Master Thesis Human Geography

Cycling Social Innovation on Detroit's Roads

From Motor City
to Bike City

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List of Acronyms and Abbreviations

AAATA	Ann Arbor Area Transportation Authority (The Ride)
BRT	Bus Rapid Transit
BUSI	Bottom-up Social Innovation
DDOT	Detroit Department of Transportation
DPM	The Detroit People Mover
DTC	Detroit Transportation Corporation (The People Mover)
GM	General Motors Company
MDOT	Michigan Department of Transportation
OECD	Organization for Economic Cooperation- and Development
RTA	Southeast Michigan Regional Transit Authority
SEMCOG	Southeast Michigan Council of Governments
SMART	Suburban Mobility Authority for Rapid Transit
U.S.(A)	United States (of America)

Acknowledgements

Executive Summary

This thesis investigates the grassroots movements within the bicycling scene of Detroit. Of special interest were not only the motivations, catalysts, methods, measures, and enablers, but also barriers to bottom-up social innovation, or in short, the *how* and *why* of their emergence.

The research was carried out by using a theoretical framework based on literature about (bottom-up) social innovation. An approach to define bottom-up social innovation for the purpose of this thesis led to the development of a list of six components. A bottom-up social innovation is, thus, a solution to a social need which is created by civil society and is more efficient, just and equal than already existing solutions. Finally, social innovation was defined as a process. In particular, the *4-I Process* by Hochgerner functioned here as a guideline. According to this theoretical construct, social innovation has to be regarded as a process and not only as the outcome thereof. Hochgerner developed, therefore, a four-stage model, including an idea, intervention, implementation and impact. Lastly, literature also discusses various barriers to grassroots social innovation. Those mainly entail the lack of financial support, the neglect through science, confronting social norms and values and insufficient governance and coordination within the network, and also through government policy.

Exploring the context of urban shrinkage in Detroit allows the reader (and of course also the researcher) to gain a more in-depth understanding of the conditions under which the innovation process took place. Poverty, unemployment and a mono-functional transportation system are only a few examples of the dispiriting current state of the city. All of this becomes intensified through racial tensions, especially between the predominantly white suburbs and black urban core. This daunting picture of a city underlines the hypothesis that bottom-up social innovation emerges out of necessity. Many structural inconsistencies create gaps in the services provided to the citizens, who, therefore, have to take the initiative to tackle the underlying problems by themselves.

By analyzing and testing the results of the 13 semi-structured interviews, the different motivations, catalysts, enablers and barriers to bottom-up social innovation in Detroit's cycling scene could be identified. In short, mostly a (social) crisis, apparent in Detroit in many ways, marked the initial idea of the researched innovations. Other themes, such as an incisive experience, also emerged during the analysis. In addition to that, a comprehensive range of methods and measures were used to empower and/or stimulate community building.

Those include mostly methods of advocacy and education. Due to differing motives, many innovations would undergo context-sensitive transformation processes in form of adaptations to changing conditions.

Further enabling resources and hampering aspects of bottom-up social innovation in Detroit's cycling scene became apparent during the analysis of the research. Partly overlapping themes of barriers and enablers facilitated or hampered the innovation process to various degrees. Noteworthy factors hereby are in particular financial resources, social capital, government policy, tacit knowledge and time. Further, barriers and enablers would also internally or externally hinder or stimulate innovation.

When comparing the findings from the empirical research to the literature discussed in the thesis, it became evident that the innovation process in reality is not as "clean" as it is described in literature. Moreover, new themes such as psychological and physical barriers could be identified, which had been not considered before conducting the research. It further became clear that the dynamic of the innovation process comes along with several (unintentional) changes. Not every innovator started off with the purpose to add social value to society, but developed that goal in a later development stage. Another dominant theme apparent in the findings was the one of externality and internality. This is insofar of importance because it opens up new field of action, for instance, for policy makers.

Under the consideration of those findings, the wide-ranging potential of social innovation could be part of a resurgence of the city that includes all kinds of citizens, and not only those young, mostly white professionals who recently moved to greater downtown Detroit and who were most likely not even affected by the city's decline. This thesis, therefore, suggests further research based on the presented findings. Additionally, actions by the city's policymakers are recommended, in order to improve the external environment of such innovation.

1. Introduction

1.1 Approaching the Topic

It was 1908 when Henry Ford developed the famous *Model T* and finally introduced it to the public. This motorized vehicle was more than just a normal automobile. Through assembly line mass production it became the first automobile that was affordable for America's middle class. It defined a whole era by creating a new level of mobility and personal transportation. Owning and driving a car was not a privilege of only the rich anymore and it soon became the status symbol of a generation. But less well known is that long before the first automobile was put together on one of his assembly lines, it was the bicycle Henry Ford used as inspiration for his first motorized vehicle. The result was the so-called *Quadricycle*. He used components of bicycles, such as four bicycle wheels, along with an ethanol-driven engine to form this rather unique vehicle (Floyd, 1971). Even though it never reached mass production, its success spurred the foundation of the Ford Motor Company.

This, however, lies already about a century ago. Since then, the automotive industry took off on its victory lap and defined how mobility in North America was perceived throughout the 20th century. With the rise of the automobile came also the rise of Detroit, leading to its nickname, the *Motor City*. It was the home for three of the biggest automobile manufacturers of modern times' America: Ford Motor Company, Chrysler Group LLC and General Motors Company (GM). It is difficult to imagine now, but the *Paris of the West* was laced with grand boulevards and elaborate architecture, which portrayed the city's wealth.

However, the rules in global business changed. Jobs were outsourced and visitors to modern Detroit find a city that is only a shadow of its former self. High crime rates, massive population loss and the continuing economic decline left a place full of despair. The nadir of the city's decline was marked by the biggest municipal bankruptcy in U.S. history in 2013 (Kaffer et al., 2013).

Several attempts in the past have been made to help the city mount a comeback. The enormous Renaissance Center, as its name suggests, was erected with a promise to herald a new era of development and prosperity. It ended up having little to benefit to the rest of the

city (Desiderio, 2009). Next came the infamous elevated train, called the People Mover, which was constructed with the hopes of spurring economic development and drawing more people downtown. Due to its limited range, it was dubbed the 'train to nowhere' and became only another entry in Detroit's long list of transit failures (cf. Risen, 1985). Most recently, the Ilitch family, one of Detroit's richest and owners of the Detroit Red Wings and Detroit Tigers, are pursuing an ambitious plan to build a $200 million ice hockey arena. A near-50 block ranging entertainment district shall arise right at the blighted edge of downtown Detroit (Gallagher, 2014). Additionally, Dan Gilbert, the chairman and founder of the Detroit-based multi-billion retail mortgage lender Quicken Loans, has a vision to revitalize the city's urban core. Already about 60 buildings in central Detroit are under the wings of his various companies and there is no end in sight (Gallagher, 2014). While previous measures resulted in little success, it is still unknown if the efforts of the two corporate leaders will pay off; most recent investment concentrates on the city's urban core and does nothing to address the problems in the rest of the city. As a result, an upsurge of inequality within the city becomes visible, leaving a large gap between the rich and poor, and in the case of Detroit, between whites and African Americans (Doucet, 2015).

On November 7, 2014, after more than a year in hope and trepidation, Detroit's plan of adjustment was confirmed, clearing the way for the city to exit bankruptcy (Davey & Walsh, 2014). While the city is slowly trying to get back on its feet by regaining solvency, another movement took off – this time on two wheels. Through several recent efforts, Detroit is becoming a hub of biking culture and manufacturing, already setting precedents along the way.

