

Louvain School of Management

Smart city governance in small municipalities: A case study of Bolzano urban area (Italy)

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Foreword

This thesis has accompanied me during the probably most incredible two years of my life. I lived in three different countries, travelled through Portugal and South-East Asia and in each and every one of these places I had my laptop with me, working on this very personal project that talks about my hometown, Bolzano. This work accentuates once more the duality of the life I have been living, studying, and working abroad, while always having a deep connection to my roots.

I would like to thank my supervisor professor Carlos Desmet for supporting and guiding me through this project, across continents and time zones. His inputs and feedback were always highly valuable and allowed me to deliver something that will be truly useful for the smart transition of my hometown.

I am also very grateful to all the people who took their time to complete the survey, and those who accepted to be interviewed. Without them, providing tangible recommendations would not have been possible.

Now, I would also like to dedicate some words to the people who have been with me during this journey.

To my family for giving me the opportunity to study abroad, seeing the world from different perspectives, encouraging me to step out of my comfort zone even when it meant moving to the other side of the world.

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1. Introduction

In 1950 only 30% of people worldwide and 53% in Europe were living in cities. Nowadays the percentages account for 55.3% and 74,5% respectively and with the current speed of urbanization, will keep increasing in the next years and approach three quarters by 2050 globally (Orejon-Sanchez, Crespo-Garcia, Andres-Diaz, & Gago-Calderon, 2022) (Shell, 2014). Urban areas and cities also account for the majority of global energy consumption, carbon emissions and use of world's natural resources (UNEP, 2013). As a result, cities must find a way to tackle these challenges. While there are multiple ways to do so, making cities smarter is one of the most common approaches: even though, there are numerous definitions of smart city found in literature, the core of a smart city is to provide sustainable urban living, in which citizens, governance and other stakeholders collaborate to build an eco-system that is sustainable from an environmental, social, political and economic point of view, making use of innovative technologies (Ruohomaa, Salminen, & Kunttu, Towards a Smart City Concept in Small Cities, 2019). As the power houses of economic growth, cities are at the forefront of having to address the risks that come with extreme urbanisation and fight climate change and must drive a more sustainable way of consuming and producing. Since the 1990s the European Union has launched various initiatives for cities to enhance their smartness and advocates for a more sustainable and responsible growth and development. Inter-governmental institutions such as the UN, OECD, WWF, The World Bank, as well as universities, have developed and continue to do so, a remarkable number of articles, reports, and guidelines on how cities can embark this journey and implement smart city initiatives.

What is critical in this transition of becoming “smart” is smart city governance which does not focus on technological and digital development only, but also takes into account how citizens, city authorities and public service providers evolve, addressing the human perspective accordingly. In particular, collaboration among stakeholders is seen as a necessary component to develop a smart city, together with participation and coordination (Komninos, Panori, & Kak, 2019) (Ruohomaa, Salminen, & Kunttu, 2019). The goal is to create “*linkages among citizens, government, business, and educational institutions*” (Appio, Lima, & Paroutis , 2019, S. 2).

While there is extensive research being carried out and frameworks and models being developed to assess the smartness of metropolis and big cities, which are considered hubs in

which innovation and technology thrive and in which intense urbanization makes the smart city approach necessary, small and medium-sized cities often find themselves in the back of the picture (Dall'O, Bruni, Panza, Sarto, & Khayatian, 2017). According to Desdemoustiera et al., policymakers in small and medium-sized environments often do not understand smart city concepts or the focus on new technologies lacks (2019). This automatically leads to a fewer number of smart city initiatives being carried out. However, research shows that also small cities are encountering – and will so even more in the future - problems of air pollution, congestion, increasing inequalities, fast-pacing urbanization as well as resource shortage, energy and waste management, aging of the existing infrastructures and human health problems (Farmanbar, Parham, Arild, & Rong, 2019); and the list does not stop here. These are issues that cannot be neglected, and small cities should not be left behind in this race. Simultaneously, we cannot adopt the same smart city approach in small cities as we would have in metropolis, as one size does not fit all (Esposito, Clement, Mora, & Crutzen, 2021). More so, small cities differ among each other, and it is a city administration's task to figure out what works best for its citizens.

Thus, the focus of this thesis will be to assess the smart city governance of a small city to not only contribute to literature in the field but most importantly to add value to local knowledge and provide the local authorities with concrete insights and recommendations on how to develop further. Despite analysing an Italian city, we look at best practices and frameworks used outside of Italy, on European and global level. The small city chosen is Bolzano because of the author's origin and already developed expertise in the South Tyrolean public sector. Moreover, most smart city projects are carried out in large cities such as Milan, Turin or Rome. However, the majority of the Italian population lives in medium and small-sized cities making the scope even more relevant (Dall'O, Bruni, Panza, Sarto, & Khayatian, 2017). Bolzano is located in the Autonomous Province of Bolzano, South Tyrol, in the North-East of Italy. It accounts for approximately 107,000 inhabitants and benefits from an autonomy statute that gives the local decision-makers the possibility to take decisions to some extent independently from Rome. Simultaneously, given its historical background, Bolzano and the region of South Tyrol are trilingual – Italian, German and Ladin – which gives it a very peculiar cultural and linguistic connotation that influences every daily life aspect and acts as a bridge between Italy and the DACH region (Alcock, 2001). The city is already investing significantly into becoming a smarter and more sustainable city and in 2021 was appointed 5th city in Italy out of 107 in terms of quality of life, ranking particularly high in “environment and services” (Il Sole 24 Ore, 2021) (Crepaz, 2020).

Given this high score and the relevance of smart governance in small cities it appears to be crucial to assess how the city is doing in terms of smart governance. How mature is Bolzano in terms of smart governance and as a result as a smart city? How is participation in decision-making regulated, how transparent are governance systems, to what extent are public services available? How are citizens involved in this transformation? But most importantly, what does smart governance look like in small cities? Bolzano will be used as a case study as it represents the ideal mix between innovation and the characteristics of a small-sized city.

The following thesis will be structured as followed: first, a review of the existing literature will be carried out, focusing on smart city governance (SCG) and more specifically smart city governance in small-sized cities, by also looking at how they are organised. Next, we will look at the methodology, followed by an extensive analysis of governance in the city of Bolzano. This will include assessing the current situation, analysing it further with a public survey, benchmarking it with other small cities and finally integrating the results to identify best practices as well as gaps. In addition to this, interviews with relevant players will be conducted to further shed light on the topic. Finally, concrete recommendations addressing the local government of Bolzano will be made together with a conclusion laying out key results.

2. Literature review and definition of relevant terms

Two main aspects that must be looked at to obtain a broader picture of the subject matter are on the one hand, smart city governance in terms of existing definitions and literature, relevant theoretical frameworks as well as best practices, and on the other hand, SCG in small cities, identifying challenges, opportunities, and gaps. We will also identify two small cities to later benchmark with Bolzano.

2.1. Smart City Governance

In literature, we find numerous definitions for what smart city governance is and what it implies. Generally speaking, smart city governance is seen as the management of smart city initiatives (Chourabi, Nam, Walker, Gil-Garcia, & Mellouli, 2012). This includes the management of city infrastructures (Castelnovo, Misuraca, & Savoldelli, 2015), resources (Kourtit, Macharis, & Nijkamp, 2013), human assets (Lombardi, Giordano, Farouh, & Wael, 2011) and other immaterial capital (Batagan, 2011). Belissent even goes as far seeing (2010) smart city governance as the “core of smart city initiatives”. However, what is extensively being focused on in literature is the aspect of participatory governance and citizen involvement. The ultimate goal of smart governance is to bring smart city initiatives closer to citizens. This not only increases transparency but also leads to active participation of citizens, from planning, implementing, monitoring and evaluating initiatives. According to Lopes and Oliveira (2014), it “concerns the articulation between private and public, and economic and social stakeholders, focusing on citizens’ participation, both in defining the future of the cities and in the innovation process related to urban problem-solving. It also involves methods for administrative simplification and modernization as well as paperless procedures.” The positive perception of a service’s added value to the society, combined with citizen engagement, transparency, and accountability, also leads to enhanced trust towards public administration. This will automatically lead citizens to adopt even more services (Castelnovo, Misuraca, & Savoldelli, 2015) and once again highlights the importance of citizens’ active engagement and involvement. The dimensions that accurately represent and describe smart governance would be: integration, innovation, information sharing, evidence-based, citizen-centricity, sustainability, creativity, effectiveness, efficiency, equality, entrepreneurialism, citizen engagement, openness, resiliency, and technology savviness (Gil-Garcia, Puron-Cid, & Zhang, 2016). All these terms align with the theoretical aspects we have discussed so far and will discuss in the rest of this chapter.

In fact, the need for a new way of approaching and involving citizens is needed and smart city governance plays a central role in this transition. Traditional engagement approaches that follow a top-down decision-making procedure in which local governments introduce initiatives to then ask citizens for their opinions and feedback are long outdated (Castelnovo, Misuraca, & Savoldelli, 2015) and centralized bureaucratic government is not the only way to achieve public outcome (Landsbergen, Girth, & Westover-Munoz, 2021). Citizens want and are already actively participating in the city's governance to create and manage public value (Aversano, Raju, Mechant, & Ballon, 2013). This happens through the use of social innovation and multistakeholder activities of products and services (Linders, 2012) and starts from the bottom in a spontaneous way. The concept of participatory governance is central to this (Pereira, Falco, Parycek, & Kleinhans, 2018).

In order for citizens to be involved in smart city initiatives, literature shows that information and communication technologies (ICT) and social media play a significant role in supporting the process of public value creation. Indeed, ICT-enabled city governance can notably simplify government administration, interaction and communication between stakeholder and include citizens in the decision-making process. Smart technologies such as ICT build the digital infrastructure needed for a city to become smarter and more knowledgeable (Castelnovo, Misuraca, & Savoldelli, 2015) and overall improve quality of life (Batty, et al., 2012). However, what must be kept in mind, is that ICT alone will not prove sufficient to reach all desired results (Veselitskaya, Karasev, & Beloshitskiy, 2019).

Now that we have seen that ICT is an indispensable factor of smart city governance, we shall look at the two different governance of information perspectives present in literature. On one hand, we see governance as the force that implements singular smart projects and initiatives that contribute to improve different aspects of citizens' lives and their success ultimately justifies the use of information by local governments but also determines how smart the city is. On the other hand, governance implies the whole storage of information the government has access to and can use to become smarter. This information is a core resource of the smart city and as a result, management of this information through appropriate governance is crucial. Very often, scarce attention is paid to this information package as a whole, as stakeholders prefer to focus on the information of one project only. This leads to scattered information and prevents local government to leverage all the data and information available in a holistic and interconnected way (Landsbergen, Girth, & Westover-Munoz, 2021). Thus, cities should increasingly focus on

integrating smart city projects and initiatives and standardizing data as many projects will require the same data set such as demographics about the population.

As we have seen so far, the majority of the research puts great emphasis on finding a new way of governing that includes and engages citizens from the beginning, acts openly and transparently and uses data holistically. However, we also saw that one size does not fit all and smart governance must adapt to local needs and requirements. Finding the right balance between following innovation and best practices in the field and adapting to local needs and requirements can result very tricky and complex. This year the Organisation for Economic Co-operation and Development (OECD) published an Implementation Toolkit to lead and guide public authorities in their urban policy processes and help implement the eleven OECD Principles on urban policy. These principles are organised around three pillars: Scale, Strategy and Stakeholders. The toolkit includes self-assessment framework and a database, where national, regional and local governments can look up leading examples of implementation (OECD, 2022).

If we want to assess a city's smart governance – which in our case will be the city of Bolzano – there are a variety of dimensions to consider found in literature. Kumar et al. (2016) have identified a variety of indicators of smart governance that public authorities should refer to in their transition (see Appendix 9.1: Figure 1). According to Giffinger et al. smart governance includes participation in decision-making, public and social services, transparent governance and political strategies and perspectives (2007) (see Appendix 9.1: Figure 2). Others mention participation in decision-making, transparency of governance systems and availability of public services (Ruohomaa, Salminen, & Kunttu, Towards a Smart City Concept in Small Cities, 2019) while Cohen focuses on enabling supply and demand side policy, transparency and open data and ICT and e-government, online services, infrastructures and open government (Cohen, 2014). Scholl and Scholl (2014) state openness and transparency of government decision making and actions, open information, stakeholder participation and collaboration, leveraging government operations and services via intelligent and integrated technology use and government's role of facilitator of innovation, sustainability, competitiveness, and liveability (see Appendix 9.1: Figure 3). Finally, Chourabi et al. mention collaboration, leadership and champion, participation and partnership, communication, data-exchange, service and application integration, accountability, and transparency (2012). All these definitions converge in

terms of stakeholder participation, e-services and open and transparent government institutions, main concepts we have also seen before.

Despite this convergence of definitions, there seems to be no universal or most used framework on how to best assess the smart governance of a city. Giffinger used the framework in Figure 2 to rank European medium-sized cities based on governance and other smart city dimensions (2007). Scholl and Scholl (Scholl & Scholl, 2014) developed a smart governance research and practice “Roadmap” (see Appendix 9.1: Figure 3). We also already mentioned the dimensions suggested by Kumar et al. (2016) (see Appendix 9.1: Figure 1). Besides the Implementation Toolkit for Urban Policy discussed above, the OECD developed a Digital Government Framework (see Appendix 9.1: Figure 4) which is designed to help governments focus on six key aspects in their digital transition, the core of any smart governance (Directorate for Public Governance, 2020). Finally, the European Commission published a document titled eGovernment Benchmark 2020 that allows European countries to evaluate its governance in comparison to other European countries focusing on the most relevant dimensions (see Appendix 9.1: Figure 5) (2020). The variety found in literature combined with the scope of this thesis, asks for the development of an easily understandable framework in which the definitions and frameworks discussed can be merged.

Moreover, the multilinguistic environment of the city of Bolzano requires a brief dive into how this could influence and affect smart governance. In our case, the languages playing a dominant role are Italian, German and German dialect. Despite Ladin also being an official language of the territory, it is not actively spoken in the city of Bolzano and will thus be not considered. Having more than one language certainly adds complexity to the existing challenges of governance as it intensifies aspects related to communication, both internal and external (Nuolijärvi & Stickel, 2016, S. 5).

On one hand, we find ourselves in a trilingual working environment. Language has been identified as the “forgotten factor in MNC management” (Marschan, Welch, & Welch, 1997), and this is undoubtedly the case for the governmental institutions and their governance too. Over the last 15 years, the importance of linguistic policies and language management strategies have been found to be essential to ensure a functioning multilingual environment. What we often witness in the private sector is the use of a business lingua franca – a one-language working policy - which seems to be the most popular opinion (Angouri, Multilingualism in the

workplace: Language practices in multilingual contexts, 2014, S. 2). However, literature found that this method might simplify things in a sector in which the prevailing language is usually English but fails to capture the complex dynamics of local multilingual workplaces, especially in areas such as Bolzano where multiple languages have been coexisting on a daily basis since over 100 years (Angouri, *Multilingualism in the workplace: Language practices in multilingual contexts*, 2014). Instead of using top-down language policies, Van der Worp and her colleagues (Van der Worp, Jasone, & Gorter, 2014, S. 410) suggest a flexible bottom-up “what works” approach policy. Overall, literature demonstrates the importance of understanding internal communication dynamics posed by multilingualism instead of imposing official then not practiced language policies. Improved communication is found to enable productive discourses, trust and correlated performance, thus, leading to a more effective governance (Angouri, 2013) (Tenzer, Pudelko, & Harzing, 2014).

On the other hand, public external communication is a key tool of smart governance. While historically it had been used to predominantly reach political objectives (Fredriksson & Pallas, 2018, S. 3), public external communication nowadays serves as an information tool and provides to the public access to information in areas such as public health, law, and public education. Similar data can be found in the Elliott School for International Affairs Lindner Commons Room at the George Washington University (2009), which claims that the three primary goals of public sector communication, or more specifically, government communication, are to engage citizens, advocate and/or persuade for policies and reforms, and inform. The latter role will become more important as public awareness increases as a result of easier and faster access to information. Additionally, McClellan's paradigm also incorporates action, advocacy, knowledge, interest, and awareness (Bogdal, 2013, S. 9). In general, and in line with the role of smart governance discussed previously, public sector communication should improve the lives of its citizens while also "promot[ing] certain behaviours and reducing others" (Fredriksson & Pallas, 2018, S. 8). Communication should be seen as a strategic tool. The challenge in Bolzano is to do all of the above in multiple languages in order to include all linguistic groups through an inclusive and efficient governance structure.

2.2. Smart City Governance in smaller cities

Now that we have gained a broader understanding of smart governance and aspects related to it, it is necessary to analyze it further with respect to small cities such as the city of Bolzano. As discussed in the introduction, small cities are often left behind in the smart transition due to lack of resources, understanding and interest, but with increasing urbanization will face the same challenges metropolises are facing now. Moreover, focusing on and developing frameworks and guidelines for small cities – in general, but in our specific case in Italy - is relevant for other several reasons: firstly, we saw that 23% of the Italian population lives in cities with more than 100,000 inhabitants, while a significant 47.5% lives in cities with less than 20,000 inhabitants and 31.3% in cities with less than 10,000 inhabitants (Dall'O, Bruni, Angela, Sarto, & Khayatian, 2017). Secondly, we must adapt the assessment of smartness of cities to their sizes as small and medium-sized cities will differ significantly from big ones. Thirdly, a high number of small and medium-sized cities are already committing to governance strategies which means that providing them with even more straightforward solutions is necessary (Dall'O, Bruni, Angela, Sarto, & Khayatian, 2017).

To start off, we shall define with how many inhabitants a city is considered small. According to OECD Data (2019), a city between 50.000 and 200.000 inhabitants is considered a small city. Bolzano fits in this range with its approximately 100.000 inhabitants. Over 200.000 and up to 500.000 is considered a medium-size city (OECD Data, 2019).

In terms of the application of a smart city governance, we have seen that small and medium - sized cities often do not have enough adequate resources or incentives to focus on smart city development in the way and intensity they should. Nevertheless, there are cities that are slowly progressing in this transition. Mollay et al. (2017) analyse in their report Austrian small cities and state that these cities indeed focus on the implementation of a sustainable and clean energy-focused city development but that the strategies and policies involved are not defined as “smart”. Only in some cases of specific projects this term is used. So, while small cities started to focus on smart city initiatives, they often do not use the term smart or only use it related to marketing and advertising purposes. The setup of a smart-city image does appear to stay in the background. In our later analysis, we will see if this is the case for Bolzano as well (Mollay, Essig, Kintisch, & Schremmer, 2017).

One of the main challenges small cities face in terms of smart governance are missing economic and financial resources to drive the smart city development and implement structural changes. Local governments have a leading role in this regard, but they are dependent on and are incentivized by financial means to focus on smart city initiatives. However, financial initiatives are not sufficient on their own. Strong political commitment and engagement is needed from local policy makers to implement a holistic smart city model. Moreover, the role of citizens and their participation in this transformation is crucial for the final result. The decisions made must reflect the local – and somehow still rural - needs and to achieve this, the search for the appropriate smart city must be as open, transparent and participative as possible (Mollay, Essig, Kintisch, & Schremmer, 2017) (Madner, 2015).

Another challenge encountered is the thematic broadness of smart city initiatives. Small cities often lose themselves in the endless smart city initiatives portfolio. Choosing the focus topics is necessary out of content and time constraints. It will depend on the strategy of local policy makers, involved economic actors and organisations. It will of course also orientate itself on regional – South Tyrol for Bolzano – and national guidelines. The lack of experience of small cities requires pilot projects as well as a very gradual embedding and implementation of smart city developments that is strategically aligned (Mollay, Essig, Kintisch, & Schremmer, 2017).

Something that can be useful for local policymakers is the strong role of the EU in the smart city transition. Smart city activities seem to present clear parallels despite the sizes of the cities. European Union's laws and guidelines lead the smart city governance not only in terms of standards but also human rights principles. Moreover, the EU fosters smart city programs through grants which results being particularly beneficial for small cities lacking financial means. Overall, the European Union strongly see smart cities as one of the main tools to reach climate-neutrality by 2050. This makes Europe an extremely stimulating and innovative environment in which smart city governance can thrive, and small cities can take advantage of funds provided and draw inspiration from major smart cities such as Amsterdam, London or Barcelona (Mollay, Essig, Kintisch, & Schremmer, 2017) (European Commission, 2022).

Another key aspect in the governance of small cities is the involvement of local businesses. Cooperation with economic actors is essential because they provide necessary resources such as network, know-how and capital but also because smart city goals can often be reached

through their participation. This participation can occur on a strategic basic but also through the collaboration on specific smart projects. However, businesses – often influenced by the overall city environment – can lack initiatives to collaborate. It is surely the local government’s responsibility to lay out the added value that companies can gain by engaging in the smart city transition (Mollay, Essig, Kintisch, & Schremmer, 2017).

Citizen participation is crucial in smart city governance, and small cities do not represent an exception. Given the lack of knowledge in smart city domain, local governments try to include citizens through informing them and raising awareness as well as including them on specific projects. Strategic participation is still quite rare, co-creation and social innovation are not being dealt with intensively. This is why inclusion in the planning phase is crucial to bring citizens closer to the projects and avoid any conflicts that may arise in a constructive way. Interests should be handled in an open and transparent way (Mollay, Essig, Kintisch, & Schremmer, 2017). Moreover, active communication plays a central role to guarantee transparency. What has been witnessed in research is that small cities tend to communicate over informal ways, which as a result leaves space for doubts, rumors and unclarity. Developing communication strategies that are clear, informative, and directed towards everyone is one of the key responsibilities of local government.

Due to the lack of a unified standard or index for assessing the governance’s smartness and smartness in general of small and medium cities, Dall’O and his colleagues (2017) have developed a protocol for evaluating urban smartness and all its components of small and medium-size cities in Italy. This protocol builds upon two smart city ranking projects that have been carried out in Italy – Icity Rate (2017) and Smart City Index by Ernst and Young (2016) – and the international standard ISO37120 (2014) which includes a set of indicators. This protocol might represent a valid solution for our case as it specifically targeted small cities located in Italy. Nevertheless, it will be relevant to extend the view beyond this protocol using frameworks discussed in part 3.1).

The two ranking projects mentioned above are particularly interesting because they are published yearly and show the progress of the smartness of Italian cities. In this way it allows to spot trends and challenges. The three cities on the podium of overall smartness and smart city governance have been Milan, Bologna and Florence for over five years now demonstrating that big cities seem to be smarter and digitally more advanced than other cities. Results also

show that there is a significant gap between cities located in the North and the South, with the South lagging. Interestingly, Bolzano positioned itself in rank six in 2017 in terms of governance and participation showing great potential (Dominici & Piersanti, 2017) (FPA, 2021). Adding up to that, the most recent Smart City Index by Ernst and Young shows similar results: once again, Milan and Bologna are on top, followed by Turin and Florence on rank 10. Bolzano positions itself on rank 16, which is still considerable. Moreover, Ernst and Young divide a city's smartness into readiness of the city and behaviours of the city user. Looking at the column of Bolzano (see Appendix 9.1: Figure 6), we notice that readiness exceeds individual behaviours, posing some questions on how to further educate and prepare citizens for evolving smartness (D'Acunto, Mena, & Alessi, 2022).

Finally, we have decided to benchmark Bolzano with two other small cities. One of them will be **Trento**, which is also Italian and given the proximity very much interconnected. Despite the similarities, Trento positions itself higher in the smartness ranking and equilibrium in terms of readiness and individual behaviours (D'Acunto, Mena, & Alessi, 2022). Bolzano might be able to benefit from synergies. The second city will be **Innsbruck**, in Austria. The goal is to address best practices in the territory but also look at what is being implemented outside of Italy and more oriented towards the international sphere of smart governance. Like Trento, Innsbruck is similar to Bolzano but as it is located in Austria has a different smartness approach, influenced by national and regional guidelines as well as other linguistic and cultural connotations. Overall, these three cities show great interest in increasing the smartness of their governance and comparing them will be of great help in providing recommendations for Bolzano.

3. Methodology

In the following chapter we will look at the methodology of this thesis and how the research was conducted. The thesis is based on three main pillars with which we want to assess Bolzano's smart city governance level. Firstly, secondary research through an extensive literature review and publicly available data of Bolzano and the benchmarked cities Trento and Innsbruck. Secondly, primary research through a public survey conducted in Bolzano to establish a baseline following the framework developed by the author, which combines several smart city governance theories into one. Thirdly, again primary research through interviews conducted with local actors and experts in the field of smart governance. The goal is to compare and integrate results from public available data, the general public and experts and form straightforward and implementable recommendations for Bolzano's city administration.

3.1. Secondary research

As part of the secondary research, we first conducted an in-depth literature review, looking at the most relevant work in the field to obtain a general picture about smart city governance, particularly in small cities. Based on this, the author developed an own framework to assess smart city governance, which will be laid out in part 4. Next, to understand where Bolzano was positioned in terms of governance, we mainly used the websites of Bolzano's city's administration and of the Province. Lastly, to benchmark Bolzano with the cities of Trento and Innsbruck, we used the latter's official websites where all relevant information was found.

3.2. Primary research: Baseline survey

The quantitative research method used was a cross sectional survey – thus, collecting data from many subjects at a single point in time - with the purpose of establishing a baseline, meaning how Bolzano citizens perceive smart city governance in the city today and from there come up with recommendations. A baseline survey helps the researcher to obtain information about the status quo and define what to focus on more (Formplus Blog, 2022). We included anyone older than 18 years of age and residing in or originating from Bolzano. Data was collected only online for convenience and speed between 14th of January and 17th of February 2023. Moreover, the author was located in Lisbon and Singapore at the time of writing so paper questionnaires would not have been feasible. The surveys were created in both Italian and German given these being

the two official languages of the city and were sent out to respondents with the methods mentioned above. They were developed after an extensive review of relevant literature on the topic and created on Google Forms as it represented a user-friendly platform most people are familiar with. The survey investigated citizens' readiness following the four spheres of the framework developed in the theoretical part. The questions implied 1 to 5 scale ratings or yes/no answers but it also included open-ended questions where the participants could give their input. The English survey guide is attached to this paper (see Appendix 9.2). The surveys were sent out to respondents chosen through snowballing, thus including word-of-mouth and own personal connections (Crossman, 2019). Purposive sampling was used in order to identify individuals that were of the right age range and origin/residency. Moreover, links to the surveys were posted in Facebook Groups "Sei di Bolzano se" (You are from Bolzano if, translation by author) to have a bigger reach (Palinkas, et al., 2015). These methods were chosen because cost-effective and can be carried out in a relative short period of time. On the other hand, this can of course limit the representativeness of a sample group (Crossman, 2019).

With a population of 107,000 residents, a confidence level of 95% and margin of error of 5%, the ideal respondent number would have been 383. We managed to obtain 329 responses, ranging somewhere between 5% and 6% of error margin. Thus, we achieved a substantial sample size that appears to be representative of the population if we also look at gender, age, and other demographic variables. For the analysis, besides laying out the descriptive results of the survey, we tried to identify connections between variables in order to be able to provide more specific recommendations further on. We used Pivot tables working on Microsoft Office Excel to achieve this.

3.3. Primary research: Interviews with experts

The qualitative research method is more exploratory and enables us to gain deep insights from experts in the field on specific questions related to Bolzano and smart city governance in small cities in general (Kaya, 2007). The interviewees were also chosen through snowballing and purposive sampling. It was tried to form a heterogenous group with experts coming from different backgrounds. A total of 8 different interviews were carried out with both local actors - aware of the challenges and opportunities of the city - as well as international experts, working in the field of smart city, smart city governance and how that applies to both big and small cities. This was done to obtain a more complete picture of the current situation in terms of smart

city governance both in Bolzano as well as abroad in order to formulate more accurate and significant recommendations. The group consisted of four men and four women. The table below aims to visualize the roles of the eight experts.

Table 1: Overview of interviewees' positions

Interviewees	Role
Interviewee A	Smart City councillor of Bolzano
Interviewee B	Senior Researcher at the Centre for Advanced Studies, EURAC Research Bolzano
Interviewee C	Researcher and International Partnerships and Relations Coordinator, Smart City Institute HEC Liège
Interviewee D	Director at swissesco and former Smart City Officer for several Swiss municipalities
Interviewee E	Postdoctoral Researcher, Smart City Institute HEC Liège
Interviewee F	Professor with focus on Smart Cities and Open Data Infrastructure at the Institute for Public Sector Transformation, Bern University of Applied Sciences
Interviewee G	Professor of Public Policy and Administration, Université Libre de Bruxelles and Senior Researcher, Smart City Institute HEC Liège
Interviewee H	Smart City Coordinator, Ville de Bruxelles – Stad Brussel

Next, the semi structured individual interviews were chosen because they represent the most adequate research method to gather in-depth insights (Longhurst, 2009). Moreover, the affiliation of smart cities and their impact to social sciences and its various facets makes it particularly difficult to measure and analyse numerically (McLeod, 2023). Advantages of this method are flexibility, the use of a natural setting and obtaining detailed information (Mojahan, 2018, S. 24) (Kaya, 2007, S. 54). Limits could be subjectivity and limited generality (Bhandari, 2023). However, the aim of this paper is not to obtain a generalized picture for smart city governance in all small cities but rather intends to obtain a clearer picture on Bolzano's status quo and in which direction to go in the future in terms of smart city development. This paper shall provide Bolzano's city administration with helpful insights and encourage further research in smart city governance of small cities.

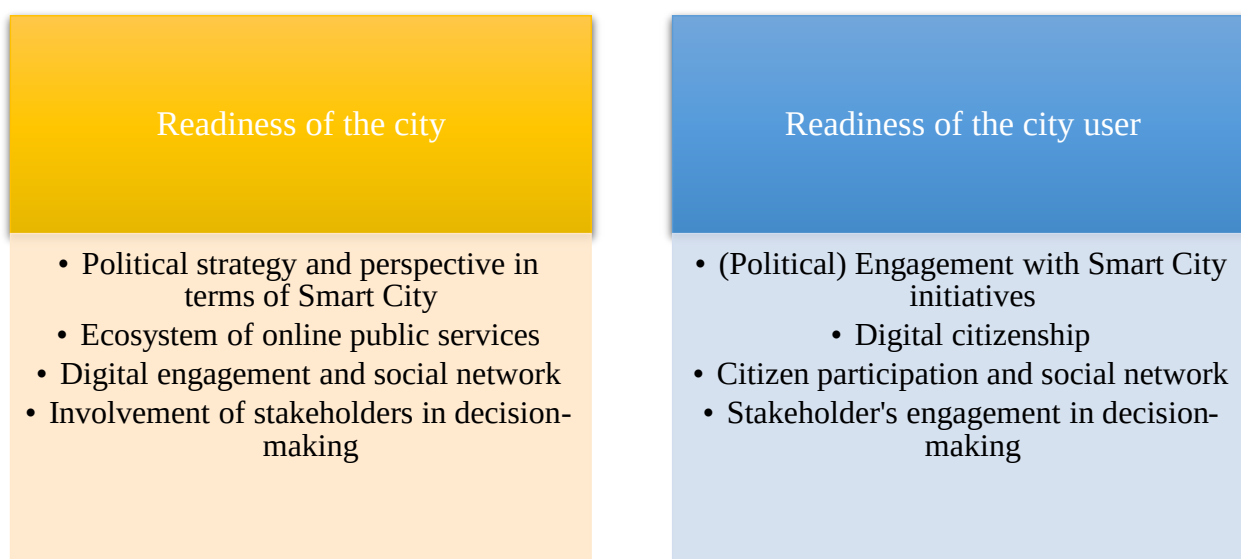
The interview guide was first produced in Italian, the author's mother tongue and afterwards translated into English. Both guides were used for the interviews. Direct exchange was possible and no intermediary was needed (Welch & Marschan-Piekkari, 2006). This ensured trust as well as higher accuracy and authenticity of the data (Welch & Marschan-Piekkari, 2006). The English version of the interview guide is attached to this paper (see Appendix 9.3). Despite having a defined interview guide, the interviewer gave the interviewees the possibility to expand on an issue further if seen as appropriate and relevant for the scope of the research. The interviews were conducted from 29th March 2023 to 26th April 2023. Since the responses of an interviewee can be influenced by the setting and the interviewer (Bhandari, 2023), it was attempted to create the most natural and comfortable environment possible. All interviews were conducted using web and videoconferencing platforms and recorded with the participants' permission. What was crucial for the data collection was seeing the participants through videocall. This makes the participants feel more comfortable and it resembles personal interviews the most. It also gives the interviewer the possibility to capture information between the lines (McLeod, 2023) (Naderifar, Goli, & Ghaljaie, 2017). Interviewees live in Italy, Belgium and Switzerland. All interviews were conducted by the only author of this paper and lasted approximately 45 to 80 minutes. The participants were again informed about the scope of the research and how their contribution would have been used.

For the interviews' analysis, they firstly were all transcribed. Qualitative content analysis was used to analyse certain themes within the responses. My research question and the smart city governance framework developed previously determined what to look for and analyse within the questions (Elo, et al., 2014, S. 1) (Hsieh & Shannon, 2005, S. 1278). The interview questions were already split up in different sections so no subsequent division was needed. A spreadsheet on Microsoft Excel was created with the main themes of the thesis containing in the columns the questions and in the rows the key aspects of the respective answers to each question within those sections. As said before, these themes would base themselves on the smart city governance framework developed in part 4. Given the low number of interviewees, creating clusters of the answers was very straightforward. After that, the results were laid out in the section and integrated with the result from part 4 (Olse, 2016) (Eliot, 2011). Relevance or non-relevance of specific answers was concluded by keeping in mind the scope of the thesis.

4. Bolzano's current situation in terms of Smart City Governance

After having looked at some more theoretical aspects of smart city governance in small and medium-size cities, in this section we will try to establish the baseline for SCG in Bolzano. What can be found in available data about the city's efforts? What does the public think and expect? Lastly, what is being done in Trento and Innsbruck and how can Bolzano learn from that? To do so, a framework has been developed integrating the most relevant aspects from theory discussed in part 3), taking into account the importance of ICT, citizen engagement and participation in decision-making.

The framework developed divides smart city governance in two spheres, one is that of the **readiness of the city** which represents the governance's capacity to redesign the city based on the needs of citizens or also called city users. This can be a citizen, a worker, a consumer, a tourist, a student, or an entrepreneur. A city user can also be many of these things: the ultimate goal is to create a city that is made for everyone. The second sphere is that of the **readiness and the behaviours of the city users**. Sometimes, citizens even anticipate the governance and the market creating demand that must be satisfied. On the other hand, sometimes the city initiatives do not reach the city user and as a result, do not change its behaviour. Below, the framework with its main subpoints:



Framework created by author (2022)

We will have a closer look at the two spheres to understand the subpoints and based on public data available try to understand at what point Bolzano stands. For readiness of the city we have four main points: Firstly, **political strategy and perspective in terms of Smart City, inspired by** Giffinger et al.'s framework (Giffinger, Kalasek, Fertner, & Milanović, 2007). What strategies does the local governance have in place to become a smarter city? Are there deadlines by which certain targets have to be met? How is the strategy and the initiatives connected to it communicated to the general public? Who does the city governance work with to build up this strategy? Secondly, we have the **ecosystem of online public services**. While literature also often considers the portfolio of offline public services available, we believe that given the importance of ICT and digital transformation, looking at the online public services will be more beneficial for the overall analysis. What services does Bolzano offer online? How many do they offer? How user-friendly are they? How is the digital ecosystem structured? Thirdly, we find **digital engagement and social network**. We saw that social media has been found to be an important tool for modern public sector communication. How does city governance communicate with citizens? Which tools and channels are being used? Overall, how do they digitally engage with the population? Lastly, the **involvement of stakeholders in decision-making**: how does the city involve citizens in decision-making processes? How is transparency and openness ensured?

4.1. Readiness of the city of Bolzano

4.1.1. Political strategy and perspective in terms of Smart City

In this first part we will try to assess Bolzano's strategy and perspective in terms of Smart City. Bolzano is the capital and largest city of South Tyrol and as a matter of fact, the region of South Tyrol is officially also called the Autonomous Province of Bolzano, which means that decisions taken in Bolzano often extend to the whole province and the other way around.

In this regard, "Innovazione e Ricerca Alto Adige 2030", "Innovation and Research South Tyrol 2030", represents a crucial part of Bolzano's Smart City strategy until 2030 (Provincia Autonoma di Bolzano - Alto Adige – Ripartizione Innovazione, Ricerca, Università e Musei, 2021). It represents a regional strategy which defines the priorities and general conditions for local initiatives in terms of innovation, research and technology. It follows the "Smart Specialisation Strategy per la Provincia Autonoma di Bolzano - Alto Adige", developed

in 2014, which is based on the directives of the European Commission regarding the development of Research and Innovation strategies concerning "smart specialisation" (Research and Innovation Strategies for Smart Specialisation - RIS3) and was approved by the Provincial Council, in agreement with the European Commission, in May 2015. This strategy aims to deploy structural funds more effectively and to increase both synergy effects between relevant policy areas at European, national and regional level as well as public and private investments. RIS3 also requires the creation of a monitoring system that generates the necessary information for decision-making processes and the allocation of financial resources. The report defines future areas of specialization and focuses on the strategic strengths of the province as well as an increasingly participatory process. Moreover, the strategy development required a tight coordination between public administration and other economic, scientific, and political actors. Overall, the main focus areas were the following:

- *Four transversal areas:*
 - 1) Sustainability; focus on the socioeconomic and political-ecological dimension
 - 2) Digitalisation; focus on digital transformation in general
 - 3) Creative industries; focus on crossover and spillover effects as well as social implications
 - 4) Permanent formation and education; focus on people and their capabilities

- *Areas of specialization:*
 - 1) Automation and digital; focus on automation-automotive and smart processing
 - 2) Food and Life sciences; focus on agrifood-nutrition, medical research and quality of life
 - 3) Alpine technologies; focus on applied technologies to mountain and people, alpine safety, alpine production and work technologies
 - 4) Green technologies; focus on smart energetic systems, energy-efficient and sustainable construction, circular economy, smart city and smart suburbs

What is particularly interesting and relevant for the scope of this thesis, is also the strong focus on governance and its solid structure. The province of Bolzano aims to improve the quality of the governance through the improvement of vertical and horizontal coordination mechanisms and the encouragement of collective action. In this regard, a reflexive governance approach is being followed, i.e. a way to be more inclusive and more reflexive and respond to complex risks, drawing inspiration from the Smart Specialisation Platform, which advises EU countries and regions in the elaboration and implementation of their smart specialisation

strategy (Provincia Autonoma di Bolzano - Alto Adige – Ripartizione Innovazione, Ricerca, Università e Musei , 2021).

Adding to that, the development of a very promising strategic plan on the city level was assigned to EURAC Research Centre by the Bolzano municipality to work on the vision of the city and project it towards the future. The strategy bases itself on the values of sustainability, dialogue, transparency, curiosity, diversity, balance, elegance, dynamism, respect, solidarity and hospitality, which we often find at the centre of smart cities. These values are lived through seven strategic axes which can be seen in Figure 9 (see Appendix 9.1). The report has a whole section on governance and networks which focuses on the collaboration between public, private and NGO sector to offer a broader range of services to the citizens. Governance communication must be efficient on three levels: with other actors – Province, Chamber of Commerce, neighbourhoods, etc. -, internally in terms of employees and of course externally with the citizens. According to the report, all of these levels should be improved. Moreover, to improve certain fundamental areas such as transport for example, the city governance should collaborate with national and international platforms. And again, digitalization should be at the centre of attention to eliminate the gap between institutions and habitants, enhancing the values of dialogue and transparency (Isetti, et al., 2020).

The EURAC Research Team has also come up with some statements that define the city of Bolzano. It is a city that is modern and traditional at the same time and that has managed to absorb some global trends but is neglecting others. It is also very complex with different needs from the rest of the region. Furthermore, while it attracts many commuters it does fewer young talents. It is in some ways “slow and shy” and should improve its relations with other municipalities and nearby regions. Overall, these are important considerations to be taken into account by the city (Isetti, et al., 2020).

Next, as part of the National Recovery and Resilience Plan approved in November 2021 (PNRR in Italian), the European Union - NextGeneration EU funds are financing a variety of smart city related projects in Bolzano (Comune di Bolzano, 2022), which shows how small cities can take advantage of EU funds.

Within the city council we also find a councillor for Digital Innovation, Smart City, Youth, Participation, Personnel and Demographic Services, Information Technology and

Community Development, which places smart city related concepts at the core of the city's public administration and the governmental bodies (Città di Bolzano, 2022).

Moreover, the city of Bolzano recently joined the “Green City Accord”, an initiative by the European Commission with the aim of making the participating cities greener, cleaner and healthier. The initiative – which was signed by the city mayor – commits to improve the life quality and implement the laws of the European Union in terms of sustainability faster and more efficiently (the so-called Green Deal). With the entry to the “Green City Accord”, Bolzano becomes part of a network of European municipalities that follow common goals to make Europe more sustainable (Stadt Bozen, 2022).

The Bolzano governance also actively engages in innovative smart projects. An extremely relevant one was the FP7 European-funded Sinfonia project. 30 million euros were invested, 8 of which financed by the EU. Bolzano, together with Innsbruck, which we will be looking at further on, were the pilot cities of this project. With regards to planning and implementation, local partners worked together to share experiences, solve problems, adopt innovative and courageous technological solutions and learned how the city can only improve through teamwork and a more synergetic, long-term vision. The collaboration did not stop here: the tenants were involved and empowered and partially owned the excellent final results. The project certainly raised awareness of how technology can improve quality of life (Vettorato & Balest, 2017) (Città pilota, 2022) (Eurac Research, 2020).

These main initiatives show how Bolzano's governance is aiming to put smart development at the core of their strategy for the future of the city. A very big focus is being put on the collaboration between public, private and third sector as well as with citizens. Even more is being done at the provincial level – thus, the whole region of South Tyrol. However, what emerged from publicly available information and from the EURAC Report is that there is a lack of unified strategy missing to lead the future of the city. Moreover, there are no clear targets and metrics to be found. In which year does Bolzano want to achieve what? While we have a strategy for the whole province and the one elaborated by EURAC, it appears that there is no clear communication by the city on how the future will look like. Further research through the survey and the interviews will hopefully support in the understanding of these issues.

4.1.2. Ecosystem of online public services

In this second step we will assess the number of public services Bolzano offers online. Firstly, we look at the website of the municipality of Bolzano to identify relevant services. The website is available in Italian and German, addressing the two main linguistic groups in the city (see Appendix 9.1: Figure 10). The first aspects that grab our attention are the red boxes which represent “Booking an appointment”, “Online services”, “SensorCivico”, “Press releases” and “Offices” (Città di Bolzano, 2022). All of them represent a way of providing value to the citizen. We shall look at them in closer detail:

1) “Booking an appointment” automatically leads us to BookBz, the portal for booking appointments at the municipal offices. This is divided in three sections: one for the booking of appointments of decentralised administrative services, of demographic services and via the land management and building construction service office.

2) “Online services” is the collection of all online services for citizens, businesses and professionals, always available without having to go to the offices. These services can only be accessed through authentication, namely SPID (Italian digital identity), the electronic identity card (CIE) or with the provincial services card (CNS). Very few services do not require authentication credentials. Services accessible with authentication are: online demographic services (8 services), electronic identity card (2), staff recruitment (2), marks stamps (2), leisure time (2), school catering (3), kindergarden (3), associations (3), manufacturing activities (1), construction practices (9), electoral services (4), communal property (1), subsidised housing (6), school construction (1), infrastructure and urban design (1), register of statistical surveyors (1). The services that do not require authentication include aspects related to municipal police, construction, gardening and mapping.

