

Becoming a smart old town – How to manage stakeholder collaboration and cultural heritage

Becoming a smart old town

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Abstract

Purpose – Within the ongoing digitalization of society and dimensions of integration, equality, citizen needs, sustainability and quality of life are of increasing importance as driving forces for cities to become smart. The purpose of this paper is to examine participatory management challenges in becoming a smart old town in the context of cultural heritage.

Design/methodology/approach – An explorative approach was applied on a qualitative single case study including in-depth interviews with 21 stakeholders representing local entrepreneurs, nonprofit organizations, the municipality, politicians, tourism organization and residents of an old town district in a Norwegian city. Additionally, participatory observations and document studies were performed. Findings were continuously validated with the respondents.

Findings – The present study contributes with stakeholder views on challenges arising from the development of a smart old town and suggests possible innovative solutions for participatory management. The transformation of a city with cultural heritage into a smart city require efforts that go beyond smart ICT implementations into issues of social sustainability.

Research limitations/implications – The study brings forward the opportunities that lie in the dynamics of interaction between the spirit of cultural heritage and the body of participatory management. It contributes by responding to calls for further research to deepen the insights into stakeholder inclusion in cultural heritage-based city transformation. This explorative study has its limitations as it is based on one qualitative single case.

Practical implications – Participatory management insights and recommendations for smart city transformation are provided.

Social implications – The study addresses socially sustainable outcomes to create democratic conditions that promote inclusion and community building by understanding what people need and expect from the place where they live and work.

Originality/value – This study is positioned as unique in terms of its complex nature of transforming an old town to become a smart old town based on cultural heritage and an open and coordinated inclusion of stakeholders. Smartness in context of city transformation is revealed in many dimensions ranging from technology-driven to more participant-driven.

Keywords Cultural heritage, Smart city, Stakeholder inclusion, City transformation, Participatory management

Paper type Research paper

1. Introduction

One important and unique resource in city transformation is the local cultural heritage of a place. The management of cultural heritage is a particular complex process as preservation of the “old” must go hand in hand with innovation of something “new” and smart (Al-hagla, 2010) in order to maintain authenticity and value for stakeholders (UNWTO, 2012). Contemporary

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cities are hence facing complex challenges due to digitalization and economic development and may be viewed as places that can benefit from innovation initiatives (Da Cunha and Selada, 2009; Johnson, 2008; Mehmood *et al.*, 2020; Schaffers *et al.*, 2011). Public sector organizations are gradually transforming due to networked digital technologies and the emerging open and “smart” innovation environment (Anthopoulos, 2015; Bernhard, 2014; Marche and McNiven, 2003). Driving forces to address these challenges are to adopt the “smart city” concept, often used to describe digitally enabled, innovative, progressive, green and sustainable social/technical systems. The concept has been used as a policy tool in connection with specialization (Josefsson and Steinthorsson, 2021). This ongoing digitalization of society also embraces dimensions of integration, equality, citizen needs, sustainability and quality of life are of increasing importance for city transformation (Josefsson and Steinthorsson, 2021; Silva *et al.*, 2018).

When cultural heritage meets innovation processes and smart digitalization several complex issues evolve. Ashworth (2017) and Warnaby *et al.* (2010) raise that cities with cultural heritages are particularly challenging in relation to its meaning and materiality and argue that the complexity of a city needs careful considerations in the management of transformation initiatives. According to Cina *et al.* (2019) challenges related to managing cultural heritage more often concerns the intangible ones, for instance the tone of interaction between social forces that at times is conflict-oriented and confrontational, and at times cooperative and supportive.