The Michigan Department of Transportation (MDOT) commissioned a study on the impact of biking on communities in 2014 (BBC, 2014). According to the study, the annual economic and health benefits associated with bicycling have an estimated value of $20.7 million in Southwest Detroit and the Conner Creek Greenway Corridor. It can be assumed that the city's benefits exceed this number because the study was conducted in only those two neighborhoods with a total population of 162,998.

Within the last few years, bicycle manufacturing returned to Detroit and numerous bicycle-related manufacturers launched their businesses in the city. Names like *Detroit Bikes*, *Shinola* and *Detroit Bicycle Company* became synonyms of small-scale local success

stories. Zac Pashak, the owner and founder of Detroit Bikes, claims "Detroit is attracting risk takers and a lot of creative people right now. It has a Gold Rush feeling to it. […] People want to see positive change in Detroit, so they are deeply invested in what is happening there. They want to hear new ideas. It's a great atmosphere for business." (Pashak, 2012)

This list can be extended with the names of various bike retailers that have opened in the city within the last few years. Another bright spot on this list is the *Wheelhouse* in downtown Detroit. With annual revenue of $200,000 in 2013, the company was able to raise its revenue by four times within four years (BBC, 2014). Additionally, projects like the *Dequindre Cut* greenway and its upcoming extension, as well as a new bike-sharing program, show the potential ascribed to biking in the city (Greenways Coalition, 2015).

But more visible than any bike retailer are the weekly mass bike rides, such as the *Slow Roll*. Every week, a steadily growing crowd of thousands of people takes over Detroit's streets. This specific ride is one of a couple that are completely free and that were grown through grassroots movements. Those bike rides are not alone; many social ventures associated with cycling have emerged all over the city.

"With less money to spend, but increasingly complex, interconnected and intractable social problems (often called WICKED problems), people are turning to the social sector to help deliver lower cost and higher impact solutions." (Jankel, 2011, p. 6)

Those WICKED problems Jankel (2011) refers to are apparent in many ways in the city. Despite bike-friendly wide and empty streets, hundreds of kilometers of new bike lines and other similar factors, there is also the harsh reality of the high unemployment rate, increasing poverty, barely-existing transit and the simultaneous rising costs of car ownership which drive people to look for alternative lifestyles. Unsolved social challenges require a new and innovative way to deal with them and grassroots social movements might be one of those (OECD, 2010).

This thesis, therefore, is aiming for a detailed investigation on bottom-up social innovation (BUSI) regarding the cycling movement in Detroit. Bottom-up social innovation, or in short BUSI, are those innovations which were created by civil society itself and, thus, not

by the private or public sector. Simultaneously, they create social value to their consumers by meeting a social need.

In order to create a better picture of the status quo, this research attempts to understand the processes and conditions under which such innovation emerges. Of particular interest hereby are the motivation and barriers to innovation of each venture in this field. By identifying the individual backgrounds and characteristics, the thesis hopefully contributes to a clearer understanding of the goings-on in the city.

1.2   Research Question and Hypothesis

The subject of interest in this research is the emergence of bottom-up social innovation (BUSI) in the bicycling scene of Detroit. Through urban shrinkage and the steady decline of Detroit, even basic needs of the citizens cannot be satisfied anymore. The hypothesis of this research is that the examined BUSI emerged as an answer to social deficits resulting from urban shrinkage. In order to find an answer to this phenomenon, the following research question has been formulated:

Why and how does Bottom-Up Social Innovation emerge in Detroit's bicycling scene?

With this question, it is desired to gain more insight into the BUSI in Detroit and what makes them thrive. Mulgan (2007) claims that social innovation always happens where there is a social need for it. As claimed in Chapter 4, Detroit has deficits in many social areas. In order to cover all relevant aspects, it is necessary to investigate the research on the background and motivation of the innovators, as well as on the conceptualization and the realization of the innovation. As a result, the following sub-questions have been formulated:

- *What are the catalysts of BUSI?*
- *How did the innovators implement the BUSI?*
- *What are the enablers and barriers of BUSI?*

1.3 Societal and Scientific Relevance

1.3.1 Societal Relevance

"The financial and economic crisis makes creativity and innovation in general and social innovation in particular even more important to foster sustainable growth, secure jobs and boost competitiveness."

José Manuel Barroso, 11th President of the European Commission
BEPA Workshop on 'Europe and Social Innovation', 20th January 2009

"Social innovation is needed because many social challenges are resistant to conventional approaches to solving them. Social innovation is about new responses to social needs and challenges." (OECD, 2010, p. 197) Economic growth does not necessarily lead to an increase in social welfare anymore. Even countries with high economic welfare face immense social challenges. This is where social innovation offers a whole new opportunity for a synergy between the two domains (Harayama & Nitta, 2011). New social businesses can harmonize with economic development and new modes of knowledge production emerge. A less linear evolution process allows space for feedback loops and adaption during the up-scaling of the social venture. The dynamic of this movement gives space for collective approaches and experiments involving a range of different stakeholders. User and community-based solutions are becoming marketable and there is a tendency of public and private actors to pick up and use these ideas (Harayama & Nitta, 2011).

According to Doucet (2013), Detroit always had a leading role in new and trend-setting fields. It was in Detroit where Ford first introduced the assembly line mass production and where America's suburbanization trend began, guided by the vision of a car-friendly city. Now, after also being one of the first to be hit by the 'post-industrial disease' that so many cities all over the world experience, it might make a 'comeback' and once more serve as a model for others in facing upcoming (social) challenges of the post-industrial era. Even though the rise and decline of Detroit took place under very specific conditions, it might still play an important role in fostering new ideas and creating innovative solutions for post-industrial urban issues. According to Bontje (2004), cities that depend mostly on one economic sector are always in danger of suffering the same fate. The quest of diving

deeper into Detroit's innovative scene resulted, at some point, in a Google search of the term 'Detroit the new'. A multitude of articles popped up, in which people discussed whether Detroit is the 'New Berlin' or San Francisco the 'New Detroit' and so forth. In realizing that people are still emotionally attached to the destiny of the Motor City, its model character for other cities became evident.

The priority of this research lies on bottom-up social innovation within the cycling movement of Detroit. Even though emphasis was placed on this part of the new social movement, one should not forget other innovations such as urban gardening, the city's artist movement and all the others which have not yet gained public attention. The city of Detroit has slowly begun to understand its potential, more specifically that of which is 'rolling' on its streets (cf. MDOT, 2014). But the research and policies dedicated to these topics are still in a fledgling stage. Moreover, the focus lies predominately on the direct and indirect economic effects of biking regarded from a top-down perspective, only conducted for specific neighborhoods. This is where the societal contribution of this thesis comes in. The research of this thesis could help to cast the spotlight more on the social aspects of innovation and allow a bottom-up approach to view the topic from a different perspective. This is insofar of importance since former measures seem to have not had any significant effect on the city. New approaches such BUSI might work where others failed.

The reader will gain new insight into the motivation of such innovators and how the implementation takes place. By highlighting the barriers, policy makers could gain useful knowledge. This might further be used to foster an environment which allows people to create a solution by taking the initiative. Especially a city like Detroit that faces tight financial constraints might benefit from such movements since bottom-up social innovation is a useful means to indicate social needs. How better identify what a society needs than by empowering its own citizens to create solutions themselves. An increased level of diversity and a more adequate way to approach the complexity of social issues is the result. In this respect, it would be counterproductive to just implement ideas to a community and expect them to 'buy it'. The project is more likely to gain legitimacy if authorities make an effort to listen to citizens (Simon & Davis, 2013).