3) SensorCivico “The Listening Municipality” is an online platform through which citizens can formulate suggestions, reports, and complaints on a map to improve the quality of services offered by the administration and to improve the livability of the city. From 3rd of January 2023 access to the platform will only be allowed with the digital identity.

4) Press releases are used as a communication tool to provide citizens with relevant information on the city’s projects, initiatives, news and events. The press releases can be searched via the search box or by topic.

5) Uffici represents the online infrastructure to find contact details, competences, and opening hours of all the offices and departments of the municipality.

Moreover, the municipality lists on their website all their competences which include: registry, digital assistance, mobility and transport, social inclusion plan, policies for the youth, urban planning and construction, funeral homes and cemetery, kindergarden and school catering, public work, municipality jobs, tributes, environment, national recovery plan initiatives (PNRR) and culture.

Overall, Bolzano's municipality website offers a variety of online services with the aim of facilitating citizens' lives.

Next, and given the frequent overlap of competences between the municipality of Bolzano and the province, the website of the provincial administration also offers a great deal of online services. Some of the most popular are: Scholarships for students attending universities or schools and institutes of higher education and technical training, Commuters - contributions for travel expenses for employees, Digital dossier for provincial staff, Recruitment of staff for school administration and administration offices, Merit scholarships for university students, Unified declaration of income and assets – DURP, Accommodation for students and university students in South Tyrol, Reservations for services and specialist visits, Bilingualism examination and Provincial Family Allowance. A central online service platform is MyCivis which gives access to online services of the public administration in South Tyrol as a region (MyCivis, 2022).

4.1.3. Digital engagement and social network

For the third aspect we will look at how the city of Bolzano engages and communicates with its citizens, focusing particularly on social media, which we have found out to be crucial within smart city governance and communication. Social media networks “improve government functionality, planning and reachability, and user participations for the cities development” (Kumar, Kumar Singh, & Gupta, Smart Governance for Smart Cities: A Conceptual, 2016).

Given the increasing importance of social media communication, the provincial council has approved a set of guidelines and an internal social media policy. The aim is to clearly regulate the use of new media communication with the citizens. These guidelines are for all that participate in the communication process in the public administration. All social media pages

of the city and Province must be official and approved by the web editorial office or the responsible committee. The Press and Communication Agency is the point of contact for all questions concerning social media guidelines and communication in social networks (Amministrazione Provincia Bolzano, 2022).

In the age of the web, social networks offer public bodies the opportunity to build new forms of dialogue with citizens, sharing information, content, and spaces for the exchange of knowledge and opinions. The provincial administration's communication strategy for using social networks must be capable of developing the following points: Direct communication with citizens, the concept of transparency from a regulatory obligation into a participatory tool, the monitoring of citizens' opinions on issues of competence, participation and active citizenship presence on the main platforms, stimulating the exchange between citizens and public administration, activating new feedback channels on the web and making special multimedia available (Amministrazione Provincia Bolzano, 2022).

This information can be found on the official website and demonstrates awareness of the importance of social media nowadays in public sector communication. The web page also had attached the document with the guidelines which is easily downloadable. Below a list of the available social network according to their website (excluding the website) (Social Media, 2022):

Social media	Link
Facebook	https://www.facebook.com/ComunedibolzanoStadtgemeindeBozen/
Twitter	https://twitter.com/Comune_Bolzano/
Youtube	https://www.youtube.com/user/BolzanoBozenVideo/
Instagram	https://www.instagram.com/comunegemeindebz/

The social media network currently used by the city of Bolzano are valid, but a shift in content might be needed to truly engage citizens. If we look at engagement in terms of likes, comments and shares, these are very low. This might imply that from the side of the citizens these media are not seen as useful. Moreover, the city of Bolzano should focus on newly established communication channels to attract new audiences.

Lastly, involving the digitalisation of the citizens, Bolzano launched the project DigitalBz, a network of associations and civic centres providing digital help and support to citizens. These can be found in all the five neighbourhoods of Bolzano and have the aim to decentralize the service from the main office in Vintler Street. Moreover, the Smart City and Innovation councillor states that *“we would like to limit, so to speak, ‘digital welfarism’, offering instead more training to help citizens acquire knowledge and skills and thus be able to access the online services of public administrations independently”* (Città di Bolzano, 2022). The Chamber of Commerce, which was already mentioned previously, also offers support to local businesses in dealing with new digital challenges and changes: The 'Digital Services' desk provides assistance to South Tyrolean businesses with regard to digitalisation. Furthermore, the 'Digital Enterprise - PID' initiative offers information and advice on e-commerce and law. The department organises various information events on digital economy topics, including the fourth edition of the Innovation and Digitalisation training course (Camera di Commercio, 2022).

4.1.4. Involvement of stakeholders in decision-making

In the last part of our analysis, we assess how the city involves stakeholders in decision-making. At the base of everything we find the Program for Municipal Development (Programma di sviluppo comunale) which is a long-term planning tool for the territory's development. The Program pursues the goal of maintaining a high quality of life for the population in the long term, while at the same time limiting the consumption of land, resources and energy and individual transport. Moreover, the plan is tailored for local use and implementation but follows the international 2030 SDGs agenda (see Appendix 9.1: Figure 9) (Bussadori, 2022). While this program can strongly be seen as a way to make the territory smarter, what is of particular interest is the strong focus on citizens' participation.

In November 2022 an awareness campaign was launched to incentivize further an active participation. This campaign, titled *“Let’s design the future together”* (*“Progettiamo insieme il futuro”*), has the aim to motivate South Tyroleans to actively contribute to shaping the future of their municipality in terms of sustainability. Citizens must be informed of the possibility of participating in the various working groups for the development program. The work is based on defining the boundaries of the various municipalities, investigating vacant spaces and possible new uses, but also addresses issues such as mobility and accessibility, tourism development, recreational, cultural and sports facilities, as well as the design of local open spaces and recreational areas (Provincia autonoma di Bolzano, 2022). In order to participate, citizens need

to fill out a module provided online through which they will later on be contacted by their municipality; in this case study it would be Bolzano of course. Examples for the participation could be public events, round tables, workshops or digital platforms. The decision will depend upon the municipality's preference.

The main motives for the campaign have been spread through various communication channels in the three main provincial languages, being German, Italian and Ladin. Moreover, municipalities have received a communication kit in order to incentivize citizens further through for example the creation of box where they can give their opinion on determined topics. A good example for this that was mentioned before is SensorCivico, the online platform that allows Bolzano citizens to provide the municipality with feedback, ideas, opinions and more (SensorCivico, 2022).

Besides these online services for improvement proposals and complaints from citizens, participation of stakeholders is also being enhanced through two other digital channels. Firstly, an open data portal where citizens can access data made available by the public administration. Secondly, access to information independent of the use of software and exchange of data possible in open format (Amministrazione Provincia Bolzano, 2022).

Furthermore, the Chamber of Commerce of Bolzano – a public entity with functional autonomy – offers an office for the relations with the public (URP), which was created to foster and simplify relations between citizens and the public administration, to ensure that every citizen can exercise his or her right to know, participate and benefit from the services offered by the Chamber of Commerce. The URP promotes participation and ensures citizens the right to: be listened to, be informed and receive a clear, precise and rapid response (Camera di Commercio di Bolzano, 2022).

Another relevant office is the Office of Participation and Decentralisation, which not only provides information and consultancy about the services of the city, but also takes care of citizenship participation in the activities of the municipality and projects for the growth of participation in the neighbourhoods (Ufficio Partecipazione e Decentramento, 2022).

Adding on to the points mentioned above, we could observe Bolzano's engagement in including citizen in decision making through a variety of events and initiatives such as:

- “Open Space – Bolzano, inclusive and open city” (Bolzano città inclusive e aperta, translation by author): an initiative that favours interculturalism and participation of citizens of foreign origin, which in Bolzano account for 14,8% of the total residents. Given the multiculturalism of the city, it is important to ensure that inclusion is also truly participatory. The project had a strong focus on new generations and was initially developed through exchange and informed dialogue between multiple stakeholders: migrant associations, civil society, public service organisations and operators, universities, and research, to give a voice to everyone that might be part of this inclusion processes and to understand their needs. 230 people were involved and a space for dialogue and listening was created, with active and dynamic participation (Città di Bolzano, 2022).
- “Public transport without barriers” (Trasporto pubblico senza barriere, translation by author): a conference organized by the city of Bolzano to discuss inclusive mobility in the city and region. In this regard, permanent working tables will be built on the different needs for road and rail transport to concretely identify problems and seek shared common solutions (Città di Bolzano, 2022).

4.2. Readiness of city users

After having analyzed Bolzano’s readiness as a city, we will look at the readiness of the citizens. Again, our framework assesses 4 spheres: Firstly, the citizen’s (political) **engagement with smart city initiatives**. How much are smart city initiatives valued? How much do citizens engage with them? As we are also dealing with elderly population, do they know what a “città intelligente” (Smart City in Italian; translated by author) is and what it implies? The need arises to dig deeper in citizen’s understanding and involvement. Secondly, **digital citizenship**: smart cities base themselves on ICT technologies so we must assess whether present digital skills and capabilities are sufficient or if the necessity arises to invest in it. Thirdly, and aligned with point three of the city’s readiness, we find **citizen participation and social network**: how do city users digitally engage with the city and what role does social network play in this regard? Lastly, the **stakeholder’s engagement in decision-making**: How do citizens involve themselves in the decision-making processes? How important is it for them? Does it only occur top-down or also proactively bottom-up? These are the areas we will aim to investigate mainly through the public survey. Figure 10, 11, 12 and 13 show the demographical characteristics of the sample (see Appendix 9.1).

4.2.1. Engagement with smart city initiatives

The first aspect we tried to assess through the public survey is the engagement and interest that citizens of Bolzano show towards the smart city aspects. As we heard before, two surveys were sent out, one in Italian and one in German. We combined the results of these two surveys to obtain a complete picture. First, we wanted to understand how much citizens were familiar with smart city concepts. Given the nature of small cities, we did not expect a big percentage to really know what a smart city is. We have seen in the literature that small cities tend to not promote themselves as smart even though the initiatives carried out are. However, we found that almost 60% had heard of smart cities before, thus, representing a considerable share of the population. We also wanted to know whether respondents thought that it was important for a city in general to become smart. Generally speaking, 84% said that it was important for a city to become smart. In this regard, we wanted to investigate whether age had an influence on these answers. Table 1 shows that there is no significant gap in terms of age group as the majority answered with yes. What we can observe is that the biggest percentage of respondents answering with “No” and “Partially, but not a priority” are from the oldest age group. Nevertheless, we reckon these answers do not influence the overall result greatly. We also wanted to see whether education influenced their answers. Respondents with a university degree or similar or that have obtained a high school diploma, provided similar answers, with over 85% answering with “Yes”. For the respondents with only a primary or middle school diploma – which were very few – we see bigger percentages for “No” and “Partially”, showing that education does tend to influence smart city perceptions positively.

Table 1: Citizens opinion on whether becoming smart is important or not

Do you think it is important for a city to become smart?				
	Partially, not a priority	No	Yes	Grand Total
Less than 25	10,38%	0,00%	89,62%	100,00%
25 - 35	9,38%	3,13%	87,50%	100,00%
35 - 50	15,91%	0,00%	84,09%	100,00%
50 - 60	17,82%	0,99%	81,19%	100,00%
More than 60	21,74%	6,52%	71,74%	100,00%
Grand Total	14,89%	1,52%	83,59%	100,00%

To start off this section, we had inserted a small description briefly describing what a smart city is and listing some examples. We then asked the respondents on a scale from 1 (lowest) to 5 (highest) how much the city administration was doing in terms of smart city initiatives. The average amounted to approximately 2.5. Respondents do not feel like Bolzano is doing

enough. We had the same result (average of 2.6) when asking how much the city was doing in general to become smarter (inclusion, digitalisation, sustainability). What appeared from our analysis is that Bolzano was engaging in numerous ways to become smart. The question that arises is: do citizens not know about these initiatives? Do they not like them? Or does the city not promote and communicate them in the right way? Lastly, we asked citizens if they knew about the city's long-term strategy and expected a negative answer given the lack of direction identified in the analysis. Indeed, only 6% is aware of Bolzano's future smart city plans. Changing this will be one of the big milestones of the city. To sum it up, we inserted some of the things respondents said in the "Other comments" section:

"The municipality should do more to inform/educate citizens. We hear almost nothing on the subject"

"Making the citizen aware of proposed municipal initiatives for active and proactive citizen participation"

"Bolzano has a management and administration without vision and projects"

"To be a smart city, a municipality should have clear ideas and more than anything else it must inform its citizens well and motivate them (...). To be smart we have to collaborate all together"

"More direct collaboration of citizens through neighbourhood clubs, consequently more circulation of information both informative and executive"

"Appreciation of citizens as owners and maintainers of the city could be improved".

4.2.2. Digital citizenship

Next, we will see where Bolzano's citizens are located in terms of digital skills and capabilities. Overall, the average grade is 3.6. If we look at age, we expect younger respondents to have more developed digital skills. Indeed, younger respondents appear to have better developed digital skills but no significant difference is found between under 25 years old and 25-35-year-olds. Moreover, almost 40% of 50 – 60-year-olds give their digital skills a 3 out of 5. The oldest age group has the highest percentages for 1 and 2, and lowest for 5, but still a considerable 37% for 3. To sum it up, younger people appear to have somewhat better digital skills than older generations but the difference is very small. Bolzano citizens have good or very good digital capabilities which can represent an opportunity to leverage on for the city administration (see Table 2).

Table 2: Grade citizens give to their digital skills and age

What grade would you give your digital skills?						
	1	2	3	4	5	Grand Total
Less than 25	0,94%	3,77%	16,04%	53,77%	25,47%	100,00%
25 - 35	0,00%	6,25%	21,88%	37,50%	34,38%	100,00%
35 - 50	2,27%	11,36%	34,09%	40,91%	11,36%	100,00%
50 - 60	2,97%	7,92%	39,60%	34,65%	14,85%	100,00%
More than 60	13,04%	17,39%	36,96%	30,43%	2,17%	100,00%
Grand Total	3,34%	8,21%	29,18%	41,34%	17,93%	100,00 %

The next question we asked is whether respondents felt confident in using new technologies with a focus on age. Again, we expect age to influence citizens' confidence in using new technologies. The younger, the more confident we expect them to be. Over 60% of the respondents said that they are confident in using new technologies. We observe that the two youngest age groups, below 25 and 25-35 have the highest scores for "Yes", with 83% and 75% respectively, and low numbers for "No". The biggest percentage answering with "No" was in the Over 60 age group as expected. There are also considerable percentages of respondents that feel partially confident. Overall, it is important to leverage on the younger people's confidence and expertise and invest for those who do not feel confident yet in approaching new technologies.

Closely related to this second question, we also wanted to know if people confident using public online services. Again, we would expect younger people to be more confident using online services compared to older generations and so similar results to the previous question. However, this is not really the case. We observe that people feel the most confident in the 25-35 and 35-50 age groups. The youngest age group is confident, but less than with new technologies in general. In fact, from 2% in the previous question it went up to 11%. In general, it appears that despite respondents feeling comfortable with new technologies, this might be less the case for public online services, and the other way around. Why is this the case (see Table 3 and Table 4)?

Table 3: Citizens' confidence in using new technologies and age

Are you confident using new technologies?				
	Partially	No	Yes	Grand total
Less than 25	15,09%	1,89%	83,02%	100,00%
25 - 35	21,88%	3,13%	75,00%	100,00%
35 - 50	34,09%	4,55%	61,36%	100,00%
50 - 60	42,57%	6,93%	50,50%	100,00%
More than 60	36,96%	26,09%	36,96%	100,00%
Grand total	29,79%	7,29%	62,92%	100,00%

Table 4: Citizens' confidence in using online public services and age

Are you confident using online services of the city administration (for example: myCIVIS)?				
	Partially	No	Yes	Grand Total
Less than 25	23,58%	11,32%	65,09%	100,00%
25 - 35	12,50%	12,50%	75,00%	100,00%
35 - 50	27,27%	4,55%	68,18%	100,00%
50 - 60	33,66%	9,90%	56,44%	100,00%
More than 60	32,61%	23,91%	43,48%	100,00%
Grand Total	27,36%	11,85%	60,79%	100,00%

We saw in our analysis that Bolzano is engaging in several digitalisation focused initiatives such as DigiBz. A focal point in Bolzano's agenda is the inclusion of elderly people in the digitalisation process. Thus, we expect Bolzano to offer many tools to improve its citizens' digitalisation skills. However, our survey shows that the average is 2.3, demonstrating that overall respondents are not very satisfied with the tools the city offers. This is definitely something the city administration will need to look into if it aims to have everyone on board. Finally, we also asked whether respondents felt like Bolzano citizens were ready for a digital transition: an astonishing 66% answered "Partially", almost 16% with "No" and 18% with "Yes". Bolzano's citizens are not confident that they are ready for a digital transition. Bolzano must find ways to tackle this uncertainty and prepare its citizens accordingly. Some relevant quotes collected in the questionnaire (translated by author):

"It is an ageing city so some people are not digitally literate"

"The population is elderly, they mostly do not have the skills and the knowledge to take advantage of digital possibilities"

"Bolzano has a large proportion of elderly people, who find it difficult to interface with technology. This is an important factor to bear in mind in terms of planning"

Respondents also point out the fact that digital skills are redundant if you do not have adequate services.

“It is not the training of citizens that is the focus, but the delivery of efficient digital services. If these are deficient and not ergonomic, the transformation into a smart city is impossible”

“Sites such as MyCivis are confusing, understandable, but not for everyone”

There is also optimism about the citizens’ readiness:

“With the massive use of social media, people are more ready than they think, but they need to be involved in real projects.”

4.2.3. Citizen participation and social network

The third aspect of our smart governance framework of citizen participation within social media networks. Given the confidence with technologies, we expect social media penetration to be quite high. Indeed, the citizens’ average on how much they use social networks amounts to 3.5. We expect young people to use social networks more than older and indeed the two youngest age groups had the highest percentages of respondents for grade 5. Nevertheless, we also saw quite promising percentages for the older generations meaning that social media networks can indeed be a great tool for the city administration to be in touch with the citizens.

Since the public sector has the main task to communicate with and inform its citizens, we asked respondents how much they used social media to communicate with the city administration. Given the high use of social media, we expected quite positive responses. However, almost 70% only gave a 1 out of 5, showing that social media is basically not being used at all to communicate with the citizens. We have seen in our analysis that indeed Bolzano’s social media strategy was far being advanced and this might cause the lack of engagement.

We also asked whether they use social media to gather information. In this case, the results were more positive. The average was around 3.2. The age groups gathering the most information from social media were the younger ones (Below 25, 25-35 and 35-50). However, in general we can say that there are no significant differences to be observed. The age group that had the highest percentage for grade 1 was the “Over 60” one with 24%. We notice that Bolzano citizens use social media for information purposes rather than communication.

We saw in the analysis that Bolzano's website has great room for improvement, especially compared to the benchmarked cities of Trento and Innsbruck. This reflects in the responses we obtained: almost 60% of respondents only gave a 1 out of 5 when asked how much they visit the city's website. The people that gave 4 and 5 are around 5% only. This is a clear sign that Bolzano must improve its social media strategy, starting from the website, which is an important tool to gather all relevant information and be transparent with its citizens.

To obtain a clearer picture, we finally asked respondents if they thought the city was using social media appropriately (Table 5). Based on the past responses, we expect a rather negative outlook. Indeed, this was confirmed: almost 40% of respondents give Bolzano only a 1 in terms of social media strategy. The respondents who answered 5 are only 0,30%. Overall, it appears as if Bolzano is not following an engaging and for the citizens useful social media strategy. Below some comments the respondents made (translated by author):

Table 5: Use of social networks for communication and information

	1	2	3	4	5	Grand Total
How adequately does the municipality use social networks to communicate with and inform inhabitants?	38,91%	31,91%	24,32%	4,56%	0,30%	100,00%

"Make sure that in addition to the website (which must become the first place to search for services), social media also becomes a tool for communicating with citizens"

"I visit the municipality's website very little; I don't know what updates are made"

"The central point is the competence of the answers. If the citizen does not receive competent and useful answers to his needs, there is no point in communicating, let alone using social networks"

"These official municipal accounts are probably not publicised enough. And certainly not followed enough"

4.2.4. Stakeholder's engagement in decision-making

For our last part of the framework, we asked respondents how much they are involved in decision-making processes in the city. Almost 50% of respondents answered with 1 and almost 40% with 2, showing that citizens are not very involved in the decision-making processes. We also wanted to investigate whether age influenced the responses. Generally speaking, both grades 4 and 5 were quite low. It seems like the age groups above 35 chose grade 1 the most. Next, we asked respondents if they even thought that it is important for them to participate. Over 70% of

respondents gave either 4 or 5, demonstrating that citizens want and are ready to participate and be involved more actively.

After having confirmed that citizens want to be involved more, we asked them whether they felt like the city was including them. From theory we saw that several initiatives were being carried out with a bottom-up approach. Moreover, online services like SensorCivico were being set up to involve citizens more closely in the development of the city. Nevertheless, with an average of 2 out of 5, citizens clearly express their discontent with the city's involvement. Almost 70% only give a grade of either 1 or 2 (Table 6):

Table 6: City involving citizens in decision making processes

	1	2	3	4	5	Grand Total
Besides elections, how much does the city involve citizens in the decision-making processes?	27,05%	39,51%	29,48%	3,65%	0,30%	100,00%

When asked whether they knew SensorCivico, 75% said no. While citizens seem to know what they require and need and where problems lay, they are often unaware of what the city is already offering them. This is an issue that needs to be addressed. As a last question we asked them how they would like the city to include them: Events (70%), presentations (70%), workshops (43%) and round tables (27%). Other mentioned were dedicated sections on newspaper, more information online, consultations, courses, enhanced communication, surveys and town assemblies. To finish off, some of the statements collected from the survey (translated by author):

“Through round tables make information and proposals circulate, both live and digitally, starting by proposing to all citizens of Bolzano to join the community of the municipality and then leaving it up to individuals to become active or not in the group for the city”

“First Smart Society, then Smart City”

“Increase citizen participation in the city's choices through meetings with the population”

“In order to actively involve young people in decision-making processes, the municipality must try to make them develop an interest in their city. This cannot happen unless we start seeing the city's young people as a resource instead of a nuisance. Equally important is to involve adults and older people, obviously in different ways”

4.3. Benchmark with neighbouring smart cities

4.3.1. Benchmark with Trento, Trentino

Trento is the capital of the Autonomous Province of Trento and of the region South-Tyrol/Trentino, counting almost 118.000 inhabitants. It is located south of Bolzano (see Appendix 9.1: Figure 14). Given the proximity of the two cities and the common history as Autonomous Provinces of the same region, comparing them seemed logical.

As we saw in the EY Human Smart City Index 2022, Trento locates itself on fourth position in the ranking, compared to Bolzano's 16th. Moreover, Trento appears to be much more balanced in terms of readiness of the city and of its citizens.

Analysing the readiness of Trento's citizens goes beyond the scope of this thesis and would have been challenging to carry out due to time and content constraints. The same goes for Innsbruck which we will look at afterwards. Thus, we shall use our framework to analyze the readiness of the city using public available data. This will allow us to get some sense on how the city is doing and how Bolzano can leverage on that knowledge.

Firstly, in terms of **Smart City political strategy and perspective**, Trento has its own smart city strategy in place, Trento SMART CITY, "the project that aims to make this (the smart city concept) a reality, based on a participatory process involving citizens, businesses, and institutions in the area" (Comune di Trento, 2022). This shows that unlike literature suggested, some small cities can and are actively using the term "smart" to promote themselves. Trento SMART CITY aims to use technology in all its forms – sensor, Internet of Things, informatics, big data and AI – to become more transparent, improve services and add value for its citizens. While there are several documents presenting Trento's strategy, there is a lack of more concrete and quantitative metric and targets.

Besides that, the amount of projects Trento is involved in is highly impressive. We shall list the majority of them (Comune di Trento, 2022):

- **Open Data:** A project about open software aiming to foster transparency and use information to stimulate processes by innovative companies, enlarge horizons, and progressively lead to an improvement of public and private services.

- **M.I.T.T. – Integrated Mobility of the transport in Trentino:** MITT improves the governance of public local transport, optimizing transport and the infrastructure, focusing on simplification, transparency of tariffs and incentivization of intermodality.
- **Telepark:** Payment of parking with the phone.
- **Smart Campus:** Ongoing project with TrentoRise that aims to provide advanced ICT in the university environment, involving students. The services are designed to cover all aspects of students' lives in Trento. An example for this is ViaggiaTrento app, initially developed and tested by students to use transport in the city, and now available to all citizens.
- **Smart lighting 4 smart digital city:** Aim to create a platform that allows for an efficient management of the public lighting.
- **NO Waste project:** Waste management in the city.
- **App “Trentino Accessible”:** Information on how to access over 800 buildings in Trento APP “TRENTINO ACCESSIBILE”
- **Piedibus:** Project that involves caravans of children going to school led by parent-volunteers
- **Targa la bici:** Goal is to insert onto bikes the fiscal number of the owner in order to easily give it back when lost/stolen; the service is completely free.
- **C’entro in bici:** Free rental service for the use of bicycles in the city.
- **Bike sharing:** Service to borrow municipal bikes and give them back in parking lots around the city.
- **Protector:** Enhancing the security of places of worship through a set of innovative measures
- **Marvel:** Aims to detect particular situations (including gatherings, events or criminal acts) through real-time video and audio analysis to which artificial intelligence techniques are applied, without violating ethics and privacy.
- **Informatizzazione dei procedimenti** (digitalisation of proceedings, translation by author): Envisages the gradual digitalisation of the municipal administration's processes over the next few years.
- **C-Roads Italy 2:** Interventions in the development and implementation of C-ITS (Co-operative Intelligent Transport Systems) to test ICT solutions in road transport.

- **Stardust:** Develop innovative urban solutions and business models, integrating the construction, mobility and energy efficiency sectors through ICT. Financed by European Commission.
- **Decentre:** Fog Computing, i.e., an architecture of peripheral nodes with autonomous data storage, calculation and processing capabilities, which realises Cloud-to-Edge solutions.
- **Qrowd:** Developing smart solutions to improve mobility in Trent. Financed by European Commission.
- **Simpatico:** Objective of simplifying access to online services for citizens.
- **Los-Dama:** Landscape and open space development in Alpine metropolitan areas.
- **GreenCycle:** Introducing circular economy system to Alpine Space to achieve low-carbon targets.
- **WeLive:** Open Government funded by the European Community under the Horizon 2020 program aimed at realising a new concept of Public Administration based on mobile urban services co-created by citizens.
- **IEEE:** The city of Trento has been selected by the Institute of Electrical and Electronic Engineers (IEEE) as part of the IEEE Smart Cities Initiative: a global initiative on smart cities with the aim of identifying 10 cities as models of excellence in Smart Cities.

In terms of representation, we saw that Bolzano has its own municipal councillor responsible for the smart city development. While Trento appears to have a councillor for ecological transition, mobility, participation and common goods, there appears to be nobody specialising in smart city.

Secondly, we shall look at the **ecosystem of the online public services** of Trento. Trento provides an online portal in which citizens, professionals and businesses can access online services of the Municipality of Trento. This portal represents the core of the city's digitalization process. Citizens can submit applications to initiate administrative procedures. Moreover, it is connected to the city's website (Service Catalog) and is integrated with the Trentino tools and instruments (Authentication, Document and protocol flows, back-office applications). It is also enriched with simplification tools such as step by step guide and Q&A. The webpage states the advantages for both the citizens and administration, as well as the strengths of the

online services in order to educate the citizens and ensure transparency (Comune di Trento, 2022).

Another online service Trento provides, similar to Bolzano and related to the involvement of citizens, is SensorCivico, a platform to send suggestions and reports to improve the quality of services and livability in the city. It is available both from PC as well as online. Other services are the Anagrafe Nazionale Popolazione Residente (ANPR), which allows to download certain registry certificates without having to go to the physical counter and pay stamp duty. Moreover, you can book appointments online, check fines on Multeonline, personalise your bike and counteract theft with Targa la bici, Car sharing, Bike sharing, Smart points positioned around the city to access online services, online newsletter, all services related to SPID and some others (Comune di Trento, 2022). In general, Trento divides its services and apps into five main categories which can help the citizens find what they need faster. The categories are: moving in the city, living the city, improving the city, digital citizen and online and smart services. Once again, Trento ensures transparency and facilitated understanding. Important projects in this regard are Simpatico and Stardust, mentioned above (Comune di Trento, 2022).

Thirdly, the **digital engagement** and social network of Trento: Similar to Bolzano, Trento has several social media platforms such as Facebook, Twitter, Instagram and Youtube. Overall, we can witness a higher level of engagement with Facebook having over 40,000 followers and Instagram almost 20,000. All the social media networks' links are to be found on Trento's website (Comune di Trento, 2022). As mentioned previously, the Trento's website appears to be much more advanced and modern than Bolzano's.

The municipality of Trento has a set of directives concerning telematic communications that can be found on their website. Moreover, the whole Province of Trento follows a social media policy to manage its social media networks. Similar to Bolzano, the goal of the networks is "to inform, communicate, listen and encourage participation, discussion and dialogue on issues concerning Trentino, its culture and its territory. In these spaces and with these activities, the Provincial Administration intends to pursue institutional and general interest objectives and, at the same time, share ideas, values and emotions (Provincia autonoma di Trento, 2022)".

Lastly, how does Trento **involve its stakeholders** in the decision-making processes? Besides SensorCivico which we have mentioned before, Trento aims to include its stakeholders

in a variety of ways. Firstly, it suggests initiatives to facilitate the citizens collaboration in terms of common goods and areas (*beni comuni* in Italian) such as public spaces, private spaces for public use, public buildings and the development and promotion of forms of civic collaboration in the fields of social, cultural and economic services, urban creativity and digital innovation. All these initiatives related to active citizenship and participation can be found on Trento's website (Comune di Trento, 2022).

Another way to include citizens is “Trento: il Comune ascolta I cittadini”, the web page of Change.org in which citizens can launch their electronic petitions. Trento is the first municipality in Italy using this platform to promote e-petitions (Change.org, 2022). Adding to this, the city aims to include young people: the project *Stra.bene* tries to increase student participation with regards to public goods and developing European citizenship (Comune di Trento, 2018).

Lastly, through its website Trento puts a strong focus on transparent administration, meaning “total accessibility of information concerning the organisation and activity of public administrations, in order to favour widespread forms of control over the pursuit of institutional functions and the use of public resources (Comune di Trento, 2022) ”.

To sum it up, the projects and initiatives Trento was and is involved in show its goal to become a truly smart city. In particular, there are two things Bolzano should leverage on looking at Trento. Firstly, Trento communicates its strategy and initiatives related to it in a straightforward, transparent, and user-friendly way. There is a dedicated space on the website of the municipality which covers everything related to Smart City. This facilitates the understanding. Secondly, Trento works closely together with the European Union and European Commission to obtain funds and be involved in as many projects as possible, taking advantage of the financial resources, knowledge, and expertise of the EU. Lastly, the city focuses strongly on public areas' collaboration and the principle of transparency.

4.3.2. Benchmark with Innsbruck, Tyrol

Next, we will look at the city of Innsbruck, which is the capital of Tyrol and with 130,000 inhabitants the fifth-largest city in Austria. It is located north of Bolzano (see Appendix 9.1: Figure 14) and since they were both part of Austria before World War 1, still share many similarities.

In terms of **strategic smart city perspectives**, the city has recently launched the Innsbruck brand by defining 7 models of success on which Innsbruck's future strategic development will be based, subject to positive feedback from the city's citizens and guests. The 7 models of success are: Alpine fascination, competence in sport, living urban space, cutting-edge Alpine aesthetics, a young, intelligent, cosmopolitan city, healthy lifestyle and ecological excellence. Moreover, the marketing of the city in terms of smart city clearly divides the tasks and responsibilities between the city, the regional DMO and the tourism promotion company.

More closely related to the smart city awareness, Innsbruck has a dedicated smart city office whose main goals are to conserve resources, enhance collaboration and improve quality of life. Moreover, the office aims to obtain funding in the areas of energy, mobility, housing, climate change, environment and digitalization. In this regard, the office has also set up a smart city group which regularly meet up to exchange ideas and seek new solutions for the challenges of the city. The office and entities part of this group are: Office for Green Spaces, Office for Urban Planning, Office for Traffic Planning, Office for Citizen Participation, IKB (Innsbrucker Kommunalbetriebe AG), IVB (Innsbrucker Verkehrsbetriebe and Stubaitalbahn GmbH) and IIG (Innsbrucker Immobilien GmbH & Co KG) (Innsbruck Stadt, 2022).

Innsbruck is involved in many different smart city projects and initiatives such as:

- **Innsbruck Urban Climate Analysis:** In-depth analysis of Innsbruck's urban climate and which local adaptation measures are necessary to improve life in the city
- **Energy plan:** With energy autonomy for 2050 as a target scenario
- **Environment and sustainability award:** Is awarded every two years to innovative projects in the area of sustainability
- **INN'F4UM – Innsbruck's Fit4Urban Mission:** Aim to develop measures that can help Innsbruck become climate neutral by 2030.
- **EU – FP 7 Project Sinfonia (2014-2020):** Same that was developed in Bolzano

- **Cool-INN & COOLYMP:** Projects to cool down so-called heat islands to improve quality of life
- **Traffic master plans:** Plan to expand the public, bicycle and pedestrian transport in the city (Cycling Master Plan 2030; Pedestrians Plan). The goal is to reduce the use of cars to a minimum.
- **Climate-smart forest:** Restructuring of the forest to limit soil erosion, snow breakage and other natural catastrophes that might endanger the city life.
- **Climate neutral city magistrate:** The goal is a climate-neutral city council with four fields of action (mobility, buildings, procurement and events).
- **E5-Municipality:** State program for energy-conscious and climate-friendly communities which provides climate protection measures. Innsbruck has been part of it since 2013. With a score of 4 “e’s” out of 5, Innsbruck is a pioneer city.
- **Cooperations:** Between different departments of city council, municipal holding companies IKB, IV and IIG and universities
- **European Innsbruck:** Is a competition and platform, in which young experts in urban, landscape and architectural planning can submit their ideas to improve the city’s urban planning. The best ones are awarded and implemented.

Another quite interesting best practice is the collaboration between cities in Austria. The Smart Cities Network Austria aims to enhance collaboration between smart pioneer cities in the country. Cities can enlarge their views on topics such as urban quality of life, innovative technologies, and integrated urban planning. Besides Innsbruck, we have Linz, Salzburg, Villach, Klagenfurt, Graz and the capital Vienna (Sustainable Development - Part of open4innovation, 2022).

Besides the smart city office, the city administration has committees for several relevant topics. Some related to smart city development are digitalisation and urban development, environment, energy and mobility. Moreover, the city created climate protection and digitalization so-called “Enqueten”, under which experts’ opinions are called upon to improve the city’s quality of life further.

In terms of **online available public services**, Innsbruck offers a digital service centre via their website. This includes the registry office and passport, registration, change and deregistration (residency), parking, build and plan (housing, buildings, infrastructure), entrepreneurs, care and education, grants, subsidies and benefits, information related to social aspects, mobile in Innsbruck, construction sites, contact and office hours of the magistrate, digital city hall (to do business in Innsbruck digitally), official board and municipal regulations, work in Innsbruck and city policy and administration (INNS'BRUCK, 2022).

Related to their **digital engagement**, Innsbruck has the aim to inform its citizens. This is done through Innsbruck informs, mentioned above, online with press releases, on Facebook, Instagram and Twitter. While their Twitter page only counts around 3,000 followers, their Instagram has 24,000 and Facebook almost 30,000. This is definitely something Bolzano should take inspiration from. Moreover, there is geoHub which is a platform uniting apps, maps, diagrams and data of the city and *Innsbruck informs*, a webpage with information about everything important happening in the city.

Lastly, how does Innsbruck **involve its citizens in decision making processes**? Innsbruck offers a City Office for citizen participation to involve them in urban projects and planning processes. At the same time, it is seen as a way of networking with both internal and external stakeholders. Some of the projects are cool-INN and alp-INN which we have seen before, but also Tree slices (give citizens the opportunity to design their own green public spaces), Move-in assistance XL (prepare future tenants for their life in Innsbruck through workshops), Feed-INN (optimize urban food cycles), Nature Playground in Campagne (make residents create their own green space design in their living environment) and Taskforce Youth (stronger inclusion of youth-related topics and young people in the city administration's agenda and decisions). Moreover, there is a platform called "Bürgermeldung", similar to SensorCivico in Bolzano and Trento, where citizens can report issues. Lastly, we have so-called "Stadtteil-treffs", locations where residents of the same neighbourhood can meet to exchange ideas, expand their network, gather information, and participate in the city's daily life (INNS'BRUCK, 2022).

What we witness also in Innsbruck is a more structured and transparent smart city strategy, better and more efficient communication channels and a clear branding and corporate strategy. It is vital to understand that the development of the city comes from the city itself in all its

plurality and should not be limited to just the traditional city administration. Innsbruck also collaborates with other cities in the country to exchange best practices and create a network of knowledge that strengthens the cities' smart development. All of this has the aim to sensitise the mindset of citizens to the "smart" approach and make them understand the value that comes from it.

4.4. Integration of results: publicly available data vs public opinion vs benchmark

In this last part of our case study analysis, we aim to put together the information to obtain a clearer picture of the smart city governance in Bolzano. We will make use of the public available data, the general public opinion and the chosen benchmarked cities Trento and Innsbruck. We used the framework developed by the author to lead the analysis in a structured and coherent way.

Looking at the first sphere of our framework, it is clear to say that Bolzano is lacking a smart city strategy. Despite being involved in several initiatives and projects, it is not very clear in which direction the city will go in the short and long term. This is not only something we were able to see through the available data, but also with the respondents' answers in the survey. Most respondents do not know what the strategy for Bolzano looks and will look like in the future. This adds uncertainty to the citizens' perception and leaves space for rumours, complaints and dissatisfaction. We saw that EURAC Research Centre in Bolzano developed a quite straightforward potential plan for the city but whether this is something that will be used in the future is unclear. Closely related to this lack of strategy, is the lack of targets and metrics. Where does Bolzano want to be in 5 years of time and what does it want to achieve until then? If you do not measure, you will never know what you have achieved, where you improved and where you worsened. In general, this is a problem also for the cities of Trento and Innsbruck. The performance-oriented approach is something that strongly characterises the private sector, but we see it missing in the public sector most of the time.

Nevertheless, Bolzano can and should learn from its neighbouring cities Trento and Innsbruck who seem to be more advanced with their smart city strategies, promoting and communicating it clearly and in a user-friendly way. The two cities managed to create a brand around their city to increase engagement which is something that does not really happen as the

smart city image in small cities is often being kept in the back of the picture. Moreover, they engage in an even broader variety of initiatives, many sponsored by the European Union. We saw in the literature that many small cities lack the financial resources to become smarter and engaging with the European Union can represent an efficient way to obtain funds and attract investment. Closely related to this, we believe that Bolzano should engage in and collaborate with other cities and create a network where spillover of knowledge and expertise can be leveraged, such as the one present in Austria. Cities, be it big or small, should cooperate on a national and international level. Lastly, while Bolzano does have a councillor specifically addressing smart city issues, we think that tackling the smart city challenges through specialised offices, task forces or groups – as it is being done in Trento and Innsbruck – can represent a way to strengthen the smart city concept and include different point of views and perspectives.

Finally, we saw that Bolzano citizens realise the importance of becoming a smart city and how it can add value to the city. It is up to Bolzano to meet and exceed expectations in this regard and deliver a tangible strategy that people can refer to and trust.

The next aspect is about the ecosystem of public online services. We saw that Bolzano's ecosystem is quite developed, offering a variety of services. The city administration focuses quite extensively on the development of the digital skills of its more elderly citizens (think about DigiBz for example), while the young ones already appear to be quite confident. Nevertheless, there are some discrepancies. While young people feel very comfortable with new technologies they do less so with the public online services. A closer analysis of different citizen groups' needs is needed. While it is of utmost importance to address the lack of digital skills of older generations, it cannot be forgotten to include and engage younger generations that already have the skills but request more tailor-made and modern solutions. Trento and Innsbruck also have an extensive list of online services. Bolzano should always be on the lookout for new potential online services, improving and developing its portfolio continuously. In this regard, working with the Province could allow for greater budget and integrated apps that can facilitate processes for the citizens.

For the third aspect we look at citizen participation through social media networks, which we have seen is an important tool to engage citizens. Trento and Innsbruck do not only have a better branding strategy but also their overall social network communication strategy appears to be way more advanced. The engagement on their platforms is higher than Bolzano's

and the content is modern. One of the major problems we see with Bolzano is their website which is poorly visited but that instead should be a central point of communication and information for the citizens. Especially communication is a major problem we observed through the survey: if the city manages to communicate with citizens through social media, engagement will most likely increase. As of right now, city administration feels like something very out of touch with its citizens. Furthermore, both Trento and Innsbruck have designated web pages within their websites only dedicated to smart city related topics. When Bolzano residents say that Bolzano is acting little, it is often because they do not know. That is why a designated space would be crucial in Bolzano's communication strategy.

Lastly, how much are citizens involved in decision-making processes? We saw in the analysis that Bolzano does engage in some initiatives that require citizens to be directly involved. Moreover, they have specific offices that focus on citizen participation. It seems like Bolzano is on the right track. The Smart City councillor is also responsible for citizen participation, putting it at the heart of Bolzano's efforts. However, the survey showed that citizens did not feel like they were being involved enough in decision-making processes. The city must find a way to align with the citizens, understand which forms of decision-making work best to satisfy the citizens' needs while at the same time remaining relevant.

Overall, we believe that Bolzano as a city is more ready than its citizens but that the unreadiness of the latter is related to Bolzano's scarce efforts in communicating it and informing straightforwardly. Moreover, the lack of strategy makes it significantly harder for citizens to follow and understand the city's plans, especially when expectations are not managed as they should. There are several things Bolzano will need to focus on to inform, prepare and integrate its citizens.

5. Interviews with experts

In this last part of the research, we decided to conduct interviews with eight experts in the smart city field to analyse the case of small smart cities more in detail while at the same time collecting ideas and recommendations on how Bolzano can progress in its smart city transition. As mentioned previously, the interviews were held taking into account the framework developed by the author, focusing on the four main dimensions of governance. The interview guide used to lead the interviews and all the transcribed interviewed can be found in the appendix.

5.1. Analysis of results

5.1.1. Dimension 1: Political strategy and perspective in terms of Smart City

As usual, the first dimension we investigated with our experts was the one of political strategy and perspective linked to smart city and smart city governance. Given the lack of long-term strategy for the city of Bolzano, we asked our interviewees what potential causes could be, with some being more general and others more specific to small realities. Generally speaking, the political agenda and political continuity affect the smart city transition strongly. While some politicians might put a strong focus on it, others might less, thus it is challenging to put down a long-term plan.