Accordingly, there is a need for inclusion of stakeholders in city transformations (Davison Porter *et al.*, 2017; Bernhard *et al.*, 2020). A smart city includes more than information and communication technology (ICT) since the involvement of stakeholders and bottom-up driven ideas are emphasized (Angelidou, 2017; Anthopoulos, 2015; Axelsson and Granath, 2018; Boes *et al.*, 2016; Le Feuvre *et al.*, 2016; Olsson *et al.*, 2018; Yang, 2014). More emphasis is put on approaching societal challenges through inclusive innovation processes in contrast to the previously dominant focus on expert-driven innovation, which is recognized in Lindberg *et al.* (2020) and Olsson *et al.* (2020). Furthermore, the concept of creativity is applied in related studies on cultural heritage and city transformation to solve urban problems and to increase cooperation among civil society (Fahmi *et al.*, 2016; Prasetya and Buddhahumbhitak, 2019; Salao, 2019). There is hence a need for cities to act in creative and innovative ways when designing and implementing city planning policies (Agbali *et al.*, 2019; Axelsson and Granath, 2018; Hamdouch *et al.*, 2016) as well as coordination and governance of stakeholder collaboration (Lundh Snis *et al.*, 2020).

However, previous research state that there is a lack of stakeholder involvement and participation in city transformation (Bernhard *et al.*, 2020; Cina *et al.*, 2019; Dormaels, 2016; Medway *et al.*, 2000; de Nisco *et al.*, 2008). Calls are made for further research to reach a deeper insight into the nature of partnerships and management of stakeholder collaboration within smart city transformation, especially with a focus on local citizens (Axelsson and Granath, 2018; Bernhard *et al.*, 2020; Le Feuvre *et al.*, 2016; Wee Lim Hew *et al.*, 2014).

As a response to fill the research gap this paper focuses on the management of a cultural heritage-based city transformation aiming at becoming a smart city. The purpose of this paper is to examine participatory management challenges in becoming a smart old town in the context of cultural heritage. The stakeholder perspective is applied through the inclusion of views from inhabitants and local communities in an old town district of a Norwegian city. The context is a preserved fortress city district, originated from the 17th century with many historical and picturesque quarters, in which people also live and often also run their businesses as owners of small self-employed companies. We will contribute with management implications for innovative and socially sustainable outcomes based on cultural heritage and stakeholder inclusion. The following research questions are addressed:

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- RQ1. What are the stakeholders' perceptions of cultural heritage in city transformation? Becoming a smart old town
- RQ2. How can transformation into a smart old town be managed in order to facilitate stakeholder inclusion and socially sustainable outcomes? smart old town

2. Related research and theoretical concepts

This section describes related research and theoretical concepts related to smart city, cultural heritage and participatory management and stakeholder collaboration.

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2.1 Smart cities and cultural heritage

Referring to the smart city concept, many definitions exist (e.g., [Boes et al., 2016](#); [Hollands, 2008](#); [Ruhlandt, 2018](#)), and it is still ambiguous and complex due to the integration of multiple disciplines embracing the smartness dimensions. These are ranging from urban and social related issues, through economic and environmental, to technological areas. As argued by [Hollands \(2008\)](#) "Cities are more than just wires and cables, smart offices, trendy bars and luxury hotels, and the vast number of people who live in cities deserve more than just these things" (p. 316) driving the development towards progressive, inclusive and sustainable urban transformation. [Boes et al. \(2016\)](#) identified four smartness components critical in developing smart places, i.e. cutting-edge technology, innovation, social and human capital and leadership while co-creating value for all involved. Smart cities are furthermore frequently about improvement and efficiency in public administration and in development of businesses, society and culture in the urban environment, focusing on creativity and sustainability while fostering human, social and relational capital ([Axelsson and Granath, 2018](#); [Caragliu et al., 2011](#); [Hollands, 2008](#)). Focus on people ([Hollands, 2008](#)) and stakeholder involvement is a prime issue parallel to user-driven innovation, such as Living Labs ([Bergvall-Kareborn and Stahlbrost, 2009](#); [Bernhard et al., 2020](#); [Boes et al., 2016](#); [Schaffers et al., 2011](#)), corresponding to ideas of open innovation and smart city development. According to [Agbali et al. \(2019\)](#), open innovation in a smart city context might be viewed as a valuable platform for building a smarter city through social interaction and collaboration.