Conforming with this, there is a high societal relevance of this topic. The central hypothesis of this thesis is that bottom-up social (cycling) ventures are an answer to the

failure of public and private authorities to meet certain social needs in the city. (Bottom-up) social innovation might not be the only option for the city to deal with those issues, but due to its tight financial constraints, it is definitely a very attractive one. The purpose of this thesis is to cast light on a still undiscovered field with a great deal of potential to improve social deficits in the post-industrial urban context. Only further research, like this, can show if BUSI really can live up to these promises.

1.3.2 Scientific Relevance

The scientific relevance of research about bottom-up social innovation is mainly justified due to two implications.

First, social innovation itself is often neglected within the broad study of innovation in business and science (Noack, 2014). Whereas the research about the technological and commercial innovations experienced rapid progress over the last couple of decades, relatively little is known about its social counterpart (Mulgan et al., 2007). Social innovations are often considered as side issues of technological and commercial innovation. "The notion of social innovation has not yet been totally explored. Many definitions exist […], but more analysis is needed. Like social entrepreneurship, social innovation has blurred boundaries." (OECD, 2010, p. 197) Existing literature too often focuses on the initial and later stages of the development process but pays little attention to what happens in between. But Caulier-Grice et al. (2010) argue that it is the implementation and diffusion of new social ideas which actually transform them into social innovation. While one should examine the initial and final stages of social innovation, it is, therefore, also necessary to closely examine the intermediate processes. This is in line with Sharra and Nyssens (2010), who argue that despite a growing awareness of social innovation, insufficient analytical research is still addressed to its antecedents and dimensions. This might be because "it is only in more recent times that social innovation has developed a significant public policy." (Champer, 2012, p. 20)

Second, even within the field of social innovation, the systematic analysis of bottom-up perspectives is still in its infancy (Noack, 2014). The bottom-up approaches suffer under the dominance of studies in the field of top-down innovation processes. It is important to change this situation because Caulier-Grice et al. (2010) see the bottom-up grassroots movement even as one of the main characteristics of social innovation.

The aforementioned conceptual issues about bottom-up social innovations also apply for its barriers and frontiers. Very little is known about why social innovations often fail, that is, what factors hamper the innovation process (Chalmers, 2012).

Lastly, Detroit has also always been ahead of the curve with new trends (cf. Doucet, 2014); this even applies within an apocalyptic, de-industrialized environment of *urban shrinkage*. According to Schlappa & Neill (2013), many American urban economists claim that "[…] capital and labour should be allowed to flow to wherever they are most efficiently used." (p.9) However, the question of who deals with the social and environmental consequences of such development still remains.

From this perspective, bottom-up movements – such as the one researched in this case study – gain more attention. In this respect, the city offers many possibilities, also apart from the bicycling scene. Urban gardeners, artists and self-ascribed urban planners offer interesting insight into what is to be next in a post-industrial urban environment. Doucet (2014) argues that the case of Detroit is not as unique as one might assume. Thus, researching the case of Detroit can also produce answers to a post-industrial world outside of the Motor City.

In attempting to contribute to already existing studies in this still rather unexplored scientific field, this case study of the fast growing cycling scene of Detroit will serve as an example to highlight the potential of bottom-up social innovation within the context of the city. Providing new insights into this sector hopefully contributes to a better understanding of the matter and potentially serves as inspiration for further studies. The lack of research in this field requires a more in-depth knowledge of common patterns of bottom-up social innovation.

1.4 Thesis Structure

The purpose of this thesis is to dive further into the world of bottom-up social innovation within the biking scene of Detroit. By doing that, an attempt has been made to unveil the individual background and development of innovations as mentioned above; what motivates the innovators to do what they are doing and what enables or hinders that process? The thesis subsequently highlights the theoretical background of bottom-up social innovation in *Chapter 2*. A literature study has been conducted in order to define the concept and reveal its unique characteristics. Subsequently, an analysis of literature about

barriers to bottom-up social innovation shall serve as a theoretical basis for the findings of the data analysis. *Chapter 3* explains the methodology and further introduces the various innovators, who were kind enough to participate in this research project. Following this, the case of Detroit itself is being reviewed in *Chapter 4*, in order to examine the context on which the findings of the semi-structured interviews of this research project build. Only by understanding the conditions under which the innovations emerged can an adequate answer of *why* and *how* be given. *Chapter 5* describes the first part of the findings elicited from the interviews' analysis. Of importance hereby are the questions of why and how those innovations emerged. The empirical analysis of the data continues in *Chapter 6*, where the findings concerning enabling and hampering factors to bottom-up social innovation are highlighted in more detail. Finally, this thesis concludes with *Chapter 7,* which consists of a short round-up of the findings as well as a confrontation thereof with the earlier discussed literature and the prospective development of the city.

2. Theoretical Framework

For the sake of clarity, this chapter has been divided into three individual sections. In Section 2.1, the notion of bottom-up social innovation (BUSI) will be defined by breaking it down into three individual steps. A literature analysis of BUSI as a process will be undertaken in Section 2.2. Finally, literature regarding barriers of BUSI will be discussed in greater detail in Section 2.3. These three sections combined together shall then function as a theoretical framework for the empirical approach in Chapter 4, Chapter 5 and Chapter 6.

2.1 Breaking down Bottom-Up Social Innovation

This section examines *bottom-up social innovation (BUSI)*, and breaks it down in order to further explore the meaning of this rather fuzzy term. Kaplan (2010) claims that social innovation has been turned into a "buzzword" which means everything and nothing at the same time. The OECD (2010) builds upon this and argues that social innovation requires a narrower definition and articulation. How to define such a complex notion to its full extent without running the risk of losing oneself in a jungle of contradicting explanations? A three-pronged approach has been employed in order to look at this fragmented concept more closely. First, innovation and all its implications are highlighted. Then, the focus will be laid on the "social" in social innovation. Finally, all parts combine with a bottom-up perspective.

2.1.1 What is Innovation?

Steward et al. (2007, p. 7) defines innovation as the "[…] successful exploitation of ideas". This means in particular that innovation has to be distinguished from merely inventions in the sense that it requires a new idea that has been put into practice. A new idea, in that respect, means "[…] a change in mindset" (Gaynor, 2013, p. 1).

Innovation, in a classical sense, is mostly regarded from a top-down perspective. In this case, innovations can be technical or commercial, but alternative views are also possible. One of those alternative approaches includes both social and bottom-up innovation, blended in a whole new way of seeing how innovative activity can work.

Defining social innovation, however, is much less clear than defining technological or commercial innovation. This is based on the fact that there is no universal definition of this

term. Furthermore, all innovations, including technological and commercial innovations, are social in the sense that they are the results of social interactions and structures. In the end, all innovation is being forgone by creative processes involving all kinds of actors (Mackenzie and Wajcman, 1999).

Nonetheless, one may distinguish between two types of innovation by emphasizing the focus of each. *Technical/commercial innovation* are those kind of innovations where technical components play a key role, whereas *social innovation* are those innovations where the functional focus is more defined by social components (Bergman et al. 2009). This thesis focuses exclusively on social innovation, which will be defined in more depth in the next section.