A second important challenge is the structure and nature of the public sector administration, especially in small cities. The public administration is known to be slower and less innovative compared to the private sector and must adhere to specific national guidelines when faced with changes. For this reason, public sector employees and managers often do not find themselves in a beneficial position to drastically change and innovate a city. Even more so in small cities, which are not yet faced with the same challenges of large cities, a lack of urgency can be observed. Closely related to this is the lack of knowledge and expertise: the smart city concepts are quite new but have already deeply affected the way cities are built and managed. Particularly in small cities, the employees are often not very familiar with how smart city initiatives are planned, implemented, and monitored. So, what often happens, and we witnessed this in Bolzano as well, is that little individual projects are being carried out but that no strategy is then put in place to actually consolidate it. Smart city became a buzzword, but many did not know what it implied, creating confusion in the long term. Furthermore, smart city started off as a corporate idea, not adapted to the public administration's sphere. Technology often came

and still does before an in-depth analysis and understanding of the needs of the citizens and the city. In fact, the solution comes before the problem and thus, the way through which the technologies arrive and are implemented in the city misalign with what is really required.

Another issue that was mentioned several times was funds and financing. Some experts do argue that obtaining funding can be challenging for small cities. On the other hand, others argue that financing can be obtained from different sources and that often a city's budget is sufficient to cover some initiatives. Moreover, collaborating with companies can also help implementing new projects. The real problem lays in the willingness to take the risk to allocate part of the budget to innovating the city. This again is connected to political variables that are often hard to change.

A last important reason to mention is the lack of strong leadership and openness from the top towards innovation and change. Given the influence of politics on city administration and public policies and the nature of the public sector – slow bureaucracy, resistance to change, lack of urgency – the transition must be led by a strong hand with a solid plan.

Now that we are more aware of what the causes are for this lack of strategy, we asked interviewees what the most important things are to consider when planning and implementing a strategy. As just mentioned, strong leadership and forward thinking, as well as openness to other stakeholders in the territory is crucial. A clear vision and objectives, with defined priorities, and definition of what is meant is needed. The city administration needs to understand the context and the situation of the city. A government led smart city is the one that works best and is the most sustainable in the long run. Closely related to this, the city needs to adopt a sociotechnical approach. We saw that smart city is often only connected to technology, data or IoT, but we cannot forget the ultimate purpose, which is facilitating and enhancing citizens' lives. To achieve this, political support and alignment is required and some level of political continuity.

We have already talked about the complexity of funding and financing so it is definitely something that must be taken into account when planning the smart city strategy. What is also crucial is to monitor and evaluate processes and initiatives from the start. There are endless KPIs that can be used to measure a city's smartness and governance. A city should start off by looking at established and developed frameworks and KPIs and then adapt to some extent to

what the city needs as “one size does not fit all”. Doing this can allow for some personalisation while being able to benchmark itself with other cities. The real challenge here is the collection of data.

Most interviewees have also mentioned citizen participation to be crucial in the planning. The city administration needs to decide whether they want to include citizens from the start or not and to what extent co creation should be considered. In any case, the city administration needs to be transparent and communicate it with its citizens clearly, showing the benefits of smart city initiatives. Other aspects to consider are: Firstly, it needs to occur both internally with the city administration’s employees as well as externally with citizens. Secondly, understand who the target of the service or initiative is and include them in process, identifying the needs that best fit. What can be useful here is stakeholder mapping to see which stakeholders would be the most affected by specific initiatives. Thirdly, include citizens from the start and inform them about what is going on. Managing expectations in the planning phase is highly important to prevent dissatisfaction later on in the process. Some concrete methods could be focus groups, town hall meetings, website with comment sections, discussion and feedback groups, deliberative democracy approaches, public consultations, participatory budgeting, pilot projects and a bottom-up approach.

Our experts mention to really focus on creating synergies with stakeholders and work with external partners, both for expertise and knowledge as well as for funding. In Bolzano’s case it would be advisable to work even more closely with the Province and with external agents such as Noi Tech Park and EURAC Research Centre.

Next, we asked our interviews how small cities can navigate the broadness of the smart city topic. We know that smart city is still a fairly new concept, not always clearly defined and particularly in the public sector of small cities expertise lacks. Prioritisation will really depend on the municipality and the specific context, taking into account what citizens and the city need and want. The right approach would certainly be a mix of contextual valuation and theoretical preparation – knowing the city but also being familiar with best practices and what theory suggests – as well as citizen participation. Based on that, a city should identify projects and initiatives that match the priorities, having a practical approach. An interesting point made was that smart city does not and should not be abstract or extremely complicated; a city should aim to tell a story, overcoming barriers and facilitating citizens’ life. Factors to keep in mind are

viability, feasibility, and desirability, as well as political priorities, long term vision, internal knowledge and budget.

Related to strategy, we also investigated the role of smart city branding. In this case, the opinions of the interviewees differed. While some argue that the small city branding can attract further investment, tourists, residents, and other economic actors, and facilitate the communication between city and citizens, defining what a small city exactly is can prove challenging. Especially with smaller cities who have different goals compared to large cities, the focus should be on the advantages that being smart brings. There is certainly a dichotomy between people that value the smart city concept and people that fear it because of its relation to technology, data, sensors, AI and similar. Once again, it is essential to sharpen the message what it means for the specific city to be smart and understand how the citizens respond to it, communicating it in a transparent way and showing the process through which technologies are designed and implemented in the city. Humans should always be at the centre of the transition.

5.1.2. Dimension 2: Ecosystem of online public services

The second dimension we investigated was about online/offline public services. Here our focus was to understand how public services can be inclusive and how a city can manage the transition to digital. What emerged from the interviews is that citizens should be included to understand at what stage people are. Despite considerable progress in digitalisation, we are not at a stage yet in which we can completely give up offline services. A hybrid system is needed that considers everyone's needs. This does not mean that we should stop there. A city should invest in digitalisation, on training the citizens and teach them to go online. Simultaneously, digitalising services also means improving the services and giving people an incentive to drop the offline ones.

We already mentioned the need of a city to train and help citizen develop digital skills. Some methods mentioned were: providing points of information, have public spaces where digital illiterate can meet and obtain support, trainings, transition periods, courses, events and programs in schools.

The most important thing is to be familiar with what the citizens can and cannot do and what they need, focusing on creating something that is accessible and user-friendly. A challenge here is that many public services are tied to national guidelines and processes. For example, the

authentication process is designed by the state and does not fall under the scope of responsibilities of a city, thus, no changes or improvements can be made, even if they would be needed.

5.1.3. Dimension 3: Digital engagement and social network

Given the importance of communication and branding, as well as social media, we investigated it further with our experts. Social media is definitely seen as an important tool to reach citizens, inform them and communicate with them. It can create spaces of debate, support collective intelligence, and facilitate participation. However, social media cannot be seen as a smart development tool on its own. Instead, it should act as an enabler for the relationship between city and citizens and it should be managed in a way that everyone can be reached.

Communicating over social media also has its risks and a city should be clear internally what they want to achieve. Other challenges to keep in mind are data privacy and ownership, adherence to national guidelines, managing different channels and risk of misinformation and misinterpretation. What happens online does not reflect reality a 100%.

5.1.4. Dimension 4: Involvement of stakeholders in decision-making

The importance of co-creation and citizen participation has already been mentioned several times. In our interviews we asked the experts what would be things to consider. There are definitely different levels of co-creation and co-decision making. Thus, the first thing to do would be to clarify what is meant with participation and decide how much and in what ways we want to include citizens. Another key consideration is how to inform the citizens and how to manage expectations. A challenge of Bolzano – and of citizen participation in general – is managing the expectations that citizen might have once they are being included. Needless to say that smart city initiatives and projects take time and that not all of them are always feasible and easily implementable. This can lead to frustration when the citizens are not correctly prepared. Moreover, keeping engagement and motivation levels high is not as straight forward as one might think.

The so-called valley of disappointment is a normal stage in the smart city transition that we can prepare for and anticipate. Citizens need to be included from the start and be seen as agents in the process and not only user. If we look at how smart cities have developed over the years, there is definitely a discrepancy between initial corporate campaigns and the public sector's actions. It is important to direct the citizens towards the reality of public sector

possibilities, communicating in a transparent way what is feasible, using the right wording and framing. Combining structural with visual aspects can also be a winning tactic. This means addressing structural problems that when improved, are visually particularly noticeable i.e., cleanliness of dirty areas or streets.

Ways to include citizens could be surveys, round tables, various collaborations between economic actors and citizens, citizen representatives, channels to inform citizens about initiatives being carried out, acquire first other stakeholders then citizens, citizen participation dedicated team and open source platform, consultations, citizen councils and participatory budgeting. Initiatives should catch people's attention and be interesting. Moreover, it should be a mix between online and offline participation, always being careful not to discriminate or exclude.

5.1.5. Additional insights

At the end of each interview, we would ask our experts whether there was something they would have liked to add related to the smart transition of small cities. Some of the main insights are listed down below:

- The speed at which a city goes through the smart city transition does not always depend on size but also on context. Bigger cities might be becoming smarter faster because they have the time, the resources, and the people to undertake changes. Again, it is crucial to know the city and citizens, taking into account various variables on top of size.
- Relying on external actors, both profit and non-profit, or local agencies for specific matters can significantly facilitate processes.
- Creating peer networks can also be a facilitator in the transition. Find cities in similar contexts and exchange best practices and ideas. In Belgium for example, peer to peer communication has resulted particularly useful.
- Information within the administration should be leveraged more. The city should work with different bodies, develop specific tools and bring them to the outside. Make sure that internal stakeholders collaborate, following one common vision and goal.

- The smart city does not end at the city limits. Collaborate with neighbouring towns and villages and with the Province. Some projects are better to launch at regional level.

5.2. Integration with results from part 4

Now that we have collected and analysed data from multiple sources, it is time to connect the dots and create a bigger picture. Based on our primary and secondary research, we have come up with four main pain points that should be addressed by the city of Bolzano – and generally speaking might apply to smaller municipalities – to successfully undergo the smart city transition and improve life both within and beyond the city limits.

5.2.1. Leadership and strategy

We have seen that Bolzano lacks a long-term vision and goals to lead the city in the smart transition. This can be caused by a variety of factors, the main ones being resources – budget, time, personnel – as well as political continuity and the nature of the public administration. Bolzano will need to come up with a strategy and objectives, as well as KPIs to measure its progress. There is the need for strong leadership and openness to innovation. Lastly, stakeholders must be included in the process.

5.2.2. Digital infrastructure

When it comes to services, Bolzano has developed an interesting online ecosystem, offering a variety of services. Despite the increasing importance of the online sphere, Bolzano will need to be careful to align digitalization and the risk of digital divide, offering a hybrid system that pushes for the digital transition without excluding anyone. We have seen various ways to train people. Nevertheless, other already mentioned challenges need to be considered.

5.2.3. Co-creation

Citizen participation was not only a dimension within the governance framework used but was also a concept that was touched upon numerous times throughout the interviews. Co creation should happen with all stakeholders, internal and external, local and international. Simultaneously, co creation should make sense and add value. Moreover, a high level of transparency is needed, and management of expectations must be carried out in order to avoid frustration.

5.2.4. Communication and branding

Communication is highly important in the smart transition, and it is something that was felt lacking for Bolzano. Not only should a city engage in a straightforward omnichannel communication strategy, but also focus on branding to raise awareness and increase engagement. Obviously, the city administration needs to align on what they want to communicate, and risks of online channels must be taken into account.

6. Recommendations

Based on the four pain points mentioned above and the insights gained throughout this thesis, we will aim to come up with some recommendations for the city administration of Bolzano. Some aspects have already been touched upon, but this section aims to sum it up and provide a clear line of thought. Becoming a smart city is certainly not as straight forward as literature portrays it to be. Moreover, we have seen before that “one size does not fit all”. There are no written rules and guidelines that work for every city which makes knowing one city’s context in detail even more relevant and crucial.

The first pain point to be addressed is **Leadership and strategy**. Bolzano needs to build a long-term strategy that sets objectives both for itself as well as for the citizens. According to our interviewees, a *roadmap* can be the ideal tool to overcome smart city hurdles such as resistance to change and inspire and influence the population. Moreover, it can maximize synergies, minimize costs, identify the best places to start and enable a city to build in stages. It can also increase public support and attract talent and business. A roadmap should include five main steps: an assessment to see where we are positioned, a vision, project plans for the key components, milestones to assess the progress and metrics to assess performance and success (Juen, Ideas to Action - Smart Community Slides, 2023).

Choosing priorities can prove challenging, especially for smart cities that are not as advanced. However, there are some aspects that can help in this regard. Firstly, instead of focusing on many things simultaneously, choose a few priorities that are truly relevant to the city and aim to solve those. Vienna for example, decided to focus on Quality of Life, Resource Conservation, and Innovation, these three building the pillars of the strategy and vision. Of course, these priorities should derive from an in-depth analysis of the context and needs of the city and with the participation of stakeholders, which we will touch upon later. In this regard, the *smart city wheel* (see Appendix 9.1: Figure 15) is an extremely useful tool – developed by Boyd Cohen (Cohen, 2014) – that has been mentioned by several of our experts, is renowned in literature and can help cities obtain an overview of six central smart city spheres, namely mobility, economy, environment, government, living and people. Simultaneously, it can be beneficial to choose priorities that bolster the weak spots of the city. For example, if heavy traffic is a relevant issue, mobility should be addressed first. Moreover, seeking out for *quick paybacks* especially at the start of a strategy can lead to easy wins and thus, demonstrate early

success, which can build enthusiasm and engagement. This could be achieved by addressing structural problems that when improved lead to a strong visual change, as already mentioned in part 6. Finally, Bolzano can also make use of free tools online to prioritise: one of them is the IFC Smart City Toolkit, which “offers a practical approach to prioritizing initiatives that makes cities more livable and sustainable while realizing their potential as engines of growth” (International Finance Corporation, 2023).

Strong leadership is a key element of building a smart city strategy. According to Juen (2023), a city needs to “find a champion” to sustain its strategy and roadmap. This can be the mayor or the city manager, but in our case, we think that this should be the role of the Smart City councillor of Bolzano. This person needs to communicate the vision to the city employees, residents, and other involved stakeholders.

Increasing collaboration amongst stakeholders should start from within. The city government of Bolzano should strengthen internal collaboration working with the different departments, training its employees and bringing everyone on the same page. At the same time, collaboration should also be increased externally. Institutions such as the Noi Tech Park, EURAC Research Centre and the Free University of Bolzano are important centres for research and innovation that should be leveraged more and could be used to obtain the expertise and knowledge needed to come up with a strategy. Furthermore, collaboration should go beyond the city limits: neighbouring towns and villages, the Province, as well as cities in other Italian regions and countries. As mentioned previously, *peer to peer networks* have been extremely successful in countries like Belgium that are also characterised by an elevated number of small municipalities. This kind of collaboration can increase synergies and provide Bolzano with information around best practices and innovations. For this reason, the smart city responsible should attend local and international events to be up to date about developments in the field.

Measuring progress and ensuring that targets are met is one of the pillars of any strategy. However, we saw that measuring and evaluating KPIs, and even before that collecting data, can be an arduous task. What Bolzano should do is *focus on established frameworks and guidelines* and then adapt the KPIs when needed. In this regard, the Smart City Institute HEC Liège has developed a Smart City Maturity Model (SCMM), again, a free tool which allows cities to evaluate the level of Smart City maturity in the territory through 7 domains and 28 criteria in

total. This is just one among the many user-friendly tools that can be found online and free of charge.

The second pain point is **digital infrastructure**. As of right now, digitalisation appears to be a highly important point in the city administration's agenda. There are several initiatives being implemented already that can tackle this pain point. However, Bolzano needs to remember that digitalisation must go hand in hand with digital inclusion. To achieve this, a *hybrid system* is still needed and will be needed if not everyone is on board. To ensure this while still pushing for a more digital ecosystem, *transition periods* could be useful. Moreover, with the digitalisation program *Digitalbz* Bolzano is already investing a significant number of resources into the training of the citizens, setting up support offices all over the city.

What Bolzano needs to remember in this regard are two things: Firstly, developing services – both online and offline – that make sense for the city and meet citizens' needs. Secondly, assess whether some services should be carried out on a regional level. For example, mobility should be handled regionally because citizens travel to work or school and might live in municipalities outside of Bolzano.

The third pain point is **co-creation**. We have surpassed the era of simple involvement of decisionmaker and have reached a point in which co-creation is necessary. But as with other things, co-creation can be challenging and needs to be well thought through, involving the right stakeholders. For this reason, using *stakeholder mapping* for projects can prove successful as it would allow Bolzano to include the stakeholders that are relevant or that are the target of a new project and initiative.

Another very interesting tool that has been mentioned throughout the interviews are citizen *participation platforms*. These are integrated platforms that can allow for collaboration and consultation of citizens, allowing to manage different participatory processes (participatory budgeting, consultations on specific developments, etc.). Furthermore, many cities have *citizen portals* where all kinds of services can be offered. Bolzano as a city does not have such a platform, but the Province has (MyCivis, mentioned in part 4). Also here an assessment would be needed to understand whether something more city specific is needed or if it is better to focus on MyCivis and improving it further.

Taking inspiration from Brussels City, an interesting way to inform citizens are *dynamic information tables*: these are interactive tables in the administrative centre, which should also have an online equivalent, locating the impacts of the city's main policy decision and projects. Another very popular feature to be introduced on the website could be the *Chatbot*, to facilitate communication with citizens and increase the quality of the services provided.

Another interesting format of citizen participation could be *smart community dialog*, as laid out by Juen and Juen-Walder (2016). Within this format, dialog occurs within the framework of family-oriented events. Citizens are interviewed individually for 15 to 20 minutes to obtain a picture of the collective intuition of where to start with the smart city transition. Also in this case, the smart city wheel should be used to understand which themes are particularly relevant to the population.

What needs to be considered – touched upon by our experts and found in literature – is that “the degree to which user involvement is necessary depends on the type and goal of the project” (van Winden, Oskam, van den Buuse, Schrama, & van Dijck, 2016). Citizen involvement and 360-degree co-creation should not be given for granted. It should be evaluated what type of users we have. Are our users clients, citizens or employees? Are they active or passive users? Based on the user type, different approaches will be necessary and when and how to involve users will require careful consideration (van Winden, Oskam, van den Buuse, Schrama, & van Dijck, 2016).

Finally, one of the biggest challenges with co-creation is the management of expectations and keeping motivation and engagement high. The gap between the corporate image of smartness and the realistic capabilities of cities needs to be closed. Bolzano must be as *transparent and clear as possible when communicating its possibilities*. Simultaneously, some degree of *personalisation and incentivisation* can be useful in keeping citizens motivated. Following up after an event is only of the very simple things that can be done. When citizens are aware of what they can expect and in what timeframe, the probability of being disappointed is much lower and thus, expectations can be managed.

Lastly, **communication and branding**. This pain point has appeared to be more complex than what initially expected. While some sources argue that communicating the smart city brand is crucial, others say that as long as citizens are involved and technology reaches them transparently and meaningfully, intense communication becomes secondary. We believe that

one does not exclude the other and that communication can occur in a way that accompanies the relationship between technology and citizenship. How can this be achieved?

Firstly, Bolzano should focus on improving its *online presence*. Information about the smart city transition should be displayed in a clearer way on the website, implementing a webpage only dedicated to that. Particularly Bolzano should focus on initiatives that have been successful already to create momentum. Strategic and operative messages should be published on the social media to raise awareness. Taking inspiration from the benchmarked cities of Innsbruck and Trento, Bolzano could significantly improve its online communication strategy without major investments.

Given the importance of offline channels, Bolzano should *collaborate with the media and cultivate contacts with journalists* as newspapers are still a central communication channel. Generally speaking, an omnichannel approach will still be needed to reach the whole population and ensure inclusion.

Ultimately, we saw that the concept of smart city has a dual nature. It can have both a positive connotation in terms of innovation, change, sustainability, and improvement of quality of life but also a negative one with an excessive use of technology, data and AI. For this reason, Bolzano needs *to grasp the citizens' perception of smart city and build on it in a constructive way*.

7. Conclusion and limitations

The aim of this thesis was to investigate smart city governance in small cities, using the city of Bolzano as a case study. Given the lack of research done on smart governance in small cities and the stage of Bolzano in the transition, trying to fill this gap was necessary. Within this work, we conducted desk research, analysing Bolzano's current state, but also primary research. We managed a survey with 329 respondents and carried out interviews with eight experts in the field. Logically, some limitations are to be found. Given the author's location, the surveys were sent out digitally only, while distributing them on paper would have provided an even broader picture, targeting additional demographic groups. Nevertheless, the results obtained were insightful and relevant. Secondly, there is most likely information about the city administration that is not accessible due to the political connotation of smart cities. Moreover, we assessed Bolzano's smart city governance situation in the months of October, November, and December 2022, but of course new projects and initiatives are always in the pipeline and the situation evolves rapidly. Despite this, we believe to have come up with an extensive picture of Bolzano's governance. The methods used gave us the opportunity to find out more about the complex dynamics of smart governance in small municipalities.

With the rise of urbanization, small cities will increasingly face similar challenges to big cities. For this reason, it is crucial for small cities to pursue the smart city transition. A cornerstone of this is smart city governance. However, these cities often lack the resources – financial, social, technological – to pursue change and drive innovation. Moreover, less research has been done on small cities' smart transition and how the governance should look like which can pose an additional challenge for decision-makers in these urban areas.

Given the lack of a universal framework, we developed our own framework - based on the literature review - with which we were able to assess Bolzano's governance from two different perspectives: the readiness of the city and the readiness of the citizens. Analyzing the eight different dimensions within the two perspectives, generally speaking we found that Bolzano appears to be more ready for the smart transition than its citizens. The city is engaging in a variety of smart city initiatives, has a strong ecosystem of online services and digital inclusion is one of the main missions in the city's agenda. Moreover, a couple of citizen participation processes are being introduced and the city is starting to collaborate with other stakeholders and

joining international networks. Nevertheless, Bolzano is lacking a long-term strategy and vision under which it can unify all these initiatives and projects, enhancing the offline and online communication channels, co-creation processes and the digital infrastructure. The somewhat perceived “unpreparedness” of the citizens is certainly influenced by both the small city nature of Bolzano, as well as caused by the city administration’s inability to come up with a framing structure for its plans and ideas. In the survey, citizens have demonstrated to understand the importance and relevance of the smart city transition. Bolzano must leverage on this awareness, focus on its citizens and their needs while also looking at what is being done in other cities such as nearby Innsbruck and Trento, and others.

Based on the insights derived from the desk research, the survey and the interviews, and analysing Bolzano’s smart city governance through the framework, we were able to come up with four pain points that must be taken into account by Bolzano to tackle the challenges it is facing as a small municipality: **Leadership and strategy, digital infrastructure, co-creation and communication and branding**. We are confident that focussing on these four pain points will enhance Bolzano’s smart governance while simultaneously making the city smarter overall, improving the quality of life and becoming a leading city in Italy.

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9. Appendix

9.1. Figures

Citizen centric government [13]	Interactive monitoring process [2]
Quality of policy making [18]	Strategic urban planning [2]
Expanding the number and types of participants [18]	Transparency in government processes [2], [13], [18], [23]
Providing information to citizens [2], [18]	Public engagement [28]
Easy access to information for the citizens [13]	Planning and regional development [17]
Equality of participation [13], [18]	Citizens' feedback systems to government [2], [23]
Open governance [3], [14], [20]	Public perception [20]
Government innovations [7]	Increased degree of government openness [13], [23]
Response from target audience [18]	Collection of valuable opinions [5]
Decision making planning [28]	Public and social services [10]
Resource efficiency [8]	Understanding citizens' problems and context [23]
Responsible resource consumption [8]	Open government for direct and indirect effects [19]
Decision making process [18]	Citizen satisfaction [11]
Political strategies [10]	E-participation [11]
E-Consultation [18]	E-empowering citizens [18]
Increased efficiency and effectiveness in government processes outcomes [2], [13]	Use of social media for crisis situations (traffic and weather etc.) [12]
Accountability [2], [8], [13], [23]	Creating a digital space from social space [23]
Increased collaborative ability [13], [18], [24]	Promote citizens trust [23]
Trust in government [21]	Crowdsourcing solutions and innovations [4]
Public Participation in decision making [10], [13]	Reduce difference in communications among govt. vs regions vs citizens [23]
City policy making [2]	Encouraging citizens participation [23]
Social Interaction [3]	Sharing of Information to create awareness [13], [15]
Organizational capacity [8]	Citizens' co-production [16]
Transparent governance [10], [23]	Public forum over social media [26]
Use of social media for critical situations (earthquakes and floods etc.) [12]	Direct communication channels between government and citizens [23]

Figure 1: Smart Governance Indicators (Kumar et al., 2014)

Smart Governance	Participation in decision-making	City representatives per resident	2001	local
		Political activity of inhabitants	2004	national
		Importance of politics for inhabitants	2006	national
		Share of female city representatives	2001	local
	Public and social services	Expenditure of the municipal per resident in PPS	2001	local
		Share of children in day care	2001	local
		Satisfaction with quality of schools	2005	national
	Transparent governance	Satisfaction with transparency of bureaucracy	2005	national
		Satisfaction with fight against corruption	2005	national

Figure 2: Smart Governance Indicators (Giffinger, 2007)

Table 1 The smart governance research and practice “Roadmap” (Scholl & Scholl, 2014)

	Budgeting/ Controlling/ Evaluating	Electronic Government/ Administrative Modernization/Process Streamlining	Security and Safety	Infrastructure Overhaul and Ubiquitous High-speed Connectivity	Electric Mobility	Participation and Collaboration	Open Data/ Big Data Provision and Use	Open Government, Transparency, and Accountability
Norms	Per focus area the elements of smart governance need to be addressed in detail							
Policies								
Practices								
Information								
ICTs and Other Technologies								
Skills and Human Capital								
Other Resources								

Figure 3: Smart Governance Roadmap (Scholl and Scholl, 2014)*Figure 4: OECD Digital Government Policy Framework (OECD, 2020)*

and end-to-end digital public services to all action to be taken as we look ahead to future.

The eGovernment Action Plan 2016-2020 set out seven principles, which were subsequently endorsed by the Tallinn Declaration of 2017:

1. **Digital by Default:** public administrations should deliver services digitally (including machine readable information) as the preferred option, while still keeping other channels open for those who are disconnected by choice or necessity. In addition, public services should be delivered through a single contact point or a one-stop-shop and via different channels.
2. **Once Only Principle:** public administrations should ensure that citizens and businesses supply the same information only once. Public administration offices take action, if permitted, to internally re-use this data, in due respect of data protection rules, so that no additional burden falls on citizens and businesses.
3. **Inclusiveness and Accessibility:** public administrations should design digital public services that are inclusive by default and cater for different needs such as those of the elderly and people with disabilities.
4. **Openness and Transparency:** public administrations should share information and data between themselves and enable citizens and businesses to access, control and correct their own data. They should also enable users to monitor administrative processes that involve them and engage with and open up to stakeholders (such as businesses, researchers and non-profit organisations) in the design and delivery of services.
5. **Cross-Border by Default:** public administrations should make relevant digital public services available across borders to prevent further fragmentation, thereby facilitating increased mobility within the Single Market.
6. **Interoperability by Default:** public services should be designed to work seamlessly across the Single Market and across organisational silos, relying on the free movement of data and digital services within the European Union.
7. **Trustworthiness and Security:** All initiatives should go beyond the mere compliance with the legal framework on personal data protection and privacy, and IT security, by integrating those elements in the design phase. These are important pre-conditions for increasing trust in and the uptake of digital services.

Figure 5: E-government Benchmark (European Commission, 2020)

Le Smart Human Cities in Italia

il ranking nazionale dei 109 capoluoghi di provincia - visione per readiness/comportamenti

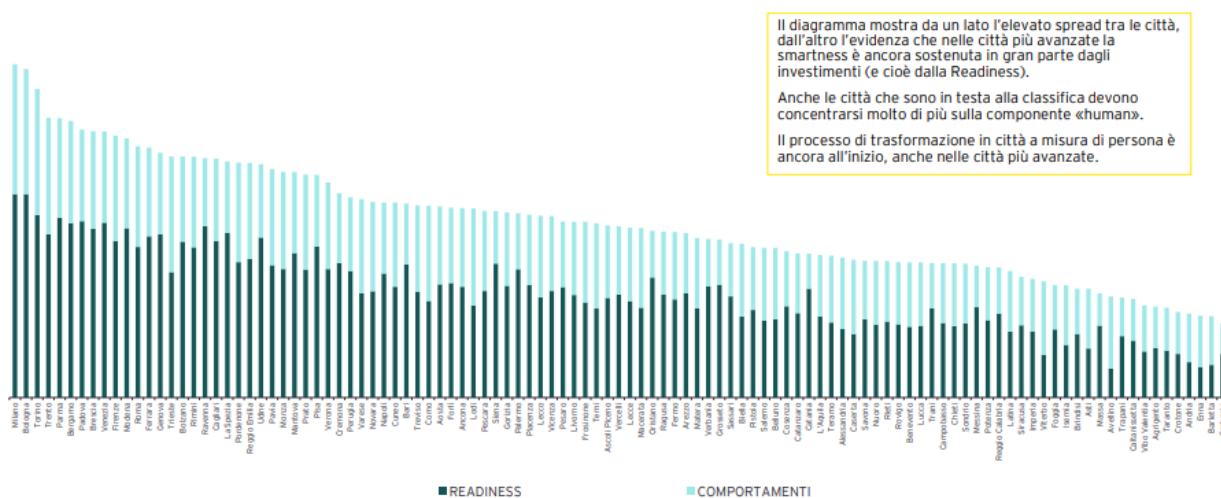


Figure 6: Readiness of the city and readiness of the city users in Italian cities (EY, 2022)

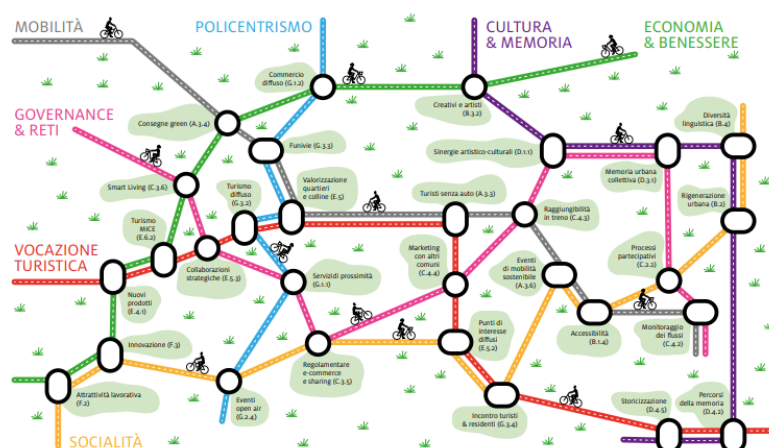


Figure 7: The 7 strategic axes (EURAC Research Centre, 2021)

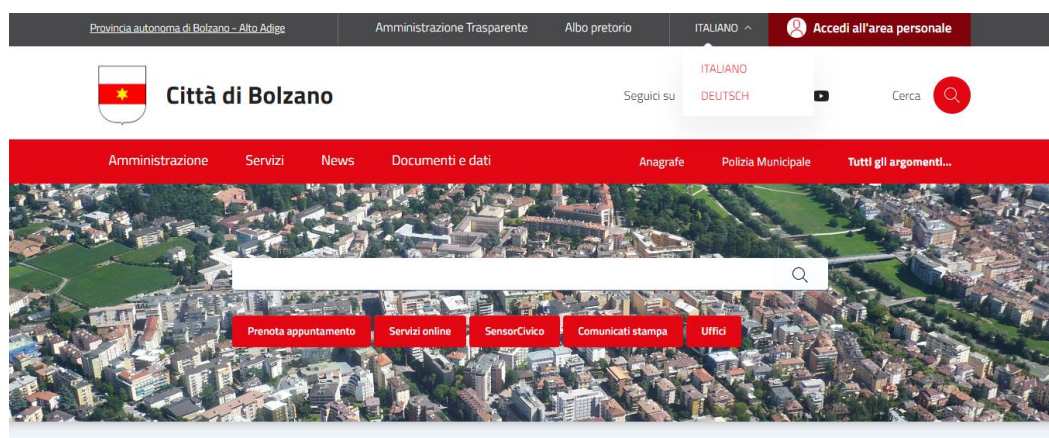


Figure 8: Website of Bolzano (Comune di Bolzano, 2023)



Figure 9: Municipal development program (Bussadori, 2022)

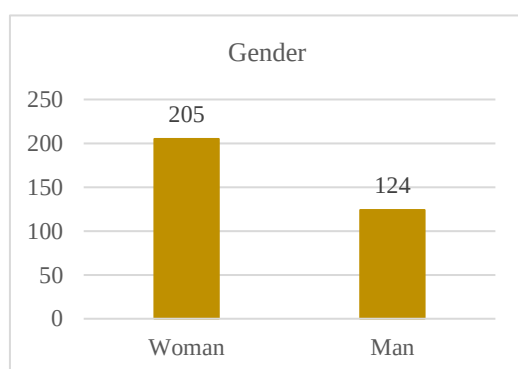


Figure 10: Gender of respondents (from Survey, 2023)

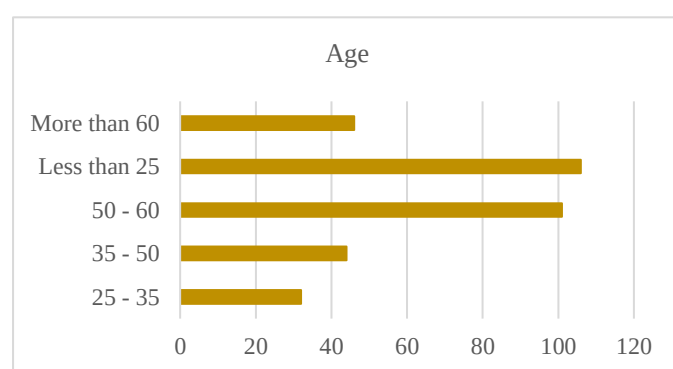


Figure 11: Age of respondents (from Survey, 2023)

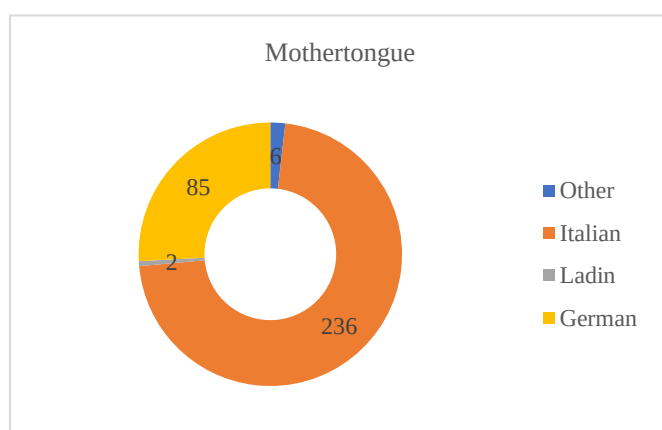


Figure 12: Mother tongue of respondents (from Survey, 2023)

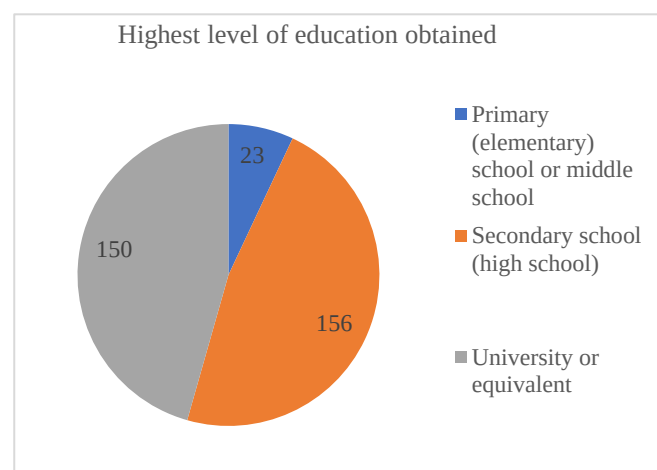


Figure 13: Highest level of education obtained (from Survey, 2023)



Figure 14: Map showing Trentino, South Tyrol and Tyrol (Tempo, 2019)



Figure 15: Smart City Wheel (Cohen, 2014)

9.2. Survey guide

- Gender (Male; Female; Other)
- Age (Less than 25; 25-35; 35-50; 50-60; More than 60)
- Mother Tongue (Italian; German; Ladin; Other)
- Maximum level of education obtained (Primary or Middle school; Secondary school; University or other)
- Neighbourhood of residency (Centro-Piani di Bolzano-Rencio; Oltrisarco-Asiago; Europa-Novacella; Don Bosco; Gries-San Quirino)

Section 1: Engagement and interest in smart initiatives

A smart city is a place where traditional networks and services are made more efficient through the use of digital solutions for the benefit of its inhabitants and businesses. A smart city goes beyond the use of digital technologies for better use of resources and lower emissions. It means smarter urban transport networks, improved water supply and waste disposal facilities and more efficient ways of lighting and heating buildings. It also means more interactive and responsive city government, safer public spaces and better meeting the needs of an ageing population. The smart city is ultimately a city that manages resources intelligently, aims to become economically sustainable and energy self-sufficient, and is attentive to the quality of life and needs of its citizens. In short, it is a territorial space that knows how to keep up with innovations and the digital revolution but is also sustainable and attractive.

- a) Have you ever heard of smart cities?
- b) Do you think it is important for a city to become smart?
- c) Thinking about the concrete initiatives mentioned in the description above, how much do you think Bolzano is doing in terms of smart city?
- d) How much is Bolzano engaging in becoming smarter (in terms of f.e. inclusion, digitalisation, sustainability)?
- e) Are you aware of Bolzano's plans and initiatives for the long term?
- f) Other comments or suggestions

Section 2: Digital citizenship

Smart cities and smart initiatives are very often based on digitalisation and new technologies. The city cannot move forward if its population is not ready.

- a) What grade would you give to your digital skills?
- b) Are you confident in using new technologies?

- c) Are you confident in using the online services of the public administration (f.e. myCivis)?
- d) How many tools does Bolzano offer to its citizens to develop their digital skills (courses, workshops, online tools)?
- e) Do you think the citizens of Bolzano are ready for a digital transformation?
- f) Other comments or suggestions

Section 3: Citizen participation and social networks

The inhabitants of a city should be able to communicate with the city. What role does social media play?

- a) How much do you use social network (Facebook, Whatsapp, Instagram, Snapchat, BeReal, Twitter,...)?
- b) How much do you use them to communicate with the city administration?
- c) How much do you use them for gathering information?
- d) How often do you visit the website of Bolzano?
- e) How adequately does the city administration use social networks to communicate with and inform its citizens?
- f) Other comments or suggestions

Section 4: Involvement of stakeholder in decision making processes

How do citizens participate in decision-making processes? How important is it for them? Is it only top-down or also proactively bottom-up?

- a) How much would you say do you participate in decision making processes?
- b) How important do you think it is that citizens participate in decision making processes?
- c) Besides elections, how much does the city include its citizens?
- d) For example, have you ever heard of SensorCivico?
- e) How would you like the city to include citizens in decision making processes and in the development of a smart city strategy for Bolzano?
- f) Other comments or suggestions

9.3. Interview guide

To analyse smart city governance in small cities a framework was developed using different theoretical concepts. The framework developed can be seen below. The framework looks at smart city governance from two different perspectives: the **readiness of the city** and the **readiness of the city user**. Both perspectives can be divided into four different dimensions. Based on my findings from the survey and the secondary research about Bolzano I want to investigate with the experts further the current challenges and potential opportunities for Bolzano and small/medium cities in general.

1) STRATEGY:

Bolzano appears to lack a strategic plan and long-term vision and this is also perceived by the citizens.

- What could be some of the causes for this lack of strategy?
- What are the most important things to consider when planning and implementing a smart city strategy?
- How do you include citizens in this strategy planning?
- How can the EU support in the smart city transition?
- There are an infinite number of initiatives a city can engage with: which one should a small city prioritise? How can they navigate the broadness of this topic?
- How important is the “smart city” branding? How can smart city initiatives be communicated to the public?
- How can you measure the smartness of a city? How can you measure smart city governance?

2) ONLINE PUBLIC SERVICES

Bolzano’s citizens are generally speaking confident when using new technologies, but they are less so when it comes to using the city’s online services.

- How can the ecosystem of online public services be as inclusive as possible? How do you create an ecosystem that targets both older and younger generations?
- Digitalisation is at the core of the transition: How can cities ensure that the whole population is on board?
- How can digital skills be developed? How can citizens be involved?
- What are the services a city should focus on?

3) CITIZEN PARTICIPATION THROUGH SOCIAL MEDIA

Social media is a promising tool for cities to communicate with and inform their citizens and with penetration being quite high in Bolzano, the city should leverage it.

- What role does social media play in becoming a smart city?
- What are the main digital channels that should be used?
- How can social media be used in a way that is inclusive also for older generations?
- What are the challenges that the city administration should be aware of?

4) INVOLVEMENT OF STAKEHOLDERS IN DECISION-MAKING

Bolzano's citizens do not have the feeling the city is including them enough in decision-making processes.

- What are ways to involve citizens in decision-making?
- What are ways to inform citizens about initiatives that aim to involve them?
- Respondents in the survey want to be included as they feel it is important, but they do not feel like the city is doing it. When we look at the initiatives however, we see that things are being done. Why do you think there is this mismatch?
- How do you involve both young people and older generations?

9.4. Interview transcripts

9.4.1. Transcript Interviewee A

Gasparini Federica: Ciao Interviewee A, grazie per aver accettato. È passato un po' di tempo dall'ultima volta che ci siamo parlati.

Interviewee A: Ciao Federica, grazie per l'invito. Sì, è vero.

Gasparini Federica: Oggi approfondiremo l'argomento smart city governance a Bolzano di cui già avevamo parlato durante il nostro primo incontro.

Interviewee A: Perfetto.

Gasparini Federica: E quindi iniziamo: Ci sono quattro dimensioni chiave di governance che ho identificato e la prima è la dimensione strategica. Ne avevamo parlato anche quando ci eravamo visti a dicembre, del fatto che comunque a Bolzano forse manca un po' una strategia a lungo termine. Sicuramente anche perché è una cosa per la quale serve budget, risorse, personale, tempo.

Gasparini Federica: Non so se vorresti aggiungere anche altre, cioè se altre cause che potrebbero appunto portare a questa mancanza di strategia a lungo termine, magari anche a livello politico, col fatto che magari ogni tot anni c'è il cambio di giunta che anche lì magari manca un po' di continuità.

Interviewee A: Sì.

Interviewee A: Diciamo che un po' come ti dicevo no? Come diciamo piccolo comune, fondamentalmente poi si cerca di seguire tante cose. Fondamentalmente adesso siamo entrati un po' in una fase dove stiamo strutturando anche un po' organizzativamente delle strutture che si occupano in maniera un po' più efficace ed efficiente di quella che è digitalizzazione, Smart City e quindi tutto a questo livello qui. In realtà le amministrazioni comunali poi fondamentalmente arrivano da un modello organizzativo abbastanza vecchio.

Interviewee A: E quindi sta anche un po' nell'organizzazione dell'ente nel riuscire in qualche modo a rimodulare quelli che sono i servizi, poi non possiamo aumentare in realtà personale, ma forse andare magari a togliere risorse da un settore che oggi può essere meno importante rispetto a 20 o 30 anni fa e tramutarlo in un settore che possa gestire meglio quello che è il concetto di Smart City. Quindi stiamo lavorando su questi spostamenti e sull'organizzazione per poter dare un rafforzamento maggiore a questo tipo di tematiche.

Interviewee A: Fino a poco tempo fa erano tematiche completamente sconosciute all'interno della fazione o comunque non erano così importanti, ecco.

Gasparini Federica: Ok.

Gasparini Federica: Tutte le cose inerenti alla Smart City vengono per la maggior parte dei casi ovviamente dal comune, dal settore pubblico, e può essere che ci sia anche il problema che magari tanti dipendenti pubblici non sono up to date quando si parla di smart city?