The heritage and commodification of cultural resources as a basis for city regeneration and smart innovation has increasingly become a key process of urban governance ([Heras et al., 2019](#); [Lin and Hsing, 2009](#)). [Ashworth \(2017\)](#) emphasizes that a place such as a city often is linked to past, present and future: "heritage is the medium through which senses of place are created from senses of time" and thus also include "the process of identification of people with places and the role of heritage as a contemporary use of the pasts" ([Ashworth, 2017](#): Introduction). Similar studies show the extended value of cultural heritage as more than merely the physical monuments, hence including both tangible and intangible aspects ([Al-hagla, 2010](#)) referring to the "DNA of place" ([Davison Porter et al., 2017](#), p. 508). [Heras et al. \(2019\)](#) have argued for a need of policies and management guidelines that counteract the unbalanced new usage of historic centers. Unique tangible resources (old buildings, genuine monuments, etc.) are often infrastructural and architectural, hence immovable and grounded in the physical facilities connected to a place, e.g. a city. Unique intangible resources are factors that encapsulate more emotive aspects of a place, its appearance and its image, or the values derived from identity, social-political relationships and collaboration partnerships ([Cina et al., 2019](#)).

The current era of digitalization enables the use of smart city tools, solutions and applications for promoting and managing cultural heritage in new ways. It is possible to address and include several stakeholders by using participatory interactive digital platforms that manage and disseminate cultural heritage content to visitors, citizens and other

2.2 Participatory management and stakeholder inclusion

Stakeholders may be categorized to sectors such as public, private and volunteer (Yang, 2014) often based on a traditional definition as “any group or individual who can affect, or is affected by, the achievement of the organization’s objectives” (Freeman, 1984, p. 46). Evans (1997) instead applies a categorization based on who is shaping city centers as those who produce the city, i.e. property owners, retailers and developers, those who use the city, i.e. citizens, employees and visitors, and those who intermediate the city, i.e. local and national government, the municipality. There are limited studies on interaction and stakeholders’ views of collaboration and their behavior towards co-stakeholders (Le Feuvre *et al.*, 2016). Yang (2014) emphasizes the need to firstly identify all context-specific stakeholder groups and their interests by applying stakeholder analysis methods (de Nisco *et al.*, 2008). The next step is according to Yang (2014) to make stakeholder prioritization, i.e. to decide what interests should be addressed preferentially, in order to make appropriate development decisions. As pointed out by Li and Hunter (2015) stakeholder theory is a management and ethics theory that is applicable in cultural heritage contexts regarding community involvement, and participation related to the morals and values in such urban transformations. Following Dormaels (2016) stakeholders are here referred to as participants involved in consensus-building and participatory management mechanisms in city heritage transformation. Li and Hunter (2015) further emphasize that community involvement in sustainable heritage tourism contexts require a system wherein all relevant stakeholder groups have full participation in collaborative decision making, and additionally sharing of responsibility and benefits. Tourism organizations must facilitate and support inclusion of stakeholder groups.

Al-hagla (2010) and Cina *et al.* (2019) are emphasizing an integrative bottom-up tool for local community development based specifically on heritage that focuses on participation and continuous interaction between the place, citizens and tourists. The mix of stakeholders for smart city development is hence complex and the communication between cultural heritage and stakeholders is of major importance. It is further demonstrated that the application of participatory methodologies in the management of city transformation is effective to activate more sustainable processes in the cultural heritage field (Heras *et al.*, 2019). Such approaches are considered to address more socially sustainable outcomes, i.e. create democratic conditions that promote wellbeing by understanding what people and communities need from the places they live and work. Participatory management and the inclusion of local actors will help to keep communities being “alive, lived in and economically dynamic” (Dormaels, 2016, p. 15) and view cultural heritage not merely as immovable remains or buildings but as social construction related to the collective symbolic meaning of heritage by a social group. Key conditions fostering participation in city heritage management are a political will to listen to and include all stakeholders, to identify trust-building mechanisms and to produce results as return of collaboration (Bernhard *et al.*, 2020; Dormaels, 2016; Li and Hunter, 2015; Olsson *et al.*, 2020; Yang, 2014). Empowerment of community by including all stakeholder groups and building an organizational structure that offer stakeholder’s knowledge, information, confidence, tools and time to be able to influence, is the key to sustainable outcomes in city transformation (Li and Hunter, 2015).