2.1.2   Social Innovation

Social innovation is only loosely defined in literature. "New ideas that work" is, for example, used by Mulgan et al. (2007, p. 8). According to him, this definition distinguishes innovation from improvement, creativity and invention. However, defined in this way, the term social innovation has very loose boundaries with respect to other domains and can essentially mean anything. He also provides a more specific version by defining social innovation as "innovative activities and services that are motivated by the goal of meeting a social need […]." (Mulgan et al., 2007, p.8) This goes hand in hand with the definition provided by the Forum on Social Innovation. According to them, a defining feature of social innovation is that it

> *[…] deals with improving the welfare of individuals and community through employment, consumption or participation, its expressed purpose being therefore to provide solutions for individual and community problems. It seems therefore that social innovation and local development can be considered as intertwined. Other channels may exist for social innovations but most of them need a very tailored and comprehensive approach, which will be both a condition and a consequence of local development.* (Noya, 2011, p. 21)

The emphasis on the local nature of social innovation, that is, its tight bonds to local development, is in line with the thinking of OECD (2010). They explicitly link the benefits of social innovation with an improvement of individual and community welfare. The outcome of social innovations, however, can differ in its form, scale, and intensity.

Another distinguishing feature of social innovation is its impact on society. Some authors even argue that it is its impact which actually defines a social innovation and less its newness (cf. Salen, 1985; Gillwald, 2010). Salen (1984) claims in this context that "an innovation does not become an innovation until there is a social impact and this may involve both positive and negative effects" (Salen 1984, p. vi). That means, in other words, a social innovation is not normatively good since where there is a winner, there must also be a loser. An alternative opinion focuses on social innovation as a process and not just the outcome (Sharra & Nyssens, 2010).

Nicholos and Murdock (2012) add another defining layer to this complex notion. For them, social innovation involves the production of new ideas and structures. They further emphasize the system character of social innovation and how it might lead to a change in attitude or behavior of society itself. Especially by including social values such as public good and justice, they create a whole new analytical dimension to social innovation.

Another definition is provided by Phills Jr. et al (2008). They define social innovation as "a novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals" (Phills Jr. et al, 2008, Section I, para. 3). By adding qualifiers such as "effective" and "just", it gives a more feasible definition of social innovation's claim for improvement. In this definition, the fact that social innovation is supposed to meet a specific social need is highlighted once more. Even though this definition of social innovation still leaves space for some interpretation, it also deals with quite a few borderline cases where, for example, social and commercial motivation blur. Mulgan et al. (2007) mentions, in this context, models of distance learning that initially started as social concepts and are now adopted by commercial oriented business.

Some other definitions explicitly focus on the motivation of social innovation. Harris and Albury (2009, p. 16), for instance, claim in their definition that social innovation is

> *innovation that is explicitly for the social and public good. It is innovation inspired by the desire to meet social needs which can be neglected by traditional forms of private market provision and which have often been poorly served or unresolved by services organised by the state.*

Thus, social innovation takes place where there is a lack in fulfilling the needs of people or where the status quo just does not reflect what there ought to be. In the case of Detroit, there is an innovation deficit in many areas. Since the municipality went bankrupt, they cannot even satisfy some of the basic needs of their citizens, such as public transportation (see also Chapter 4). The answer to this problematic situation comes increasingly from the bottom, that is, from the citizens themselves. Citizens help out where the public sector failed and create an environment for creative and innovative social solutions (Jankel, 2011). The definition of bottom-up innovation is topic of the next section. Further, it will be discussed how a bottom-up approach and social innovation engage with each other.

2.1.3 Bottom-Up initiated Social Innovation

Due to globalization and the densely connected world, innovation can be found anywhere around the world nowadays. But it is still evident that cities take a leading role in innovative activity. However, it is important to note that the governments of cities rarely innovate themselves but that cities are "[…] hosts for innovation by people, firms and organizations. This means that the governments of cities often support innovation indirectly and that some of the most important things they do are not thought of as innovation policy" (Athey et al. 2008, p. 156). One should, therefore, think about cities less as an innovator, but rather as a space where innovative processes take place.

Since the innovation comes presumably from the 'bottom' of society, one may speak of bottom-up innovation. Bottom-up innovation is therefore defined "[…] as innovation generated by civil society" (Bergman et al. 2009, p. 5). Civil society refers to "[…] generally non-class based forms of collective action […]" that has to be distinguished from the government and the capitalist market economy (Cohen & Arota, 1994, p. 2). That also includes, for instance, the private sphere.

Murray et al. (2010, p. 5) highlight the different role ascribed to the consumer of innovation in this new social economy. Instead of passively buying and consuming innovative goods, they now become active players and "[…] producers of their own right."

Figure 2-1: Typology of Innovation
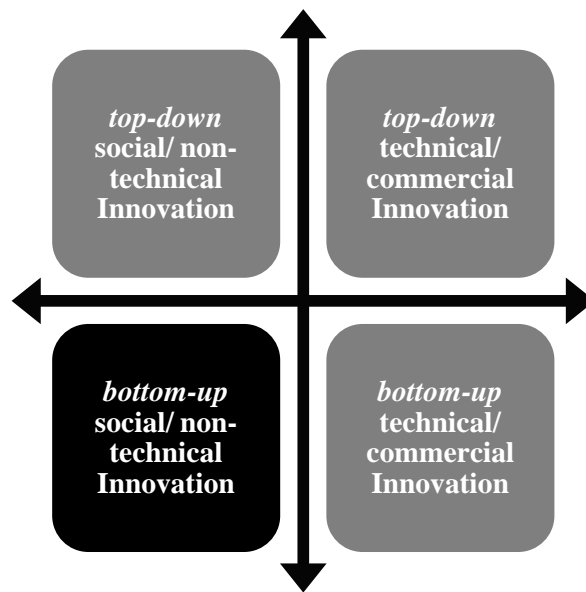
Now that all components of bottom-up social innovation have been clarified (see Figure 2-1), it is time for an all-features-embracing definition. But instead of developing a whole new definition of bottom-up social innovation, an attempt has been made to elaborate the common themes and key features which best describe BUSI for the purpose of this research. After breaking down bottom-up social innovation into its components and taking into account the previously mentioned definitions, six core elements have been identified:

- Novelty
- Meets a social need
- Generated by civil society
- Justice, Empowerment and Equality
- Improvement
- From ideas to implementation

Novelty

Novelty does not mean that a bottom-up social innovation has to be completely new, that is, that the approach to solving the social problem claims originality. In order to qualify as innovative, they need to be new either to the user, the application or the context (Phill Jr. et al, 2008).

Meets a social need

Further, a BUSI has to address a social challenge. A social challenge or need generally refer to global social issues such as an ageing society, social exclusion, climate change and poverty (Hochgerner, 2012b). Those challenges can be met on a global or a local platform (OECD ,2010).

The means that are being used to solve the problems focus on non-technological and non-commercial features, that is, new social practices and institutions which are supposed to help the society as a whole. This does not mean that there is no technology and commerce involved in the innovation process, but that technology and commerce play only a secondary role.

Generated by civil society

Another distinguishing feature is that bottom-up social innovation has to be generated by civil society itself in order to be regarded as a bottom-up or grassroots venture. This means that the innovative activity was not implemented by any governmental organization or firm orientated with accumulating capital.

Justice, Empowerment and Equality

BUSI is, by definition, supposed to address more justice, empowerment and equality within society in both its intention and outcome. There is high consensus on this part of the definition in literature (Caulier-Grice et al., 2012). The process of social innovation can empower underrepresented and marginalized social groups and defines social and power relations in a new way.