Gasparini Federica: Diciamo, non sono a conoscenza di progetti, iniziative Smart, internamente non è troppo moderno e quindi magari anche questo potrebbe essere una barriera.

Interviewee A: Allora, in parte Federica, ti potrei dire di sì, però dall'altra parte devo dire che noi lavoriamo poi molto anche rispetto alle proposte che arrivano. Devo dirti che le proposte che mi arrivano dall'esterno, nella maggior parte dei casi sono proposte veramente deboli. Adesso ho la mail sempre invasa, diciamo da aziende che propongono progetti di Smart City, ma fino a prova contraria i progetti di Smart City che mi propongono le aziende esterne sono la vendita di panchine con i ricaricatori del telefono, cioè questo e la maggior parte dei progetti Smart City che ti viene proposta. Quindi sai se io devo dire che per essere Smart City devo metterci una panchina con la cosa per caricare il telefono non mi sembra quella la visione Smart City. Anche all'esterno in realtà c'è ancora un po' di confusione rispetto a quali sono gli elementi o quali possono essere i processi per aiutare una città a diventare smart, quindi all'interno devo dire sì, magari si paga un po' questo.

Interviewee A: Però devo dirti che noi sollecitiamo il fatto di poter avere delle proposte e capire come inserirle all'interno dell'ente, è che alla fine si fa fatica, no? È tutto ancora molto nebuloso. Tante cose sono legate alla gestione del dato e su quello devo dire che ci stiamo un po' attrezzando, cioè riusciamo

a capire, ad avere i dati per poi capire come ottimizzare. Sono scelte politiche quei dati che abbiamo però a livello concreto si fa appunto fatica anche all'esterno.

Gasparini Federica: Sì, perfetto e ovviamente quello che ho visto che è anche importante è coinvolgere i cittadini anche nella pianificazione della strategia. Voi avete qualche iniziativa in ballo? C'è una mezza idea, di dire OK, vogliamo creare una strategia, vediamo un po' cosa dicono i cittadini, cosa vogliono per Bolzano nei prossimi anni?

Interviewee A: Allora noi abbiamo fatto parecchia attività di partecipazione, soprattutto per Bolzano 2025.

Interviewee A: Fondamentalmente, dove appunto abbiamo preso i diversi settori cui ti parlo, il settore urbanistico, il settore sociale, tutti i settori dell'amministrazione dove con diversi stakeholder, aperta anche ai cittadini e alle associazioni, e abbiamo elaborato quella che poteva essere una visione di città da qui ai prossimi 5-10 anni. Quindi queste azioni noi le facciamo. Devo dirti poi io sono anche assessore alla partecipazione, tra le altre poi c'è sempre una cosa che io evidenzio.

Interviewee A: Quando fai partecipare i cittadini si aspettano in realtà che quello che loro propongono venga realizzato e venga realizzato, magari anche nel breve tempo. E quindi io mi rendo conto che spesso gli strumenti di partecipazione di questo tipo possono diventare un problema.

Gasparini Federica: Sì.

Interviewee A: Se il Comune individua più o meno delle linee su cui può muoversi e condivide magari quelle linee col cittadino finisce per tramutarsi in frustrazione da parte del cittadino. Dicono "Ci sono andato a partecipare Eh, però poi non succede niente". Quella cosa non succede allora questo diventa secondo me un processo di partecipazione, anche all'inverso, che rischia in qualche modo di danneggiare il tutto.

Gasparini Federica: Ok, quindi magari anche in questo caso dovrebbe esserci più management anche delle aspettative, probabilmente.

Interviewee A: Sì, Io credo che bisognerebbe prima chiarire quello che la città può fare.

Gasparini Federica: Sì.

Interviewee A: Secondo me l'amministrazione comunque prima dovrebbe magari definire alcune cose che vorrebbe comunque fare e poi successivamente magari fare un lavoro di partecipazione e di scelta da parte dei cittadini, ma pensare di dire ai cittadini "cosa vorresti?" cioè lì tu, apri un mondo. Visti questi esperimenti dove quando tu metti tante persone a parlare di un argomento diventa un'assemblea di condominio, dove poi uno dice una cosa e uno un'altra.

Interviewee A: Facendo così alla fine fondamentalmente non si conclude nulla. Ecco quindi dico che negli strumenti di partecipazione ci vorrebbero sempre secondo me, delle linee definite già con dei budget, con quello che è possibile fare e magari presentare delle proposte ai cittadini, magari fargli scegliere o andare avanti su quella che è più amata o che ha un consenso maggiore da parte della cittadinanza. Allora così secondo me funziona. Ma dare libero arbitrio e parlare a 360 ° di un argomento vedo che in realtà crea più confusione sia all'esterno che all'interno.

Gasparini Federica: Perfetto. Come vedi il ruolo dell'Unione europea in questa transizione a diventare una Smart City? Perché io ho analizzato anche un po' il caso di Innsbruck e Trento e per esempio a Trento ho visto che comunque hanno tante iniziative che sono finanziate dall'Unione europea. Allora volevo capire un po' come viene vista questa cosa all'interno del comune.

Interviewee A: Guarda quello è funzionale, nel senso che ovunque si riescono a prendere dei fondi è sempre positivo. Adesso penso anche col piano PNRR. Noi stiamo comunque prendendo parecchie risorse su diversi progetti di transizione digitale, sul cambiamento dell'hardware, quindi cioè quando ci sono le risorse è sicuramente importante, quindi secondo me l'Unione europea può sicuramente agire mettendo a disposizione dei fondi a favore dei comuni, magari facendolo in maniera anche più semplice possibile nell'ottica della Smart City. Poi ti dico un'altra cosa. Spesso sono difficili poi da seguire e da gestire questi progetti, nel senso che serve poi sempre personale e ti ripeto, noi non possiamo assumere personale oltre rispetto a quello che abbiamo. Impianto organica.

Quindi l'Europa deve mettere a disposizione, secondo me mettere a disposizione fondi e persone che possano in realtà seguire o gestire determinati progetti per migliorare quelle che sono le città anche

nell'ottica smart.

Un accompagnamento maggiore da parte dell'Europa non sarebbe male. Perché l'Europa, mette a disposizione i soldi, però poi tu devi comunque organizzativamente, in maniera organizzativa, avere persone che gestiscono quei fondi, che gestiscono quei progetti e toglie risorse da altre cose. Avrai sempre un discorso di priorità per una città come Bolzano, priorità in base poi a budget, personale e organizzazione. Gasparini Federica: Già l'ultima volta ha parlato di digitalizzazione, che penso sia una delle vostre iniziative più importanti. Non so se poi vorresti aggiungere altre, cioè altre iniziative alle quali bisognerebbe dare priorità, soprattutto considerando la realtà di Bolzano.

Interviewee A: Ma io guarda, credo ed è quello su cui stiamo lavorando molto, con diversi progetti. Abbiamo creato questa rete Digital BZ, abbiamo reimpostato il lavoro dei centri civici, abbiamo aperto un digital point a Firmian, abbiamo aperto dei punti di facilitazione digitale, abbiamo lavorato al progetto swap con università e giovani, video tutorial con delle pillole digitali. Proprio rispetto all'alfabetizzazione dei cittadini, quindi accompagnare questa può essere anche partecipazione. Cioè tutto quello che l'amministrazione sta facendo sia a livello di digitalizzazione interna nel trasformare i propri processi, i processi digitali, e accompagnare i cittadini all'esterno con diversi, diciamo appuntamenti e diverse impostazioni per aiutarli a comprendere quella che è la trasformazione digitale. Alfabetizzazione digitale secondo me è la prima cosa.

Interviewee A: Per riuscire a portare i cittadini della nostra parte e spiegare che questa sfida del digitale è una sfida che non riguarda soltanto il comune, non riguarda soltanto la città, ma che riguarda in realtà tutti. Ecco quindi focus maggiore sul digitale e ed è quello sul quale ci stiamo concentrando molto.

Gasparini Federica: Ok, perfetto.

Gasparini Federica: E poi una cosa un po' più diversa, secondo te quanto è importante il marchio Smart City? Quindi anche un po' il brand Smart City? Soprattutto per vendere la città meglio.

Gasparini Federica: Al di fuori perché ovviamente uno può dire siamo una Smart City, tanto branding e poi magari sotto non c'è nulla.

Interviewee A: Ma ti dico Federica, questo potrebbe essere un processo corretto, però bisognerebbe vedere che cos'è una Smart City. Allora va benissimo se c'è un marchio che vuole essere dato dall'Unione europea. Però definiamo esattamente quali sono i passi che la città deve fare per essere definita smart, perché ripeto ancora, è tutto un po' lasciato all'incertezza.

Interviewee A: Che cos'è oggi una smart City, cioè quali sono gli elementi che una città deve avere per essere definita smart? Io non lo so, quindi sarebbe importante in realtà, che l'Unione europea magari facesse proprio una legge, no? Dove dice un decalogo con quelli che sono i 10 punti per essere definita una Smart City e magari anche degli obiettivi a medio lungo, perché le città raggiungano quegli standard di smart city.

Gasparini Federica: Allora questo si collega anche alla prossima domanda, cioè come fare a misurare una Smart City? Ovviamente una città può dire che questi sono i KPI, che ci mettiamo e che gli obiettivi che vogliamo raggiungere.

Gasparini Federica: Cioè, non ci sono delle linee guida a livello nazionale o europea, quindi lì è più la città che dovrebbe dire OK, questi sono gli obiettivi però misurarli anche.

Interviewee A: Sì, cioè va tutto un po' a polso, va tutto un po' a cuore, cioè e come ti dicevo prima e pago 1.000 € per panchina e ho messo una panchina con i caricatori che prendono la luce del sole e caricano.

Interviewee A: Secondo me le piccole azioni noi le stiamo facendo, magari si vedono ancora poco. Ho un incontro proprio nei prossimi giorni, per esempio, per questa modalità di prenotazione dei parcheggi quindi stiamo inventando un po' l'idea che per entrare in auto in determinate zone della città o comunque le più critiche devi dimostrare di avere un parcheggio prenotato altrimenti se non sai dove mettere non entri all'interno di quella zona. Diciamo che sono delle idee che vanno verso la digitalizzazione della città e quindi l'ottimizzazione poi di quello che può essere il traffico piuttosto che altre cose. Però, ripeto, parte sempre poi dall'esigenza che può nascere in un determinato momento.

Interviewee A: Quindi sì, questo, Eh, sì va un po' a cuore, ecco.

Gasparini Federica: Sì, perché alla fine non è che ci sono degli obiettivi che per esempio l'Italia mette

o?

Interviewee A: No in generale no, mentre sulla digitalizzazione magari sì, perché che ne so, la digitalizzazione dei servizi, rilasciare i certificati in digitali è stato un processo lungo, ma ci sono delle norme che ci stanno dando. Ci stanno anche dettando questi tempi. Per Smart City noi in questo momento non abbiamo delle linee guida che ci obbligano a mettere la panchina con ricaricatore solare o fare l'applicazione che consente di non so che.

Interviewee A: Noi abbiamo un sacco di telecamere, per esempio in città, dove riusciamo a monitorare determinate cose, vuol dire essere Smart City sì o no, non lo so, cioè le città stanno mettendo degli elementi, diciamo smart tecnologici all'interno del contesto urbano. Poi secondo me vanno sempre controllati. Una città smart è una città che riesce ad avere il controllo digitale per poi ragionare sul dato. Quindi una restituzione del dato che mi consente di poter fare poi ragionamenti per migliorare la città.

Interviewee A: Adesso invece per Smart City non c'è nessuno che mi dice Cosa devo fare, come devo farlo.

Interviewee A: E di conseguenza diventa anche più difficile per noi darci degli obiettivi.

Gasparini Federica: Ok, per la prima dimensione abbiamo finito, passiamo alla seconda che è sui servizi pubblici online.

Gasparini Federica: Dal questionario quello che è venuto un fuori e che i cittadini di Bolzano si sentono a proprio agio nell'usare nuove tecnologie, ma meno quando si tratta di utilizzare i servizi online della città. Quindi la mia domanda è: Possiamo, magari, cioè non so se sono anche già dei piani per creare un ecosistema dei servizi pubblici online che è il più inclusivo possibile e che sia adatto alle esigenze dei cittadini.

Interviewee A: Ma allora ti dico, i nostri sistemi li stiamo costruendo in maniera molto semplice e guidata. Il problema è già uno, cioè l'autenticazione attraverso Spid, cioè tu per accedere a un servizio della pubblica amministrazione – non conta che il Comune abbia fatto la schermata friendly - tu hai già un iter pazzesco solo per autenticarti e quello non lo decide il Comune, ma lo stato.

Interviewee A: Pure l'organo statale che mi fa accedere attraverso Spid, non è semplicissimo. La Cie che è la carta per la sanità elettronica è anche molto complicata. Per i cittadini la parte che non è semplice è proprio quella legata all'autenticazione, perché poi ripeto, le nostre armate, mi dispiace dirlo, sono veramente molto intuitive.

Interviewee A: Il maggior problema per il cittadino è in realtà l'autenticazione e tutte queste cose che riguardano l'autenticazione. Però quello non è il singolo comune che decide.

Interviewee A: In realtà gli organi preposti dovrebbero lavorare per snellire, semplificare quel tipo di procedura. Cioè oggi siamo in un mondo di password, cioè ti scade una password, non sei più come entrare in un luogo, cioè diventa e immagino magari quelli che fanno più difficoltà che possono essere gli anziani, gli stranieri o altre categorie di persone.

Gasparini Federica: Ma quindi non c'è, diciamo una sorta di comunicazione tra comuni e Stato, su cioè che riguarda questo aspetto?

Interviewee A: Sai, noi ne facciamo le segnalazioni ogni volta però, è tutto un po' anche la burocrazia no? Cioè la legge mi dice che io per dare un certificato devo fare un determinato iter, mi viene predisposto quello, Eh, non basta che il cittadino mi scriva per avere quel certificato, ma deve fare 20 fogli. Quello non è che lo determina il comune, il comune non fa leggi. Il comune rispetta quelle che sono le normative e fa dei procedimenti amministrativi in base a quello che in questo caso lo Stato.

Interviewee A: E la legge non la facciamo, quindi è proprio un sistema di burocrazia generale che il nostro paese comunque ha e che vediamo in tutti gli ambiti e gli enti.

Gasparini Federica: Se tu potessi scegliere diciamo dei servizi sulla quale la città dovrebbe concentrarsi di più?

Interviewee A: Dipende da Provincia e Comune. La gente poi tende a focalizzare tutto sul comune, perché il comune è il luogo più vicino ai cittadini. Quindi sembra che poi sia del comune la responsabilità, in realtà ti dico noi servizi su cui stiamo lavorando, secondo me lo stiamo facendo anche discretamente bene. Sono tutti servizi in realtà più che visivi, cioè così, ma proprio quelli di poter essere più rapidi e possibili nella richiesta di pratiche che il cittadino chiede. Cioè mi chiedi un certificato, mi

chiedi un documento, mi chiedi un qualcosa che ti serve per poter realmente poi svolgere una tua iniziativa, una tua attività all'esterno, tu possa prendere dal comune le informazioni in maniera più rapida possibile, quindi ti dico i nomi, ci stiamo concentrando, sono quelli rilascio dei certificati piuttosto che i cambi di residenza, piuttosto che la richiesta di bollini, la richiesta di una sala, cioè io sto digitalizzando tutto quello che è, che sono richieste che al cittadino servono per compiere un'azione concreta rispetto alla sua vita all'interno del contesto cittadino urbano, ecco.

Gasparini Federica: E vabbè. Poi è una domanda sulla digitalizzazione. Ovviamente al centro della transizione, come può la città garantire che tutta la popolazione sia partecipe, cioè ha già un po' risposto con tutte le iniziative che state facendo ora, che sono proprio focalizzate su quello, direi.

Interviewee A: Sì, sì, esatto.

Gasparini Federica: Ok perfetto e poi una terza dimensione è la partecipazione dei cittadini attraverso i social media che appunto sono uno strumento molto importante e che secondo me anche la città magari potrebbe sfruttare di più. E secondo te i social media hanno un ruolo importante, cioè per una città nel diventare più smart? E una cosa che magari viene dopo una volta che la città è in uno stadio più avanzato.

Interviewee A: No, no, ce l'ha. Assolutamente per quello e per la partecipazione. Quindi, pensi social media, penso una cosa che io avevo chiesto. A me piacerebbe, per esempio, anche lì, riuscire ad attivare, per esempio il Canale Whatsapp, il Canale Telegram dove in qualche modo determinate informazioni possono essere mandate direttamente ai cittadini, quindi, per esempio, che ne so, c'è una strada chiusa. C'è quindi delle comunicazioni di questo tipo. Che siano questi canali, diciamo di comunicazione anche rapida con i cittadini, possano in qualche modo veicolare anche le informazioni in maniera più rapida e veloce. Quindi assolutamente credo che su quello dobbiamo lavorarci molto e va rafforzato anche lì. C'è da dire che ci sono poi delle guide nazionali. Non è l'utilizzo dei social network funziona come per un'azienda, cioè ci sono proprio delle linee che vanno seguite, e quelle vengono dettate poi dai ministeri e dagli enti superiori al comune. Non è tutto così semplice, ecco. Lo stato da proprio le linee guida, anche rispetto a come vanno costruiti i siti Internet delle amministrazioni, come bisogna comunicare, quindi, sono proprio delle linee che uno che uno deve rispettare e che in realtà, come tutta l'amministrazione lenta, spesso anche quelle regole lì sono regole, magari che poi non vengono aggiornate. Non sono, diciamo in linea, non riescono a seguire la velocità anche del sistema. Il diritto va molto più lento rispetto poi a quello che è la digitalizzazione e quindi l'amministrazione.

Interviewee A: Se una determinata regola ti dice che devi far così, tu non puoi essere avanti a quella regola, lì devi rispettare.

Gasparini Federica: Mhm OK perfetto e qua secondo te quali sarebbero i canali principali da digitali da utilizzare?

Interviewee A: I social tutti, ma io penso, adesso abbiamo il canale Instagram e lo abbiamo come comune, lo stiamo un po' cercando di sviluppare, poi Facebook lo abbiamo e Twitter lo abbiamo e penso magari maggiormente quello che dicevo prima. Quindi secondo me Whatsapp, Telegram, quelli che possono essere veramente i contatti diciamo più diretti col cittadino.

Gasparini Federica: Mhm e. Beh invece il sito web lo vedi anche come un canale digitale importante?

Interviewee A: Il sito web secondo me deve essere un canale molto importante. Per reperire le informazioni per poter poi entrare in quelle che sono le diverse maschere, diversi siti che consentono di fare le procedure online, quindi è sicuramente importante, diciamo un po', la vetrina che consente in maniera rapida di poter trovare delle informazioni, avere le informazioni e consentire al cittadino di poter svolgere le sue pratiche online.

Gasparini Federica: E i social media, magari, cioè allora forse sono un po' più difficile da usare per le generazioni più anziane, poi dipende cioè per esempio magari un Facebook è già più utilizzato, ma altri social media, magari un po' più complicato, lì come si può fare per rendere tutto il più inclusivo possibile?

Interviewee A: È difficile questo Federica, nel senso che tu vedi comunque ormai il mondo è fatto di Boomer, cioè anche questi strumenti che tu fai, che tu dai, puoi dare le informazioni secondo me deve essere utilizzato come metodo per dare delle informazioni, per capire cosa succede in città. Quindi la partecipazione, come ti rendo partecipe di quello che sta succedendo, posso darti delle informazioni,

posso prendere una tua opinione, un tuo punto di vista? Ecco però anche lì poi devono essere mediati e ben controllati.

Gasparini Federica: Ok.

Interviewee A: Io vedo gli strumenti di partecipazione come strumenti inclusivi per arrivare attraverso un canale diverso a dirti, a comunicarti quello che l'amministrazione sta facendo.

Gasparini Federica: Secondo te quali sono le sfide delle quali la città devono essere consapevoli, anche appunto, rispetto ai social media?

Interviewee A: Eh li guarda, siamo sempre sotto l'occhio del ciclone del garante della privacy. Per quello ti dico, dobbiamo rispettare quelli che poi sono i regolamenti, quindi è chiaro anche nell'utilizzo dei social network, con tutte le regolamentazioni che abbiamo noi dobbiamo stare molto attenti perché noi prendiamo un dato, trattiamo un dato e se semplicemente quel dato lo trattiamo in maniera sbagliata noi abbiamo cause aperte, siamo stati condannati più volte dal garante per esserci comportato in un modo rispetto ad un'altro, quindi sì, nel rispetto di quelle che sono le normative, sempre.

Gasparini Federica: Certo. Poi diciamo l'ultima dimensione che vabbè ne abbiamo già parlato un po, quindi coinvolgimento degli stakeholder nei processi decisionali.

Interviewee A: Sì.

Gasparini Federica: Dal questionario un po' è venuto fuori che tanti bolzanini hanno la sensazione che la città non li include abbastanza nei processi decisionali. Poi però comunque, vedendo anche in realtà sul sito web e parlando anche con te, in realtà ci sono cose che vengono fatte, quindi quello che anch'io ho visto è che c'è un mismatch tra quello che la città fa e quello che i cittadini sanno e quindi magari anche qua vedere come coinvolgerli e informarli?

Interviewee A: Guarda su questa roba io mi interrogo quotidianamente, poi in realtà nella maggior parte dei casi non gli interessa neanche partecipare. Mi dicono che a Bolzano non c'è niente, ma come gli dico, ma guarda, ieri sera c'era questo, questo e questo. Ma tu cosa vorresti? Poi quando chiedi, ma cosa vorresti o a cosa vorresti partecipare, la gente non sa mai darti una risposta no, quindi anche rispetto agli stessi giovani, quando ti chiedo, ma cosa vorresti, cosa manca?

Gasparini Federica: Mhm.

Interviewee A: Poi non hanno mai una vera risposta. Quindi dico, secondo me le cose ci sono. È vero, bisogna migliorare la comunicazione, ma le informazioni secondo me comunque girano abbastanza. Ormai no, c'è sempre, secondo me forse un'offerta superiore rispetto a quello che in realtà servirebbe e spesso si fa anche fatica con tutte le informazioni che si hanno magari a trarre quella che è l'informazione che uno cerca.

Gasparini Federica: Facendo un po' di brainstorming, che modi ci sono per informare i cittadini su iniziative che vengono fatte?

Interviewee A: Ma ripeto, per esempio, questa cosa che dicevo, cioè riuscire ad avere questi canali e magari divisi in maniera settoriale, no? Quindi io penso il giovane 18-35 anni che mi dice i miei interessi sono questi. L'amministrazione potrebbe mandare, magari che ne so su Telegram, su Whatsapp il messaggio dicendo: Guarda che stasera c'è questo e c'è quest'altro, quindi magari anche i messaggi diretti penso rispetto a quella che è le preferenze o le fasce d'età che uno seleziona, quindi poter arrivare magari a un target più diretto, penso alle stesse, sponsorizzate magari sui social network di determinate iniziative e attività. Però, ripeto, le informazioni poi arrivano e spesso le persone non hanno neanche tutta questa voglia di partecipare.

Gasparini Federica: Sì, ma invece più cose magari non so, tipo dei cartelloni in giro per la città con dei QR dove la gente può scannerizzare per vedere non so quali sono le iniziative attuali o non so raccogliere opinioni, cose del genere.

Interviewee A: Ma io non so, cioè non credo che funzionino queste cose qua ti dico la verità. Se in alcuni casi ne abbiamo fatto una foto della cartellonistica, abbiamo messo il QR però non vediamo ancora tutta questa diciamo volontà di partecipare. L'informazione la trovi in realtà mi sembra che non ci sia proprio spesso la volontà di reperire informazioni perché l'offerta è tanta e alla fine qualcosa da fare c'è.

Interviewee A: Perché i canali sono le associazioni e attraverso gli organizzatori, attraverso le amministrazioni, attraverso comunque Internet, cioè le informazioni girano. È un po' una scusa, secondo me

quello di dire che non arriva l'informazione. Cioè siamo pieni, forse abbiamo troppa informazione. In realtà secondo me spesso non cerchiamo quell'informazione o siamo così invasi da tante informazioni che non diamo attenzione a quelle informazioni. Ecco.

Gasparini Federica: Mhm e se dici che magari manca la volontà, come si fa a incentivare le persone?

Interviewee A: La gente si lamenta sempre, ma io lo vedo in ogni cosa che tu fai, cioè tu fai un'azione, tu prendi una decisione, hai 10 persone a cui va bene, è un milione che non va bene, è tutto così. Quindi la gente comunque tende a lamentarsi, cioè tu quelli che senti sono quelli che si lamentano la grande ma lo vedi anche sui social network? Sia una cosa che è buona e non è che mi vengono a dire bravo, hai fatto una cosa buona però.

Gasparini Federica: Sì.

Interviewee A: Magari o 100 che mi dicono: Hai fatto uno schifo. Gli altri però 90.000 non mi vengono a dire hai fatto bene, no? E secondo tematica, qui è un po' la stessa cosa, cioè chi ha voglia di informarsi, chi ha voglia, di chi è propositivo e secondo me riesce a reperire le informazioni, riesce a partecipare ai processi, eccetera eccetera. Chi è vuole soltanto lamentarsi perché non ha voglia, perché è arrabbiato, perché quelli continueranno a comportarsi in questa determinata maniera. Ecco, poi lavoriamo sicuramente per recuperare anche quella fetta.

Gasparini Federica: Sì.

Interviewee A: Va benissimo, però basta che tu lo veda sui social network, cioè l'utilizzo della comunicazione, Eh sempre negativo, cioè chi commenta sempre distruttivo. Raramente vedo la positività no nell'interazione o nel commento.

Interviewee A: Un grande minestrone, un grande minestrone dal quale erge sempre l'aspetto negativo. Cioè una roba funziona, non te lo dico. Se non funziona faccio il diavolo a quattro e sembra che la mia voce preponderi rispetto al totale.

Gasparini Federica: E ma lì non avrebbe senso, magari mettere qua che poi anche lì ha una risorsa in più che bisogna trovare, ma mettere qualcuno che gestisca un po' il management di appunto dei social network, dove la gente va a scrivere determinate cose.

Interviewee A: Guarda, noi abbiamo chi gestisce i nostri social network, è un dipendente comunale. OK, lo facciamo un po' così, non avrà la qualifica, ma noi fondamentalmente sotto l'aspetto della partecipazione, noi abbiamo SensorCivico che è un portale proprio per le segnalazioni, su tutte le problematiche della città, che può essere una piuttosto che una manifestazione piuttosto che e dove lì noi andiamo proprio a far seguire al cittadino tutto l'iter nella risposta e nella risoluzione di quel problema. Quindi dalla foto il cittadino arriva poi questo qua vedere tutto l'iter fino a quando viene risolto il problema, quindi questi vengono seguiti diciamo in maniera regolare rispetto alle segnalazioni dei cittadini.

Gasparini Federica: Che poi il SensorCivico, è una delle cose che ho chiesto nel questionario e l'80% delle persone non sapeva neanche cosa fosse, che è un peccato.

Interviewee A: SensorCivico è molto utilizzato in realtà. Noi abbiamo tantissime iniziative, tantissime attività dove arrivano e dove il cittadino può esattamente essere seguito dalla sua segnalazione fino alla risoluzione del problema, è la vede proprio, quindi quella è un'esperienza che secondo noi è positiva. Ecco poi non è conosciuto informati anche un po' nel senso, io non è che posso venire a casa tua a darti da mangiare, cioè se hai fame, mangi, no.

Gasparini Federica: Sì, sì, no, no, assolutamente.

Gasparini Federica: Ok. Poi ovviamente è importante coinvolgere i giovani. Come vedi la collaborazione tra il comune e le scuole o magari anche l'università, vengono organizzate cose? Anche per diciamo nutrire un po' l'interesse, rendere i giovani più partecipi anche nella vita di ogni giorno.

Interviewee A: Ah sì guarda, ti dico, parli di scuole, io sto proprio facendo un tour nelle scuole in questo periodo dove stiamo presentando il comune, per esempio, anche come datore di lavoro, quindi presentando le prospettive di lavoro ai ragazzi di quarta e quinta superiore, quelle che sono anche le iniziative in ambito giovanile. C'è il collegamento col mondo della scuola. È molto vivo, è molto aperto da parte dell'amministrazione comunale, con l'università stiamo sviluppando parecchi progetti. Per esempio, swap è un progetto che nasce proprio insieme all'università, dove noi prendiamo studenti universitari che stanno facendo da tutor anche ai ragazzi delle superiori per insegnare e l'utilizzo delle nuove

tecnologie ai cittadini e agli anziani che non ce la fanno, quindi sai progettualità si sviluppano, poi si può sempre far di più, cioè l'università è un'istituzione all'interno della città, la città magari non è così universitaria, ma ripeto il collegamento c'è.

Gasparini Federica: Ok perfetto. Le domande sulle dimensioni sono finite però ho solo qualche domanda in più da farti. Il Comune collabora abbastanza con altri enti? Al di fuori, perché quello che penso poi mi dirai la tua, e che ovviamente magari spesso ci sono tante iniziative che magari il comune non riesce a fare perché non so, mancano le risorse, manca il personale, manca il tempo, non so, magari l'idea di outsourcing.

Interviewee A: Ma noi facciamo la maggior parte delle cose attraverso il terzo settore. Cioè diamo contributi alle associazioni, alle organizzazioni, proprio per organizzare attività, manifestazioni e attività sociale, attività ricreative. Quindi per noi è un valore aggiunto, cioè il terzo settore e il terzo è uno dei degli organismi con cui noi lavoriamo di più all'interno dell'ente. Proprio far lavorare il terzo settore, quindi l'amministrazione comunale dà un contributo in termini economico in termini di spazi, in termini di aiuto organizzativo. E poi al terzo settore che organizza, determina la maggior parte delle attività e delle iniziative in città.

Gasparini Federica: E cosa ti auguri tu di raggiungere nel diciamo breve medio termine per Bolzano generale, cioè digitalizzazione un aspetto grande, ma altre cose che vorresti raggiungere nei prossimi anni?

Interviewee A: Riuscire a portare, diciamo una innovazione soprattutto per quanto riguarda l'organizzazione, quindi penso una un'organizzazione come l'amministrazione comunale di Bolzano che possa essere percepita come un'organizzazione moderna, sempre più in collegamento con i cittadini, in chiave anche tecnologica digitale. Quindi una riorganizzazione di quella che è proprio la struttura, la città di Bolzano. Ecco, se devo dirti una cosa, no, proprio per dirle tutte, tutto quello di cui abbiamo parlato oggi è possibile solo se tu vai a riorganizzare quello che è l'amministrazione comunale. Posso dirti nei prossimi 5 anni noi avremo una schiera di dipendenti comunali che andrà in pensione. Oggi la media è molto alta, la media più alta, 55, 60 anni dei nostri dipendenti sono più di 500/600 in quella fascia d'età. Tutta quella generazione lì. Quindi metteremo forze nuove e dovremmo andare a ridisegnare una nuova amministrazione comunale in grado di potersi risintonizzare con quelli che sono gli obiettivi e le esigenze della Bolzano d'oggi.

Gasparini Federica: Mhm e dici che con queste forze nuove ci saranno grossi cambiamenti all'interno?

Interviewee A: Sicuro.

Interviewee A: Quindi ci saranno occhi nuovi, sta poi all'organizzazione, l'amministrazione dettare delle linee nuove. È chiaro che oggi io faccio più fatica a dettare delle linee nuove con chi è in amministrazione da trent'anni e ha sempre lavorato o ha definito. Ho pensato in un determinato modo e con occhi nuovi e più semplice, sicuramente potere anche ridisegnare una nuova organizzazione, una nuova amministrazione.

Gasparini Federica: OK, perfetto.

Gasparini Federica: E Beh, io non ho altre domande, non so se tu vuoi aggiungere.

Interviewee A: No dai, mi sembra che abbiamo detto.

Gasparini Federica: Ok, perfetto, beh, allora grazie ancora ci teniamo in contatto come al solito.

Interviewee A: Volentieri se hai bisogno sono qua.

9.4.2. Transcript Interviewee B

Interviewee B: Salve Federica.

Federica Gasparini: Salve Interviewee B, grazie per aver accettato l'invito. Spero tutto bene.

Interviewee B: Grazie a lei. Mi fa sempre piacere.

Federica Gasparini: Per iniziare, ci parli del progetto MyBz.

Interviewee B: Quindi sono stati loro stessi a voler un progetto in progetto. Attenzione, il progetto era su identificare l'identità di Bolzano, non aveva direttamente a che fare con il concetto di smart city. È stato fortemente voluto dal Comune che ha fatto un bando che abbiamo vinto e, come ha detto lei, è

partito tutto prima del Covid e anche le nostre attività in realtà dovevano andare anche oltre. Però con la pandemia non siamo più riusciti a fare raccolta dati per garantirlo e quindi abbiamo dovuto un po' concludere di corsa con quello che avevamo e le strategie che abbiamo sviluppato hanno anche a che fare con una città pre-Covid. Adesso la situazione è quasi tornata alla normalità, quindi. Però ovviamente questo ha creato un ostacolo. Per quello che riguarda l'implementazione, come ha chiesto lei, cosa è stato fatto? Abbiamo avuto anche l'ulteriore difficoltà che durante il progetto la giunta è cambiata. Qui ci sono state le elezioni e quindi quello che è un po' mancata, una continuità politica che portasse avanti un po' quelle che sono state le nostre raccomandazioni. Però quello che ci ha fatto piacere, anche se non vediamo che il Comune ha implementato qualcosa in particolare il fatto di aver coinvolto i cittadini, una serie di associazioni di quartiere, ma anche associazioni culturali. Abbiamo visto che tante cose da noi consigliate poi sono venute ad accadere. Un po' ad iniziativa dei cittadini o comunque di queste associazioni. Per esempio, adesso non so se conosce Bolzanine, ma quello già esisteva prima del progetto. È una bellissima iniziativa che si è sviluppata ulteriormente, ovvero la rivalutazione, anche culturale, fare delle visite turistiche anche in zone meno note della città, non solo il centro storico, ma anche le zone industriali, le zone più popolari. Quindi ci sono delle raccomandazioni che sono state oggettivamente realizzate, però non da chi ci aspettavamo, ma anche da bottom up.

Federica Gasparini: Perfetto. Adesso che siamo tornati a tempi pre Covid, il Comune sta comunque cercando di implementare le cose che voi avete suggerito? C'è comunicazione tra l'Eurac e il Comune di Bolzano?

Interviewee B: No. Quello che ho notato in diversi progetti è che quando una giunta politica chiede qualcosa e poi c'è un cambio di giunta, non c'è la volontà di continuare le cose che sono state cominciate dalla giunta precedente. Questo è un po' un peccato, però. Questo è il bello e il brutto della democrazia, nel senso che poi c'è sempre un cambio di governo e manca la continuità.

Federica Gasparini: Ok, capisco. Parlando anche con l'assessore alle smart city, mi sembra assurdo che non ci sia più collaborazione tra il Comune e l'Eurac, che comunque è un ente super importante per questi aspetti.

Interviewee B: Non mi stupirei neanche se lui non sapesse niente del progetto.

Federica Gasparini: Infatti, la settimana prossima lo sento e spero di aver modo di parlare anche di questo perché penso sia veramente un progetto super importante e sarebbe un peccato non usufruirne.

Interviewee B: Assolutamente. Magari gli mandi anche il PDF.

Federica Gasparini: Sì.

Interviewee B: Il problema che abbiamo notato nel Comune è che all'interno di diverse aree settoriali non ci si parla, per cui una nostra raccomandazione era anche di creare dei tavoli di lavoro all'interno del Comune, dove esperti di diverse aree possono confrontarsi -perché lavorano molto settorialmente - anche noi, d'altra parte, non è che siamo una best practice. Sicuramente c'è difficoltà anche per noi nella comunicazione interna. Poi, nel corso di intervista credo che la comunicazione verrà molto fuori, e dell'importanza di comunicare bene le cose.

Federica Gasparini: Esatto. Ok, perfetto. Allora magari guardiamo un po' più nel dettaglio le quattro dimensioni che io sono riuscita ad elaborare durante la tesi finora. E la prima, appunto, è l'aspetto della strategia di qui parlavo già prima. Che appunto sembra un po' mancare. Non c'è un piano strategico, una visione a lungo termine, ed è quello che è stato anche percepito dai cittadini nel questionario. Tante persone non sanno cosa farà a Bolzano nei prossimi due, tre, cinque anni. Non ci sono dei piani concreti e quindi vorrei anche chiedere a lei, quali sono un po' le cause di questa mancanza di strategia? Sarà anche legato al cambio della giunta, che non ci sia la continuità, ma non ci sono anche altri aspetti, magari di budget, risorse o altro?

Interviewee B: Beh, io non ho una conoscenza molto approfondita del Comune, perché dopo che abbiamo finito questa collaborazione non abbiamo avuto altre occasioni di scambio. Può darsi che quello che le dico non sia aggiornato.

Federica Gasparini: Ok.

Interviewee B: La mia impressione è un po' come ho detto che il cambio politico sicuramente ha giocato un ruolo. Ovviamente un Comune e il Comune rispetto alla Provincia ha molti meno fondi e quindi

anche un limite di budget, di finanziamento. Perché questa Smart city transition ovviamente è una cosa che richiede una serie di risorse economiche e anche temporali, perché dovrebbero esserci persone adibite a quello. Quindi è una questione di tempo, di budget ma anche di competenze. Una smart city richiede una serie di competenze che non so se più o meno ha visto, ma l'età media del dipendente comunale/provinciale non è sui trent'anni ma è più avanzata. Quindi è il Comune stesso spesso che non ha personale, che non è formato su una serie di temi che sono la digitalizzazione, ma anche temi come la privacy, perché quando si lavora, eccetera, ci vogliono questo tipo di competenze, tecniche ma anche legali. C'è anche un problema, forse di governance un po' frammentata, quindi sia all'interno del Comune, che con stakeholder esterni. Per fare smart city bisogna outsource certe cose e questo richiede collaborazioni che funzionino bene con i partner esterni. C'è forse una mancanza di consapevolezza a livello un po' dirigenziale, dell'importanza di alcune cose, anche un po' una resistenza al cambiamento che si può vedere come un po' legata anche al tema dell'età "old white man". Sono loro a prendere decisioni, quindi c'è un po' di resistenza. E soprattutto si parla anche un po' di mismatch tra quello che i cittadini si aspettano e quello che il Comune fa. Bisogna pensare al coinvolgimento dei cittadini che spesso viene fatto ma che poi non viene implementato. E poi è anche frustrante per loro, dire che hanno partecipato a cinque incontri, abbiamo sviluppato una strategia e poi non è stata fatta.

Federica Gasparini: Chiaramente questo è un problema.

Interviewee B: È stata molto frustrante, sì.

Federica Gasparini: E quindi gli aspetti più importanti da considerare quando si pianifica questa strategia. A parte che ovviamente avere il budget di fondi, le risorse anche una maggiore collaborazione tra diversi stakeholder, soprattutto i cittadini, io direbbe che c'è una parte più importante.

Interviewee B: Siccome le risorse sono la cosa più importante, le risorse finanziarie, perché con le risorse finanziarie uno può acquisire le competenze, uno può organizzare eventi partecipativi. È tutta una cosa a cascata, però senza risorse economiche è difficile.

Federica Gasparini: Perché il fattore anche delle risorse, che è una cosa che, come ha raccontato l'assessore, che ovviamente a livello provinciale viene fatto molto di più perché ha molte più risorse. Però quello che ho visto, anche facendo benchmark con Trento e Innsbruck, vedendo cosa fanno loro e comunque sembrerebbe che per esempio a Trento vengono fatte molte più cose, più iniziative e molto più moderna. Come città, anche tutto questo branding di smart city è molto più sviluppato. Anche a Innsbruck, dove c'è un gruppo, c'è un ufficio smart city proprio dedicato a quello. Poi non so se sono tanto più ricche di Bolzano, questo non lo so. E però lì, appunto, sembra funzioni. Anche una cosa che ho notato che a Trento ci sono tante iniziative che vengono fatte anche con i fondi dell'Unione europea.

Interviewee B: Anche qui è una questione di competenza perché Trento è una delle città che penso che sia tra le dieci più smart in Italia. E una questione anche di competenze. Per avere i fondi europei bisogna essere in grado di rispondere ai bandi dell'Unione europea e quello non è che lo fa chiunque. Bisogna avere anche dipendenti in comune, delle persone che sono in grado di farlo. Non è una cosa facile, appunto, vincere questi progetti. E quindi di nuovo torniamo nelle competenze al budget. Da noi, sì, la Provincia ha molti soldi. Però Bolzano come città italiana è sempre un po' penalizzata. È il capoluogo della provincia, ma non è tanto considerata come tale. È un po' a parte.

Federica Gasparini: Risolvere questo problema delle competenze non è una cosa che si riesce a cambiare da un giorno all'altro. Ma come potrebbe essere indirizzato un po' questo problema?

Interviewee B: Ma a parte che adesso ci dovrebbe essere un grande pensionamento, quindi una serie di dipendenti pubblici raggiungono l'età pensionabile, questa può essere l'opportunità per il comune di rinfrescare un po' le competenze del personale che viene assunto. Questa è la possibilità più grande che in questo momento le amministrazioni pubbliche hanno. E poi cominciare sì, con piccoli passi, ovviamente, però cominciare a pensare a metodi partecipativi che magari non richiedono tanti investimenti economici. Qualcosa può essere fatto, non bisogna rinunciare a priori.

Federica Gasparini: Se diciamo che il problema è ovviamente l'inclusione del cittadino in generale, ma anche proprio all'interno dell'amministrazione, bring everyone on board, perché c'è anche magari un mismatch in questo senso. L'idea è che abbiamo iniziative che vogliamo fare, ma poi non ce ne sono le persone giuste per poterlo realizzare all'interno.

Interviewee B: Però quello appunto si può anche collaborare con altri. Siamo a Bolzano, abbiamo il Noi Techpark, l'Eurac, ci sono una serie di aziende e centri di ricerca che sono molto innovativi e quindi basterebbe forse anche appoggiarsi un po' a loro, anche per fare progetti europei. Bisognerebbe creare delle sinergie e rafforzare quelle già esistenti per risolvere questo problema del budget e delle competenze. Le competenze in Provincia ci sono, però bisogna sfruttarle meglio.

Federica Gasparini: Ok, e ovviamente ci sono tantissime iniziative sulla quale la città si potrebbe concentrare. Secondo lei quali sono quelle più importanti ora? Perché ovviamente se ne possono fare tante: Smart mobility, digitalizzazione, inclusione, tantissimi temi diversi. Secondo lei qual è quello sul quale bisognerebbe focalizzarsi di più?

Interviewee B: Sostenibilità, questa sarebbe la mia opinione personale. Però penso che bisognerebbe anche questo chiederlo ai cittadini. Cioè, quali sono le priorità della città di Bolzano, perché può essere la digitalizzazione dei servizi ed io non so qual è la sua conoscenza dei mezzi che ci sono adesso dato che è all'estero, ma ora come ora è praticamente impossibile fare la carta online del medico, oppure prenotare un appuntamento in ospedale digitalmente; è tutto molto complicato. Tutte queste cose andrebbero snellite e quindi la digitalizzazione dei servizi, la mobilità. Devo dire Bolzano rispetto a tante città italiane è già avanti perché ci sono già delle app che ti permettono di vedere in mobilità, quindi puoi fare questo percorso in parte in bici, poi c'è l'autobus lì, eccetera. Quindi quello già è stato fatto, però sì, sicuramente nella digitalizzazione dei servizi si può fare di più, anche per il coinvolgimento dei cittadini. Bisogna capire quali sono le priorità della città, perché ogni città priorità. Non c'è e una ricetta fissa per tutti.