3. Research approach

In order to understand the complexity of the city transformation initiative by applying an explorative approach on a qualitative single case study (Walsham, 2006; Yin, 2018). The feature of qualitative case study research is its focus on “how” and “why” questions

(Myers, 2009) and for this reason is appropriate for descriptive and exploratory studies. The case and the empirical setting is an old town district in a Norwegian municipality that has approximately 82,000 inhabitants. The municipality has gone through a recession during beginning of the 21st century and is now a fast-growing city with many city transformation entrepreneurial initiatives running, for instance smart city strategies.

The studied old town district is throughout the article referred to as the “Old Town.” The context is a preserved fortress city, originated from the 17th century with many historical buildings, surrounded by a star-shaped moat, see [Figure 1](#). The cultural heritage is of significant importance to the local city and its community. Hence, the physical and social environment of the Old Town is strictly influenced by local norms and values as well as municipal and national authority and regulations for preservation. In the Old Town there are small shops, galleries, craft studios, schools, cafés and restaurants. The number of active companies is approximately 200, and they are often self-employed or companies consisting of just a few staff. The Old Town is an arena for several different culture events such as music festivals, military history events and book festivals. The approximate number of visitors is 100,000 a year mainly during summer season. The Old Town is not only a tourist destination, but a vital living area for about 450 local citizens, of these 50 children, who live in this historical residential neighborhood. The Old Town represents a city area where many people in generations now are moving to and most of them are middle age or older. Either their parents or grandparents have lived there many years ago, or they lived there themselves as a child and have now moved back.

Qualitative data collection methods were used since the aim was to examine a phenomenon from the perspective of those involved in the context and to gain in-depth knowledge. In such an inside out view ([Islind et al., 2016](#)) the stakeholder perceptions about challenges of city transformation and governance of the Old Town were captured and interpreted. Insights and views of stakeholders, i.e. people who were in some sense connected to the Old Town, were aimed through several in-depth interviews and five participatory observations at visits and guided tours during from October 2016 to April 2018 [1]. The data includes 18 one-hour, semi-structured and on-site interviews with a total of 21 respondents. The sample covered a mix of both new and established actors in and around the Old Town. The selection represented mainly middle age and older stakeholders, who were active as tradesmen, citizens, property owners, craftsmen, nonprofit associations, educational institutions, local government and municipal organizations, as well as local elected officials. The gender distribution was nine female twelve men. The selection was



Figure 1.
Overview of the Old
Town district,
“Gamlebyen,” (Visit
Fredrikstad-Hvaler)

conducted as snowball sampling in order to identify hidden or conflicting groups (Atkinson and Flint, 2001; Cohen and Arieli, 2011; Eisenhardt, 1989).

In line with the explorative approach, the semi-structured interviews followed an interview guide as an instrument of a low level of control, but at the same time supportive for giving guidance for the interview situation (Kvale and Brinkmann, 2009). The following topics were covered: background and role, present and future views of collaboration, inclusion, governance and communication in order to reveal challenges, visions and strategies in becoming a smart old town. The interviews were recorded and transcribed. The quotes were translated from Norwegian into English and have been anonymized and handled with informed consent. Furthermore, local documents (e.g. previous visitor surveys and studies) as well as private and public websites by the involved actors were studied to enrich our understanding of the empirical context. Hence, in this qualitative study, we aimed for research rigor by selection of respondents, semi-structured and coded interviews, use of respondent validation and triangulation to confirm findings (Gill and Gill, 2020).

Analysis and discussion of results are based on views and perceptions of the challenges experienced by actors in the Old Town. The case study approach applied herein is mainly explorative but insights and concepts from previous related studies acted as a guide for discussing the empirical findings (Eisenhardt, 1989). The analytic strategy was to develop a descriptive conceptualization and reasoning for organizing the case study findings based on inspiration from related research. Hence, the analysis was conducted in an abductive way, by alternating concepts and related studies on smart city, cultural heritage and participatory management and stakeholder collaboration with empirical findings through respondent validation. The results have been validated at presentations and discussions with stakeholders and local politicians in five feedback sessions during 2017, 2018 and 2020.