One must acknowledge that the intention of creating a more just and equal world by empowering people does not necessarily result in a more just and equal world for everyone. Additionally, change-makers will inevitably also oppose those who benefit from the current situation. No social innovation can be normatively good since it never achieves in creating an outcome that is equally beneficial for all parties.

Improvement

In order to create improvement, bottom-up social innovation must be more efficient or effective than other already existing solutions (Phill Jr. et al., 2008). This means in detail that the particular social innovation has to create an outcome which is (measurably) better than the status quo. Those outcomes range from "[...] hard outcomes (e.g. reduction in numbers of reoffenders)[…]" to the ones "[…] more qualitative in nature (e.g. reported increases in confidence or self-esteem in young people, or reduced feelings of isolation in house bound older people)" (Caulier-Grice et al., 2012, p. 19).

From Ideas to Implementation

Hochgerner (2012b) argues that all social innovation must progress through different stages. The *4-I Process* (see Section 2.2) developed by Hochgerner consists of four stages: the idea, the intervention, the implementation and finally, the societal impact of social innovation. Consequently, a social innovation can only be considered as such if it also reaches its final stage of impact. Otherwise, it is merely a promising idea that never reached the next step of diffusion and financial sustainability in the mid-to-long-term (Mulgan et al., 2007). However, a social innovation is still regarded as such even if it does not gain large scale systematic change. This means that the impact of social innovation is not limited to a specific scale or size and may happen on either a global, regional, or local level.

2.1.4   The Actors of Social Innovation

Who does social innovation? Caulier-Grice et al (2010) claim that there are mainly three different kinds of actors involved in the creation of social innovation: *individuals, movements* and *organizations*.

As the role of the consumer changed within the new social economy, countless examples of *individual social innovators* emerged all over the world (Murray et al., 2010). These include politicians, activists, business people and more. A famous example is the Grameen Bank founded by Muhammad Yunus, which provides so-called *microcredits* to poor people in Bangladesh without requiring collateral.

According to Caulier-Grice et al. (2010, p. 22) "growing numbers of *movements* are taking shape globally – and they are increasingly cooperating across borders." Those movements range from feminism to environmentalism. Interestingly, within all these movements an emphasis lies on the empowerment of the citizens, that is, people are taking the initiative to solve their problems instead of waiting for the government to do so (Caulier-Grice et al., 2010).

Organizations can function as a third lens through which social innovation can be understood (Caulier-Grice et al., 2010). It is important to note that social innovation does not necessarily come from new organizations. Preexisting organizations focus not only on already established activities, but also on potential new markets. Therefore, social innovation might also occur within already existing organizational structures.

While social innovation used to be strictly linked to the *non-profit sector* (also called *third sector*), it is now considered to be driven by various actors throughout all sectors. That means that social innovation can occur in the public sector driven by governments as well as in the private sector or by civil society (Mulgan et al., 2007). Additionally, a social innovation does not even have to be restricted to one sector but can begin in one sector just to be taken up by another (Murray et al., 2008).

2.2   From Ideas to Impact of Social Innovation

A good idea alone does not necessarily make an innovation. As with technical innovation, a social innovation has to pass several steps before it can actually be regarded as such. Despite the less linear and occasionally even diffuse or random nature of social innovations, several attempts have been made to create process-orientated overviews of the term. However, there is still a lack of systematic analysis of social innovation in science, especially when compared to its direct counterparts of technical and commercial innovation (Caulier-Grice, 2012).

One of those attempts is the *4-I Process* developed by Hochgerner (2012b). Distinction is essentially made between four steps: *idea*, *intervention*, *implementation* and *impact* (Hochgerner, 2012b, p. 95). Those are illustrated in Figure 2-2 and will be highlighted in more detail in the following section.

Figure 2-2: The 4-I Process (based on Hochgerner, 2012a)

| Idea | Intervention | Implementation/ Institutionalization | Impact |

2.2.1 The Idea

The *Idea* of a social innovation arises from a lack or a specific need and defines a solution thereof. The initiative comes from so-called stakeholders who range from individuals to organizations (Hochgerner, 2012a). Social innovations emerge primarily outside of research departments in companies and universities (Howaldt & Schwarz, 2010b). In terms of this thesis and the very specific topic, it shall once more be emphasized that "bottom-up" implies that the innovation emerges from civil society itself.

Murray et al. (2010) identify six exemplary triggers and catalysts for innovative action: *crisis, efficiency savings, poor performance, new technologies, new evidence* and *urban acupuncture*.

'*Necessity is the mother of invention.*' This is a commonly known idiom which puts the essence of social innovation in a nutshell. *Crises* tend to stimulate creativity in those who are suffering from them and might, therefore, function as triggers for innovation. A possible response to a crisis could be *efficiency savings* in form of a cut in public expenditure. When traditional ways of efficiency measures do not suffice anymore a system change is required (Chapman, 2002). That is, only the right kind of cuts and savings lead to the desired result.

Bacon et al. (2008) point out the *poor performance* of (public) services and their internal processes. Due to their inefficiency, they unavoidably require a change of the system achieved through social innovation for example. Instead of adopting methods from elsewhere, new ways of addressing social problems could emerge from within the system itself.

New technologies might be adapted to create a better or more efficient way to deal with social needs or deliver services (Murray et al., 2010). In the case of Detroit, this can also

mean that the bicycle – which is obviously not new technology – is applied to a whole new context and environment.

New evidence in science, on the other hand, may stimulate social innovation by creating new possibilities to meet social needs. Those needs might not even have been apparent before, or only in a very subtle way (Murray et al., 2010). Knowing, for example, the effects of certain developments might trigger further movements to either oppose or inspire social innovation even more.

Finally, *urban acupuncture* has been mentioned (Murray et al., 2010). Here, the authors refer to the correspondent traditional Chinese medicine. Small scale projects may function the same way as the needles used in acupuncture by having an energetic impact on a whole city in a much larger scale. The term was coined by Lerner (2014) in his book *Urban Acupuncture*.

2.2.2 The Intervention

"Nearly every problem has been solved by someone, somewhere. The challenge of the 21st century is to find out what works and scale it up." (Bill Clinton)

This quote by former U.S. president Bill Clinton takes on the importance of growing innovation to become more than just an idea. In order to do so, the problem has to be conceptualized and successfully implemented. The second stage of the 4-I Process, *Intervention*, thus describes the intentional actions which lead to the new praxis (Hochgerner, 2010). The methods and resources available are here of interest in how they can be developed or mobilized. To put it briefly, a conceptualization takes place by asking how and with what the social challenge can be answered. Those resources include human capital, such as the qualifications and expertise of the participants, as well as knowledge in the form of experience or scientific knowledge. Finally, monetary resources such as money, infrastructure and social capital play a crucial role (Hochgerner, 2012a).

2.2.3 The Implementation and Institutionalization

The *Implementation* describes the actual realization of the innovation process (Hochgerner, 2012a). However, one has to distinguish between implementation and *institutionalization*. During the institutionalization, new social praxes harden through defined rules and

organizational structures. Implementation on the other hand is rather informal and appears, for example, in the form of new habits and lifestyles (Hochgerner, 2010).