Federica Gasparini: Perfetto. E un'altra cosa che ho visto molto, analizzando anche Trento Innsbruck, è che questa idea della smart city viene comunicata al pubblico in modo molto più chiaro e user friendly. Secondo lei questo marchio Smart City è importante in sé per il branding della città, o è una cosa che comunque, finché le iniziative ci sono, può essere anche tralasciata. Perché, appunto, Smart City Group è proprio l'ufficio apposito. Vai sul sito e c'è tutta una sezione Smart city. Questo è quello che facciamo, ed è molto facile anche da capire, da seguire anche per il cittadino, per sapere che cosa sta facendo la città. Invece a Bolzano le ho detto che per me è stato difficile trovare delle cose concrete.

Interviewee B: Ma, come brand è sicuramente sexy, diciamo così, perché crea un'immagine positiva della città e può attirare sia investimenti da aziende tech, ma anche attirare turisti e nuovi residenti. Questo manca un po' in Alto Adige, se ci fosse un brand a Bolzano, una smart city concept come Trento, si riuscirebbe anche ad attirare un determinato pubblico di giovani aziende, quindi sicuramente è importante. Poi bisogna anche vedere che non sia una cosa una scatola vuota, quindi dire siamo smart e poi non esserlo veramente.

Federica Gasparini: Assolutamente, il branding e la comunicazione sono importanti, ma deve esserci sostanza.

Interviewee B: Sì.

Federica Gasparini: Perfetto. E un'ultima domanda in questa sezione: C'è un modo per misurare la smart ess della città e la governance della città? Ci sono delle metriche dei KPI, che la città può misurare o è più una cosa che facciamo iniziativa, cerchiamo di portarla a termine e basta?

Interviewee B: Per questo ho letto recentemente uno studio: Credo che ci siano più di mille possibili indicatori per misurare la smart city in una città. Possono essere categorizzati in grandi categorie, come per esempio rispetto della natura, la governance, la mobilità, la qualità della vita, eccetera. Quindi ci sono una quantità incredibile di possibili indicatori, alcuni molto importanti come l'utilizzo delle tecnologie: quindi quanto le tecnologie sono integrate nei servizi, ma anche misurare quanto i cittadini sono coinvolti. La qualità della vita è già un indicatore che Il Sole 24 Ore misura per tutte le città italiane. Quello è un indicatore molto utile e si può misurare anche la governance. Quindi quanto gli stakeholder vengono coinvolti? Quanti progetti partecipativi con partner vengono fatti, quanto accade l'accesso dei servizi da parte del cittadino, eccetera. Quindi tutte queste sono cose molto importanti, però ce n'è infinite ovviamente.

Federica Gasparini: Perfetto, grazie. Poi per la seconda parte, appunto parlando dei servizi pubblici online che il Comune di BZ offre. Quello che è venuto fuori dal questionario e che è interessante è che

i cittadini si sentano abbastanza a proprio agio con le nuove tecnologie, Ma quando si tratta di utilizzare i servizi online nella città, per esempio MyCivis, i cittadini non si sentono tanto a proprio agio. Quindi a me vien da pensare ok, magari ci sono anche tanti cittadini che sono pronti. Però in realtà sono i tool che la città offre, che forse non sono abbastanza moderni, adeguati. Per esempio, a Singapore, che sarà anche un caso estremo, ci sono le app per tutto, quindi è molto comodo da usare sul telefono. Tutto molto intuitivo, molto facile da usare, da scaricare e viene anche voglia di interagire con la città. Mentre a Bolzano questa cosa secondo me manca. Paradossalmente, mio padre sa usare i servizi online meglio di me, quando invece io conosco nuove tecnologie, sono molto più avanti e quindi anche la mia domanda è: come può fare la città per rendere l'ecosistema ed i servizi pubblici il più inclusivo possibile? Quindi creare un ecosistema che si rivolge alle generazioni più anziane, che magari devono anche capire come funziona e anche quelle più giovani per rendere il tutto più attraente.

Interviewee B: Tutto nascerebbe dal migliorare quello che c'è. In realtà bisognerebbe partire dalle esigenze dell'utilizzatore finale. Quindi più che il Comune decidere adesso faccio quest'app, bisognerebbe prendere cittadini diversi, fare un bel focus group o un metodo simile, prendere il cittadino un po' più anziano, il cittadino migrante con problemi linguistici, il giovane e cercare di capire quali sono le loro esigenze e cosa si aspettano dalla città. E non parliamo già dell'idea che serve una app, magari serve qualcos'altro. Quindi cercare di capire qual è lo strumento che meglio corrisponde alle loro esigenze, come dice lei, bisogna che sia accessibile. Per esempio, che ci sia un supporto vocale nell'app, che si possano ingrandire i caratteri, sono innumerevoli le cose che possono essere necessarie. Bisogna anche garantire che la privacy sia rispettata perché può essere una barriera per tante persone, perché non vogliono che i loro dati siano dentro le app. Poi bisogna anche garantire che ci sia digitalizzazione. Molti anziani, come dice lei, hanno difficoltà a usare determinati mezzi e questo è anche una cosa su cui il Comune dovrebbe lavorare. Si possono anche fare delle iniziative, diciamo così, dove non necessariamente ci vuole un budget per fare dei corsi alle persone più anziane. Ma anche si possono istituire queste banche del tempo in cui ognuno regala due ore, lei spiega ad un anziano come usare le app e l'anziano le spiega come lavorare a maglia. Non lo so, però ci sono diverse di queste iniziative che sono carine, anche perché aumentano anche un po' il senso di coesione sociale. Si può imparare e insegnare qualcosa di proprio.

Federica Gasparini: Sviluppare le competenze digitali e coinvolgere i cittadini è essenziale. Una cosa che per me è un po' strana, perché comunque ho letto anche sul sito che ci sono iniziative che vengono fatte per includere anche gli anziani. Ci sono questi uffici sparsi per la città dove gli anziani possono andare e gli spiegano come funzionano determinate funzioni, come si prende un appuntamento online e quindi la mia domanda è: Pensa che quindi queste cose non sono abbastanza o sono i cittadini che non ne sono a conoscenza, perché per esempio io queste cose ho scoperto facendo ricerca, ma non è una cosa che i miei genitori o nonni sanno. Quindi forse la città coinvolge i cittadini e fa cose, però non vengono comunicate in modo chiaro. O non abbastanza.

Interviewee B: È una questione di comunicazione, come abbiamo detto all'inizio è la cosa chiave. Quindi è anche come comunichi queste cose, per cui se ci sono persone che hanno una resistenza digitale è inutile metterlo sulla pagina web. Bisognerebbe fare dei manifesti in una città o mettere un articolo sul giornale sull'Alto Adige. Insomma, bisognerebbe cercare di raggiungere queste persone con i canali che loro utilizzano per insegnare a usare altri canali.

Federica Gasparini: Ci sono dei servizi on line sulla quale la città dovrebbe concentrarsi in particolare?

Interviewee B: Questa è un'opinione personale ma penso quelli sulla sostenibilità sarebbe importante. Per esempio, fare il calcolo dell'impronta ambientale dei nostri appartamenti, di quanto consumiamo, o per esempio dal punto di vista della salute si può migliorare veramente tanto. Anche il fatto che ci siano magari siti di engagement. Ne avevo visto uno recentemente, però c'erano dei volantini/poster in giro per la città in cui vuoi essere più così attivo nelle decisioni. Non so se fosse il Comune della Provincia e mi sono registrata, poi non ho saputo niente. Queste cose sono belle, dovrebbero essere più.

Federica Gasparini: Chiaro.

Interviewee B: E ovviamente che diciamo tutta una serie di cose che ancora avvengono a livello di carta. Mi sono sposata l'anno scorso e sono diventata matta per sposarmi. Hanno voluto un documento

cartaceo, il comune della mia città di origine. Ho mandato il pdf, loro non riuscivano ad aprire il pdf. Insomma, queste cose non devono succedere.

Federica Gasparini: Io ho fatto il secondo anno di primo anno di triennale, ho fatto tirocinio alla Camera di Commercio di Bolzano, era nel dipartimento di digitalizzazione e cioè io non ho mai visto così tanta carta in Italia che alla Camera di Commercio un minimo. E quindi non posso capire il senso.

Interviewee B: Sì, far capire ai cittadini come la digitalizzazione aiuta la sostenibilità, perché ovviamente facciamo, usiamo meno carta, eccetera. C'è un vantaggio economico ma anche sotto altri punti di vista. Federica Gasparini: Ok, perfetto. E allora terza dimensione partecipazione dei cittadini attraverso i social media. E comunque secondo me sono un passo molto importante. Possono essere utilizzati nella comunicazione con e informazione dei cittadini. Quello che è risultato dal questionario è che i bolzanini ovviamente usano i social network, per informarsi, per trovare informazioni on line ma non per comunicare con in comune. E hanno anche la percezione che la social media strategy della città non sia veramente moderna; quando paragoni a Innsbruck e Trento sono due mondi diversi. Anche il sito, cioè il sito del Comune di Bolzano, è abbastanza brutto e non c'è ti viene neanche voglia di andare a vedere e leggere. Non è intuitivo, non ci sono informazioni su niente e quindi volevo chiedere, secondo lei, anche con la città più "vecchie", se i social media sono importanti per una città per diventare più smart o se ci sono cose più importanti sulle quali focalizzarsi.

Interviewee B: I social media possono essere sicuramente un mezzo importante per raggiungere i cittadini, per decidere determinate cose, però bisogna anche considerare che possono non essere del tutto inclusivi a questo stadio, perché comprenderebbe una fascia di persone che sono già digitalizzate, poi possono essere utilizzate, ad esempio, per dire c'è un'emergenza. Oppure, secondo me i social media possono essere utili come strumento di monitoraggio dei flussi delle persone e quindi anche per prendere decisioni per quello che riguarda la mobilità. Quindi c'è bisogno di più autobus perché c'è un assembramento di persone, quindi può aiutare da quel punto di vista come mezzo di comunicazione. In realtà mi sembra aver letto anche un paio di studi che le città che hanno più follower sui social media sono anche quelle dove c'è meno engagement sui social media, quindi non è una cosa che mi convince al 100%. Però questa è la mia impressione personale.

Federica Gasparini: Ci sono dei canali digitali più importanti di altri? Per esempio, magari il sito è la cosa sul quale bisognerebbe concentrarsi di più prima di Facebook o Instagram?

Interviewee B: Secondo me sì, perché si presuppone che il sito web sia accessibile a tutti i mentre i social media bisogna avere un account eccetera. Quindi c'è già un po' una barriera per alcuni user è il sito. Poi puoi mandare al social media quello che vuole. Però secondo me è più importante sviluppare delle app dedicate a determinati servizi per la mobilità, che però non credo sia gestito dal Comune ma dal sistema dei trasporti. A proposito, se ce ne fosse una per la salute o per diciamo così, monitoraggio della sostenibilità degli edifici, eccetera, sarebbe secondo me anche interessante. E sito web è bene ricordare che fosse uno dei nostri primi suggerimenti al Comune. Una modernizzazione del sito web, sicuramente la cosa più importante.

Federica Gasparini: Diciamo che i social media, magari per le generazioni più anziane, potrebbero essere meno invitanti, anche se in realtà anche mia nonna ha Facebook.

Interviewee B: Facebook quindi però ci fa caso ai più giovani. Alla sua età avrà dieci anni buoni, meno di me. Non credo che i miei cuginetti di vent'anni lo usino.

Federica Gasparini: Io ce l'ho, ma non lo usa, per esempio.

Interviewee B: Esatto. Quindi io non so neanche se Tik Tok è un buon canale. Quindi bisogna anche calcolare che invece sarebbero le generazioni più giovani non essere del tutto raggiunte.

Federica Gasparini: Quindi? Diciamo che è il social Facebook che non troppo utilizzato dalle generazioni più giovani, magari Instagram sì. Però in ogni caso, e bisogna fare in modo di creare un ecosistema di social che sia inclusivo per tutti e che ovviamente anche solo per esempio, anche il sito. Io non so se io non andrei magari a vederlo dal pc ma dal telefono. E non so neanche se sia troppo bella la facciata dallo smartphone diciamo quindi sì.

Interviewee B: Si potrebbe fare la app nel sito della app proprio del Comune, da cui poi ci sono diversi pass per altri tipi di servizio. Con l'accesso SPID uno può direttamente accedere dall'app del Comune a una serie di.

Federica Gasparini: Lo SPID in realtà è un'altra cosa che un sacco di persone possono usare, ma questo o.

Interviewee B: Sì, non è user friendly.

Federica Gasparini: Infatti. E secondo lei, delle sfide inerenti ai social? L'amministrazione dovrebbe essere consapevole e stare particolarmente attenta, a parte, appunto, l'inclusione. Privacy?

Interviewee B: Probabilmente la questione della privacy è, come ho detto, più che usarlo per comunicazione e branding, sarebbe utile utilizzare i dati che vengono dai social media, appunto questioni di privacy. Ed è costoso, nel senso che se uno vuole acquistare i dati da Vodafone nei movimenti dei turisti, sono migliaia e migliaia di euro, quindi è una cosa particolarmente costoso. E poi un rischio che noi abbiamo visto essere molto concreto è che questi social media, hanno il rischio di diventare una specie di pentolone di lamentele dei cittadini, che si lamentano alla fermata dell'autobus danneggiata, la spazzatura che ne è stata portata giovedì e che diventa semplicemente aria, complaints, e che non è neanche, appunto, la cosa ideale.

Federica Gasparini: Questo è un problema grandissimo, che però c'è eccome. Come si fa a fare in modo che questo non accada?

Interviewee B: Bisogna fare una sezione dedicata per quello così la gente si sfoga, per cercare di indirizzare la comunicazione verso cose positive, appunto sull'inclusione. Ci sono questi eventi, venite o ci vuole qualcuno manager che veramente si guardi bene, tutti i commenti che cancelli quelli che sono offensivi, perché c'è tanta aggressività online al giorno d'oggi e quindi bisogna evitare che la gente esponga le proprie frustrazioni su questi canali.

Federica Gasparini: Se no questa è anche una cosa che anche l'assessore aveva menzionato. Il fatto che alla fine non c'è, non importa quello che fai, ci sarà sempre tantissima gente che si lamenta e tu magari cerchi di creare nella città più digitale, più inclusiva. E poi arriva uno che si lamenta di una cosa banale. Oggi il bus è arrivato 3 minuti in ritardo. Dovete concentrarvi su altro.

Interviewee B: Per esempio sul problema della democratizzazione di Internet, dove chiunque, può esprimersi su qualsiasi cosa.

Federica Gasparini: Sì.

Interviewee B: Spesso non è costruttivo.

Federica Gasparini: Esatto, esatto. Ok, perfetto. E poi, appunto, per questo è l'ultima parte che ha parlato di coinvolgimento degli stakeholder nei processi decisionali. Anche qua i cittadini non hanno la sensazione che la città misura abbastanza nei processi decisionali. Quando invece? La maggior parte dice che sarebbe importante che vorrebbero essere coinvolti di più, eccetera. E quali sono, secondo lei, i dei modi efficaci per coinvolgere i cittadini nei processi decisionali? Più.

Interviewee B: Ma forse anche fare dei sondaggi? Uno potrebbe mettere dei cartelloni per la città con un QR code le persone possono partecipare a sondaggi su determinati temi oppure a creare proprio un pool di persone interessate a quei temi che vengono invitate regolarmente a dei tavoli di lavoro. Quei tavoli di lavoro di cui abbiamo parlato tra diverse aree del Comune o altri stakeholders. Sarebbe bello che ci fosse anche una rappresentanza dei cittadini. Ci possono essere anche persone votate come rappresentanti di circoscrizioni dei quartieri. Però dovrebbe esserci anche il cittadino che passa per strada, diciamo così. Quindi bisogna cercare di quella divisione che la gente percepisce. Tra la politica e la cittadinanza c'è sempre più sfiducia, la gente va sempre meno a votare, eccetera. Bisogna colmare questo divario in tutti i modi possibili e questo può essere un modo sapere di essere ascoltati e che viene implementato quello che ovviamente queste persone suggeriscono se sono cose ragionevoli, fattibili perché questo è la sua domanda, foss'anche sulla frustrazione da parte dei cittadini. Bisogna anche fare management delle aspettative, perché è quello che ci aspettiamo dal Comune. Bisogna anche vedere le risorse, competenze, tempo e budget.

Federica Gasparini: Per vedere che cosa è fattibile. E il problema, anche, ovviamente, come già detto prima, è che magari certe cose vengono organizzate. Però il cittadino non ne è a conoscenza. E anche lì

come si può informare il cittadino? Si fa attraverso i social, si va sul sito e cartelloni in città o magari anche al tg. Secondo lei come si può fare?

Interviewee B: Dipende un po', ovviamente, da quello che si vuole comunicare in quel momento? Secondo me per ogni tipo di comunicazione c'è il canale più ideale. Un questionario spontaneo, la cittadinanza, quello del cartellone, soprattutto se fosse un pubblico vasto, potrebbe essere un buon metodo. Però se invece abbiamo un gruppo specifico di persone, diciamo così, di cittadini, si può fare una specie di mailing list o una newsletter per quelle persone. E ci sono diversi metodi che si possono utilizzare in base a quello che si vuole comunicare, dal momento.

Federica Gasparini: Dipende dal contenuto quindi. Un'altra questione importante già menzionata è il *misalignment* tra quello che la città sta facendo, e in parte quello che i cittadini vorrebbero vedere. Non sono a conoscenza di tante cose. Per esempio, ho chiesto un questionario se la gente sapesse cos'è *SensorCivico*, un tool del Comune dove la gente può commentare se ha dei problemi/suggerimenti per la città. Diciamo che non è un processo decisionale in sé però uno può partecipare. E veramente l'ottanta per cento dei rispondenti non sapeva cosa fosse. Quindi io penso: la gente non è informata e anche questo è frustrante perché uno organizza, s'impegna, porta iniziative nuove, cerca di fare il possibile col budget che ha a disposizione, e poi comunque arrivano le lamentele perché la gente non è a conoscenza.

Interviewee B: O siamo ad un punto della comunicazione per cui sì, andrebbe messo a caratteri cubitali. Sul web andrebbe messo un Internet. Anche cose che non costano come un'intervista con un giornalista dell'Alto Adige, un articolo sul giornale. Ci sono diverse cose che possono essere fatte anche a costo abbastanza limitato. I social possono essere anche un modo abbastanza economico di farlo. Bisogna andare sui diversi canali da questo punto di vista.

Federica Gasparini: E in ultima cosa più perché comunque secondo anche questi round tables, presentazioni, eventi. Lo so, io ho la sensazione che sia più una cosa dove partecipano gli adulti, magari dai 35 in su. Diciamo che i giovani della mia generazione non sembrano troppo interessati in generale. Come si può cambiare questa cosa? Come coinvolgere anche i giovani nella partecipazione dei processi decisionali?

Interviewee B: Ma qua si dovrebbe passare attraverso l'istruzione, cioè attraverso le scuole, le università. Ma c'è una signora in un altro progetto a Merano che aveva detto che bisognerebbe creare una specie di piccolo consiglio dei bambini dove siano loro anche a fare proposte. E perché? Io penso che questa generazione di giovani sia particolarmente frustrata. Si pensi al problema climatico...

Federica Gasparini: O il covid.

Interviewee B: Esatto. Non si sentono ascoltati, non si sentono presi in considerazione e quindi c'è molto più disinteresse da parte loro. Nessun engagement di stringere con la politica perché dicono cosa serve a fare? La gente non va a votare, soprattutto ai più giovani e questo secondo me si può rimediare solo andando nelle scuole, facendo educazione civica, cercando anche di farlo, magari facendogli implementare dei piccoli progetti pilota. Questo può far sì che le persone siano un po' più motivate, vedano un effettivo risultato del loro impegno. Questo secondo me può essere fatto a livello del Comune, perché loro hanno accesso direttamente alle scuole, agli asili, all'università, anche se università privata. Però sono sicura che anche con la facoltà di design si potrebbero fare delle partnership che potrebbero proporre metodi partecipativi. Quindi, ci sono tante cose si potrebbero fare a Bolzano perché c'è una ricchezza, come ho detto, di aziende tecnologicamente avanzate, un'Università che ha dei corsi di laurea che non studiano greco antico, ma si occupano di innovazione. Ed è un peccato che il Comune sia una bolla isolata e non riesca a collaborare di più con questi partner.

Federica Gasparini: Ok, perfetto. E allora le domande inerenti al mio framework sono finite. Volevo solo chiederle anche secondo lei se il fatto del fattore linguistico influisce un po' su questa cosa della smart city, smart city, governance, implementazione delle iniziative che magari anche lì c'è un divario, perché io ho fatto un questionario in tedesco e in italiano. È venuto fuori che la popolazione italiana è più a conoscenza delle cose che vengono fatte a Bolzano. Cos'è una smart city? Perché è importante? E allora Sì, volevo sapere un po' qual è la sua opinione a riguardo.

Interviewee B: Ma differenza tra apertura per smart city, tra gruppi linguistici, questa non è una cosa che io ho preso in considerazione, quindi non saprei rispondere. Quello che so è che ovviamente

complica le cose, nel senso che se si fanno eventi partecipativi, eccetera, ci sono spesso italiani che non parlano tedesco, anche se i tedeschi in genere parlano italiano e questo sicuramente non aiuta, nel senso che poi bisogna avere un traduttore oppure fare eventi separati che va contro il principio di inclusività, eccetera. E una cosa che vedo anche che molto raramente vengono prese in considerazione migranti o persone con un background migratorio che sono il 10% della popolazione, quindi anche loro andrebbero presi in considerazione. Quindi si può essere anche una ricchezza. C'è il fatto di avere questa diversità viene molto spesso vista come un ostacolo e non come una ricchezza. Poi sì, Bolzano, come detto, è una città maggiormente italiana e quindi si sente un po' la pecora nera dentro la provincia che ha di madrelingua tedesca. Mi sembra di aver notato durante il progetto un po' di attriti per questo. E questa è una cosa che va presa in considerazione.

Federica Gasparini: Quindi adesso non ci sono progetti in ballo con il Comune o Provincia?

Interviewee B: Abbiamo diversi progetti con la Provincia. C'è un progetto molto grande che portiamo avanti da oramai quattro anni, INSTO, che si occupa proprio di monitoraggio della sostenibilità del turismo in Alto Adige. Quindi abbiamo una serie di indicatori che ogni anno raccogliamo e facciamo report. E poi hanno avuto un progetto sulla mobilità sociale e quindi, come le persone riescono a far carriera sostanzialmente in Alto Adige, in base al livello di educazione della famiglia da cui provengono. Abbiamo questi tipi di progetti per la provincia. Su Bolzano non abbiamo avuto niente.

Federica Gasparini: C'è magari questa mezza idea di lavorare con Bolzano per diventare più smart. È proprio una cosa che voi dite: Ok sì, ma dipende dal Comune.

Interviewee B: Ma anche l'EURAC è grandissimo, nel senso che siamo 600 impiegati oramai. E ci sono diversi istituti. C'è per esempio per smart city a me viene in mente l'Istituto per le energie rinnovabili che si stanno occupando della digitalizzazione, del monitoraggio delle emissioni di CO₂, fanno parte degli esperimenti che ho fatto loro delle case nella zona più alta di Isarco mi sembra, e loro sono anche responsabili del progetto sinfonia che è stato fatto a Trento. Io non so però se sono fatte in collaborazione con il Comune. Questo forse dovrebbe parlare con qualcuno di quell'istituto. Noi siamo più scienze sociali, quindi non ci occupiamo dell'aspetto tecnologico ma dell'aspetto sociale. Non posso rispondere veramente. Sono parole che riguardano.

Federica Gasparini: Ok, perfetto. E allora io in realtà non ho più domande e non so se lei vuole aggiungere qualche commento. Opinione personale sull'argomento.

Interviewee B: La chiave del successo della smart city è far vedere i suoi vantaggi.

9.4.3. Transcript Interviewee C

Gasparini Federica: But thank you again for accepting my invitation. As I told you, it really adds value to my thesis to talk with experts in the field of smart city and smart city governance. And so maybe to start off, I would like to know from you what your role is about and what you're currently working on.

Interviewee C: Ok. So, I've been working at the Institute for a bit more than four years now. I have a double hat. So, on one side, I'm doing applied research and insight on the applied research. I'm not doing publications and everything, but more fundamental research on. I don't know if you're familiar with the Institute in general.

Gasparini Federica: Yes, but please explain further.

Interviewee C: Ok. I will recap that first. So, the smart city institute is attached to the Faculty of Economics and management of the University of Liege. So that means that we study and raise awareness around smart cities. But from the management governance strategy approach. So, nobody in our team is an engineer, right?

Gasparini Federica: Yeah.

Interviewee C: We have different kind of funding but basically, we do let's say fundamental research. So, publications papers because you're part of the university as well.

Interviewee C: We also do really on the other end of the spectrum, practical things like we organise events, info sessions and everything and in the middle, we also do applied research because we are mandated by the Walloon government. We are the academic refund of the smart region dynamic in Wallonia. And so, we also make the link between what's happening at the regional level and local level and vice versa. So, we produce a handbook's barometers, and different management model tools for municipalities and in this.

Interviewee C: I'm doing more the applied part of it so, Let's say I have a general expertise on the governance and the public management of smart cities. I have a particular thematic affinity with mobility, but I'm not only working on mobility. And so yeah, focus on training is also related to the planning of project, the monitoring and evaluation of those projects, actors' dynamics and so on.

Gasparini Federica: OK. Perfect. Nice. Thank you.

Interviewee C: And on the other side, let's say the other hat is that I'm also now the coordinator for relations and partnerships. So, I spend a lot of time on all these EU calls for funding and social building and everything.

Gasparini Federica: OK, great. Because that's also something that's going to come up a bit. The role of the EU in the smart city transition for cities.

Interviewee C: OK.

Gasparini Federica: Um, OK, so maybe I'll just get right into the questions. So, I don't know if I've, I've anticipated it to you, but within my research, I've kind of developed a framework that looks at like 4 different dimensions of like governance. The first one is, let's say, political strategy and perspective in terms of sports cities. So how does the city develop a strategy? How do they implement it? And in case of Bolzano, what came out from the research and was from the public survey is that there's kind of a lack of a strategic plan and a long-term vision. So, there are some initiatives that are being implemented. But if you look on the website like there's no clear guideline okay, this is how it's going to look like in 5-10 years. So, I would like also to know from you what do you think could be the causes. Why is it maybe easier for bigger cities to implement and come up with a strategy compared to maybe smaller cities and municipalities.

Interviewee C: So, I think there are possible different answers. I think the first one is that it's a one that can be subdivided, but it's about the term smart city itself. So, it was really a decade ago it started becoming this buzzword.

Gasparini Federica: Yeah.

Interviewee C: And suddenly everybody wanted to be a smart city. So, like mayors and others, they then went to international fairs. They met experts because the market has developed very strongly and the same. Let's implement that at home. It looks fancy. It's a caricature, but it's basically that, right. Yeah. This could fit to my territory. Let's do that. So that means that project has been implemented like randomly without thinking of a concrete path and how to really make sense of them. So, for me it would be one.

Gasparini Federica: Yeah.

Interviewee C: The second is again, related to the term Smart city. At the Institute we have like debates because sometimes we wonder if smart cities terms are the ones we should still use because the way we see Smart City is really about the sustainable transition of a territory with technology being as an enabler. And so, I also think that sometimes there are cities that do smart city projects, but don't think it's a smart city. So, let's take the example of mobility project. They would develop like you know, those scooters and bike sharing system and for them they just do mobility project whereas it's actually smart city, and because Smart city something transversal, you know it's not.

Gasparini Federica: Yeah.

Interviewee C: So that would be one thing. I think I don't know the situation in Italy, but if I compare here to municipalities, they often live in the rush. So day-to-day task and they don't have the time maybe to anticipate. Um, like companies would do for five years plans and so on. So now In Belgium when they start a new legislature, they aim to make this the five years plan. But it was not the case before. So, you come as you go. I don't know do you speak French a bit or not at all. I'm just telling you that because we published the handbook on Smart City strategies and my colleague Max developed a model called a smart city maturity thing. That is in French, but we want to translate it and explain why there are different reasons why maybe sometimes smart cities are not mature enough. So, in terms of also Leadership, you know, depending on who in the administration or the municipality takes care of the project. So, you might have like an employee that is really into a smart mobility or smart city or smart energy smart homes. But if it's the only one carrying out the project and maybe the mayor or local government doesn't really take it up. Then it won't become strategic. But if you have a strong leadership and openness then it might be more strategic.

Gasparini Federica: OK, perfect.

Interviewee C: So, this will be the first items I think about.

Gasparini Federica: Yeah. And so, what would you say are the most important things to consider when planning and implementing Smart city strategy?

Interviewee C: I would say first clear vision and definition of what is meant by smart cities. Um, as I said, some leadership and forward thinking. Openness to other stakeholders on the territories because municipalities cannot do it only by themselves and I would say that almost the first thing is identifying the needs. Because no matter how smart your solution is if it doesn't fit the public the desire will not be taken up.

Gasparini Federica: So, in this regard, you would also say that it's important to include the citizens in the planning?

Interviewee C: Yes, the only thing I'm not saying is that everything should rely on citizens because I think there is a tendency worldwide to say we must do citizen participation to citizen participation, citizen, blah blah blah. And I agree. But it depends on what, because, for example, some aspects of smart cities might also be to make, I don't know. Aspect related to intranet. You know for a municipality employee to work more easily and more seriously. I mean in this case you don't need to ask people need because then it's only the one who will make it hard for you that will participate anyway. So, it's about understanding who's the target of the service or of the initiative and making sure you include them.

Gasparini Federica: Umm. OK, perfect. And how would you say can that you the EU can support in this transition because I've also talked to some, yeah, to the it's like the city councillor for Smart City in Bolzano. And he said that often the EU provides like funds but at the end of the day it's maybe like very complex projects and maybe the right people are missing to actually implement them. You know it's okay give us the money, but then you also must know how to manage and use that money.

Interviewee C: I tend to agree with them. I think there's not a strong impetus from the EU, you know, like in some policy you have this really strong, like, again mobility policy and then you go down on national and local level and implement it. In this case, it's not. It's not the case because again, what is meant by smart cities is, is it just the digitalization of territories? You know, it's really hard because I think that some will tell you the support us a lot because they would focus on digitalization and there's a lot on digitalization.

Interviewee C: But yeah, it's more a matter of available funding. So, either research funding or

a federal fund funding or like interaction, but it must be taken up by the municipalities and their partners or research projects or you know. So, I think there is this smart city marketplace put in place by the EU Commission that can be useful, but I think it's not used to its full potential because it's still this very...and don't want to say boring on record, but basic page where all the info is there. They organise sometimes events, but I think all that difficulty coming in terms of support is again because nobody has the same definition and doesn't expect the same things from smart cities.

Gasparini Federica: And another problem that I saw within Bolzano. Instead, of course I mean first, as you say, smart city, it can mean a lot of things and it's it can be quite vague to say, OK, we want to become a smart city. And of course, there's a lot of initiatives that are city can focus on and it's a very broad topic to navigate. So, what would you say like coming from exactly a small city, small municipality, what would you say are the initiatives that they should mainly focus on? And engage with like, how do you set the priorities?

Interviewee C: I cannot do that because it will depend on every municipality and what's their objective? I can only insist on the initiatives that are needed, of course there are needs that are the same everywhere, like improving mobility or a building efficiency, for example adapting sometime public services to make them smarter and smoother. But I cannot say like they should develop bike infrastructure because. You know it, it would depend on the where it is because also, I have my opinion on what every municipality should do, but I don't know all of them personal.

Gasparini Federica: Yeah, I don't know. Makes sense. OK. Perfect. And in terms of, let's say this smart city branding. So, I think it's, let's say it's quite sexy for cities to sell themselves as smart. How can these smart city be communicated to the public in a way that is also really like attractive and makes them understand OK why it is important to become smarter and related to of course sustainability and digitalization.

Interviewee C: I think it will not be the same way of approaching it, depending if you're big city or small city, because Big City is there keen on being innovative because there are centres of economic activities, and you know innovation is important and you want to have good publicity outside of your country.

Interviewee C: So, for them I think it would be quite easy. What I see here in Belgium, but I guess is the same. Is that first it took us a lot of time to get smaller municipalities on board because when we're saying smart cities like, yeah, but we are not New York or London or Roma, you know, so that. Yeah, but it's revocable. It's a way of approaching it. It's about telling them OK you are different, you have different issues, you have different challenges and I mean the need for sustainability is not to be proven anymore, right? So, in this aspect, technology can - not must - help you on different aspects. So why don't you take advantage of it for having a more efficient way of being and processing? And I think that's how it should be communicating to the citizens about making their life easier.

And taking care of the technology, but not it's really not the technology for the sake of technology, because then people will be like having debates about 5G and data management and cameras, you know they would say that the surveillance, instead of really adding value to services.

Gasparini Federica: And do you think it's actually harder to kind of convince the main decision maker of a city or is it that not harder to actually convince the citizens that like becoming smarter can actually, like, facilitate their lives?

Interviewee C: I would say again it depends on the territories. Sometimes the impulse actually come from high authorities, so that's the best-case scenario for the development of the cities.

Interviewee C: Citizens also it will depend, I think, on a lot of things like, um, even, like maybe

the political colour, so to say of who is ruling that location because, you know, if you have a party, that is like, let's say more of the liberal approach. People would be keen of all of this, but if it's conservative that there might be more afraid or if they are green, there might be happy but worried about the impact of all those technologies and the environment. And so, it's really a case per case from.

Gasparini Federica: OK, perfect. And then how would you say is the best way for a city like a small medium city to measure their smartness? Cause I feel like that's also kind of a problem, let's say, like what local actors told me is that often they don't really know from which side to approach it because they're so new to this smart city topic. And Italy as a country gives a lot of guidelines on digitalization, but not on, let's say, other topics, topics like sustainability, inclusiveness, for example. How should a small city navigate it? Because of course we have a lot of KPIs, we have lot of metrics. But how would do you also hear how do go about prioritisation?

Interviewee C: What we prune here, so we distinguish two approaches to monitoring and evaluation. There is this inside out and outside in. Outside in is a performance measurement, really about taking existing maybe rankings and frameworks and adapt it to your territory and use it and implement it that way. Um, I think it's nice because you don't need to think too much about the indicators, and you can compare yourself to other cities. But it doesn't help you to improve your initiative.

Gasparini Federica: OK.

Interviewee C: What is really big is inside out. It's really based on the municipality strategy and it's really about understanding what the goals are and how do we measure them.

Gasparini Federica: OK.

Interviewee C: I will send you a presentation that I did recently at the Universities of Maastricht in the Netherlands, because everything that I'm telling now is in our and book #5 on monitoring and evaluation, that again is only in French.

Gasparini Federica: OK.

Interviewee C: Yeah, but you can have a look at it because it explains maybe how to develop and thing in evolution framework and I'll send you the presentation that is translated in English. So, you can refer to it.

Gasparini Federica: Perfect. Then that's also going to be useful later for the recommendations. So, then it's great.

Gasparini Federica: OK, perfect. Thanks. OK. So that was kind of the first dimension. The second one is a bit more practical. So, it's really about the, let's say, online public services that the municipality offers. And what I saw with the survey because I made a survey at the start to kind of establish a bit of a baseline what citizens feel like in terms of smart city and what came out is that like the citizens are generally speaking very confident when it comes to the use of new technologies, but that they are less so when it comes to using the online services of the city. And so how would you say can a small municipality create an ecosystem of public services that is actually like appealing and inclusive and that, you know, addresses also the needs of its citizens?

Interviewee C: Well, first, by including the citizens in the process and understanding who's at what stage. Because it might also be that there's just a part of the population that you cannot get online, and you must find a way to keep it offline for them.

Interviewee C: Yeah. And actually I would say this is the only approach because then you use your inner expertise and you work with experts to build it. But you must make sure that the system will be used.

Gasparini Federica: Umm, OK. In this regard, of course, digitalization is kind of at the core.

Gasparini Federica: How do we make sure that the whole population is on board, so not just to put everything online and say OK, I'm going to make it digital. But also, maybe say OK, maybe there's some people that still need it to be offline.

Interviewee C: Digital transition as you take everybody on board, but it's a matter of generation still. So, I think for the next maybe 10 years, we still have people that don't want to join online, and you cannot exclude them.

Interviewee C: Or if you don't want to have another system. Then you must have people that help those who cannot do it, you know what I mean?

Gasparini Federica: Yeah, cause actually that's a kind of a big topic on the agenda of the Smart city councillor because he's really focusing on this, OK, digitalization, but making it accessible to people in a sense that there's offices around the city where like more, let's say, elderly people can go to if they have questions. I think like that and that's also how he plans on let's say, involve the citizens more and to develop their digital skills. But do you think there's maybe also other ways to do that?

Interviewee C: In Belgium, they keep like a hybrid system so to say they encourage people to go online, but it's not exclusive. If you cannot make it, you can do it the other way. So I think it's you cannot do in the municipalities like OK now we switch to no, it's more about encouraging people up until the point you don't need the alternative anymore.

Gasparini Federica: So you would say that I mean with the kind of generational change we're just going to reach a point in which most likely everything is just going to be online.

Interviewee C: Yes, but it takes time. It's not a two-year job.

Gasparini Federica: Yeah. And in terms of services a city should focus on? Is there any services the city should focus on in particular or it's more about again seeing what citizens want and need and focusing on that.

Interviewee C: Exactly.

Gasparini Federica: Okay.

Interviewee C: And I mean, you can see it from record. You know, if people always ask if like 95% of the service is asking about a construction permit. Then you make sure you put that online, but it must be double checked that it's unique.

Gasparini Federica: Then the third dimension is about citizen participation through social media, because obviously social media is a very promising tool for city to communicate with citizens, but also to inform them and also like, of course, the Internet and social media penetration in Bolzano is quite high. Um, what do you think? What role does social media like really play for a city in becoming smart? Like is it relevant or it's something that comes a bit along the way?

Interviewee C: I don't know if you can include that in the smart development apart the fact that it's connected to Internet. I think it's a useful communication tool. A powerful one also because you get direct comments from the citizens and. But I don't think it they should rely on it like.

Interviewee C: You know saying "we have a Facebook page, we are smart." I don't think it's the case.

Gasparini Federica: Yeah.

Gasparini Federica: And do you think that there might be the risk that social because I feel like on social media, of course everyone can just go on there and say whatever they want and complain about whatever they want, even maybe not very aggressive and negative way. Do you think that if not control rightfully, it could become kind of a bit of a pot of negativity? Oh, and complaints in which people will never really acknowledge what's being done, but they will just complain and say OK cool, but actually, this has not been done well.

Interviewee C: Yes, but I think it's not something that is specific to public authorities. It's about the way social media works in general, but yeah.

Gasparini Federica: Yeah.

Interviewee C: And I can see that, for example, one of my former bosses in another job is now the minister for Environment, and each time she posts something like really not related, people complain about something that is not related to her. Like, yeah, that you didn't do that in like, I'll never be a politician because I don't want to be targeted like that all the time.

Gasparini Federica: Yeah, yeah, yeah, whatever they do, it's never enough. Whatever we do, it's like never enough.

Interviewee C: Exactly. And I think at that moment, they focus on the person. As if it was the institution itself. It's like for people, the concept about. The city is doing nothing, so that means that if you are the mayor, you are the city. You're doing nothing. And they don't consider that there's a person behind that.

Gasparini Federica: Yeah. So would you say that's also kind of a bit of the Challenges or risks other maybe that's a public.

Interviewee C: No, but I think you cannot not do it in the world we live because it's easy to communicate information. People are on the phone all the time, so you must have your social media.

Interviewee C: It just don't put too much expectation on them, but I think it's still very important mean of communication too with the citizen.

Gasparini Federica: Should it? Do you think it should be used for Communication or it's more kind of maybe more for inform as an information tool.

Interviewee C: To be honest I don't see the difference between the two things.

Gasparini Federica: Like as it should it be more like okay like a back-to-back communication between city administration and the public. Or more saying, OK, we put the information on our digital channels and people just retrieve it.

Interviewee C: Yeah, I would say second ones.

Gasparini Federica: Hmm.

Interviewee C: Except if you really decide to have something proactive like making a survey or asking people in the comments there, you can use it, but don't use it generally to think that what's being on the on the social media reflects the people's will.

Gasparini Federica

Okay perfect. And then let's see, like kind of a bit, the 4th dimension is about. Yeah, citizen participation, so also involving citizens in decision making. And that was in the survey. What came out is that citizens don't feel like the city is including them in the decision-making processes.

Gasparini Federica: But at the same time, when looking at the initiatives, Bolzano was doing quite a bit and there are some offices for citizen participation. And so why do you think there is this kind of, I don't know, maybe it's an issue in Belgium as well. I feel like there is kind of a mismatch between what the citizens expect and maybe know and are informed about and between and what the city is doing and providing them with.

Interviewee C: I think there are different dimensions.

Gasparini Federica: Hmm.

Interviewee C: For I think in those kind of questionnaires but device because people are keen to to complain.

Gasparini Federica: Yeah.

Interviewee C: You know, like we don't have words, but there are not many people that actually

try to have their word. They expect that someone would knock on the door and ask, hey, what you think? I think there is the fact that - I'm not a specialist in citizen participation - but there are people who are and what they also find is that basically, when you have citizen participation, it is really a hard process to follow. It's always the same people that come. Those are all really like civic engagement people and even the other ones that are invited, they don't always come because it's not a priority for them. And when they come, maybe after two or three sessions, if they see that it doesn't change anything, they don't come anymore.

Interviewee C: So, it's something a bit risky. You know there are different levels of citizen participation, like from information to co-creation and co-decision making.

Gasparini Federica: Ok. Yeah.

Interviewee C: But it depends also what is meant by public participation. Is it just because you want to inform them or have their opinion?

Gasparini Federica: Umm yeah.

Interviewee C: I have the impression I'm making publicity, but our second and book is about that.

Gasparini Federica: Yeah, OK. But I will manage. Do you think - because that gives me a better impression that maybe OK people are not as interested in participating - they're just like, OK, I'm just going to complain, but don't then actively, like. Yeah, cool. Engage. Cooperate Co make the decision. Do you think that's a problem in general, or is it particularly to be seen in maybe smaller cities in which this kind of co-participation thing is still new cause it's yeah, modern?

Interviewee C: No, I think it's everywhere because also in, again, depends on the territories, because you have maybe a culture that might be stronger in rural areas because people everybody know each other and they know the local mayor is like the cousins of their friends and you know, like really this local dynamic. And I think you have more people participating also in cities because you have more people in the cities.

Gasparini Federica: Yeah.

Interviewee C: So again, sorry I'm not giving clear answers, but I think it scares case per case.

Gasparini Federica: Umm, OK and yeah.

Interviewee C: And there might be papers that tell you strong information about that, but I don't know about that, so I'm just talking about my personal feeling and obviously; So in for example, in Belgium you would say it's, but probably also in Italy. It depends on bit on the municipality. And I would say that in Belgium, maybe it's stronger in bigger cities than smaller just because they have the time and the resources to hire people to take care of that.

Gasparini Federica: Yeah.

Interviewee C: Um, but maybe so then for me it's more on the supply side like.

Gasparini Federica: Hmm.

Interviewee C: You need someone who can take care in the administration and maybe in small municipalities, they don't have time for someone to take care of that or they don't have the money to hire a consultant to take care of that.