4. Findings and analysis

Historically, the Old Town has almost been described as a neglected slum area that the municipality did not invest in until quite late in 20th century. Even then people lived there, but there was very bad housing, almost no infrastructure, and no water nor toilets. There were no strategies nor plans for the Old Town, most strategic development was aimed only for the city center instead. However, since about two decades, the negative trend was broken, and the activities increased regarding growth and development. The potential was valued high as it can withstand many more businesses, shops and projects and can be innovatively transformed built on content and quality. The Old Town has now become a key area where to increase competitiveness and internationalization in the tourism and experience industry through innovation and city transformation. During this transformation there were many informal power struggles and conflicts as old and new groups with many different perspectives emerging.

4.1 Stakeholders' perceptions of the old town

The view that the Old Town was a unique and genuine environment that should be preserved, maintained and to some extent developed *without* endangering the uniqueness was apparent.

The stakeholders express a great pride in the Old Town and state that it has a high market value and that they are amazed by the lack of development as a place to live and work in as well as a place of tourist attraction. Respondents representing the local citizens strongly formulate that the Old Town should not merely be seen as a picturesque scenery backdrop or theatre props but as a real living city throughout the year for local citizens, businesses *and* visitors. This is also argued by Al-hagla (2010), Evans (1997), Kalandides (2011) and

Dormaels (2016). Other respondents representing businesses articulate a wish to preserve the past, the cultural heritage, by *using* it in the present time (see Ashworth, 2017) e.g. by filling it with people, events, cafés and restaurants so that everyone has a chance to enter the Old Town and for a couple of hours experience the unique place. This highlights the challenge of balancing preservation versus usage, which is an eternal dilemma in managing transformation of cultural heritage.

Historically, the Old Town has been an area that can almost be described as a slum area that the municipality did not invest in until quite late into the 20th century, described by a respondent in the following quote:

Yes, people lived here, but it was very bad housing, it was what we called “social clients” because they were almost no infrastructure, there was no water and no toilets. In 1957 we had 61 houses . . . and of them only 31 had a water toilet in 1960, because there was no plan, and it was just one road in and out . . . So the old town became so bad that the municipality built up the city center and just let this district stay at it was . . . when I was young and I went to dance school in the city center, I could not say that I came from the old town because then I was not allowed to dance . . . such a bad reputation had this district (citizen, craftsman and property owner).

Another challenge concerns the identity of the Old Town that is not fully discussed, communicated, negotiated or anchored among stakeholders nor related to the strategies of the municipality and the city Centre. This corresponds to earlier studies (Al-hagla, 2010; Axelsson and Granath, 2018; Li and Hunter, 2015; Lindberg *et al.*, 2020). There is a lack of a holistic view and the respondents wish to be included and doing this step-by-step to build community inclusion and trust.

Conflicts and commitments are also challenging as several of the respondents belong to multiple stakeholder groups, hence representing special interests or have multiple roles as local citizens, residents, property owners and/or business entrepreneurs. There are many associations that meet regular and their members are deeply committed to the Old Town. Respondents mean that conflicts between groups as well as individuals have hampered the development of the Old Town. There are issues about preservation, i.e. preservation of environment and facilities, and issues about development and contemporary use of cultural heritage in creating new experiences and structures, which is in line with Evans (1997), Heras *et al.* (2019) and Li and Hunter (2015). The respondents express ambiguities about the regulations and different jurisdictions found in the Old Town, which leads to uncertainties, misconceptions and, in the long run, conflicts. The following quotes illustrate the complex conflict situation:

It's a mix of national, municipal, and to some extent private ownership, which in itself makes management and coordination complicated. (Citizen, property owner and tradesman)

But there are so many of the old who were allowed to govern in the past, who just sit and protect the old things and when something's going to happen, it's on their premises, hence it will often be conflicts with the old generation. (Citizen, property owner and tradesman)

We have meetings, but we notice all the time that they want everything to be as it was in the 18th century and then it will be very difficult. It is difficult to fight against quite powerful people because the leaders in that committee are politicians and sit on the village council. They sit on cultural committees. They sit on the technical committee (tradesman).