Institutionalization and implementation both happen through *diffusion*. If and to what extent diffusion occurs depends on how much the new social practice is being accepted by the targeted audience. This, again, depends on how useful and how progressive the new praxis is being perceived by the audience in regards to solving the given problem (Howaldt & Schwarz, 2010a). From the civil society's point of view, the new practice has to have a clear advantage towards the current situation (OECD, 2010). On these grounds, social innovation has to be designed specifically in purpose to meet those needs. *Context-sensitive transformation* processes in the form of adaption might still occur in a later stage of the development process (Howaldt & Schwarz, 2010a). Chances of diffusion are particularly high in domains where there are no (or still very few) institutions which are capable to meet that specific social need (Howaldt & Schwarz, 2010b).

Diffusion of technical innovation takes place on the market. Social innovation can also spread on the market, for example, in the form of new business models. However, there are various possible diffusion channels and the process is in general far more complex (Rogers, 2003). These range from technological infrastructure (e.g. social networking via internet), networks, movements and governmental funding to social entrepreneurship and other forms of communication and cooperation (Howaldt & Schwarz 2010b).

The growth of social innovation is heavily relying on the interplay between *effective supply* and *effective demand*. Effective supply basically tells us if an idea works or not and if the service is actually implementable and cost-effective (Caulier-Grice et al., 2012). Effective demand on the other hand means that people are actually willing to pay for the product (Murray et al., 2010). While it is necessary to prove effective supply in some cases, it is necessary to grow effective demand in others. "The combination of the 'effective supply' and 'effective demand' results in innovations that achieve social impact and at the same time, prove to be financially sustainable" (Mulgan, et al., 2007, p. 11). Raising awareness through advocacy or campaigning are the keys to growing effective demand. In addition to that, diffusion occurs more easily if the new practice is simple and does not require new skills. More complex practices can diffuse, however also in a slower pace and with input of more energy (Murray et al., 2010).

In literature, there is a broad agreement that it is diffusion which transforms social ideas into social innovations (Kretschmer, 2011). This does not mean that the whole society has to accept the new social praxis. Social innovations can also occur in niches as long as they are generally perceived as being innovative by society (Kretschmer, 2011). However, often it is not defined from which point on social innovation is being perceived as such. The term diffusion is, therefore, not well defined and leaves a lot of space for interpretation (Wehrspaun, 2012).

The more the new social praxis spreads, the more it loses its newness. The new praxis is not anymore perceived as something innovative as soon as it enters everyday life and becomes a routine (Howaldt & Schwarz, 2010a). This can be compared to the saturation of the market in the product life cycle theory. Examples for implemented social innovations are compulsory school attendance, traffic laws, e-learning platforms, et cetera (Hochgerner, 2010, p. 10).

"It is also at this point that social innovations are often confronted with a key tension between the desire to collaborate and remain open, and the need to protect the financial interests of the project" (Caulier-Grice et al., 2012, p. 38). That is, the goal of social innovation is to spread the new social practice as far as possible in order to create social impact while still being able to finance and maintain the project.

2.2.4 The Impact

The *Impact* specifies how the new social praxis affects society (Hochgerner, 2012). Depending on the range of the diffusion, social innovation can have an impact only on single societal groups or on the whole society (Gillwald, 2000). Gillwald (2000) distinguished between two types of social innovation: *social basic innovations* (translated from German as "Soziale Basisinnovation") and *improvement innovations* (translated from German as "Verbesserungsinnovation"). The former describes a fundamental change of direction. A great impact on society is ascribed to them and they form the society in the long run. Further, they influence all levels and structures of society (Gillwald, 2000). The latter is less radical and profound and only implies improvements on a smaller scale. Thus, their impact on society is less strong (Gillwald, 2000).

In the context of the impact of social innovation, it is also necessary to take a look at *social change* or *systematic change*. These notions describe the nature of social innovation which

is to reach as many people and to have as much of an impact on society as possible (Caulier-Grice et al., 2012). In this sense, initiatives with a social mission ideally want to change the way people think and do things. However, only a small percentage of them actually reach that stage. Further, Caulier-Grice et al. (2012, p. 41) argue that social change "[…] always involves a complex interaction of culture, consumer behavior, business practice, legislation and policy", that is, it requires more than just one player. Since social change presupposes an actual change in behavior of people, it is more likely to occur during times of crisis and instability.

Besides the positive effects, social innovation might also come along with negative outcomes since the effects are not normatively 'good', which means that not necessarily everybody benefits from them (Hochgerner, 2012a). In addition to that, those who have to adapt to the new social practice might be subjected to costs (Gillwald, 2000). This implies that conflicts with common and already established praxes might also come along during the diffusion process (Howaldt & Schwarz, 2010a).

Still unanswered in literature remains the question of how the impact of social innovation can be measured. So far, no standardized method exists that pursues that goal. This is in contrast to technical and commercial innovation which can be measured with economical indicators such as sales numbers and market penetration (Hochgerner, 2010). This methodological challenge will further be highlighted in Section 3.2.

2.3   Barriers to Bottom-Up Social Innovation

Social innovation is criticized for failing to live up to its promise (Jankel, 2011). The growth of (bottom-up) social innovation is often hampered through various barriers which act as disincentives for innovative activity. However, to have a significant impact on society, any social innovation has to spread in order to lead to system change. In literature, numerous general barriers to social innovation are discussed. For a better overview, three main categories of barriers will be introduced and discussed extensively in the following section. Those categories will further serve as theoretical basis for the empirical approach.

2.3.1   Lack of Financial Support

Financing a social venture is problematic because of the specific characteristics of social innovations. Often emerging as 'grassroots' innovation from the bottom of the pyramid, a lack of measurement makes it difficult to see the impacts of potential investments. The

usually small size of social innovation and the rather unlikely business background of the innovators is being perceived critically. It is not often regarded as self-sustainable by many financing institutions, which makes it difficult to tout money (Hubert, 2010).

Additionally, many actors in the field of social innovation depend on grants, foundations and charity money to survive. While this kind of financial support is important in the starting phase of social innovation, it is not reliable enough in the long term (Chalmers, 2012). In particular, social economy firms have difficulties saving growth capital. However, a risk averse culture expects social ventures to scale up and prove themselves first before granting financial support (Jankel, 2011). By depending on external funding, the long-term development of the whole sector is endangered.

2.3.2   Neglect through Science

According to Castellacci et al (2005), social innovations are also widely neglected by scholars because their focus lies primarily on the economic performance and impact of technological and commercial innovations. That means a minority group consisting of financially underfunded scientists are the main researchers of social movements and other forms of social innovation (Henderson, 1996). Albery (1996) even claims that existing funding models of new, innovative ideas discriminate against social innovations. This is insofar crucial since knowledge can be regarded as a key factor in innovation processes (Jain et al., 2008). Thus, an underperformance in research can be a barrier for social innovation. Concerning this matter, Caulier-Grice et al. (2012) finds that growing the impact of a social venture does not necessarily imply organizational growth. Yet, a lack of fitting models to draw on limits social ventures and is a still unexplored frontier of social innovation.

The approach of problem solving for social issues is, in particular, defined by natural sciences. Social issues, in this respect, are then regarded as several isolated problems. Consequently, approaches to solve problems only focus on one at a time (Jankel, 2011). By concentrating on only one issue at a time, however, a greater picture of the whole problem cannot be visualized. This approach does not suffice to meet the complex issues faced by individuals. Unless the problem is understood in all its parts and complexity, all attempts will fail to create a broader solution and they will, at best, only deal with the symptoms of the issue.

2.3.3   Confronting Social Norms and Values

Social innovation not only lacks support from the scientific domain, but it is also difficult to find active support from mainstream actors. Social innovation's key aim to create benefit for the society as a whole is less feasible than economic enrichment and therefore also less appealing (Bergman et al. 2009). This might end up with the perception of social innovation being "[…] 'impractical', or frivolously portrayed, unlike those innovations in technology, production, and marketing in the private sector which are usually hailed as progress" (Henderson, 1996, p. 217).