Gasparini Federica: Yeah, but that's also one of the issues that the councillor mentioned. Maybe they even know, ok, this is what we should implement. This would be nice to have, but often they just don't have the resources, and not just funding, but really in terms of people, you know, because at the end of the day, you need people to implement these kinds of things.

Interviewee C: Exactly.

Gasparini Federica: But then it's kind of a vicious circle because you don't have the people, so you don't implement it and it's kind of always the same.

Interviewee C: Exactly.

Gasparini Federica: So how do you tackle that?

Interviewee C: I don't know. It's something I see every day as a problem, and I haven't seen a solution working so far, but sometimes municipalities do is that they rely on other local actors like NGO or non-profit.

Gasparini Federica: So outsourcing kind of.

Interviewee C: Yeah, but it's not even outsourcing. For example, in Belgium you have all those kinds of local agencies that are not part of the means parties, but they're attached to it for, I don't know, business purposes or whatever and they take care of it. But it's on specific matter so.

Gasparini Federica: Yeah. So would like a potential solution would be to call, yeah, to just also do more partnerships and collaborate more also with outside actors?

Interviewee C: Yes, but then you asked me that and you open like another big black box, that is collaborations and It's not always that easy as well.

Gasparini Federica: Yeah. OK. Just to go back to the yeah decision making, how to involve them and if you say that, OK, some a lot of citizens are not that interested, how would you say could be ways to involve them more and kind of engage them more as especially with the younger generations.

Interviewee C: I think younger generations are way more involved than older generations, but I would say it's about reflecting on the needs again and Um, do we want to talk to them about smart cities, or do we want to talk to them about how to make sure they don't need to take the bus every day and at the same hour in the morning because our other alternatives, you know, it's really about talking to the needs. Um and the needs being large because my feeling is that there's also a big part of the younger generation whose need is: we need to address climate change. And so to put it through that lens and say, OK, look, it's smart cities, but it's not about just technology, it's about making sure that those different challenges are taken care of.

Gasparini Federica: Umm, OK, so maybe you'll be more kind of straight forward about it in a way and say these are the things that we can actually do, that will change your life and improve it.

Interviewee C: Exactly.

Gasparini Federica: OK. Well, that was it.

Interviewee C: Good. I'll be happy if you can send me your thesis when it's done. Thank you. Bye bye.

Gasparini Federica: Okay, perfect. Thank you. Then we'll keep in touch. Have a good day. Bye.

9.4.4. Transcript Interviewee D

Gasparini Federica: OK, perfect. So, thank you again for accepting my invitation. So, the first dimension I would like to talk with you about is let's say political strategy and perspective in terms of smart city, what has appeared from my primary research and desk research is that Bolzano appears to have kind of a lack of strategic plan and long-term vision which is also perceived by the citizens through the survey that I made. So, I wanted to ask you what you think could be the causes for this lack of strategy, considering that it's a small/medium city?

Interviewee D: I think the reason is probably that nobody in the city government really found himself or herself responsible for it to try and make some effort, to establish a strategy. I work in the field of smart city in Switzerland since about 2015 and the trend for smart city rose let's say five years ago. So, in 2017 and 2018, and then finally some leading cities started to formulate smart city strategies. Then the main cities in Switzerland came up with smart city strategies.

I also compared some of them because I was occupied by the smart city strategies for two cities, one is the city of Wil. We worked for the elaboration of this multi strategy there.

When it comes to the creating a strategy with the population, with the task to participate, the inhabitants did from the beginning on in the other city which was Thun, where I was smart city officer for one year where we set a kind of basis for smart city strategy.

And during this work I also compared some Swiss smart strategies and there are two which I have found relatively good. I think this was the strategy of the city of Thun and also of the city of Winterthur, and I also think that XY made some substantial work, but apart from that, most of the of the smart city strategies I have found so far are not very substantial.

For many cities, it's more a marketing tool than the real strategy.

Interviewee D: I rushed through the questions and what is the most important things to consider in planning and implementing a smart city strategy is that you must make a choice at the beginning if you want to integrate stakeholders and the inhabitants from the beginning or at a later stage. Both is possible and both is valid, but you should be clear about this.

Interviewee D: In the literature, it is recommended that a city should start the participation right at the beginning. I think this is very interesting and we had a very, very interesting task to fulfil for the city of Wil in this respect. It was also very successful because we got, we gained a second place in a challenge, a competition in Germany which was called community guitar, and we also could present our work at the National smart city progress in 2018.

Gasparini Federica: Can I ask you something?

Interviewee D: Of course.

Gasparini Federica: Because talking to also other let's say experts, what they were mentioning is that what is often kind of a challenge, maybe you had the same, was the lack of let's say funds and resources both in terms of like budget and finance, but also people that have the right competencies and capabilities to actually like initiate such as smart city strategy and projects and initiatives.

And do you agree with that? Do you think that it's not the real problem and you can find the funds somewhere or I don't know what your experience is with that?

Interviewee D: I don't know about the situation in Italy. I can tell it about Switzerland, I think that a city, a community, if it is really interested to do something in smart city, usually the funds are, should not be the main problem because they have a city budget with which they already move important funds. They just have to be courageous enough to take part of the funds they already have and cut a little bit out of it to start, maybe with the strategy or with a small project. And if they want to go on with larger project, usually the large companies who offer smart city solutions in most cases have business models which should allow to generate the funding by the project itself or in Switzerland. There's also some public funding around I don't know about. If this exists in Italy, but as far as I know from news, Italy has got so many funds for rebuilding the infrastructure and everything after Covid-19. So, the money should not really be the problem. And in my experience the money was not the key issue. The main problem to my mind is more the political decision making. But to go back to the question before: How to start the strategy that there is two options. Either you start first only within the administration and then you go public by acquiring stakeholders or by acquiring or by including the population. What we have done in Wil by participating in the population, we asked the people. Maybe we told them they should mention that Wil already has reached a good quality of life and is ecological sustainable. And we are in the in the year 2040 and now they should tell us how we did reach this, and they should tell this according to each field of each section of the smart city (see wheel).

Interviewee D: We finally got some answers from the population which referred to the main 6 dimensions of smart city, and we did the same with the city government/the City Council, the politicians, and the heads of the city departments. And we did this to the working areas, to the working fields. And so we got two impressions which we integrated into one picture, where we also derived some priorities which is the main priority wasn't smart environment, but smart living.

Interviewee D: We obtained the priorities from the city government and then we put this together into one wheel which shows the main issues which are to be preferred in the start of a smart city process according to the Questionnaires. According to this, we could identify the dimension of the cell smart city she will head towards and the main focus for the city of Wil. We calculated this and then we could offer some measures for some projects.

Interviewee D: Oh with regard to this priorities, we suggested some projects which correspond to this priority setting. Do you understand what I mean?

Gasparini Federica: Yeah, yeah.

Gasparini Federica: Like the fact that you had such a central role in the smart city transition, I don't know if it's from public or the private was it? Is it a major who said OK, I want to have people working on this.

Interviewee D: It was started by the city government.

Gasparini Federica: OK.

Interviewee D: And it was also paid partially by the by the city government. But we also had some funding from a national fund.

Interviewee D: I have seen in your questionnaire that you also have some questions about, old and young generations.

Interviewee D: This is also something that must be focused on, so we did some focus groups. With young people and with old people trying to find out what are their needs. The main response was that it would be an advantage if they would have a place where they can get in the information and service regarding Smart City for the old people, they are very interested in tickets realisation. But of course, for the no digital natives it can be difficult.

Interviewee D: And so they would appreciate if there would be a location where to get advice and stuff like this.

Interviewee D: And for the Youngs, which was interesting. They wished to location, which was digitally free, which was a how do you say this?

Interviewee D: Abstention. Something like this.

Gasparini Federica: But do you think that because it seems and makes me feel like the citizens were already quite aware of, like, say, the benefits of like becoming a smart city.

Gasparini Federica: What, for example, um? I don't know. Maybe that the feeling I have is that often, maybe in smaller cities they feel like that's not really something that is needed compared to like Metropolis. Because that say that the challenges may be different. But in your case, it seems like the citizens were already quite informed about the benefits and you know about digitalization, inclusion and all of that. How yeah, how it would benefit and maybe facilitate their lives.

Interviewee D: No. Uh, the word at the beginning. At the start of the project, we had some groups of pupils at school which were part of the project and I think they had the age between 12 and 15 or 12 and 16 or something like this and they spent one week at the end of the school year (...)

Interviewee D: Parallel to the project, we did some communication to get the people more informed, but the venue that formed in the beginning and the risk of smart city is that with this

large amount of different subject it's an overload and it's too abstract for the people to understand. So therefore, it's good to focus on the three main issues of Smart City, probably you know Smart City Wien. They did very well to focus on the three main issues which are quality of life in the future. Innovation which means not only technological and digital innovation but also social innovation. And the third one is the colonisation and energy efficiency. And these three main issues are all the stories to tell.

Interviewee D: And one guy from Munich told, which is very interesting, that Smart city it's not always very complex, but it can be very simple. For instance, if you have a bus station or a tram station and you make a roof, the people don't get wet when it's raining. That's smart. City is often very easy.

Interviewee D: How it is possible to get into contact with the administration and so on? it's smart city. It's not just a list of projects, it's more, it is a different approach. How to cover an urban area and it's also a philosophy. It's a philosophy not to separate into silos but trying to bound to overcome the barriers which usually exists, and this is also the main problem, because to be honest, my experience is this doesn't work really doesn't work properly because the administrations in the cities, at least in Switzerland, are strictly regulated.

Interviewee D: For instance, what happened in Wil is that we were too quick. We suggested them a lot of measures for projects which are connected to this strategy, priorities, strategic priorities set by the city government and the population and right after the conclusion of this project, we started to acquire new funds for the execution of this project. And then nothing happened which was very upsetting for us because uh, there was a change: In the position of the mayor before there was a woman who was very engaged and very active and she switched career to the next political stage, she acquired a position in the Canton and a man was followed in. This was a very lazy guy who didn't make any decisions. So, there was a standstill for two years.

Gasparini Federica: Yeah. So more like political so often, it's difficult to fulfil this project if there is no, like political continuity kind of in that sense.

Interviewee D: Yes, and but this is the reason of frustrating.

Gasparini Federica: Yeah.

Interviewee D: Then there was this new mayor election, the old mayor was sacked, another mayor came in and then they restarted in particular with mobility sharing but we weren't part of it anymore. They did this with other consultants and then they established a very innovative sharing mobility programme, which is one of the leading legal probe programmes in Switzerland right now.

Gasparini Federica: OK.

Interviewee D: But it has also a very good national funding. It's called Mona more. It's a specific category project, so.

Interviewee D: Do you know the hype cycle? This is the hype cycle. Uh, first you have AI for real. This area, which is very often connected when a city starts with smart city. But this is an overload of expectation. This doesn't work. Then there is the valley of disappointment. And then you have the value of this satisfaction. And then you have the path of enlightening where you really can start to be productive.

Interviewee D: It's very difficult for the decision makers to endure this, but this is also one of the reasons why a strategy is needed, because if you have a strategy, you know you will still go on.

Gasparini Federica: Yeah. So how do you manage this mismatch of expectations? So, I'll just start, maybe there's a big hype and also citizens are very involved, and they are excited to see

these new things being implemented and then maybe not everything happens as fast as they would like to. And maybe then you had to get disappointed, and they say OK, but actually nothing is being done. Have you experienced that in real life, this kind of misalignment?

Interviewee D: I have experienced this in real life, and I have observed it in many cities in Switzerland and in most cases, to be honest, it's very sad.

Interviewee D: It's the case that people who work in this position, who take responsibility for this change, so they will lose the job, either because they are fired, or they leave because they're very frustrated and we were very lucky that we had one guy. He's a friend of mine who managed this value of disappointment and then he also could manage the productivity, but he left the city now after some success.

Interviewee D: And the other problem is that usually the main political drivers are very cautious, they're very anxious. They don't want to take any risk. They usually want just to do things which are like in the administration but if you want to start Smart city, you must understand that you cannot be always liked by the administration guys or by the people who working with the administration because how administration works is totally against the concept of smart city. So, you have to show some willingness to overcome the rotational structure.

Gasparini Federica: Okay.

Interviewee D: And let's go on with the questions, for instance, we tried it the other the other way around. We did not start with the population.

Interviewee D: This was also a very interesting approach, and this could be very successful for Bolzano. Particularly if there's a lack of money.

Interviewee D: In June, we started with acquiring stakeholders who are interested in taking part to the smart city process.

Interviewee D: We did this along 4 layers in the decision-making process of the city. Here are the workers of the administration, here are stakeholders and then there's the inhabitants. And we started with these first three layers. We didn't work with the first layer and with the fourth layer at the beginning. And it was very interesting to see that there were many people. I for instance, I did the starting event to gain stakeholders and it was the beginning of the corona time.

Interviewee D: And we had what was the first lockdown in Switzerland, so we did this online with some video sensors on. But after this meeting, we had about 40 people who showed interest to take part which was very interesting. Most of them there are people from the economy, small and medium companies, which are interested in technology. One guy is very competent with drones and other one had a system of geographical information. One had a software company for money transactions and so on, they were very keen on cooperating with the city.

And I just started to cooperate with them. But then there was a blockade from the administration workers because it was too quick for them. We wanted to establish mixed groups subject groups that where one part of the group is built by people from the companies and social initiatives.

To sum up, the pool of stakeholders was very interested to cooperate with the city administration.

But in the city administration, there was a lot of anxiety that this would overload the workforce of the city administration. The idea was to make joint groups subject groups who cooperate on different ideas which are relevant for the development of the city, but which also could use the potential know how of the small and medium enterprises located there and so make the city more competitive, location competition on economic terms, but also to produce more devices which could increase the quality of life.

Interviewee D: So it was the same in Wil but a little bit different. It was stopped, I left the

administration and 1 1/2 years later they retook it and started again and they also acquired a subvention for some funds from the National Party and now the IT also.

Gasparini Federica: Yeah, so very slow.

Interviewee D: Took two more times and they restarted this process and now as far as I've heard, they are preparing a participation scheme, which is a very interesting software solutions through the 1st to a social media stuff, to integrate the inhabitants into the participation in an electronic way, but it's also always very interesting if you do some participation in the digital way, you also need it in a non-digital way not to discriminate the internet illiterates.

Gasparini Federica: And would you say just because we were talking about digital channels, would you say social media or so like the website, it's a tool that a smart city should use to communicate with its citizen and also inform them or maybe just to do the one of the two?

Gasparini Federica: Or maybe it's not as relevant as it might seem.

Interviewee D: If they should communicate?

Gasparini Federica: Yeah. Social media, should it be used for communication or just information or for both?

Interviewee D: Once it's good to communicate within inhabitants and it's also good to involve them, but in my experiences, it's good that the city government administration takes some time to first know what they want. The problem is if you make it for smart city to make it successful or to integrate the population?

Interviewee D: You can't go out and say "We are smart city now" because it's too abstract. You have to connect it with something real which is going on to with some project which can either be mobility or smart energy, smart parking and so of course then you get into the risk that people are getting aware of Smart City. Mainly focus on this project, but this is better than nothing if you come along with the whole concept, it's very difficult to understand. But for Bolzano I think this should be easy because they've done a lot with the Symphonia. If I was in Bolzano, I would try to communicate the successes of Symphonia.

Interviewee D: I think 2019 or something I took part in a Congress in Innsbruck which was quite by the end of this Symphonia process. But I think as far as I know the project was more or less successful. And so I think that Bolzano should have something to show to the people.

Gasparini Federica: So be more concrete in the communication and say these are the things we're doing and maybe really showcasing the benefits of it.

Interviewee D: Yes, yes.

Gasparini Federica: OK.

Interviewee D: But I think they have something which they can show. How can the EU support this city transition? Yes, of course. Then there is some funding.

Gasparini Federica: Do you think it's enough to just provide funding, or should they also provide more let's say, resources? Like, I don't know, like experts, people that are familiar with the concepts, professionals.

Interviewee D: I don't know. I mean, there are some programmes which are very ambitious from the European Union and which give proper funding. The problem is that the level to reach this, this funding, is relatively high, so you need, you need to invest first in smaller projects to get this to reach EU funding.

Interviewee D: And for instance, if the guys in Bolzano would like to make a programme, I could try to think to find some cities in Switzerland which would like to cooperate. This could be interesting. I mean, I haven't worked in Italy, but I have worked in Austria and in Switzerland and the South of Germany. But I know people there. So because for EU funding you need at least three Member States.

Interviewee D: Switzerland it's not a Member State, but they can take part in some of the programmes.

Gasparini Federica: Hmm. OK, perfect.

Interviewee D: In terms of smart city initiatives and which ones to prioritise, they should focus on where they have a specific need or a specific opportunity at the moment.

Gasparini Federica: Yeah.

Interviewee D: Every smart city is different and a good smart city reflects the needs and the challenges which are necessary there on site. So, find the subject where they have an advantage because they are good in something, or they have a field where there is a very high need.

Interviewee D: And to find out there. I mean the advantages of this low hanging fruits which are recommended to earn the question centre. And where they have this specific need, they can find it with this kind of deal dialogue.

Interviewee D: We recorded smart community dialogue and from this smart community dialogue we also derived our name.

Interviewee D: How can I navigate the progress of this topic? They can navigate it along the small city wheel, both the smartness of the city as well as the governance.

Interviewee D: Next, city branding is very important. But to start with the branding it is advisable to make a stakeholder analysis and consider which stakeholders could be on site and could be interested. Because the power of your brand is strong. If you have many forces, many sources who use this brand, who invest energy or money or communication efforts together in this brand. So it's better to save some time with coming up with the brand. It's better to integrate the key stakeholders and multiply doors built the brand with them. Together, hoping that they also will transfer and support the brand.

Interviewee D: For instance, all the shops and magazines in the city are extremely important. If you can find the brand which is shared by them and which is also supported by them, it's much more powerful and it also can support the shops in the centre which most of the time are very under pressure.

Interviewee D: How do you measure the smartness of the city? We did 2 projects to measure this. It was very, to be honest, very frustrating, and very difficult because it took years. I started an initiative to measure this in 2018. And we got funding for this project right now. So you know, it took 5 years so and it was annoying for me that this did not drive any longer. It's a colleague of mine who does this now. An interesting project for Bolzano could be smart city monitoring. Gasparini Federica: But are you using also some kind of specific KPIs and metrics and if yes, is it something you develop kind of internally or do you take, I don't know, frameworks from the EU or the OECD or other entities?

Interviewee D: We actually did a pretty research project on this where we tried to find this out, what KPIs can we take on, what KPIs do already exist? And then we made interviews with five or six small city offices and also, we made an online questionnaire and the main result is that there exists already a lot of different approaches to measure the quality of life, to measure city progress and so on, so we decided it's not good to come up with something very new because. All the administration workforce is already very busy in different projects so the approach we try to follow now is to rely on already existing programmes, for instance, in Switzerland, there's a lot, there is only to have quality for children, there is energy, which is in Italy's energy, European energy awards, their risk, climate, city (...). So instead of coming up with something new, we try to integrate different projects. Put different indicators to have an overall overview. Something like this.

Gasparini Federica: OK.

Interviewee D: But there was some interest. 60 cities told us they would be interested if we tried to negotiate with the national level if they would fund this project of giving points to see what has to be improved and what is already good. But it was very difficult to gain some funding, so I didn't continue to be honest, we have still this project in the pipeline, which is called Smart City Check 2.

Interviewee D: I tried some effort to get this running, but I was too tired of always trying to motivate some people to get some funding for this. And they did other projects which are easier to fulfil. The problem is for a project like this you need you need many different sources of funding, and you need too many people. So, it's easier to make smaller projects.

Gasparini Federica: More about maybe a last question about digitalization and developing digital skills. I don't know if this is an issue that you have encountered, but how do you see it with, for example, online public services should, should they be all online? Should it? Should it be a hybrid?

Gasparini Federica: How do you also maybe teach older people to be digitally proficient?

Interviewee D: Yes, for the city of Thun I introduced a so-called City App or Citizen App with which you can gain the most important and most crucial information about the city.

Interviewee D: If you do any services only on an online basis, it's discriminating for all the digitally illiterate, so they cannot do this. You always must provide some point of information.

Gasparini Federica: Yeah.

Interviewee D: With the real human person who answers the questions or give some leaflets or questionnaire whatever, you always need to have multiple channels.

Interviewee D: Municipality community must care for everybody. You must find a hybrid solution because otherwise you're discriminating too many people.

Gasparini Federica: Hmm. And how are you looking in the future, where digital services are going to be more common than non-digital? How do you see like developing the digital skills of citizens?

Interviewee D: There was a trend in Switzerland also which I occupied myself some time with, with the city apps and community apps and apps to get people more involved into something. Oh, but the experience is this. Apps must be very good, and they have to include very relevant topics that they work. You have always to bring a lot of different functions into one app and something which is very relevant. Most of it are very easy things. For instance, parking app. If you can pay your parking bill with an app, then this will be used, and you can combine this app with some information from the city.

Interviewee D: Oh, shopping opportunities events. Some environmental issues, stuff like this. You have written on Section 2 that digitalisation is the core of the transition. How can citizens do? The whole population is important! To get the message, the digitalisation is not the core of the transition, it's just a part. It's a tool. The main topic in a small city should always be on the quality of life of the inhabitants. If you have this topic, it's interesting and it's relevant.

Interviewee D: In the city of Vienna they made a triangle for the three main issues of smart city and a city should be focused around these three main focal points. It's quality of life, it's innovation but not only digital innovation. This can be also very simple low-tech things.

Interviewee D: A lot of things in the city ministration are innovative. If city administration uses all the information, they have already it would already change a lot.

Interviewee D: And the information is there, but it was only used within the administration. So, the key issue was OK, we have the information, it was always already here. We just have to publish it on a website. So even in a small city like Wil and Thun, which are way smaller than Bolzano, which has like 100,000 inhabitants. Thun is only 44,000. I'm sure every town of this

size has a lot of information to use inside the administration. And if the different bodies within the administration work more together, they can develop these tools. They can discover these tools and bring it to the communication. The communication guys often didn't know that this information existed in administration.

Interviewee D: You also ask how computer skills can be developed and how can citizens be involved? There exist different tools for online participation. You can do a lot with this. The best one is *insert name*. I don't remember the name though in Switzerland. It's a tool from Barcelona, an open-source participation tool. But the best one, I don't remember the name, I have look it up. I can send you the link, it's from Finland. They developed this in Helsinki.

Interviewee D: Fortunately, I have spent some time in comparing systems like this and this is the best one to my mind, or at least it was two or three years ago. Maybe the city of Bolzano can work well with it.

Interviewee D: When the participation tool is a good one, you can do a lot with it and then then the people will, if they see that it is relevant, they will involve themselves. For instance, you can do a participatory budgeting. You can say we want to spend let's say €20,000-30,000 on some projects for you and they can decide on which projects. If you do things like this, you can involve people very easily. The problem is often not with the citizen. The problem is with the structure of the administration that you usually have.

Interviewee D: In administration you have many small kingdoms, and every king of his Kingdom does everything to defend his Kingdom, so usually the administration parties cooperate only as much as necessary, but not more. And this is the main issue. So, if you go out as a city governor to the population, you must first ensure that you can break up all these little kingdoms and make it 1 Kingdom for all, for the population, and this is the most difficult task.

Gasparini Federica: Yes, makes sense. I think we've covered quite a bit. I have another meeting in 10 minutes and I'm sure you will have also other things to do. So, I don't want to take too much of your time.

Interviewee D: Yes, I see, I like this subject. Therefore, I wanted to answer all questions in detail, and I tend to talk too much on this because it's very interesting.

Gasparini Federica: No, no, no problem at all. It was very interesting.

Interviewee D: Let's come to an end then.

Gasparini Federica: Yes. I don't know if you want to make any final comments, if there's anything else you would like to comment on.

Interviewee D: Yes, I will send you some material after the call.

Interviewee D: If the responsible person wants to, maybe you can send them to me to do something in the field of smart city. I would be interested to talk to him, how he can be supported or if we could support him in any way, maybe.

Gasparini Federica: Perfect. Then I would appreciate it if you could send me any material. Also, the one we saw together, I would really appreciate it.

Gasparini Federica: And then if I have questions, I can reach out to you on mail or LinkedIn as you prefer.

Interviewee D: After next Monday I will have more time. Anyway, remember to involve stakeholders in decision making, it is very important, but do it step by step and find the issues which are relevant, then the people are interested. If you come up with something which is very abstract and nobody does understand, nobody gets an interest.

Gasparini Federica: Yeah, of course, of course.

Interviewee D: Okay. That's it. I have a long list of paperwork I can send you this evening.

Gasparini Federica: Thank you again.

9.4.5. Transcript Interviewee E

Gasparini Federica: Introduce yourself and explain maybe what you're working on right now at the moment.

Interviewee E: Sure. So my name is X. I am a researcher, a senior research associate at the Smart City Institute at HEC Liege in Belgium. It's a management school attached to the University of Liege.

Gasparini Federica: Yeah.

Interviewee E: And I have been there for around three years now. My background is in political economy and natural resource management. So I'm really interested in sustainable transitions and how we can use technology to support these. And what I am working on right now, I kind of have two different projects and my dog just jumped up. So let's see how that goes.

Interviewee E: Um, the first project is kind of ongoing since three years. I'm working on governance of smart cities. So how different strategies and policies can be used to support sustainable and smart territorial transitions? And then the 2nd and that's kind of a broad project with lots of little pieces here and there, and then the second project that I'm working on is a project with a lot of institutions, so it's really focused and it's on the concept of the just transition. So how can we have a carbon neutral future and transitions and processes towards this carbon neutral future that is just that doesn't leave any individual or place or territory outside of the benefits that a transition can bring.

Gasparini Federica: OK, perfect. Great. So maybe I can, I'll just explain to you quickly how the interview will be structured. So as I mentioned, my thesis is about smart city governance and how that affects like small, medium cities and the case study I'm analyzing is Bolzano, which is my hometown. It's a small city in the north of Italy. And so for this, I kind of developed a framework where I consider four different dimensions that I would like to investigate further in terms of governance, which are the political strategy and perspectives, Smart city ecosystem of the online public services, digital engagement and social media, and then involvement of stakeholder in the decision making process.

Gasparini Federica: And so if it's OK for you, we can start with the first dimension, which is more the strategic aspect, which I personally find to be the most interesting one.

Gasparini Federica: So basically actually what came out from the primary research and the desk research is that Bolzano appears to lack a strategic planning kind of a long term vision. So there's a lot of initiatives being done here and there. But also if you ask like the citizens, they feel like there's a long term vision missing and so my question to you is maybe like what do you think could be the causes of this lack of strategy?

Interviewee E: So what we have seen in the Belgian case, which is almost only smaller/medium cities, if we can even call them cities, is that when there is not a lot of certainty, when there's not a lot of capacity and knowledge about the smart city concept, what governments do is they start with one or two projects to kind of test out the area, the domain, the thematic in their territory.

Gasparini Federica: Yeah.

Interviewee E: And this this makes sense because why are you going to put all of the investment into a huge strategy when you don't know how it will work? Because Smart City, when you hear about it, you think about a big city and all that, but what can happen is if the city doesn't kind of consolidate these little projects is that there is no overarching framework that kind of houses them.

Interviewee E: And you start to see initiatives that pop up in different themes that are all labelled with the smart city approach. But actually there's nothing really coherent that ties them together.

Gasparini Federica: Yeah.

Interviewee E: And on the other hand, what some cities do to avoid that is they realise one or two of these projects that they know worked out really well. And so now we're going to formalise our strategy and this is really making the political commitment to figure out what makes sense in terms of smart city approach for their territory, identifying the different themes that matter the most for them based on an understanding of their local context.

Gasparini Federica: Okay.

Interviewee E: And then really writing down a document, I would like to say with the participation of citizens, but in reality that almost never happens, although I think it should happen, normally it's a really top down approach with a couple of government administrators working on this with some political leadership. So the mayor's to define the strategy, but I would think, I don't know the case of Bolzano at all, but I would think that it could be related to this. They had this idea that they wanted to be smart city. They didn't know what to do. They started with a couple of projects.

Gasparini Federica: Yeah.

Interviewee E: And then it's difficult to tie them all together if it's not done shortly after the launch.

Gasparini Federica: Yeah. Because I also talked to the councilor that is the one of the Council from the city that is responsible for participation and smart city. And he said that a big problem is of course, also kind of the lack of funds. I don't know how you see it because I know of course there's like national plans that provide funding. But he said that it's still also to get that funding you need to have the right people that like invest their time. Like let's say the application to apply for the funds.

Interviewee E: So again, the case of Belgium and specifically, Wallonia, Belgium, is a very crazy country. There are three regions, it's federal and the regions have a lot of power. So when we talk about government, higher levels of government support, it's almost never the federal or national level. It's almost always the regional level. And in the case of Wallonia, which is a region, they really push the smart city concept. And because of this, they put in a call for projects, lots of financing. They have kind of these like intermediary public companies that each district has one, they're called Inter Municipality companies.

Gasparini Federica: Yeah.

Interviewee E: Well, they're public, but they're still a company, let's say, and they're really implicated as well in the smart city approach. So funding is an issue, I've definitely heard this before and to get the money that comes from the calls for projects you definitely need a human resources capacity. You need time. But in our case, there are a lot of options for funding. I've had some masters students work on financing smart cities, so I have some information about that. Normally in the Belgian case again, which is what I know best in terms of like administrative, it's almost never just one source of financing that's going to completely finance a project, so they have co-financing, they might do a subsidy for 80% a loan for 20%, they might put it as like a political priority, and so they dedicate the funds directly at, like, the their own municipal funds to finance a project.

Gasparini Federica: OK.

Interviewee E: So there are lots of different ways that it can happen. It's almost never just one line of financing that will do the entire project, but for our case, the level of political support for the smart city is so high at the regional level that they really make it available funds available, and they have kind of like different support throughout the territory to help municipalities access these funds. I mean there's never enough funding for what cities want to do. It's difficult.

Gasparini Federica: Yeah.

Interviewee E: Um, so even the most successful ones, sometimes they do a pilot, and it doesn't follow through because there's no funding. They have ideas, but they don't get finance because there's too much competition. So, this is still certainly an issue, even if it might not be as big of an issue in in the Italian case.

Gasparini Federica: Perfect. And what would you say are some important things to consider when planning and implementing a smart city strategy?

Interviewee E: So I think every strategy, no matter what it is, should first be an understanding of the context. It's important for local administrations before starting anything to understand what their situation is, what is their economic situation, what is their environmental situation.

Gasparini Federica: Yeah.

Interviewee E: Where they stand right now, this is often difficult because data at the local level is hard to come by, so they might not have all of these indicators that give an idea of their current situation. But no matter what, this is important. After this is theoretical because as I mentioned before, it almost never happens in practice. But I would argue that it's important to try and co create the strategy with citizens

and with other important stakeholders if there's some.

Interviewee E: Local businesses that are really relevant to the territory. If there are some associations working with citizens to implicate these groups and these individuals.

Interviewee E: And now I think despite the need to have citizen participation, a third component that is really essential when the beginning to start the process of developing a strategy after you know the situation and start to gather the people together is to have a clear vision of what you want to do. Because if you know where you are now and you know where you want to go, then you can really start to put steps in place to reach these objectives.

Interviewee E: So yeah, let's say the first one would be understanding context, figuring out who the important actors are, creating a vision and sharing this vision with them, and then kind of working step by step to figure out how to reach this vision.

Interviewee E: Any person in charge of writing a strategy is going to have to identify priorities in this context. This is really complicated because it's political, it's social, it's sensitive. As we mentioned, there's really limited financing. So in this whole process of things going on and different actors involved, it's very likely that, especially if it's the first strategy of municipality is going to have to say, listen, we have three things that we're going to focus on. We're going to do a couple of projects for each thing and that's it for right now.

Gasparini Federica: Yeah, yeah, yeah, makes sense.

Interviewee E: I think that these would be the most important and then something that's kind of more mature like it would be more mature. It would be seen in more mature approaches with some cities that have more experience, but also to already think at the beginning of creating the strategy, how you're going to monitor and evaluate it. This is something that organizations/administrations often do after they create this strategy and then they say two years later: Oh, what have we done? Actually, if you can think about it before you even start the process of implementing the strategy, it's going to be a lot easier to track. It's going to be a lot easier to say. Listen, this didn't work, let's adapt and then go forward after. So it's kind of not logical to think that you should already put in a monitoring and evaluation framework from the beginning, but in terms of like managing the strategy, the implementation of the strategy, it makes a lot of sense to already think about this from the beginning.

Gasparini Federica: OK, great. And how would you include citizens in this kind of strategy planning?

Interviewee E: So what we would propose is after identifying the context to do some sort of stakeholder mapping. This is seen in the practice that's seen in both public and private organizations that tend to care more about their social impact.

Interviewee E: Um, but to really identify, knowing all the context in their head, who matters in this? So obviously there's going to be broad citizens, but are there particular groups that might be more relevant or not even relevant, but more ready to participate at the same time? Are there groups that are always left out? Should we do something extra to reach out to them to include them better, be inclusive in the stakeholder mapping, you're going to also have companies and civil society organisations, universities, academic institutions. So once you have a very clear idea of how, who, who could matter for this process, who you could implicate, there are several different ways to involve citizens and town hall meetings are a good option, but I think what's important here is to note that it shouldn't just be the administration communicating their ideas. It should really be a discussion where citizen feedback or organisation stakeholder feedback is actually accepted and listened to, to move forward.

Interviewee E: And there are also some cases of focus groups, so not necessarily like a broad town hall meeting, but you really target the specific stakeholders or citizens that you want to dialogue with. So this would be another way.

Gasparini Federica: Yeah.

Interviewee E: There are some other methods like having something on a website where you can feed comments into. I mean I think this is nice, but you're not going to get this like real dynamic between the administration and the citizen. You're going to hear their feedback, but it's going to be really one way.

Interviewee E: And I it could be a good place to, like, really start to identify the context, like what people care about. But I think the more interactive ways such as town hall meetings, focus groups would be more interesting.

Gasparini Federica: Yeah.

Interviewee E: We have some research tools that I don't think have been applied and smart city contacts, but even, you know, mayors or local administrations actually like going to walk with citizens to understand a little bit the spatial aspect and the how they perceive certain parts of the city. This could be another way, but I don't think that this is really done in practice. I think it's more of like a theoretical concept.

Gasparini Federica: Hmm. And because I talked, of course, in my other interviews, what they were saying is that citizen participation, yes, it is good. But sometimes what happens is that citizens maybe come to these events, they propose a lot of things and then they are kind of disappointed when things are not being implemented, like, not everything that they talked about is being implemented or maybe not as fast as they would hope for. And I don't know how you see this kind of. Yeah, maybe mismatch of expectations.

Interviewee E: Yes, I've seen this often and I've also seen it in master's thesis in the Belgian case as well. I mean, I think that there are two things. I think one is that it's really hard when you're in charge of creating citywide plans to take into account all of the different perspectives that you're going to hear.

Interviewee E: But I think it's a difficult exercise, let's say. So it's kind of normal that some people are going to feel left out and feel like their messages were not being heard and implemented, but at the other side, despite all of this, I think that it is reflective of the lack of political commitment to include stakeholders throughout the entire process, because what we see is that no matter how citizens are implicated 100% but I won't say 100, let's say 90% of the time. I know a couple of exceptions to this case. They hear what citizens want, they say: Oh, that's interesting, but actually I already defined my objectives. I already know what I want to do and this doesn't align with that. So I'm going to go ahead and do what I wanted. And yes, citizens got to participate, but they were already excluded from the start. So I think this is the difference between really the Co creation of what people want and versus the idea of OK, we created our strategy, we created our plan and now we're going to get feedback. So yeah, this is going to be the difference between feedback and Co creation. But all of this said, in reality it's super difficult. It's super difficult to keep citizens interested throughout the process, even if they are getting what they want. People participate in one meeting, and they say check, I did my civic duty and they move on. I mean, this is my job. I study this and I don't go to the town hall meetings and then I'm upset later when the city doesn't do something I want.

Interviewee E: So, I think there's also some things that needs to change and I don't have the answer on whether it's incentivizing people to stay throughout the entire process.

Interviewee E: Um, how could they do this? Maybe more personalised messages, a direct follow up saying: Hey, I saw that you were at this first meeting. You put your e-mail down. We're having a second meeting. Please come. Something a little bit more personalised. A little bit more incentivised, but we don't have the answer for this and especially when I see what I do in practice in my city and how I write about what people should do in my research, I see the difference. It's really difficult.

Gasparini Federica: Yeah. Yeah. On paper, it always seems more straight forward than in real life.

Interviewee E: Yeah.

Gasparini Federica: OK, great. And how do you see how can the EU support small cities in this transition?

Interviewee E: So the EU has already some kind of overarching guidance for developing sustainable smart cities. I think that this is useful. I think it's working. I think what they can probably do to help most is financing.

Interviewee E: Now we already talked about the lack of competencies at the local level, the lack of human resources at the local level. I don't know how it is for this smart city case, admittedly, but I do know that there is a tool at the European level that's called a Technical Support instrument, and this Technical Support instrument is something that countries can apply for to get technical aid. So just like

extra knowledge like help to implement policies so and they give the money for it too. So for example like with the other project that I do now for the Just Transition project, there's a specific financing that goes with it and because it's a complicated concept, the territories that are eligible for the financing can also ask for Technical Support instrument and the EU will pay like a full time staff of people from KPMG or Deloitte or something like that to help them strategize. So I think that this sort of initiative, I admit, I don't know if it exists in other contexts, but I think this sort of initiative where the EU says not only do I make available the funding through subsidies call for projects, but I know that it's really difficult for local actors to implement their projects even if they have the funding. So we're also going to give different types of support. I think that's one really interesting way.

Gasparini Federica: Nice! And of course this, I mean, smart cities are a very big term, and there's a lot of projects and initiatives that a city could focus on, so how can a city navigate kind of the broadness off the topic and how do you choose and prioritise. Okay, these are the things I'm going to focus on.

Interviewee E: So I think there are two ways, the 1st is going to be understanding the local context and from there making priorities so to give an example, if you have a city that has horrible traffic and it is ruining everyone's lives and people are complaining there are accidents, there's pollution, then this is kind of a clear signal that this could be a priority. So really to look at the local context, the other I think would be to listen to citizens and see what they want. This I mean can be really difficult because you're going to have 57 different opinions all the time. But to try and present like, listen, we did this contextual analysis of our city, of our territory. This is what we found half citizens come in say listen, we need to pick three. We're going to have six meetings over the next four months. We need to do this together. I think that's really one way to prioritise to kind of match like the contextual needs with what citizens want.

Interviewee E: Oh before this you could also hope that there's some sort of like theoretical approach that someone in the administration is saying like oh, this is the literature. These are the categories that we could focus on. These are some best practice cases from other cities that are kind of like ours. So maybe there's some more theoretical preparation behind but to figure out what these priorities are, I think that contextual valuation plus citizen participation is very useful.

Gasparini Federica: OK, great. And how important do you think is the smart City branding so also communicating to a city, OK, we want to become smarter. These are the initiatives we want to implement, initiatives that at the end of the day probably will improve your life. Do you think that's really relevant like the communication marketing aspect of it?

Interviewee E: So, this is a difficult question because there's a like a dichotomy. There's a huge split from people who think Smart City is a great idea and people who are terrified of it.

Interviewee E: So to give like some more theoretical insight, one of our main missions at Smart City Institute is to shape the definition of what a smart city should be, because for us, we really hold on to this idea that what we want in the future is a sustainable future where there is reduced inequalities, reduced poverty, reduced social challenges, and we think that at the local level, certain types of technology can help bring us to this future. And for us, that's smart city and state. That is what is Smart city is.

Interviewee E: This is the very idealised dream like version of what is Smart City is. On the contrary, in different contexts, notably, I've understood that the American case smart city is about new innovative technologies. It's very driven by private companies. It's almost like a collaboration only between public private to put all this technology in place. So I think already from like the theoretical level, the literature level, we have this split. After that I think it's really difficult for citizens to understand what a smart city is because you hear all these different stories. And for Belgium, I know that the smart city is the brand, the label of it. For most municipalities, is really exciting. They want it. But on the other hand, I've heard from other cities like Grenoble in France, a medium sized town that's near to the Alps, so it's very like ecofriendly and lots of outside activities. I've heard that they can't even mention the term smart city because it's terrifying for the citizens, but they could essentially be doing the exact same thing using technology to bring about sustainability, to bring about efficiency, to bring about social inclusion. But they would never frame it that way. So in my opinion, I think the first thing we need to do is try and clarify a bit what the smart city means, which is impossible because people have already started going

off and putting in their smart city stuff, but I think it's still worthwhile to try and sharpen the message of what a smart city is, at least in a territorial context. So for like Wallonia, it's this for Italy, It's this for Singapore. It's that like, at least to try and get an idea of what it means to be a smart city in a context and then figure out how people respond to it. I think most people have reservations, but they are excited about the idea of technology improving their lives. But of course there are some cultures, there are some parts of society that are really against it, so that's not an answer to your question at all. But I think the branding of Smart City is really going to depend how people understand it and there's work to do at the top level to really give this indication of what it means for the territory.

Gasparini Federica: Because actually, yeah, I did a survey at the start of the research to kind of establish a bit of a baseline where, like the people's stand and like most of the results, over 80% that actually like smart cities and understand that it's going to like, improve their lives. So I think that for example, for the Bolzano case, I think it's something that people would not be scared of potentially. So that's also nice to see.

Interviewee E: Yeah, because if you know that something is going to make your life easier. I mean, for me personally you can have all the data you want if you do good things, but I know people don't think like me. Like I don't, you know, I don't have anything to hide. I'm a pretty boring person. All I want is my streets to be clean, the pollution to be gone, more green spaces. And if you do this for me, I can share my information with you. Like I don't care. But I know some people do care.

Gasparini Federica: The thing is, Bolzano is also where it's in in the Italian Alps, so it's also quite like people put a lot of emphasis on all this ecological aspect. And I don't know, like the fact that every summer it's getting hotter and hotter, it's things that people like really feel because until a couple of years back, it was kind of this fresh paradise in the mountains. And so I think also under this aspect, people might be more willing to say okay we can make bring it a bit more back to on the sustainability track. So that could be an incentive.

Interviewee E: Yeah, they're motivated.

Gasparini Federica: Yeah, OK, great. And in terms of measuring so smartness, I guess there's a lot of indicators. What about smart city governance KPIs? How should they go about it? Should they kind of build own metrics? Or maybe say OK, let's see what frameworks are out there that are monitoring tools that are being used already.

Interviewee E: So I think that for monitoring, there's probably going to be different types of indicator sets. And so there is kind of the outward indicator sets that will be things like air pollution, traffic, number of trips taken on public transport, time spent at an administrative office to do a task. A number of applications that you can do online that are paperless or something like that. And then also you're going to have the more internal indicators that are going to be for the administration. So number of citizens that they implicated in their initiatives kind of like a two way thing to check not only the organisation of the administration and implementing the smart city but then also the results of this organisation.

Interviewee E: It's really complicated because there are so many trade-offs with indicators. You want indicator sets that are comprehensive. You want indicator sets that are comprehensive so they should cover all of the areas that you're trying to change actually. But it's really complicated. If you have 50 indicators, how do you make sense of them? How do you track them? How do you study them? How do you share the information in an understandable way? And you could also have very specific indicators, say the problem in your region is something really specific like I don't know, water pollution from a factory upstream, and you could have a really technical measurement, but no one understands this except for experts. So you have a lot of trade-offs that go into making indicator sets.