Some stakeholders mean that they have the task to preserve a unique historical environment for future generations and yet adapt to digitalization, which implies a responsibility towards those living, working and visiting in the Old Town as also highlighted by Ashworth (2017). The eternal dilemma of balancing preservation and use becomes particularly important in a smart city transformation.

For a city to work, there must be past, present and future, not just history . . . we will develop the Old Town so that it can meet the million [visitors] that comes in five years. (Citizen, property owner and tradesman)

Corresponding to [Heras et al. \(2019\)](#) the respondents' perceived lack of conceptual and common visions and the municipal passivity is resulting in a difficulty to reach consensus of what the Old Town is or should become.

The municipality must be more active towards the Old Town . . . go in and resolve conflicts and do not just leave us who are in conflict to resolve it. (Tradesman and nonprofit association)

The stakeholders do not experience the conflicts as serious, but what seems most disturbing is that conflicts hamper development. This disturbs those who do not have a pure conservative agenda yet aiming at a smart old town. They are not afraid of the conflicts and many respondents express a wish that someone walks in and points out the direction for the future, i.e. coordination and governance as well as the use of digital technologies. The Old Town may thus be viewed as a “fuzzy” place in need of careful considerations for coordination and implementation of smart city elements. Not so much to resolve the conflict, but to come to action.

4.2 Managing smartness and stakeholder inclusion

Respondents clearly state that there is lack of governance and communication both internally between the stakeholders of the Old Town, hence also between the Old Town and the municipal city center. Findings show several challenges due to no consensus ([Dormaels, 2016](#)) among those stakeholders who produce, use and intermediate the Old Town ([Angelidou et al., 2017](#); [Evans, 1997](#); [Koukopoulos et al., 2017](#)). There are obvious flaws in communication due to that the information available is fragmented and rarely reaches beyond its own grouping. The fragmented information is also confirmed through the study of public and private websites in the Old Town. There is no common communication channel covering all stakeholders.

We need a shared platform to meet and discuss how we can benefit from each other. (Tradesman)

Missing a common communication—no overview—it happens very much but no one knows – Exclusive email groups. . . Information is fragmented. (Citizen, nonprofit association and craftsman)

The Old Town lacks wireless networks – Develop information via the Internet. Wireless is good when you want to make the story more accessible and this with the crafts tradition, live the story. (Citizen and municipal organization)

There is a wish to follow the contemporary digital development of society, to offer free city Wi-Fi, apply digital and location aware solutions to measure number of visitors and their positions.

From a business perspective the city area has ambitions to use advanced information technology to collect, analyze and utilize big data to extend the visiting time, get visitors to explore more destinations and activities in the region and expand the season in the form of targeted information and marketing, as well as strategic and business prioritization of resources. (Citizen and municipal organization)

Previous studies further demonstrate the importance of both deepening as well as broadening the digital competence among key stakeholders in times of smart city transformation (e.g., [Axelsson and Granath, 2018](#); [Agbali et al., 2019](#); [Angelidou, 2017](#); [Anthopoulos, 2015](#); [Koukopoulos et al., 2017](#); [Schaffers et al., 2011](#)). A key stakeholder in the Old Town, the tourism organization, has recognized lacks and possibilities in smart and digital solutions:

How can we build digital channels so we can talk to everyone? We must take the need for digital skills and competences in the business sector seriously and teach our stakeholders to become better so that they have the skills required to create an attractive place. (Citizen and municipal organization)

It is vital to upgrade skills of digital communication and use of open data in order to become a smart city and offering innovative products and service:

We have to upgrade our digital communication skills. We have to be “smart” since the visitor reception desk now is online and we have to apply a digital hosting. (Citizen and municipal organization)

Furthermore, our findings clearly show that smartness aspects reach beyond technology-driven elements into the need of stakeholder inclusion and collaboration. The respondents mention that there are difficulties in integrating the Old Town into municipality’s development strategy, they have been allowed to live a relatively free own life within the municipality, which has formed informal decision-making structures regarding the development of the Old Town. The municipality is seen as a passive stakeholder.