A lack of attention from mainstream actors is one problem. But it is also the people who are active within the social sector themselves that show great distrust towards the commercial world (Chalmers, 2012). A financially sustainable social innovation would just provide further evidence of commercialization permeating throughout all aspects of public life and "[…] the entry of capitalist values into the 'sacred' areas of human suffering and human rights" (Chalmers, 2012, p. 9). Jain et al. (2008) builds on this by arguing that values themselves may act as another barrier to social innovation processes. Values and innovation are often so closely intertwined that it is difficult to view them as separate entities. If those values are not shared commonly among civil society, it might be troublesome for the innovation to be implemented and scaled up in order to actually succeed. However, bottom-up innovations are often due to alternative ideological reasons, that is, they might be opposing mainstream values and norms on purpose (Seyfang and Smith, 2007). Particularly in the U.S., where people dream of their own rags-to-riches story, problems emerge out of the Calvinistic values of American society. This refers to the quiet consensus that the poor deserve the poverty they are living in (Chalmers, 2012).

2.3.4   Insufficient Governance and Collaborations

In contrast to technological and commercial innovations, social innovations still lack policy support. National support for social innovation is still inadequate and insufficient (Mulgan, 2006). The avoidance of risks such as the possibility of failure is the main reason for this gap in support (Seyfang and Smith, 2007). Further, the way social innovation is understood within the political domain is often too much influenced by how the financial support for technical and commercial innovations works (Bergman et al. 2009). This is in line with Caulier-Grice et al. (2012, p. 39), who claim that "[…] existing commissioning and procurement structures are not well designed for social innovation. In most cases,

contracts are too short-term, […] set unrealistic prices […] [and] involve an excessive burden of monitoring and evaluation." This hinders access to financial and human capital and exposes providers of social goods to excessive risks. It is evident that the given structures prefer more established providers.

Since the policy competences and responsibilities for social innovation are, in general, spread over different levels of institutions and actors, many overlaps in coordination are generated (Hubert, 2010). Whereas it should not be the aim to concentrate the governance of the social innovation to a single institutional level, the coordination between the different actors evidently needs to be improved. Due to insufficient measurement of data about social innovation, only little is known about the actual extent of its spread and impact (Hubert, 2010). This makes it difficult for policymakers to make the right decisions since the actual impact of their work is unknown. This again influences investment in infrastructure, human capital and other long-term investments, which might improve the overall environment for social innovation (Hubert, 2010).

Social innovation faces barriers not only in policy coordination, but also within the networks between the various players. Those include the innovators as well as financing institutions and so on. The innovators themselves are intertwined to a strong degree. Terms such as "proximity" and "clustering" are often used in this context. Even though there are more and more intermediaries, it is questionable if they actually meet the criteria to maximize the social impact of social innovations. In addition to that, those intermediaries are often criticized for being too large to be creative (Hubert, 2010). A failure in networking with other actors within the field not only has negative effects on the access to knowledge, financial and general support, but it also results in a decrease of morale and motivation (Lettice & Parekh, 2010).

2.4 Conceptual Model

The previous sections discussed bottom-up social innovation in all its aspects. Six criteria have been identified in order to define BUSI for the purpose of this research. A bottom-up social innovation is, thus, defined as a new solution or response to a social need that is more efficient, just and equal than already existing approaches. Moreover, it has to be created by civil society, that is, it does not emerge from the private or public sector. And finally, social innovation has to be regarded as a process and not just as its outcome.

This process has been examined in a bit more detail in Section 2.2. According to Hochgerner (2012b), the process of social innovation is divided into four individual stages: *idea*, *intervention*, *implementation* and *impact*. The *idea* stage describes the initial impulse which leads to the social innovation. During the *intervention*, the approach to solve the problem is being conceptualized. The realization then follows in the *implementation* stage. In those two stages, the resources and other enabling factors for the innovation are of high importance. Revealed in the final stage of *impact* is whether the social innovation can live up to its promise and truly bring about systematic change.

Lastly, a closer look has been taken at the barriers to bottom-up social innovation, as discussed in literature. In Section 2.3, mainly four broad fields of barriers have been identified. A *lack of financial support* heralds the innovation project due to the unsteady and unreliable nature of social innovation's financial income. The concept of social innovation is, further, widely *neglected through scientific research*, for which reason there are no models to draw on in order to stimulate social innovation in a larger scale. Moreover, *social norms and values* play a crucial role in confronting social innovation. It is in the very nature of social innovation to be less feasible and thus less appealing for the mainstream market. Additionally, *insufficient governance* and collaboration of the social innovation networks prevent many small-scale success stories to gain a foothold and scale up in order to have an impact on society.

While keeping the just discussed theoretical framework in mind, a conceptual model for the thesis can now be developed. The research question formulated in Section 1.2 was as follows:

Why and how does Bottom-Up Social Innovation emerge in Detroit's bicycling scene?

This research examines the case of bottom-up social innovation within the cycling scene of Detroit. Of special interest, hereby, are the motivation and catalysts of the initiators, the methods and measures they use, resources they rely on, as well as the barriers they are facing. Therefore, the conceptual model of this thesis looks as follows (see Figure 2-3).

Figure 2-3: Conceptual Model
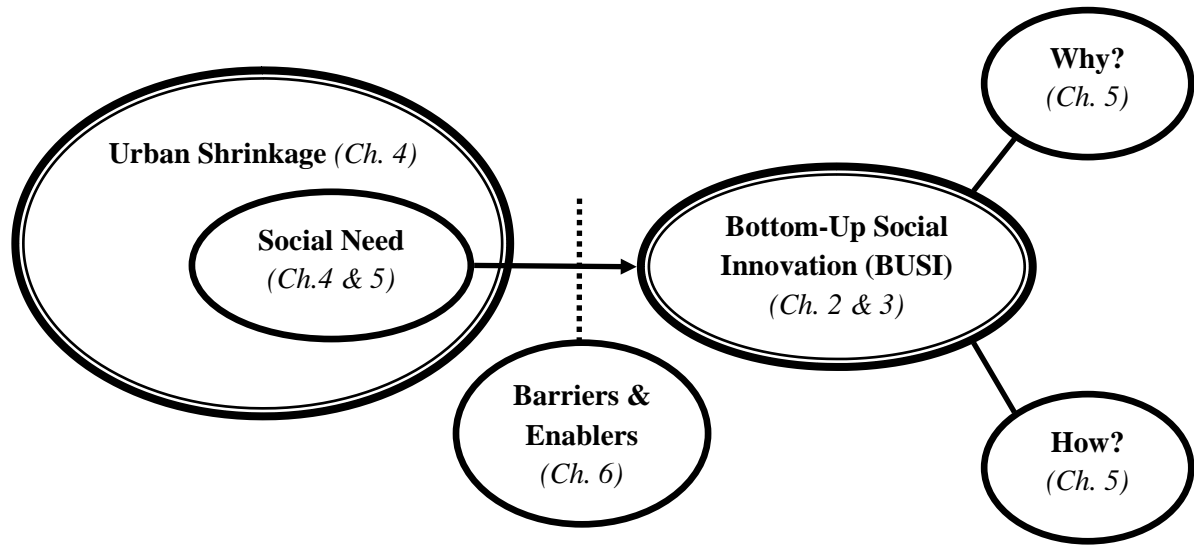
The central theme of this conceptual model is the hypothesis of this research, which claims that BUSI can be described as an answer to a social need, all in the context and as consequence of *urban shrinkage* (see Chapter 4). This is illustrated by the little arrow connecting *Social Need* to *Bottom-Up Social Innovation*. In order to be in accordance with the research question, two main subjects have been identified. The first question to be answered is *why* BUSI emerge in Detroit (see Section 5.1). It follows an in depth-analysis of *how* social innovation developed within the given context (see Section 5.2). Finally, *barriers* and *enablers* to BUSI in Detroit are highlighted at the end of the thesis (see Chapter 6).