Interviewee E: Um my advice, my perception rather would be for city starting off, they should probably look to more developed frameworks and then figure out what makes sense for them and adapt it as they go through the process. There are a couple of pretty well thought of indicators. There's one that's like world data for cities, but it's an ISO standard for smart and sustainable cities. I don't remember exactly what it is. And then, yeah, so it's like an official label, so International Standards, Office or organisation, I don't remember what. And then the cities have, like if they sign up for it, they have like, a huge set of

indicators, something like 200 indicators, and then they can get, like, different rankings, like silver, gold, platinum, based on how much data they collect. So it's not even about the progress they made is just about the data that they actually managed to collect.

Interviewee E: So this is a great initiative. I still think it's a bit overwhelming for a city that's starting to do their monitoring, but yeah, I would probably think to look to already developed frameworks and then you know, compare this with the context and adapt after.

Gasparini Federica: Hmm. OK, perfect.

Gasparini Federica: OK, then this was the first dimension, the second one, as I mentioned before, it's the online public services and kind of the ecosystem around it. And what emerged from this survey, which I found was very interesting, is that the citizens in general, are quite comfortable with new technology, but they are less so when it comes to being proficient in all the online services that the city provides. And so here my question is like, how do you create an ecosystem of public online services that is inclusive and that targets all the different stakeholders, let's say, but are more about the inclusiveness part and that it's actually like accessible because I feel like try to put everything on digital. But then many people don't feel comfortable using them. And they're like okay: Yeah, they created another thing on their web page, but I'm never going to use it anyway.

Interviewee E: Okay so my preface will be that this is going to be mostly like what I think because I haven't really studied this, so I might not be the best person to ask for this, but I think a part of it is communication, so having some sort of channel between what the government is doing and reaching citizens. I don't know how they could do this because you must know about it. Like you're not just going to randomly go onto a website but where I am right now in France, there are like billboards everywhere that announce like new things that the city is doing. It's pretty low tech, but you're out going to the store, walking the dog, going to school, going to work and you see this like, really big. I think it's actually pretty efficient.

Interviewee E: Um, and then you have to train people. You have to explain how tools work and what is the best way to do this. I don't know have a dedicated employee that goes into a room Mondays from 4:00 PM to 8:00 PM and they teach any citizens that come in how to use the tools. I don't know if that's a huge waste of time. And obviously there are YouTube videos, but I feel like that is never completely satisfactory to me, but yeah, I think you have to communicate and then teach people how to use it.

Interviewee E: I think that would be the two biggest things that I can think of, but yeah, this isn't something that I've worked on, so I'm not 100% sure my answer.

Gasparini Federica: No, no, no worries. It's also to get a bit of brainstorming and to get your perceptions and for it because at the end of the day, smart cities, a lot of about like, kind of the digital aspect of it. And there's always a bit this debate, you know, OK we want to become more and more digital. But at the same time, you have to consider people that are not able to or will never be, I don't know.

Gasparini Federica: How can a city kind of balance, manage to navigate and balance these two worlds, you know, because I guess at some point you'll, it's going to become all digital. Right now it's more hybrid.

Interviewee E: Yeah. So this is really important for a lot of things like in Belgium right now, there's a big conversation going on about cashless. So the public transport is going to become cashless soon. So only using credit card. But poor people in Belgium don't have credit cards. They only use cash. So already they have to rely on public transportation because they're poor. This is really general. But this is kind of the message that's coming out of this debate. So we want progress, we want efficiency, but not at the expense of excluding people from society like this, is really dangerous. So I think that there's always going to be offline until we eliminate poverty and train 99% of people, there's always going to have to be something in, like, something not digital.

Interviewee E: Um, even if it's just one person whose job it is to make sure that people who are not in this online ecosystem are taken care of, and maybe they'll have to adapt their business model instead of having people come into the office. Maybe they have someone that goes to people because obviously if they're not able to, as the world is changing, they're not able to keep pace. This could be a vulnerable

person in society. It could be an elderly person, a disabled person. And so I think that it's going to have to be some sort of like hybrid business model of delivering services.

Interviewee E: I have spent a lot of time in Singapore. It's amazing. It's super efficient and everything is digital, it's great, but I think that it's really a global exception and I'm sure there are some vulnerable people left out of the system. So yeah, I think this like hybridization of trying to drive paperless digital online ecosystems efficiency, all of that. But with the recognition that not 100% people are going to be there and maybe instead of having an office you, yeah, decentralise and you have people go around to help with administrative tasks.

Gasparini Federica: OK, great. And what do you think are online services that a city in general should focus on because of course many of them are more like to facilitate everyday life things. So I don't know you have to book an appointment for something like kind of these things but do you think there's other services that could be useful and could be focused on.

Interviewee E: And so you think with COVID we saw the span of things that actually can't be digitalized like renewing identity cards, getting a new driver's license. When you buy an apartment, you still have to go into a notary's office and you still have to do all this sort of paperwork in person. I think that could be easily digitalized. So I think like all of these kind of day-to-day basic tasks. It's almost silly that people still go in.

Um, I think most things in my life now are digital, though my taxes, I can renew my identity card from a distance. I'm not European, so I still must do immigration. I have to go in physically for that. I understand. Other than that, I don't do anything in person anymore, so I think actually everything I do is now digital.

Gasparini Federica: Do you think there could be more? I don't know if there's something that might be needed, like services or apps maybe related to health and sustainability.

Interviewee E: Yeah. So I think that the biggest for me, the biggest thing about health and sustainability probably are cultural changes, so for both health and sustainability, we've known for 20 years exactly what we need to do and people don't want to do it. It's frustrating. Um, but we can't make it that simple. I mean, especially for health. We know that you should eat well. You should exercise. You should sleep. You should not drink too much. You should reduce your stress. But in reality, especially for some people in certain conditions, it's very difficult and you don't have the money. The time, the knowledge of the resources like no one wants to live in a world where they only have access to fast food and coffee and Pepsi and can sleep 4 hours a night. Like that's terrible. But it's still a reality, a widespread reality in all of our societies. The same for sustainability. We have the science that cars pollute, planes pollute, certain diets pollute more than others.

Interviewee E: Houses that are in a suburb with a huge lawn are not good for the environment, but these practices only increase actually. So I think what could really be helpful is to start to use digital tools or apps or services that can, I don't know if it's spreading the message or like sensitising individuals, but really starting to nudge a bit at the cultural level, that block us from making progress.

But even in our case, like you have special trash bags, you have recycling bags, then you have something for the glass. You have something for the food waste, but no one uses them like so, I think that the issue is not that services are not available. Like obviously we can improve cycling and things like that. But I think a lot of it is changing how society thinks about them, how people are incentivized.

And the problem is that it's easier said than done. I have apps on my phone that teach me about local biodiversity, but I don't really use them. So how do we do that? I don't know if it's digital that's going to survive. That's going to have success with this. I think it's something really deep in our culture. That's not a very satisfying answer, sorry.

Gasparini Federica: No worries. It's good.

Interviewee E: And there are somethings that I think are really great, like the apps where you take a picture of something on your street, and someone will come to fix it like that's quite helpful. I still have never used them, but in theory I think that's quite helpful.

Interviewee E: I don't know if this would be like the municipality, but all of these like telemedicine treatments so like that it is not necessary to visit someone in person. That's probably really helpful too

and could even be subsidised by the government because people being healthy brings benefits to society in huge ways.

Gasparini Federica: Yeah. No, that that's good. That's good. Thanks. OK, great. Then the third dimension, it's actually quite short, is more about the citizen participation through social media and more about communication and how that can look like between the city administration and the citizens because of course, social media is important, the penetration is quite high. How do you see it? The role of social media as a tool for communication, but also maybe only for information or for both.

Interviewee E: Yeah. I mean, I think that unfortunately it is probably one of the main ways that people consume information now, so I think that governments at all levels should leverage this, especially in different ways. So we see different generations pulled to different types of social media, like maybe Facebook is more interesting to older adults now where I don't even know what TikTok looks like because I've never had it. But maybe this is very younger citizens. There are different ways of reaching out through social media that could be more effective. Different parts of society. And I think it's great that governments could use this. It makes me nervous, but this is how most people get information. I think beyond just communication. As I mentioned before, it would be really good way to start to raise awareness about certain issues as well.

Gasparini Federica: Yeah, yeah.

Interviewee E: I think you would probably have to have like a communication campaign manager or someone to really make sure that the vision is clear of like the objectives of clear what the government wants to do or the municipality wants to do. Governments need to adapt to what people are doing and if people are spending 80% of their time on social media then it's a really good way for them to follow up with this trend.

Gasparini Federica: And what would you say are some of the challenges that could arise related to this? Like using social media more and more and?

Interviewee E: Well, something that would be maybe an unintended consequence is that everyone can post, comment, give feedback in a very visible way. So if you leave comments open, people who do not like the idea can be very vocal about that. Not saying it's a bad thing because democracy is based on conflict and on dialogue and negotiation like no one has the same opinion. And that's what makes countries work well, I think.

Interviewee E: But of course it could backfire if you say something and it gets a lot of negative public feedback.

Interviewee E: It's a big effort to figure out what works best, so what channel or what medium? What happens for which population? Do we change? How do we give messages or information or raise awareness through this channel? Because it's for young adults versus for older people like how do we organise all of these campaigns? I think that would be pretty difficult because you have to understand who's using what, what message do you want to send to whom? So that could be kind of like an organisational challenge.

Gasparini Federica: I think maybe also these campaigns at the end of the day you can, yeah, you organise them online. That's already a challenge, but that is as we said before, there's probably going to be people that are not really on social media and so also having kind of, yeah, this double track, let's say, because you have to be both online and offline.

Interviewee E: Like I mean some simple things are still really good. Like these huge billboards. I was so impressed. Like they say the dates, the times, the locations, this in participatory meetups. I mean, even if you're 90 years old, you have to leave the house once in a while. So some sort of hybrid.

Interviewee E: And at the same time, they're giving the information. So this is something that is low tech, but sometimes low tech is really efficient.

Gasparini Federica: Hmm. OK, great. The last dimension is the involvement of stakeholders in decision making, which we've already tapped upon a bit.

Gasparini Federica: What are ways to involve citizens in the decision making? Or ways to inform citizens about initiatives because what I saw is that actually quite some things are being done by the city of Bolzano and. But then when you ask when then, when you ask people in this survey, they're like, oh,

nothing's being done. The city doesn't organise anything. And so also when I was talking to the Smart city councillor, he was like, yeah, it's also a bit frustrating because we have limited budget and we try to organise things to also involve people, but then they don't know about it, they don't inform themselves, they don't show up. So again, this kind of mismatch bit which can be frustrating then also for both sides. Interviewee E: Yeah. So something that we do at Smart City Institute that when I first joined, I was confused as to why we did it, but something like really standard, really not innovative at all, but I mean, if you're in a city, you can do it in a park. Um, but something that gets people, very visual that people can see, so the problem is people still must want to go. So you're going to have to make it interesting. You're going to have to you know, have some food trucks. Something like that. And it's expensive. So I mean, these are not free to do, they're quite expensive. But we have Belgium and France, so that's why I'm always between the two. But in the city I live in France, they have kind of block parties. So they close off the area to cars and they have like cultural events and food and arts and crafts for kids. The goal here is not really to share the message about like initiatives, but it is a perfect opportunity to have a little stand and someone's staff there to do that. So I think something that really catches the public's attention like this could be useful. And the second thing is, is just trying to communicate as much as possible and have a good communication strategy. Whether this is in the form of like an annual report, no one reads these so bad advice, but to have the accomplishments of the city somewhere. I read them but I don't think the average person would read them and to use social media more.

Gasparini Federica: Yeah.

Interviewee E: Uh, it's communication activity, especially ones like events that catch people's attention, I think could be useful, but it's another question that we don't have an answer for because it is so difficult to engage citizens.

Gasparini Federica: Yeah, but also because from what like the perception and then also the Council told me is that at the end of the day, you can feed citizens so much and communicate with them so much. Like it's, I don't know, at some point he was like, at some point I also don't know, OK, what else can I do? And so much frustration from his side because there's social media, there's the website maybe there is information around town but then he was like hey, but then people are really interested.

Gasparini Federica: There should be also some sort of proactiveness from the citizens' side.

Interviewee E: Yeah, when people are happy, they don't do anything. And when people are unhappy, that's when you start to hear the comments. So unfortunately like all the winning initiatives, it's difficult to share them. But another way is to kind of hair the initiative. So you have things that are really visible, like if you have a dirty street and it becomes really clean, people are notice it. If you don't have a lot of green spaces and then final yes, someone's going to notice this. Obviously, these types of initiatives are not applicable for everything.

Interviewee E: You need Italian initiative, let alone Smart city initiative, so this might not be possible, but if they can kind of mix a little bit like more structural things with more visual things, that could be one way to help.

Gasparini Federica: Yeah.

Interviewee E: But maybe the budget it's not a priority. There are all these things that maybe Bolzano is already very green and clean, so it's not needed to do improvements in these areas.

Gasparini Federica: Yeah. No, but I think the combining structure with visual is definitely a very good strategy in that regard. And also my last question is, I don't know, maybe from also Belgium like do you have the feeling that younger people are more involved than older people or the other way around or do you see some trends there?

Interviewee E: I would like to say that younger people are more involved, but my personal opinion, which is not scientific, it's just very what I feel is that younger people are just better at manipulating technologies to make their message louder than older people. I think that maybe they are more caring and more implicated, but I think that what is happening, in part at least, is the ones that do really care about something are much more savvy at getting their message out through different means.

That being said, we do know in Belgium that - not from a public organisation level, but from a private organisation like companies - I've talked to companies for a different project and they told me that people

who go into job interviews, young people who go into job interviews, are actually demanding that the company is sustainable, like young people don't want to work for a company that's not doing things for the environment. That's not doing good for society. So this is something that is a clear difference between generations, which is good to hear.

Gasparini Federica: Okay.

Interviewee E: But apart from that, I haven't noticed too much between generations. I do think that the youth is much better at communicating messages though, which is great.

Gasparini Federica: And communicating loudly. Yeah.

Interviewee E: Yes, it's very effective. So I think that is something they do excellently.

Gasparini Federica: OK, perfect. Then this was actually the last question, I don't know if you have any other comments, any other things, uh, you would like to add.

Interviewee E: I think that the last thing I could say for small cities, it's really useful to try and make peer networks. So to find similar cities in different contexts, I mean different contexts in the sense, like, it's not just the city next door, but maybe like similar challenges. But in France or similar challenges, Canada or something like that and do sharing of what's going on, ideas, best practices.

Interviewee E: We've done research on implementation of sustainability plans in Belgium and this peer-to-peer communication has been one of the most helpful things.

Gasparini Federica: Okay great.

Interviewee E: But I would be very pleased if at the end you share your results with me, if you can, I would be happy to read the thesis or hear what you do. So it's really interesting.

Gasparini Federica: Yes, yes, would love to share it with you. Thanks as well for taking your time. I don't know if you're still in Easter break or not, but really I appreciate it and was very insightful.

Interviewee E: No worries. I understand how difficult it can be to find people to interview for research. So it's my pleasure.

Gasparini Federica: Thank you.

Interviewee E: And good luck with everything. And yeah, keep me posted if you have results.

Gasparini Federica: Yes, we'll keep in touch. Perfect. Thank you again, Jessica. Have a good day. Thanks. Bye. Bye.

9.4.6. Transcript Interviewee F

Gasparini Federica: Just to start off, you could briefly introduce yourself and maybe explain what current projects you're working on.

Interviewee F: Yes. So well, my name is X. I'm a professor at the University of Life Sciences in Bern. Oh and I'm working at the Institute Public sector transformation. It's saying we're looking at how can you use IT or general digital transformation to improve what the public sector does. So that means both public administrations, how they work internally, how they can be more efficient, how they can be more sustainable as well as also you know what the impact is on society, um etcetera. So from my background I'm a computer scientist computer engineer. Uh, and I think in the public sector it it's really important, you know, to have the kind of liaison between, you know, the technical people who know technology as well as the, let's say, the social scientists who can also look at what impact will that have on society etcetera.

Gasparini Federica: Yeah.

Interviewee F: And my main research topic is smart cities since about well I started concretely in 2016 on that, but I have a long history with IoT research before that as well.

Interviewee F: And from the projects that that we're currently doing, Um one, we have just finished is called Innova which is about strategy monitoring in cities, so the basic idea behind this is that you know the cities have all kinds of development strategies, but often you see that it's well, it's a nice paper they produce but then forget about it, basically. So what you're saying is that you have to actually have concrete goals and measurable goals with KPIs, key performance indicators and we have basically looked at what kind of KPI frameworks are around. We have integrated some in a digital tool basically that

cities can use to monitor their strategy and to see like what the projects that they're doing if they have an effect on let's say climate goals or whatever. That's the one that just finished.

Interviewee F: Then, innovation processes are a new instrument, or rather new instrument in Switzerland, where the Innovation Agency of the Federal Government is basically giving money to the teams or to organisations or consortia that aren't supposed to run innovation programs.

Gasparini Federica: Yeah.

Interviewee F: So it's really at the very beginning of the innovation cycle where people have some idea what would be a nice thing to do and they get up to 25,000 Swiss francs. So it's about €25,000 to kind of work on that idea in order to validate if this is actually something that is viable, if that is something that is feasible, if that is something that actually desirable that people actually want it.

Gasparini Federica: Yeah.

Interviewee F: Um, there are several of these innovation boosters running and we are responsible for the one on smart cities.

Interviewee F: And so we are in the nice situation, really received quite a lot of money from the federal government and part of the money we can use to pay our salaries, of course, but the other part we give away, it's like people with ideas. They come to us and say, hey, we have this great idea. We would like to do that and then we decide: Okay yeah sounds great. And we can give the money to them to then do something.

Gasparini Federica: Yeah.

Interviewee F: Yeah, that's that. I think that's the two main things that I'm working on.

Gasparini Federica: Okay nice and what was kind of the driver that made you like focus on smart cities just out of curiosity?

Interviewee F: A very good question. Basically, it's quite easy to explain. I used to work like before joining the applied sciences department, I used to work for a long time for SAP, so the German software company.

Interviewee F: Uh, in several countries, actually started in Tokyo and worked in Germany and in Switzerland. And there I was in the research arm and was doing IoT. So internet of things, research, development, all kinds of prototypes, demos and so on. And I'm still very interested in that topic because it's you know, I mean software engineer, but software is sometimes boring because they will just have a computer and nothing else within them. So I'm still interested in that topic and when I joined the Bern University of Applied Sciences I joined what was then called the E Government Institute.

Gasparini Federica: Yeah.

Interviewee F: Then I thought, OK, we are doing like things like open data and I would still like to continue doing some IT things and if I want to combine these things then smart city is really the way to go because it's public sector use, open data use. So I got and I said Okay, I would like to work on that. I submitted a proposal for a new project at that time and I was lucky to actually get it. And with that, I basically could start up that kind of research where I'm working now.

Gasparini Federica: Nice. Great. OK. Perfect then. Well, as I anticipated to you already, I'm in doing my masters at Louvain School of management. And as part of my master thesis, I'm looking at Smart city governance, particularly in small cities. And I'm using my hometown Bolzano as a case study.

Gasparini Federica: Um and so in order to kind of bit investigate the topic further, I've created kind of a framework with four main dimensions that I would like to look at to see a bit okay, where does Bolzano stand? Why does it have certain challenges? How can it work in the future and for these main 4 dimensions, I will then ask you questions about the political aspect or like the political strategy and perspective in terms of smart city, the ecosystem of online public services, then digital engagement and social network, and finally more the involvement of the stakeholders in decision making. So citizen participation. If it's okay for you then we can start straight away with more the strategic aspects.

Interviewee F: Sure.

Gasparini Federica: I also conducted a survey to kind of establish a baseline a couple of months back and what came out of this survey and also by looking of course through the desk research at what Bolzano is doing is that there appears to be kind of a lack of strategic plan and long term vision. So there's

a lot of initiatives being put in place, but there's no like documents saying okay, look, these are the objectives for 2030, something like that. You know, something more long term. And citizens are aware. And so I would like to ask also you may be what do you think could be the causes of this lack of strategy and also maybe also related to bit to smaller realities.

Interviewee F: Okay I will send you actually, before I answer the question, the first project that I was talking about which is strategy monitoring, we actually did some surveys with Swiss municipalities out of which we generated a few papers and I can send you links to those. Because you have some data in there and we are actually continuing that. But looking at Switzerland's work, one question was: You know, do you have some kind of development strategy?

Gasparini Federica: Yeah.

Interviewee F: And the result was pretty clear. I don't remember the exact numbers, but basically you know the big cities, well, big cities for Switzerland, they usually do. The smallest they don't.

Gasparini Federica: Yeah.

Interviewee F: The reasons are. One is certainly in smaller communes or villages, cities, they don't have the manpower to actually do that. You know, the sometimes it's just one person and they say, OK, I have other things to do then this and I think that is one of the issues probably. You know, we do what we need to do and try to run the city and try to keep the budget etcetera, and as long as everything goes as it used to go, it's OK. I think that's a little bit the other reason.

Gasparini Federica: Good.

Interviewee F: What I've seen is that smart city, open data and these kinds of aspects usually take 1 or a few people within the city that you know take up the initiative and start doing something. Generally speaking, I mean, people in public administrations, I mean, I don't want to say that really, but at least they have the image of being, you know, slow and not really very innovative, etcetera.

Gasparini Federica: Yeah.

Interviewee F: That's certainly not true for all of them. I mean, especially in the biggest cities. As I said, you have people that are taking initiative and want to change things. But, um, I think that's one of the reason also. Looking at Switzerland, I mean, Switzerland is doing quite well like also economically and socially everything is more or less fine, so there's much less pressure to actually change something. Um, which can be a bad thing actually. I mean, there was this former CTO of X who changed a lot of things, but they have much more pressure of doing something and the CTO was kind of saying, well, you're lucky that you don't have the pressure, but because you don't have it, you don't change, right.

Gasparini Federica: Hmm. OK, I see. Would you say also that the maybe kind of lack of funds is a problem? I mean I don't know about the situation in Switzerland, but I also talked to the councillor responsible for smart City and citizen participation, and he said of course that it's also like initiatives that you need funds for and you need also yeah, as you said manpower, but also people that actually know how to implement certain initiatives. Because he also said that, uh, yeah, many people in the public sector maybe don't have the background or the knowledge to actually implement many of those initiatives.

Interviewee F: I mean it can be, especially with smaller cities or villages, it is an issue. Obviously, it's also a political issue in the sense of what do you use the money for? You have the left people that do want more social engagement. You have the right people who want to lower taxes and don't do anything at all, etcetera. So obviously, have these discussions on the other hand, if I look at some of the of the biggest cities in Switzerland, but the former chief digital officer of one of the cities he was saying, well, money's not really the problem.

Interviewee F: Also, Smart City in a small city in Germany, he also saying well, we put it actually into the budget but then we found out that we can actually cover most of it and through the regular budget already.

Gasparini Federica: Good.

Interviewee F: So but I have to say, even though some say the problem is the money, the real problem is to find the right people that could do these things.

Gasparini Federica: Good.

Interviewee F: I think to sum it up, it depends very much on the individual city or village where the issues are.

Gasparini Federica: Umm. OK, perfect. And what would you say are kind of the most important things to consider when planning and implementing a smart city strategy besides having concrete goals, objectives and KPIs to measure that?

Interviewee F: Well, there are several things that are important. You need to really have the political support.

Gasparini Federica: Yeah.

Interviewee F: Basically from top level like, you know Mayor or if you have a Parliament also from Parliament that you actually can do things. Also, you should involve the people living in the city somehow. Because you know, if they don't see the need to it, there will soon be people you know who will be questioning it. Why are you doing this? Why should you involve them early? I think Zurich was doing it quite well with using a participatory approach and participatory budgeting, you know, to show people what it actually brings or what use it has.

Interviewee F: Also, I think that it is really, really crucial to have a look at it from a perspective of: What does it bring to the people living and working in the city and what not?

Gasparini Federica: Yeah.

Interviewee F: Technology wise, because you might have Google and Amazon and SAP and who else you know coming to you and saying you know we can implement Smart city for you. Probably not such a good idea. I mean, you might know Google tried that in Toronto. People are saying we don't want Google to have our data, forget about it basically. So they failed. Also, former Smart City responsible person in one of the cities in the French part of Switzerland, he was also saying, well, smart city projects that are built only on IT departments, they fail. One last thing that I want to point you to is the city of Boston has published a Smart City playbook.

Interviewee F: They started writing that because, well, you know, they had, like, these goggles, and Amazon's coming to them and trying to sell them their solutions. They are basically saying, well, you know, stop selling salespeople, you know, come to us if you have understood what our challenges are and how you can solve these challenges. Don't try to sell a platform without an understanding of what it should be used for.

Gasparini Federica: Umm, OK. And then you were talking about, like, involving the people from the start. How do you see this happening? Like should it be something that OK, there is really a white sheet of paper and there's going to be brainstorming done together or should it be more like okay we propose we say okay these are maybe three major issues in the cities and we see we ask the citizens what they want us to particularly focus on. So maybe not as broad of a range.

Interviewee F: Yeah, I mean there are several approaches that you can take. One is like this participatory budgeting that you know people can propose so that they reserve a part of the budget and people can propose things and you then decide on that, you can start with small.

Interviewee F: Pilot projects basically involve the people in the sense of, do you have like actually meetings or stuff in the area where it's happening? Like with participatory budgeting, they also did like some kind of city councils or City Hall meetings etcetera that they could meet people.

So I think it's for 2016, but an analysis of 12 smart city projects in Amsterdam and they looked exactly on you know who was involved, what were the benefits, how did you know, did it succeed, did it fail and why did it fail? Why did it succeed? Etcetera. And I think there you can find quite a lot of answers.

Gasparini Federica: OK, nice. And how do you think can the EU support this smart city transition? Is it just about providing funds or is it more? I mean, the money is nice, but you also need to provide maybe some more sort of assistance in terms of manpower or tools or something similar.

Interviewee F: I think there is already quite a lot going on, so I don't think you need more, of course funding is always nice and you need that as well.

Interviewee F: Um, but you're probably familiar with open and agile smart cities.

Gasparini Federica: Yes.

Interviewee F: And I mean officially their worldwide. But I mean, they started from European effort and what they also have defined is like what they call minimum interoperability mechanisms, so that's also another point. You know, that you have some kind of standards that you're well, let's have several points in there. One is the 12 standards that you're not locked to a specific vendor and solutions that work, let's say in Helsinki, can be also transferred to Vienna. Then you have this new mission of which I forgot the exact name. It's something like smart and sustainable cities, but which is basically targeting that.

While they have cities that should be climate neutral by 2030 and all those things to follow. So I think there is quite a lot of things going on.

Interviewee F: Also, there is a new proposed interoperability. I mean, there is the European interoperability framework and they're proposing an extension now for smart and sustainable cities.

Gasparini Federica: Okay.

Interviewee F: So there is a lot going on and also exchanges between cities are happening. I personally would like to have more horizon calls that actually ask to do something there.

Gasparini Federica: Yeah.

Interviewee F: But that's kind of a selfish wish as well because we'd like to apply for some of these projects as well, but I think on the European level a lot is really happening already.

Gasparini Federica: And I mean smart cities are a super broad topic. And of course, there's a lot of different projects and initiatives that a city can focus on. And how do you see like how can cities navigate kind of the broadness of this topic and also this like decide okay, what are we going to focus on, especially when they're at that early stage?

Interviewee F: Each city has to decide by themselves. I mean, that's why in this monitoring project, we didn't say these are the KPIs that you have to focus on. We say, OK, we have these KPI frameworks that you could use, but you can also define your own. We kind of had the idea at one point in time, you know, that we can kind of define a model in a sense, but at least in Switzerland, cities and communes or municipalities are way to different to have some kind of common thing. And I think that also holds true in Europe.

Interviewee F: That is probably difficult to say. Obviously, there are things that go well with everything that like the smart city wheel.

Gasparini Federica: Yeah, yeah, yeah.

Interviewee F: And obviously things around, you know, smart environment, energy are probably very much in, at least in the news, everybody agrees that you need to do something there.

I cannot really give a recommendation of where you should start and also how you should start. If you look at how different cities you know work. I mean some cities they take a kind of leading role and they decide what is supposed to be done. Others like Amsterdam they are more in well they call themselves like better city. They are just looking at themselves as an enabler and now they're trying to connect people and eliminate any hurdles that they might have. But then you know, they should try out if it works.

Gasparini Federica: Yeah.

Interviewee F: I think that it should really be kind of the general try thing out, experiment. And that's sometimes the problem because public administrations they don't like to experiment. They don't like to have failures. And the experimentation means failure, but learning from it, and that takes a little bit of a mind change. But I think that's really important because when technology is involved, you have to make sure that they actually work.

Gasparini Federica: Yeah.

Interviewee F: While we're talking about cities and people, people should also have benefit from it and want this thing as well, in the end it also needs some kind of business or at least operational model because a pilot is nice but you have to see how can you scale it up from a pilot to actually productive usage or from one city to another. Viability, feasibility and desirability, all these need to be there.

Gasparini Federica: Perfect.

Gasparini Federica: And then, uh, something a bit more different, let's say. How important do you think is the Smart City branding? So the way you communicate the image of a smart city to the public.

Interviewee F: Ah, very good question. Fortunately, I cannot give you a definite answer. Because there are, to me, I see two different aspects on that. On the one hand and that's why we are using that branding as well. Um, it's sometimes can be used to secure funds. People look at it as modern and etcetera, so that's positive and that's a reason why you should use it. On the other hand, Smart City is often associated with technology, you know, with sensors and cameras and so forth, forgetting that the human should be in the centre and that image can be dangerous. So I know for example the City of Bern. Nowadays they start using also smart city, but they tried for long to avoid that term and talk more about digital City or others just not to fall into the trap that is the technology I think.

Gasparini Federica: Perfect. And then lastly for this section, let's say, how would you measure the smartness of a city? Because of course there's a lot of KPIs and indicators out there so well, so there like, how can a rather small city with not a lot of experience say okay, these are the KPIs I'm going to focus on.

Interviewee F: To me there are no specific KPI. That said you know a city should look for itself what is important for its own development. And I mean there are all these Smart city rankings that you can find on the web, which I mean you're in Singapore, so I know the one study that says surprisingly Singapore is judged as the smartest city in the world.

Gasparini Federica: Yeah.

Interviewee F: I mean, yes, Singapore certainly is one of the smartest cities in the world. I agree with that. But on the other hand, if I look in some of these studies, Zurich is quite high. I know the situation in Switzerland. I think there are smaller cities, you know that are probably further than the city of Zurich. It doesn't really matter too much because I mean, depending on what you measure, if you measure more open data equipment aspects you know Zurich is very good. If you measure more, I don't know, technology, IoT senses then others are further. I don't think the ranking is very important. What can be good if you know some cities agree on that climate is very important. For US, mobility is very important. We define some KPIs that we can kind of benchmark and measure between ourselves where we stand.

Gasparini Federica: So you would say it's rather better for cities to say, OK, these are our goals and objectives and focus on how to measure those instead of maybe following a predefined framework or tool.

Interviewee F: Like long or midterm, it would be certain desirable if we would have some standards, but I think it's too early to actually decide on that yet.

Interviewee F: And probably you know if I were a city, I would, or if I would consult with the city, I would recommend using KPIs from existing frameworks, not try to define everything from scratch again. And hopefully overtime, you know we will get the same numbers.

Gasparini Federica: Yeah.

Interviewee F: And ideally you know you would have some KPIs that many cities use. Each city has then maybe additionally some KPIs which are just specific for the city itself.

Gasparini Federica: OK, perfect. Then this was a bit more the strategic aspect of it. Then the second one would be about online public services and these are a bit shorter and what came out from this survey, which I found very interesting is that the citizens in general felt very comfortable in using new technologies. But when it came to using the cities online services, many said they don't really feel comfortable in using them. And so my question is like how do you create an ecosystem of online public services, that is, that you know works well, is inclusive, that focuses on what citizens really need.

Interviewee F: Yes, interesting result, it matches some survey in Switzerland as well regarding online service. Basically more or less the same what you just said that you know use the citizens were saying hey, we need more of them and especially smaller municipalities saying, well, we have already everything. So there was kind of a discrepancy there. How do you get there?

And I cannot give you definitely the answer, but some ideas learning actually from others. You know, some cities are doing things well. You can reproduce that. Also ask the people what they would like to have and then implement that. Doesn't need to necessarily be hackathon, but it can be just kind of asking people what they want.

Or tracking when you do things, put things online. Check which ones are most used and try to start with those and for example if you have some service that is not online yet, but you put it online and try to measure how do we get there?

Gasparini Federica: Yeah.

Interviewee F: And what is the reason? You know if people are not using the online version? What is basically hindering them? Why are they not using it? Did they just know about it or?

Interviewee F: More ideas are obviously digitalization in services should not just be about: I have this old process with, you know, papers and forms and now I just do digital forms, but I keep the same process. That might be a first step but trying to think how we can improve the process itself and make it more effective.

Interviewee F: One example is in I think Austria had that or has that. if you have children or if you have your first child you are entitled to get some financial support. But at least in the old days, you need to apply for it. So many people just didn't know about it or thought I have enough money, you know, I don't want to kind of be in an applicant's role, even though they are entitled to it.

But that all this is automatically given to you, right? I mean if you go to register your child, the state knows that there is a child now, so they can know your tax returns, so they can say, well you should reach someone. You can do that automatically.

Or I mean, if you wanted to build a house etcetera, you need to get all kinds of permits etcetera. And then in the old days you needed to run from one place to the other with the forms and back and forth, and it won't stop shop. Would be ideal if you could hand in basically your application and then it goes automatically between all the different departments of the city and at the end you receive the decision and not that you have to run the process basically.

Interviewee F: The third thing that some cities are having, I know Vienna has that. I know Zurich has that, is what they call a „Bürgerportal“. It is kind of the citizen account where you as a citizen basically have all the services that could relate to you directly at your hand. I mean, if I go to cities nowadays, I want to find a service, I basically need to know probably which department is offering that service and on the website, I need to go searching and it can be hard to find sometimes and if I have that just in my account it's much easier.

Gasparini Federica: Yeah, sort of personalization.

Interviewee F: But some cities are experimenting with, I would say with chat bots, I mean, chat bots are not the solution to everything and the current implementation has still a lot of things that don't work so nicely, although that will change with you know, the developments, which are GPT, etcetera, there will be changes coming up, but even chat bots today they can help you actually find the service that you need.

Gasparini Federica: Yeah. There will be useful to kind of a bit of so yeah, so more automatized pros, maybe some sort of personalization. If we think about the contents. OK and another like big challenge of course this whole digitalization process is kind of the enabler of the smart city. How do you see balancing out what is being kept offline and what can be put online because of course it's not like you can just switch to online from one day to the other because there would be excluding many people? And so how do you balance that out but at the same time, maybe also pushing for more digitalization and putting things online?

Interviewee F: Yes, it's a difficult question. Also, politically different question, on the one hand, you're right. You must make sure that all people can actually use the services and not just the people that are digitally natives or how you say. What I would strive for is to scale digital first.

Interviewee F: I mean, especially with new service, we do it first digitally and for those people that actually need it we maybe provide an offline version as well.

Interviewee F: There are people. I was at an event where a lady, I think she was from the Swiss post. She was saying we should stop providing offline services because, well, on the one hand, it's no inefficient. On the other hand, it really prevents people from changing. It sounds harsh and I probably would say it's probably been too harsh. But I think it's a good thing to think about it and in a sense, well, we

operate digitally and maybe we provide some help or services you know for those that cannot deal with it.

That they either start learning or that they at least get the service I mean, I don't want you to quote me on that but, so I would guess that the problem of people not being able to access online services that will die out overtime because it will be just such a minority of people that they have to say, OK, you know if you don't want to be an user online well, sorry, but then you cannot use that service.

Gasparini Federica: Perfect. And then the third one is about citizen kind of engagement also through social media. Yeah, both as a communication tool, so also to exchange, but also maybe more to inform and I don't know how you see the role of social media, is it really that relevant as a communication and information tool.

Interviewee F: Yeah. I'm having a more critical stance on social media because some people call it unsocial media. Because there are many issues, but that probably putting it a little bit too one-dimensional. You have to make a distinction between what social media brings, certainly good also for the city, you know to inform about what's happening. On the other hand, you have to be aware I think the world is different from what happens on Twitter? So I personally think you have to be careful.

Gasparini Federica: Yeah, yeah.

Interviewee F: That's a little probably peculiar in Switzerland. So there are ways of finding out what the people really want. But uh, what obviously is an issue is that we vote about all things all the time. Um and some of these things are also difficult to understand. Between what we want and the actual voter turnout is very low. We wanted that to be higher but there is a danger that, you know, social media campaigns can be used to trigger yes or no vote, because people don't understand what something really is about.

Oh I have no good solution for that except that we need to have more education in schools, that they understand how democracy works and what the dangers are also, you know what the dangers are with data and data manipulation.

Our people need to be aware of that. So what we call data literacy is something that I believe is very, very important in the future and you have to start in school with these kinds of things. I don't know how democracy should work if people don't know how voting etcetera works and what power parties are doing.

Gasparini Federica: So social media can be used, but it still has many challenges and risks to it that need to be considered. Yeah, I guess both in communication, but also information because we see that then, you know, whatever you put out there, if there's a tiny mistake, then it could really lead to problems.

Interviewee F: And I mean the question, it's a good question though if actually we should monitor what's happening, you know if somebody raises some kind of fake tweet about something that apparently happened somewhere, which is complete nonsense that you can react and kind of disregard with official information at an early stage. Could be something that is necessary.

Gasparini Federica: OK, perfect. Great. OK, then the last dimension, which is about the involvement of stakeholders, citizen participation, we already talked about it a lot. So in actually Bolzano most respondents had the feeling that the city was not doing as much to include them. But then when you look at the initiatives that they describe online on the website of the city, there's actually quite some things being done. Of course it's nothing major, but something is happening and so it appears that there is a bit of a mismatch between what the cities offer, what the citizens know/want, because maybe they are not informed. So I don't know how you see that. Yeah, Citizen maybe saying okay I want to participate, but then they just go to a meeting once. Like, how do you keep the motivation high?

Interviewee F: Yeah, I mean, you raised a couple of good questions here. One thing obviously is: why are they feeling that there's not enough participation? Didn't they know about these efforts that are already going on? That could be one reason. So then you would, you know, kind of need to better communicate, to tell people about this. Letters are not e-mail. A letter that informs the people about that, so that could be one reason. Another reason could be that well actually they had some of these mechanisms in place and this is something that I think you can see quite often with participatory approaches. But when you actually participate, you get the feeling, well, actually I cannot really say anything or what

I'm saying is not being listened to. In the end, they're still doing what they want, but they just put down the label, participatory. So that is, I think it is important to be very transparent. What you are doing with the vote or the things that people are saying.

One example which I think is a good example in Zurich with this participatory budgeting that they did. So they had all the ideas that were coming in and they classified the ideas in three categories, red, green and yellow. Green, meaning that the idea can be implemented with the budget. Red is when the city is not responsible, where the Canton or the country or somebody else's responsible, and they have to do it, we cannot, as a city, do that legally speaking.

And then there was the yellow. That was something in between where the city would actually be responsible. But it would be the city government that is responsible. And you could not handle it through the participatory approaches and these ideas they promised they would, you know, tell their respective city officials about this need or this desire so that this can be handled. So informing people, giving feedback of what has actually happened with their idea is I think extremely important, because if you get the feeling well, they just call it participatory, but it is not, well, they will stop participating.

Gasparini Federica: Also the counsellor told me that he's responsible for this. He was like sometimes citizens also then expect every initiative, every idea that they say to be implemented straight away, you know, short term, while of course many things take time. So also there, I guess it's about managing expectations maybe.

Interviewee F: Yes, definitely. I mean that's the other thing. Uh, you have to be careful. Um, what I've seen in in some places is you know that it's OK we have these, you can submit your ideas and experts will then basically grade your ideas or something. It's like oh well then it's the experts together. I'm not. It's not me that is participating. It's maybe sometimes just the name of wording and framing, etcetera, but it's really very, very important that you have that.

Interviewee F: I think it was in the Parliament of and they were asking, you know: Where do we need more participation on the city or the Council or on the federal level, and where do we have enough participation? And the interesting result was, I mean if I put it simply, these political candidates, they thought they had, there is enough participation already on that level where they as Parliament are in power.

Gasparini Federica: Yeah.

Interviewee F: But you're not empowered them on board participation. So there is a power game. You know that these politicians that if there's something where they decide upon, they don't necessarily want to the rest of the people to interfere.

Gasparini Federica: It's interesting. And what do you think? There's some ways to involve citizens that are better than others?

Interviewee F: Um, in the sense of selecting who to participate or what we need better?

Gasparini Federica: Yeah, maybe who and also how like should it be? More like workshops, more events.

Interviewee F: There are many different possibilities, I would not really say one is better than the other.

Gasparini Federica: Okay.

Interviewee F: So you have to be careful that it doesn't sound discriminatory when you choose determinate people to participate. Um, so participation should basically be open to everybody. I think the only discrimination I think that is OK is that you say citizens are allowed to participate in the sense of people that have the right to vote.

Interviewee F: Or are other people able to participate in in the sense of any anybody, all over 20 years old or anybody? Also foreigners, or even children or teenagers? Oh and what are their roles etcetera?

We currently have actually an idea going on with innovation boost where they say people that are often in the area are able to participate, so meaning you know, it's not just the people living but the other people that work there all the time and basically they use kind of the mobile phones to see who is often in the area or something. Then you say, OK, if you're often there we want to hear your voice.

Gasparini Federica: Yeah, yeah, makes sense.

Interviewee F: You know, but if you live, if you're usually in a complete different part of the city, you're not interested in that. And that's one thing. I mean then you also have these kinds of instruments of citizen panels?

Gasparini Federica: Hmm yeah.

Interviewee F: Where you basically have a short tunnel or a small panel of citizens that are deciding on something or working out a proposal or kind of information leaflet on upcoming votes etcetera. And there obviously I have to ask people if they are interested to participate. Then in the selection what you typically would be doing is to make a random selection.

Gasparini Federica: Yeah.

Interviewee F: On the one hand that you don't say, OK, I I'm looking at „I like this face“ and so on. No, it is more or less a random selection, but not completely random, let's say representativeness should still be there.

Gasparini Federica: Yeah.

Interviewee F: For a city that you have to know about, 50% men and women, about the number of old people, young people, well educated, less educated people, that that kind of matches the city population.

Gasparini Federica: Well, actually I don't have any more questions. So this was also like the final dimension. I don't know if you have any comments or remarks to make or things you say.

Interviewee F: Um, well, maybe just one thing that I believe is important. I'll put it bluntly. Like a smart city doesn't end at the city limits. Sometimes you have to talk about smart regions. Because especially look at mobility scenarios, you know, commuters, they live in other cities. They might also live in other countries. Like if you look at Basel in Switzerland and a lot of people working in Basel, they live in France or in Germany and commute daily to the city. And Geneva is the same issue.

Gasparini Federica: Yeah.

Interviewee F: So their participation can be a completely different thing. Also from a political perspective you know. In smaller areas or small villages, it might, you know, really make sense to define yourself as a smart region and kind of share responsibilities and efforts as well in order to implement something which is like a small party by itself.

Gasparini Federica: Yeah. So maybe also then a stronger collaboration and cooperation between, for example, Bolzano has a lot of like small villages around and many people of course working because that's where the companies are and so also enhance cooperation and collaboration there.

Interviewee F: Yep.

Gasparini Federica: OK, perfect.