All the things that are done, they are made by committed private individuals. I think committed private individuals are absolutely necessary; many arrangements could not be implemented without them. (Nonprofit association)

... the actors in the Old Town have for many years taken a lot of action in terms of organization and governance, which has led to formal and informal power structures in the Old Town. (Elected official)

The municipality has in no way taken hold or ownership in the Old Town! (Citizen and nonprofit association)

Respondents emphasize that it is necessary to clarify and formalize the process of decision-making in the Old Town in order reach an effective governance of collaboration (see [Bernhard et al., 2020](#); [Cina et al., 2019](#)). Hence, there is a lack of an organizing body with clear coordination, planning and implementation of activities or flow of information between stakeholders ([Li and Hunter, 2015](#); [Silva et al., 2018](#)). The respondents clearly state a need for the municipality to be an active part of the organizing body, working for an inclusion of the local actors. Here respondents express a lack of close collaboration with the major property owners, especially the national fortification organization and the local municipality and it is hence vital to identify and include all stakeholders ([Dormael, 2016](#); [Li and Hunter, 2015](#); [Yang, 2014](#)).

It was quite clear during the interviews that the municipality’s responsibility and presence in the Old Town need to increase although it was stated by one respondent that it might be better that the national government instead of the local municipality had the overall responsibility for the Old Town due to the historical uniqueness of the district. The role of regulators in the Old Town is mainly taken by local and national governments that regarding safety, preservation, use and maintenance of cultural heritage. Smaller groups of Allies and collaborators exist, and there are several good examples of successful symbiotic collaboration, and the respondents wish to expand this to include more stakeholders.

Overall, respondents express the need for a governing force in the Old Town. Digital as well as physical platforms for continuous meetings and dialogue where all different actors can meet and learn from each other is also of importance.

Collaboration at all levels is important. Important to gather all actors regularly and have dialogue once per month or quarter. (Citizen, property owner and tradesman)

Important to learn from each other. (Tradesman)

The tourism destination organization that is co-owned by municipality and member organizations and is appreciated by most actors in the Old Town. Thus, they are an emerging actor taking the role of an organizing body that takes innovative initiatives for collaboration and digitalization towards smartness thanks to common funds and a common voice both inside and outside the Old Town.

The local tourism organization is the only organization that can start up and be the driving force of such collaboration that we fully trust. They may not do it forever, but perhaps the municipality may support this collaboration. (Citizen, property owner and tradesman)

A living lab (Bergvall-Kåreborn and Ståhlbröst, 2009; Schaffers *et al.*, 2011) for collaboration and innovation was established in the Old Town during 2017. This initiative was called Hub42 and was run by the tourism destination organization in collaboration with the local university. The aim of the Hub42 was to create a community space where stakeholders can work on ideas related to smart city development and combine technology, business and tourism to create value for citizens and businesses as well as to learn along the way (Fredrikstad Living Lab (2020)).

We have created a hub/living lab for innovation which also involve actors from local university. The hub does really work as a meeting point for local stakeholders. (Citizen and municipal organization)

The Old Town is a perfect experimental area for the business sector as it is a fortress town, and everything is inside the walls as a miniature community. We use HUB42 as a Living lab, a test bed, for collaboration and innovations, i.e. a center for both destination development and skills development. (Citizen and municipal organization)

During 2020 the Hub42 has been re-organized into a minilab that coordinate a few more overarching collaborations such as University projects and Environment organization.

There is a need to clarify and anchor responsibilities roles and functions due to the committed cross-sector mix of stakeholders (Bernhard *et al.*, 2020). Not at least regarding the property owners who constitute a group that other stakeholders wish to be more active within the innovation and transformation processes (Bernhard *et al.*, 2020; Lundh Snis *et al.*, 2020). The property owners state they are interested in having a good living environment, as they often are business owners and rent out homes and premises. Then, there will be enhanced possibilities to create democratic conditions that promote inclusion and community building by understanding what people need and expect from the place where they live and work.

The municipality should be in charge of the development of the Old Town but in consultation with the actors of the Old Town. This is because there are several different ownership interests in the Old Town. (Citizen, craftsman and property owner)

Documents such as visions and strategies should be with the municipality. However, the operative performance of goals and strategies needs to be on the Old Town business community itself. The initiatives need to be within the business community. The municipality needs to show greater responsibility for what we want with the Old Town. (Tradesman)

5. Conclusion and implications

The purpose of this paper is to examine participatory management challenges in becoming a smart old town in the context of cultural heritage. The above analysis of findings contribute with in-depth knowledge of the stakeholders' views on the cultural uniqueness and stakeholder inclusion of the Old Town, its strengths, weaknesses and opportunities. The findings are conceptualized as challenges and principles that need to be considered in city transformation towards a smart old town. This explorative study is positioned as unique in

terms of its complex nature of transforming an old town to become a smart old town based on an open and coordinated inclusion of stakeholders. To address the cultural value in city transformation the management of participation from and inclusion of different stakeholders become fundamental. The establishment of legal relationship between self-organized local communities and municipality would enable a stimulating regeneration process of the Old Town.

One important challenge is to manage the unique resources of cultural heritage with both tangible and intangible values, considering complex prioritizations of decisions in development processes through balancing the old and the new as discussed in earlier research. For a cultural heritage-based city to be transformed it is important to go beyond touristic usage of immovable heritage to include the community spirit of the citizens and tradesmen who both live and act in the area. Given that smart city is not only about advanced ICT implementation the findings contribute with vital issues of smart partnerships and involvement of stakeholders generating bottom-up driven ideas.

Another challenge concerns the need of an organizing body that coordinates and manages activities and flows of information and communication as well as acts as a driving force for digitalization. Accommodating the need for continuous information, arrangements of physical meetings as well as shared digital communication platforms are important. In order to find smart, innovative, inclusive bottom-up approaches for collaboration and city transformation, physical meetings and discussions are needed on neutral arenas, such as open activities in workshops or Living Labs. Hence, participatory management in cultural heritage-based cities needs to be smart both in terms of effective digital technologies and in terms of “smart” management with the right skills and competences.

The study brings forward the opportunities that lies in the dynamics of interaction between the spirit of cultural heritage and the body of participatory management that go beyond smart ICT implementations. Conflict resolution structures in terms of collaboration and learning mechanisms have emerged based on living lab concepts. The findings contribute with vital challenges that need to be addressed from a social sustainable perspective that considers democratic conditions by understanding what people and communities need from the places where they live and work. Herein, the understanding of the relationship between existing cultural resources of a place and the social dynamics of local stakeholders and communities through developing participatory management is crucial. A key implication is to foster participatory management in a social sustainable way. The development of tourism and the emergence of new ways of living have begun to impact cultural heritage-based areas such as the Old Town in disruptive ways. Municipal actors are required to handle the demands of all social groups, who claim to have significant roles in the management of becoming a smart old town. The two main stakeholders in the field, the municipality and the community groups in the Old Town, must work to build an organizing body that addresses a social sustainable public-private agenda.

To conclude, smartness in context of city transformation is revealed in many dimensions ranging from technology-driven to more participant-driven. The city’s resources such as cultural heritage, residents, technologies, businesses and visitors need to be balanced since they are mutually dependent. Communication is fundamental for collaboration and participatory management. An organizing body is needed. Smart city implementation will have wide-ranging societal implications that require governance and commitment on policy level. The present study contributes by responding to calls for further research and by deepen the insights into stakeholder inclusion in cultural heritage-based city transformation. This explorative study has its limitations as it is based on a single case. The ongoing digitalization

thus encourage further research covering socially sustainable outcomes related to cultural heritage in city transformation.

Note

1. The data collection was conducted in a larger research group.

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