Gasparini Federica: Thank you. Thank you very much really for taking your time was very interesting.

Interviewee F: Thank you. Bye. Have a good weekend.

9.4.7. Transcript Interviewee G

Gasparini Federica: So thank you again for accepting my invitation. Maybe we can start off with you introducing yourself, your background and maybe projects you're currently working on.

Interviewee G: OK. Just one question: When you say projects only related to smart cities or or in general?

Gasparini Federica: In general, yes.

Interviewee G: Okay so I am a professor at ULB and I teach public policy and administration. But most of my research work is done in Liege. I should say HEC Liege, so the Business School of the University of Liege where I work with the Smart City Institute.

Interviewee G: So this is how my work is split between the two universities. Beside that I'm also a policy advisor for the International Centre for Migration Policy Development where I mainly work on migration policy. So as far as teaching is concerned, I teach basically public administration and change management in the public administration. So this is the focus I have on public administration and for research I deal with complexity, conflict duality, and uncertainty in contemporary public policies, and how policymakers cope with this features of contemporary public policies. Then I work on urban

innovation policy, with the narrow focus on smart cities and sustainability. This is the work I do with HEC. Then I work on 3rd sector development and how institutions can be designed to improve let's say the flourishing of sector organisations. Besides this I started a little bit less than two years ago with Agri food transition policies, with the main focus on the European level. Uh, these are the main projects I am involved.

Gasparini Federica: And because of course my thesis about Smart city governance, maybe out of curiosity and what has led you to also pursue the smart city research field, was there any reason in particular?

Interviewee G: So because digitalization is one of the, let's say, grand challenges of the era we live in or mega trends. So when I speak, so maybe this this can help you understanding the red line that keeps together my research work. So when I speak of contemporary public policies its the policies that deal with what I call grand challenges or what the European Commission and the GRC, the Joint Research Centre of the European Commission, called Mega Trends, so megatrends are the structural forces that are will affect and dramatically change our society. So among these migration is one of these forces and environmental degradation, which I deal with within the framework of agri-food transition, is one of these forces, and one of these forces is also digitalization and urbanisation. So, my research is at intersection of these two megatrends, urbanisation and digitalization.

Gasparini Federica: Okay. Perfect. Thank you. Well, so as I have anticipated to you, my thesis is about smart city governance in particular in small/medium cities. And I'm analysing Bolzano as, let's say as a case study because I'm from there. And so I just found it particularly interesting to work on the city I actually am from. And so within the theory I came up with this framework in which I look at four different dimensions to analyse the governance of Bolzano, which are political strategy and perspective in terms of Sports City, the ecosystem of online public services, the digital engagement and related to that social media network and then involvement of stakeholders and decision making, sort of citizen participation. And so the goal of the interview is to ask you questions about these four dimensions and just let it run really smoothly as a conversation and maybe also brainstorm about potential challenges, recommendations and so on. So if it's OK for you, I can start straight away with the first one, which is more the strategic aspect because I also did a survey to kind of establish a baseline of what citizens thought of the smart city plan in Bolzano, and most citizens think that there's a lack of kind of strategic vision and long term vision, and that's also something that can be found through desk research, because if you go on the website of Bolzano, there's a lot of initiatives being implemented, but there's no clear vision, this is what we want to reach by 2030 or whatsoever. So I would like to ask you what do you think could be the causes of this concrete lack of strategy?

Interviewee G: I think there can be two aspects. One is more about the process through which smart city projects lend to the public administration. This is one thing and the other one is to reach, make the policymaker understand what is a smart city.

And so is there a smart city policy basically because just to understand each other, when you speak of lack of strategies that administration level, it's at the level of the public administration, right?

Gasparini Federica: Yeah, yeah, yeah. Of the city, yes.

Interviewee G: Yeah. OK. So the city administration. So the first aspect is and I don't know if this applies to Bolzano, but one of the critique which is levelled against the smart city is that this is often a corporate idea and when cities embrace Smart, so undertake innovation process centred on smart urban technologies, you actually have managers from the ICT sectors approaching the public officers and selling them basically technologies. So the technology comes before an analysis and understanding of the needs of the city.

Interviewee G: I don't know if this is the case of Bolzano, but this can be an explanation. So basically the solution comes before the problem. And of course, uh, this is a problem itself.

Gasparini Federica: Yeah.

Interviewee G: Yeah. So this is one thing, the other one and maybe the two are connected is that, so since the smart cities as a concept was basically developed within the IBM Corporation, it's not something that has been developed by public administration themselves. So those who sit at the strategic

level, so at the high level of public administration, level of directories for example, may not be aware of the concept.

Interviewee G: OK, so basically these two things I would say the lack of understanding of what smart city is and how it can be deployed to address environmental issues, to address mobility problems or to address governance if the objective is to improve the interaction between the citizens and the public administration for issues through platform to exchange the documents.

So yeah, the lack of understanding of the concept by the policymaker and the way how the idea of the smart city arrived to the public administration and in both cases the problem is that there is a lack of analysis of the needs of the city.

Gasparini Federica: OK.

Interviewee G: So this could be, but I don't know. Again the situation of Bolzano, but maybe it's this and in both cases is because the solution comes before the problem.

Gasparini Federica: And in the case in which maybe, like the city administration is aware and they want to start implement, but like, what do you think could be then the causes like because many I had also other interviews before and many people also mentioned. Yeah, often of course there's maybe a lack of funds, but more than that, even lack of people that know how to implement initiatives because many of these things are quite complex. And so also like saying okay, maybe there's manpower missing as well.

Interviewee G: So when you say manpower, there's a problem at the level of human resources within the smart city?

Gasparini Federica: Yeah, exactly.

Interviewee G: But again, if this is a need of the public administration then human resources should be developed consequently. The point is, how do these technologies arrive at the level of the administration? Is it because technology providers are pushing for them, is it because maybe it's also politicians pushing for them? At which extent politicians have built their electoral manifesto? So the manifesto that then will become their program at the level of the city by responding to the needs of citizens or by responding to the lobby of technology providers. Again, I'm not critical of smart human technologies and of digitalization, I do think that it is important. The point is the process through which technologies arrive to the city. And for me this is a problem of governance.

Interviewee G: To which extent these technologies are Co-created and coproduced with citizens?

Gasparini Federica: OK.

Interviewee G: So usually in my research I look at the difference between corporate led smart city policies and government led smart city policies, and of course, when these are government led and when these are based on long term planning of the administration, it usually works better and in a more sustainable way, where sustainable is not in the sense of environmental, but it's really long term sustainability of the technology because it responds to the needs of citizens. So there can be a problem of resources. But I think that if there is an agreement between the political level, the high level of the administration to implement the certain technology, then through recruitment processes you can adjust the human resources of the administration. This is what has happened in the study we've done in the Azure about this during the Covid with the Belgian administration. I can share with you the study during the Covid because of social distancing measures, a number of services could not be provided anymore physically by the municipalities. OK, so because of the new context posed by the Covid, municipalities had to strategically react to the new contest, municipalities were obliged, let's say, to innovate, provide services which weren't there before the crisis. The pandemic crisis demanded physically to be provided digitally. OK, this was done also through either recruiting new people or simply be externalising the service. So if there is a need and the administration wants to address this need because it's also a need which is perceived by the citizen I don't think that human resources are a barrier.

Gasparini Federica: Yeah.

Interviewee G: OK. So again, I think it's really an issue of which technologies are needed and to which extent and the other thing is also to which extent the citizen is supportive of it and is considered in the design of the technology.

Gasparini Federica: Yeah, no worry, that's fine. Maybe to continue on this, what do you think are key things to consider when planning and implementing a smart city strategy?

Interviewee G: I would say having... So as far as digital innovation is concerned, but technological innovation is concerned, have sociotechnical approach. What does it mean, that beside the technology you need to consider the social ecosystem, right? So here, who is the key actor of the social ecosystem at the end of the days the citizen? So I think that for planning it's important Co creation.

Interviewee G: So basically what are the needs and this can be done with mini publics or deliberative democracy. Or you can simply do public consultations around key technologies, which have been identified as feasible by the public administration in conjunction with the private sector, which will provide later on during the implementation phase the technology. So I think that co creation of this in the planning, which is basically about deciding what are the needs we want to address and what is the technology we want to use to address these needs.

Interviewee G: And will share a second thing with you a study which is now under review, so it's please keep it confidential, but we basically explore the relationship between societal objectives that municipal administrations want to achieve and the technology you can cope with.

Gasparini Federica: And how do you think can the EU support in the smart city transition like where they can maybe provide more or are they already doing enough? Because some interviewees also told me that sometimes of course funding is not enough and you need maybe also more technical assistance in terms of tools and knowledge. The city councillor in Bolzano which is responsible for Smart city and citizen participation, and he said that the funding of course is nice, but also there are maybe some more practical tools in that sense. I don't know what you think about that.

Interviewee G: OK, so if I understand, so is this is the same actor that told you about the human resources?

Gasparini Federica: Yes.

Interviewee G: Because I understand that in the case of Bolzano there is clearly a lack of capacity at the level of the public administration, capacity in terms of skills and human resources, even though there is a will to embrace smart cities now. So in this sense, maybe they expect also Technical Support from the European Union.

Interviewee G: So maybe this is a need, so if the actors tell you this about the situation of Bolzano, and I mean, this can be possible. Now I don't know if the European Union provides technical trainings, but I think the European Union provides frameworks to implement some policies, in this case a smart urbanisation. In Italy there is all this debate around the national plans for resilience and reconstruction. So maybe within this framework, whose features are in the international agenda, the European Union can provide the support, but I don't think they should add yet another program or funding line, or so maybe creating synergies. This is synergies with the resilience and relaunch plans of the European Union can be interesting, because I'm sure that there is there, you know, like working groups or often the European Union has open days with public administrations workshops. I would say that maybe support could be related to the implementation of these plans.

Interviewee G: So if the need is to build capacity within the public administration, I'm not sure that the European Union can do it, but what can be done is certainly a better synergy between what is done within the framework of these plans for which there is a will to be implemented at European and national level, and the support that administration's municipal administrations need.

Gasparini Federica: Okay perfect. One of the challenges, especially for small cities, is that the smart city can mean a lot of things, and there's a lot of things that fall under Smart City. And so how can this city navigate the broadness of the topic as well as kind of prioritising, especially when it's at an early stage?

Interviewee G: Look at the cities can be used to build benchmarks. To say, this is what can be done. Do you want to go this direction or not? But again, I think that's the issue here: it is really having a discussion about the need and the technology. Concretely, what does it means it needs. OK, let's have meetings with the user citizens at the, don't know, district level, at the neighbourhood level and let's try to understand what is needed. This can be done either independently by the public administration with civil society organisations and this can be the face of mapping the needs of the city. But this can be done also

if politics properly work with party representatives which are usually to be rooted within their electorate, so they should know what their electorate needs.

Based on this, once you have understood the type of problem, what do we want? I try to be practical. I can make an example in one municipality in Belgium where there was a need for a civil society organisation to set up an association working within different sectors, sport, culture, etc to mutualise cost about the equipment you need to organise events in the city, being events related to sport or culture. So what they did was simply with the support of a call for projects of the region, which is called the smart territory called for project, launched in 2019, and the municipalities answered the following year.

They created a platform, basically a digital platform, where associations could say, OK, I need this equipment, OK, need these other equipment and they created a sharing economy basically around this. So again, starting from the needs is important. So one way could be, as I said before, like workshops or consultations at the party level or at the neighbourhood level with the support of the administration. The other one can be an instrument such as called for projects. So basically, that administration can launch a call for project where civil society organisations can answer and money are made available to implement.

Interviewee G: Smart urban solutions within the call for projects, within the framework of call for project, which was launched here in volume, the administration also gave the regional administration guidelines to propose projects within 3 groups of technologies; technologies for governance, namely improved relationship between the public administration and the cities energy. So to reduce CO2 emissions for example, the use of sensors at the level of energy and mobility. So the use of calls for tenders or calls for projects could also be another way, through which, let's say, disconnection between the needs and available technologies could be done.

Gasparini Federica: Yeah.

Interviewee G: Um, I don't know if this answer your initial question.

Gasparini Federica: Oh it's perfect and switching to something a bit more different. How important do you think is kind of smart city branding and communicating that to the outside?

Interviewee G: This is a good question. Because we've been discussing this several times, especially with the researchers in HEC. Since this smart city movement is associated with the IBM Corporation and with some idea that has been called surveillance capitalism – I think that this brand does not help - because it has passed some message at the level of the public opinion that basically the use of sensors, cameras and maybe to some extent it is also true. But this goes back to the issue of the governance of these technologies that can threaten the privacy of citizens. So the issue here is how these technologies are governed, how the data that is generated through the interaction between the citizens and smart city technologies are owned. Who is the owner of this data and how is this data used? What is this data used for? So I think this is what the smart city label is often associated with. The branding could be problematic. This is what happened with the sidewalk project in Canada with, which was a project for the construction of a smart neighbourhood in Toronto? The project was basically a corporate led project because it was driven by Google. Google said that the project failed because of the covid pandemic but in reality the project failed because citizens were afraid of surveillance capitalism and how data would be used later on. So I think there is an issue with the smart city label, especially when these projects are designed and implemented without any transparency.

Gasparini Federica: Yeah. And how would you think is the right way to communicate it also to the citizens, like in a way that shows them look, these things might facilitate your life. How would you then communicate it to the outside?

Interviewee G: But again the issue is are we selling technologies to the citizens or are we addressing a need? Did technology fall within the scope of marketing and marketing campaign or are we co-constructing technologies with citizens because when cities are involved since the beginning and this is done in a fair, transparent way, then communication becomes a secondary need. Communication becomes a strategic foundations for public administration. For corporations, if you need to compete on the market with other corporations, OK, because you need to subtract demand to your competitors for your product. But here the issue and this is because again, if you implement them in a legitimate way, which

is consonant with the needs, the expectations of citizens, then I mean, the point is that we're using digital technologies to improve some needs of the citizens. I mean, I don't think that this could be problematic. So again, I don't think it's a problem of communication. I think it's a problem of the process through which these technologies are designed, planned and implemented within cities.

Gasparini Federica: OK. And last question for this section, how do you think smartness and smart city governance should be measured?

Interviewee G: What do you mean?

Gasparini Federica: As a city that is at the start of kind of the transition, they maybe they don't know exactly. OK, what am I going to measure? Should it be more like? OK, I'm going to just look for out for what I want and measure that. Or is it better to orientate themselves to like established frameworks.

Interviewee G: So the discussion around the Co construction and Co creation of smart cities goes along, I think with the discussion around KPIs, key performance indicators. So once we have decided what are our objectives, what we want to achieve, then we can associate with these objectives indicators to measure performance. Basically, do we want technologies that reduce traffic jams. Do we want technologies that reduce CO2 emissions. Do we want technologies that allow preserving biodiversity? Do we want technologies that reduce the number of people circulating in the city centre through cars and increasing the number bicycles. It is well explained in an article which is called one size does not fit all. This is the idea that you cannot arrive there with the idea that indicators and what you want to measure comes after the discussion around the needs, the objectives and then the performance so again we cannot choose. To answer your question about what I would measure, there are very nice exercises about how quantifying the impact of projects in this case of Smart city projects, which is done by research centre of the University of Milan, which is called Tiresia and they work a lot on the co-construction of indicators to measure the social impacts of innovation projects. So this would lead to the issue of governance. So if governance is the rules and rules that actors have within a process. Then there is also a governance of the impact measurement: so once citizens, the final users, have been involved through mini publics or workshops I don't know about the objectives they want to achieve once these objectives has been defined, they can be combined with technologies to achieve them. And this can be done through the facilitation of university researchers in this research centre that I told you this is what they do. Basically, through interactive workshops they come up with the scoreboards that can be used later on to monitor the implementation process. And you have the distinction between outputs and outcomes. Outputs is what's the projects we want to achieve. I want to build this technology, that technology and my progressing towards the construction of this technology, this is the output, but the outcome is what is the societal objectives I want to achieve with the technology? Does the technology reduce CO2 to reduce inequalities and there the interesting thing is that you can associate sustainability measures, social, economic and environmental and at this stage you can type outputs outcomes with SDG. So this is you know, this is an issue of governance of how you organise this. So I don't think you have a preorganised or predefined set on indicators. Again it's a process of adapting to the context.

Gasparini Federica: OK. And because we are also talking a lot about citizen participation, maybe I just dive right into that. And what I saw also again through the survey and a bit of the desk research is that the citizens feel like the city is not including them enough. But then when you look at what's being done by the city, I mean it's not like super much, but there are initiatives, there are workshops events where people can go and Co create.

Gasparini Federica: And so my question is, I mean, there appears to be kind of a mismatch and why do you think this mismatch is like is it because the people are not informed? Is it because maybe the city is not involving them in the way it should? Like what do you think?

Interviewee G: Okay I can bring you the example of a city in Belgium which has been a fast mover on the implementation of smart city projects. I will not tell you the name of the city, but I can share with you a study about the city later on after this call. But basically so in this city few years ago, right after the election of this major, the city undertook a smart city program. And this was part of the electoral manifesto of mayor. The mayor is elected as a strong majority, which means also that he had the support of the voters, therefore of the citizens. So during the first Assembly of the municipal council, he launches

among the different strategic objectives of this administration, the Smart city program. So he commits in the following six years, to realise as much city program, which was built around 3 pillars: smart economy, smart governance and smart mobility. And so it starts with a strong electoral support. So which means that citizens were somehow supportive of it. Of course, its electoral manifesto was not only about this. There were several things. And it is done with the support of European regional funds. OK, so maybe this is another aspect which can be taken into account when thinking of how the European Union can support okay so regional policies of the European Union can be interesting and provide a framework for smart city development. Throughout the process of implementation, one project which was the one about smart governance involved the construction of a smart neighbourhood, the neighbourhood was close to the neighbourhood of the public administrations and one of the cornerstones of this smart neighbourhood was building a transparent building where municipal officers, politicians, citizens could meet and Co create the future and the planning of the city.

Interviewee G: Little by little the project lost the support of citizens. So basically the only thing that the mayor and the staff were doing was to do communication. So social media and YouTube videos presenting the project, rather than saying okay, let's have roundtables, let's discuss about it, what is it that does not persuade you, maybe you want to propose something different. Maybe you want to be part of a board supporting the project. So I think that when the disconnection happened, the smart city manager resigned because he said „I arrived here with high expectations about how this administration would have implemented smart urban technologies and improve the connections with citizens and interact with citizens and civil societies and they blame me for what I'm doing“. So not only did the project lose the support of citizens, but the person who was recruited to do the project, felt that the good thing to do was to resign.

Gasparini Federica: Yeah.

Interviewee G: And so the issues that basically the citizens did not understand the importance of the projects, they did not feel part of it. They were just treated as recipients of public communication campaigns. So basically again, I think that the point revolves around what we have said before is that the citizen is considered maybe a user and not an agent of the process.

Interviewee G: This is important because participation can be of different ways. You can have participation like consultations, but you can have participation like delegation of decisions. I think the deeper you go into participation and so you do not limit to inform citizens, but you have you treat them as decision makers, the higher the chances of having them involved and supportive of the project. This is what I was telling you before. I think there is a strong connection between city policies and participatory democracy or deliberative democracy.

Gasparini Federica: There's different levels of participation and actually another interviewee told me that especially at the start if you make them participate too much, they might be unhappy because they could go to meeting and to these roundtables and presentations and maybe have a lot of ideas. We want to create, but then not everything's being implemented straightaway. I guess it's a bit about management of expectations. I don't know if you see this as a problem or if it's maybe something that can be avoided in some ways.

Interviewee G: So if I understand well what you're saying is that you invite them during the phase of identifying projects to be implemented, and then you identify wonderful projects which cannot be realised, and this is a problem of feasibility of the project its citizens want and those that can be implemented by the administration. Do I understand your point?

Gasparini Federica: Yes. Because I feel like a lot, this citizen participation seem like „everyone goes there and they put down all the list of ideas and then they leave the meeting and yeah, maybe they don't receive updates or they see, actually I suggested 10 things, but none of them is really going through“.

Gasparini Federica: And I mean, obviously ideally people know, OK, not everything can be implemented. I go there to give my input, some things are going to be doable, some not. But of course that's kind of the ideal scenario. But in real life, yeah, people maybe go there twice then they get demotivated or people go there, but then they complain because what they had suggested is not being implemented.

So yeah, how do you? Yeah, I don't know if you see this as a problem where you say actually if co-creation is done right then this problem doesn't even emerge.

Interviewee G: Yeah, I see. I think it's not only a problem of smart cities, is a problem of the democratic forms of management. To which extent is democracy and participatory management an effective system? Oh well, it's true that motivation can be a problem. I mean, people might not commit, they just go there, they give their opinion and they do not commit to accomplish the process to the end. This is true but I think there is a trap here, which is the fact on the one end, the smart city concept it's wicked because it has been built on the idea of participation, you know, of transparency, and it raised a lot of expectations. And it is also based on technologies been hyped and politicians crafting their campaigns and now reality is different. And so maybe there is here a discrepancy between the expectations of the initial marketing campaign of corporations and what's now the public administration has to do to put this project forward. This is why also you're doing your research on the governance of these technologies. Because for sure that paved the way to increase participation. But at the same time, we are realising that participation is complex and now I think we have two options as usual in life, either we go forwards or we step back and we say, maybe this narrative that is being developed in the past is not accurate. And here the point is just use technology to make urban systems more effective and more efficient. And we stop there. We do not speak about smartness and intelligence anymore. We do not speak about collective behaviour anymore. We just speak about innovation in the Department of this administration, in functioning of this mobility infrastructure. We abandon the narrative that corporations decided to create to hype these technologies.

Interviewee G: With deep political cost of this, of abandoning this narrative. The other one is to push it forward, we have envisioned, we have imagined the world where hierarchies can be abolished and technology can support this transparent relation between public administration. So we embrace the challenge and we, even though we realised that it's difficult, we see how this can be improved. This is why we have representative democracy, we have representative democracy because direct democracy is very complex. This is why we have politicians, professional politicians, it's because direct democracy, especially when you are with large numbers, it's a very hard organisational model to implement. So I think that if this is the direction towards which we need smart cities to go, as a technological tool, which is meant to empower democracy, then there is still a lot to be understood about how to improve the commitment of citizens. I mean there are nice tools which can bring collective intelligence, provide some tips, some strategies to have people working together. You add from a management point of view, you have some systems which can facilitate horizontal decision making processes. You have all accuracy predictions. Maybe the intersection between the smart cities and collective intelligence, can be along the process of implementing smart cities.

Gasparini Federica: Maybe just to touch upon the ecosystem of public services. How do you create services that are inclusive? Smart cities are about digitalization, but you cannot just go digital from one day to the other because that would mean excluding a lot of people. But you have to kind of find a hybrid way while at the same time still promoting the digitalization process for the future. And so I don't know how you see balancing out these two spheres.

Interviewee G: So how align digitalization and the risk of digital divide? I think there can be different solutions. One is the possibility of having spaces in the city where people who are poorly digitally literate can go meet and have interaction with humans, not algorithms, that help them navigating through the system's otherwise. Support Centre for old people or youngsters that do not know how to use digital technology. So this is one thing. The other one is also trainings for users. This can be an alternative and ways to strengthen the literacy. Both ways aim either to support those who are not digitally literate or to strengthen their skills. Another way is that you introduce transition periods where services can be digitalised and are provided both on a physical support. Maybe you have a transition period where you can have both.

Gasparini Federica: Do you think there's other services that have city should focus on?

Interviewee G: You mean for the digitalization? Yes, I mean I think that the migration from paper to digital support is clearly something that facilitates life a lot. The other aspect is this is related to the workplace, so smart working.

Gasparini Federica: OK, great. Looking then at citizen engagement and social media. Just a quick question there: How do you see the role of social media in communicating and informing also the citizens. Social media can be dangerous especially when the strategy is only based on communication, but not on actually including the citizen. And yeah, how do you see this as a tool?

Interviewee G: Look, social media depends which social media.

Gasparini Federica: Yeah, every type of social media, but also maybe the channels that you have in communicating. In this case it's more digital channels. But of course there are also offline.

Interviewee G: I think social media are places where people can meet in a virtual environment and this can be used certainly for communication. It can also be spaces of debate, so if social medias again are used to support collective intelligence processes where awareness of a phenomenon or an issue can be shared in a collective way and decided upon a common course of action, then social media becomes a facilitator of participation. The point is, are we using social media for one way or two ways information flows? If this is the second case, then social media has become an asset for participation.

Gasparini Federica: And do you think there's any particular challenges and risks that city administration should be aware of?

Interviewee G: If you do not use them carefully, it can pose problems. About the way you are perceived, sometimes you know wrong words are written on a social media account and can provide political troubles to the administration. So you have to use politically balanced or politically correct jargon otherwise it can threaten the political stability of the administration. So I think this is the main risk of social media for the administration. The other one is the ownership of the data. But this applies to social medias as to other types of technologies that collect data.

Gasparini Federica: Okay perfect then from my side that was all the questions and the topics we touched upon. I don't know if there is any last comments or remarks you would like to make about, yeah, things to consider related to the smart city governance, but in small cities.

Interviewee G: No, no, I think was pretty clear.

Gasparini Federica: Thank you.

Interviewee G: No worries. Have a good day.

9.4.8. Transcript Interviewee H

Gasparini Federica: So maybe to start off you can introduce yourself and tell me a bit about your role at the city of Brussels. Maybe what you're currently working on and what your main tasks are.

Interviewee H: So, I am the smart city coordinator for the city of Brussels. I am in charge of a team of three people at the moment. We have 2 project coordinators that are working on the European project. So it's a project which aims at developing positive energy district in the north of Brussels.

So we have received a subsidy to develop a plan for developing that district. So they work nearly exclusively on that project and then there was one other project coordinator who works on all the other projects. And so I work also a lot with her and on the implementation of our Smart City road map. Also trying to find new opportunities. The smart city units is included in the strategy and digital transformation direction of the city. So we are really a transversal team, coordinating all the projects that have a smart city aspect. We also have to keep ourselves updated about all the new technologies and so on. So we try to identify new ideas for projects and to discuss with other teams. We also participate in international networks of cities.

Gasparini Federica: Thank you. So before I start, I will just explain you briefly how the interview is structured. So I'm analysing right now Smart city governance in small/ medium cities and I'm using my hometown as a case study. And I'm from this little town called Bolzano in the north of Italy close to the Austrian border. I've developed a framework to kind of analyse the readiness of the city and there's like 4 main dimensions to it, which are the political strategy and perspective in terms of smart city, the

ecosystem of online public services, then digital engagement related to social media and then the citizen participation. I'm just going to ask you questions to every dimension and it's really an open discussion also a bit to brainstorm. What can you give me from the side of Brussels like how is Brussels handling things and how can this maybe be applied to other cities because my city is at a fairly fresh stage in terms of smart cities. So of course it's not as advanced as, for example, Brussels. So if it's OK for you, we can start with the more strategic aspect.

Gasparini Federica: And so basically I did also a survey to kind of establish a baseline. You know what citizens think in the city and what kind of came out from the survey and also the desk research is that my city is kind of lacking long-term vision, strategic plan. So a lot of initiatives are being implemented here and there. But there's a lack of strategy. And so I would like to know for from you what you think could be the causes for this lack of strategies, something related to size, experience, funds? How has this evolved in the city of Brussels over time?

Interviewee H: Yes, it's quite recent actually. The smart city department was launched at the end of 2015, so there was only one person working on smart city projects until 2020. She was working on a very ad hoc basis. So really depending on the opportunities that were coming up. She was really just leading the project like that without having really a long term vision and a very defined strategy. At the end of 2020, another person joined the team. Then I joined the team in the beginning of 2021 and so that's when you had the beginning of 2021, we started with the traditional way of defining a smart city, road map and strategy for the city. So we worked with consultants. It took longer than expected, so it took nearly two years to arrive at our final documents. We launched it in March this year, so two years after we started. The idea was to bring long term vision. Of course we always depend on the political deadlines. So here the next elections will be in 2024. So we have a bit of pressure from the political sides to deliver some projects by 2024. And so it has always been like that, but we as the administration are responsible to bring a longer term vision and yeah, to make sure that we do not only depend on those bodies. So that's why it was really important to do that, defining a vision, a strategy until 2030. So we discussed with them the direction of the city. And so we chose to have a very general approach of the smart city. Try to identify projects that would be interesting for all the departments of the city. So we do not focus on very specific topics. We have defined seven political domains in which we are active and now we identify interesting projects that have already been done that are ongoing or that need to be launched. So that was really an exercise that we did with the departments, with a bottom up approach. We also have identified 5 building blocks for Smart City, so aspects that are necessary to develop all the other projects. But you have like more than 50 projects to implement. So we will have a lot of work to do to see also how we will actually implement those projects and collaborate with the department.

Gasparini Federica: Why did it take so long to actually come up with a strategy?

Interviewee H: I think the methodology was not perfect. We let the consultants do a lot of the work, but we realise that sometimes they didn't have enough internal knowledge about the city to really bring the right recommendation. We had to rewrite a lot to make it really fit with our reality. I think that's what took really a long time.

Gasparini Federica: Was funding a problem at any point?

Interviewee H: Yeah, it is a problem. We do not really have a budget to implement projects. We have a budget to launch events. We have budget for studies to work with consultants. But not project related budgets. We really try to focus more on the studies. And so we identify an opportunity. So for instance, a project related to mobility, we will go to the mobility unit and try to see if they have a budget for that. So that's where the coordination and transport safety is really important because it's not because we think that one project is good, that it will launch, it will be launched, we will need to be aligned with the people working on the business and make sure that they have all the budget and that's next to our internal budgets. We also follow all the European calls that are being launched and we apply to quite a lot. From time to time a project gets funding. So that's a good opportunity for us.

Gasparini Federica: Yeah. When you had to come up with this strategy, what do you say are the most important things that you considered and that in general a city should consider when planning and then managing a strategy?

Interviewee H: I think that it is really important to first work on vision before going into the details of the project. Trying to define a common goal, a shared vision for the different levels of hierarchy in the city, and maybe that's something that we missed a bit and that's why it was a bit complicated to finalise our strategy. Um, because they chose to follow the bottom approach, which is nice, but it also has to fit with the vision that you have. So at some point, yeah, the vision and the approach have to match. Yeah, that's a bit complicated. But I would say that first, we really have to do that work on the vision to be able afterwards to work on the roadmap and make sure that everything defined really fits with the long-term vision.

Gasparini Federica: And you said that you work with the departments of course to set up this strategy but did you also work with just like normal citizens or was it was more between departments and you?

Interviewee H: It was really an internal work. But part of our strategy is to use more citizen participation. We have a team that works on citizen participation in the administration. So yeah, we try to do participation when it is possible. So for instance we are working on digital rights charter at the moment and we will try to consult some citizens to make sure that it fits.

Gasparini Federica: Okay perfect. And of course I imagine you're trying to navigate a lot of different projects and initiatives and how do you prioritise like, the ones that are actually maybe important and feasible from the ones that maybe are not on top of the priority list? Like how do you navigate kind of the broadness of the smart city initiatives and projects?

Interviewee H: There are different factors that you have to take into account and so of course there are the political priorities and there is a political agreement for the legislative periods from 2018 until 2024. So they really have a majority agreements where they list projects that they want to be launched during that period. So yeah, we have to make sure that those projects are launched unless we see that the context has changed. So that gives us some priorities.

Interviewee H: But we also have all our word as the administration, as I said, we are to keep the long term vision. We define priorities based on our internal knowledge and the region and if we think something is necessary, define additional queries and add them. What is also important is the opportunities and the budget. When we see that there is a budget that is available to launch a certain project, then yeah, we will launch a project. So we need the financial parties, it is a really important factor to take into account. And so it does the same if we if we apply to a European project and we are selected, then we will launch a project that maybe was not the first priority but as we have that opportunity we do it.

Gasparini Federica: So the political side matching your internal goals and objectives and then of course also depending on the financing and budgeting that there is available.

Interviewee H: Yeah, but of course, when we apply to European projects, we try to apply to project that really fit with our priorities. But we don't have a very clear list priorities with like numbers. It's just some priorities that we would try to focus on.

Gasparini Federica: Um, and how in terms of like more than marketing side of it, how important do you think is the smart city branding and the way it's communicated to the public? Because smart city means everything and nothing. So it's very difficult, for some people it's very exciting and appealing for others it's like oh it's technology that will steal our data. I don't know how it's in Brussels and how you sell and brands this whole thing.

Interviewee H: So it's that's actually an important point. So far we didn't really have a communications strategy. And so yeah, we communicate on some project when we thought it was, it was relevant. But now that we have a very well-defined strategy, we thought that, yeah, are working on the communication strategy around this small city. So we also work on this with consultants and so again takes a bit more than expected because we want to define a logo, we want to launch a new website. So there is a lot of work. You want everyone feeling involved and so it's already a bit complicated to align everyone's opinion on these very subjective topics but yea we hope really to launch all of this by June. Because yeah, indeed, that's also an important pillar of our strategy. The fact that we really have to communicate both internally and externally. So within the administration we have to convince our colleagues that what we do is actually useful and that it is not only working on the very futuristic projects, we want to be there to support them, launch projects that are relevant, use technology to reach a goal and so that's

something that we have to launch. To organise awareness and sessions internally to work with you, so explain some projects, give some inspiration from other cities to really give them some ideas about what this modification can do and then externally you want to communicate a bit more and with a bit more structure about our projects. So both towards the citizen so he/she knows what the city does for him/her, but also towards the smart city ecosystems. So like the companies. We work with the citizens, with the private companies, with the other public authorities and also with the universities and academia.

Interviewee H: So that's also something that you want to launch. So there's a lot of things to do, ideally we would like to have a sort of reflection group where we talk about the smart city in person. We still have to define exactly the scope and who would be involved.

Gasparini Federica: OK, great. And then I mean, you already talked about the road map that you follow on your project and like the goals you want to achieve. And I wanted to ask you how do you measure your progress and the progress of the projects? Like how do you measure let's say the smartness of the city of Brussels and also then related to it the governance?

Gasparini Federica: Do you have specific KPIs?

Interviewee H: Oh yeah, that's still under discussion actually. Yeah, we wanted to define KPI, but then there's also a similar exercise that is being done for the whole city. So the strategy team of the city is working on defining indicators to follow the most important projects of the city.

Interviewee H: So we still need to see how to align with that. What is difficult is that there are different plans that are launched. So for instance, you have the smart city strategy and the climate plan. We also have a sustainable development plan. So all those plans have defined some objectives. They have some sort of indicators where they are not really aligned so it would be wise to define some that are overarching. I think we will try to define a few ones so that we are able to actually follow them. What is also difficult is that you need data of course to calculate those indicators and data is also a very hot topic. We have just launched a data team, but it's one person at the moment, but she's starting to give a bit more structure and governance around data in the city. So if we define indicators, we have to make sure that we are able to calculate that.

Gasparini Federica: Are you going to use like, do you think you will yourself after frameworks that already exist to measure certain things? Or are you going to come up with your own indicators and your own kind of structure and framework?

Interviewee H: We can get inspiration from existing frameworks. But we will really try to focus on our own objectives and try to define indicators that really fit with what we have defined.

Gasparini Federica: Perfect. We'll go then. This was a the first dimension, which is kind of the longer one. And then the second one is about online public services. So basically when I did the survey, what came out is that citizens of my city, they're very confident in using new technologies and but they're not that confident when it comes to using the services that the city offers. So that can be apps or, I don't know, like renewing your identity card online like also administrative stuff. And so I don't know if you have maybe already projects related to the digitalization of administrative services. If yes, like how do you see creating an ecosystem of online services that is inclusive and works for digitally literate people, but then also maybe for older generations because I guess you will need to have a hybrid system. So that like push for digitalization, but make sure that no one is excluded.

Interviewee H: Yeah. That's also an important project that was launched in the city. So I didn't work directly on it, but we had a whole program of digital transformation for the city and that program ended with our moving here to this new building. So it was a whole transformation program for the administration. And so one key point of the program was the launch of a Citizen Portal. An online portal where citizen can make some requests for administrative documents online. We really think that this is important and that it answers the needs of a lot of citizens. Because we know that the opening times of the administration are not always very convenient for working people. So offering those services online is crucial. Obviously, it is not adapted to the needs of all citizens. There are some people that still prefer to go physically to the administration to be able to talk with people. There are people that are not able to use digital services. So that's why the actually adopted a 360 degrees approach: Really trying to put the citizen at the centre and try to transfer to the needs. They said that we need an omnichannel approach.

So being able to answer the needs through all communication channels. We still have physical lockers here at the ground floor where people can come in and make requests and there are still some services that are not digitalised yet. Of course we also have a phone number where they can call and ask some questions.

What we also do is that here at the ground floor, there are computers and tablets that they can use to make their requests on the digital portal and there are employees there to help them with that. So we really try to again empower those people. We will also launch some trainings about the authentication process here in Belgium, a service that is needed to access the citizen portal. So we really show reflection around inclusivity of these services.

Gasparini Federica: Actually my next question was going to be how can digital skills be developed also for people that are not digitally literate yet. And so you already mentioned some, I don't know if there's any other bigger projects coming up.

Interviewee H: So we work on digital rights as a whole. At first, we really wanted to work on digital inclusion exclusively. Because we know that we have a lot of people here in Brussels that have lower income and that are not always very digitally literate. So we wanted to work on digital inclusion, but then we had the opportunity to participate to a project of the city's coalition for digital rights. And so we decided to do a project that was a bit broader and so we work on defining an additional citizen rights Charta, where we define our commitment as a city, so regarding inclusivity, but also accessibility, AI ethics, data ethics, sustainability. So we try to cover all those topics and to also define some actions related to those commitments. Of course you need some alignment internally to work on that. So we have lots of actions that are possible. We already offer some trainings around digital skills in public spaces that we have in the city. It's also places like neighbourhood houses. In the schools we also have a program that is meant to help students develop those skills.

Gasparini Federica: Nice. And besides the more administrative tasks, do you think there's other services that a city should focus on? Maybe more related to for example, sustainability or health because of course right now in most cities it's more about facilitating administrative things. But I don't know if maybe you are planning to launch other services.

Interviewee H: You mean smart city services?

Gasparini Federica: Yeah, exactly. So always related to the city, but maybe related to other something not administrative.

Interviewee H: So yeah, as I said we try to cover all the political areas of the city and so multiple topics. As an example we are developing a positive energy district, so a neighbourhood where we produce more energy than what is consumed. We also have a bailout project focused on monitoring pedestrian flows in the city and also monitoring air quality. Or we have smart bins.

Gasparini Federica: Perfect. Then the third dimension is about engaging with the citizens through social media. So you already said that you're working on the communication strategy. I don't know what role has social media in that is it something that you consider or something that you say is going to be relevant further. And what about the website?

Interviewee H: So our website is not really nice in the moment. We really hope to make it a lot more attractive and so the idea there is really to publish some articles about projects and also about events in the city just really are or information channel. And so that's something that we manage internally with the smart city team. As we are working on our communications strategy, we were thinking about what we can do with the social networks. We first thought about launching our own accounts, put it on Instagram, or at least on LinkedIn, and maybe Facebook for this. But you realise that we do not actually have the resources to publish enough content. So what we will do is use the general social networks of the city to communicate about our projects. Our idea is to define with the consultants a branding for the smart city so that we can raise awareness about what we want to do towards the citizens. And yes, especially on LinkedIn, we can reach a lot of potential partners.

Gasparini Federica: Right now is the city administration using the social networks a lot?

Interviewee H: Oh yeah, they have accounts on most social networks: LinkedIn, Twitter, Facebook, Instagram. We have a communication team that publishes daily on those networks with communications from all the departments of the city.

Gasparini Federica: Yeah. What do you think will be some of the challenges related to social network and communicating on social media because only on the Internet, of course, everyone can kind of say what they want and what they have seen in my city is that often social media tends to become a hot pot of complaints and people not being satisfied with things.

Gasparini Federica: And I don't know how it is for Brussels right now but do you see this kind of problem? Is it even a problem or a challenge for Brussels? And yeah, how to tackle that?

Interviewee H: We do not work with social networks directly, so we do not really have to manage those kinds of issues. But yeah, I think our communication team is really used to managing negative comments. So I don't know exactly what are the rules, how they really deal with it. But yeah, I think it is a risk, but if you do not want to have negative comments, then you will not communicate about anything, so that's a risk that you have to take and that's also a good opportunity to answer to the citizens and maybe even convince them of what you are doing.

Gasparini Federica: OK, then the last dimension is about citizen participation. And so yeah, you said it is also one of your goals to include citizens more. What do you think are ways to involve them, inform them also about the fact that they can be involved because that's a big issue in Bolzano, is that things are being done to actually involve the citizens, but then when you ask: Oh are you being involved? They say no and so it is like people are not aware that things are being organised or don't take care? I don't know how this is for you.

Interviewee H: As I said, we have a citizen participation team. So it's really like four people working on that. So we have different tools. We have a citizen participation platform where we do participatory budgets that can be managed, we can also make some surveys and different types of consultations that that can be done. I think it's a good platform, based on the platform that was developed by Barcelona.

Interviewee H: Then you also have some citizen councils where we can consult some groups of citizens. We can consult them on some specific issues. So they meet like for three months or something like that.

Gasparini Federica: And have you conducted a survey maybe to see if people are satisfied? How do you see it with this kind of mismatch? Maybe citizens want to participate, but then they see that the projects are not being implemented as they would like or not as fast. And then maybe say okay actually the city is not really listening to me. I don't care. I'm not going to go to any other events because the city is not considerate of my opinion. I don't know if you had this in your city.

Interviewee H: I do not work specifically on citizen participation, but I know that's something that they have to be cautious about when they consult citizens and if they really try to collect their ideas to make sure that they can actually launch their ideas afterwards. In general, not all projects are successful of course, so I guess that you have some people who will not be satisfied with it but you have to manage expectations and satisfaction.

Gasparini Federica: Then actually this was the end and also it was one hour or so I don't want to take more time. I don't know if you have some final comments to make or things to consider.

Interviewee H: Uh, I think we've covered the important topics. Maybe something that is important, that we did not discuss here is that the fact here I work for city of Brussels, but we are included in the regions. And so there is also a smart city office at the regional level. Some projects are better to launch on the regional level, for example traffic. So that's something that have we to take into account, consider things beyond the city borders.

Gasparini Federica: Smart city not just the city, but also apply to kind of the surroundings.

Interviewee H: Yeah. Then our territory is quite specific because we are really touching the next municipalities. We are very close to each other. So we sometimes cannot just think about our territory within our borders. There are issues that go beyond our borders.

Gasparini Federica: Okay. Thank you very much and have a good day.

Interviewee H: You too. Goodbye.

Abstract

The purpose of this paper is to investigate smart city governance in small municipalities, using the city of Bolzano, Italy, as a case study. Smart city governance in small urban areas represents a considerable research gap which this study aims to address. We aim to understand Bolzano's case more in depth by using publicly available information, as well as the results from a baseline survey conducted with Bolzano's citizens and interviewing both local and international relevant players in the European smart city domain. This will not only allow us to provide the city administration with clear and actionable recommendations on how to embark the smart city journey but shall also inspire other small municipalities that might encounter similar challenges to our case. Analysing Bolzano's governance from two perspectives, the readiness of the city and the readiness of the citizens, it appears that the city is readier for the smart city transition than its citizens. Nevertheless, we find that this misalignment is also caused by the city's inability to effectively inform, communicate with and include its citizens. Overall, there are four pain points that Bolzano will need to focus on to improve its governance and as a result quality of life in the city: strategy and leadership, digital infrastructure, co-creation and communication and branding.

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