3. Methodology

Social innovation and methodology have a difficult relationship. The methodology used to research social innovation takes many forms, but no procedure follows a routine, as is the case in other scientific fields. Gillwald (2000) claims that there are no real instruments to measure social innovation. For this research, it seemed most suitable to use the *Case Study Method*. The exact virtues and characteristics of the case study method are highlighted in the following sections.

3.1 Research Design

The research method used for this research is the *Case Study Method*. Yin (2009) describes this method as follows:

> *An empirical inquiry that investigates a temporary phenomenon in-depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident.* (Yin, 2009, p. 15)

Thus, applying a case study as a research method also means, among other features, that investigations on the context and other complex conditions are an integral part of the understanding process.

The research of this case study was conducted in the framework of a two month long research internship in summer 2014 at Wayne State University, Detroit. The university appeared fitting as an internship organization since it opened up many possibilities for the researcher. Being able to fall back on an already established network facilitated the initial orientation within the city tremendously. It further enabled the researcher to connect with other colleagues that held similar research interests, participate in lecture series and be a productive part of the department. The central location of the university's campus additionally permitted easy navigation through the different neighborhoods by bike and therefore facilitated the active participation in the bicycling scene.

The initial choice to conduct this study in Detroit was mainly based on one reason. As already argued in Section 1.3.2, Detroit has always been ahead of the curve and not as unique as one might assume (cf. Doucet, 2014). Thus, researching the case of Detroit seemed all the more fitting for this study, as it might already contribute today toward producing answers to tomorrow's problems.

3.1.1 Data Collection

The range of possible methods to collect data is one of the virtues of the case study research. Multiple sources of evidence served as methods for this research.

A *literature research* was used in order to gain a more in-depth understanding of the complex context of the case. In Chapter 4, the results of these investigations are introduced. Later on in Chapter 5, Chapter 6 and Chapter 7, those findings are applied and compared to the results of the thematic analysis of the 13 semi-structured interviews.

As a second qualitative method in this case study, *semi-structured interviews* seemed to be suitable to underline the explorative nature of this research. This allows the researcher to adjust the research to the circumstances once being in the field. Flick (1994) claims that there are three types of interviews: narrative, group and semi-structured interviews. The semi-structured interview is defined by a clear structure which gives the interviewer the possibility to actively interfere and control the further course of the conversation (Flick, 1994). This is an important factor which makes this type of scientific interview suitable for this research. Further, despite having a structure, they still leave enough space for open answers. A too-narrow structure might influence the interviewed person too much; thereby some crucial information might not be captured. Nevertheless, the interviews can be compared later on, which would not be the case with a completely open questioning structure. A version of the interview guide can be found in the Appendix 1.

The population from which the interviewed samples were initially drawn was the *Urban Innovation Exchange* database (www.uixdetroit.com). The number of potential interview partners constantly increased through the exploitation of this database. But it was not until being in the field in Detroit that most of the contacts could be established. Through the snowball effect, further, innovations not yet considered by that point could be identified and contacted. Being able to personally meet the innovators opened many possibilities which would not have been possible due to the distance. Only through the help and effort of some of the interviewed persons could relations to new innovators be built up.

3.1.2 Data Analysis

All 13 interviews were recorded and fully transcribed. However, there is no singular method to analyze the collected data. Using the qualitative data analysis software *ATLAS.ti*, a detailed *thematic analysis* was undertaken (cf. Braun & Clarke, 2006). Using a *pattern-*

matching logic as described by Yin (2012), thematic codes were created for all interviews. A detailed list of those codes can be found in the Appendix 2.

Creating codes by using a thematic analysis has two virtues. First, it enables one to compare the patterns gained from the empirical work with the predictions formulated in the theoretical framework (Yin, 2012). Second, it allows the researcher to evaluate the research. Only if it is known how people went about analyzing the data, it is then possible to compare it with other related studies in the future (Attride-Striling, 2001). This is especially important with regard to the benchmark study suggested later.

3.2 The Case

The case study method is suitable in particular for an *explanatory question*, that is, exploring *how* and *why* something happens (Yin, 2012). The research question of this research was:

Why and how does Bottom-Up Social Innovation in Detroit's bicycling scene emerge?

In order to be able to apply the case study method to the case of BUSI in Detroit, the broad range of potential research objects had to be limited. Instead of losing focus by investigating the vast amount of BUSI in Detroit, a group of bicyclists has been elected to serve as representatives. The restriction to a relatively small group of people enabled the researcher to cover almost all involved innovations, represented by at least one involved innovator.

3.2.1 Overview of Participants

Table 3-1 shows an overview of all people who participated in the research. Most innovations revolved around individuals. They created their venture in their free time outside of any formal business environment. The interviewed persons represent those individuals. Only in the cases of [E, F, H] could the initial innovator not be interviewed. Both [E] and [F] have undergone deep personnel changes, which meant that none of the current staff members initially helped implement the innovation. The bicycle collective run by [H] has also undergone personnel changes, but at least one initiator of the project is still actively involved. However, the tight schedules and unfortunate overlaps with other obligations would make it impossible for them to participate in an interview.

Table 3-1: Overview of the Innovators interviewed

Case	Mission	Interviewee	Background of the Interviewee			Stage of Development	Year Founded
			Sex	Race	Residence		
A	Clearing and cleaning bike trails in Detroit and the suburban area	Innovator	m	white	Detroit (from the suburbs)	Late Stage	2004
B	Weekly bike ride and yoga class/Bicycle collective for neighborhood/ pedal powered taxi service[1]	Innovator	f	white	Detroit (not from metro Detroit)	Late Stage	2011
C	Hand built BMX Playground	2 Innovators	m	white	Detroit (from the suburbs)	Late Stage	2013
D	Organizator of bicycle fundraising events including the city's biggest bike ride	Innovator	f	white	Detroit	Late Stage	2002
E	Community center for the youth/bicycle shop	Operator	m	white	Detroit (not from metro Detroit)	Late Stage	2009/14
F	Community center for the youth/bicycle shop	Operator	m	white	no info	Late Stage	2000/08
G	Weekly bike ride to promote neighborhood	Innovator	m	black	Detroit	Late Stage	2010
H	Bicycle collective for women, queer and transgender cyclists	Operator	f	white	Detroit (not from metro Detroit)	Late Stage	2009
I	Website collecting data about stolen bikes	Innovator	m	white	Detroit (not from metro Detroit)	Early Stage	2014
J	Bicycle collective for women	Innovator	f	white	Suburbs	Early Stage/Partly Conceptual	2013
K	Organizator of bicycle events including the world's biggest weekly bike ride	2 Innovators	m	black/ white	Detroit	Late Stage	2010
L	(annual) bike rides/Biking advocacy Facebook group	Innovator	m	white	Detroit (not from metro Detroit)	Late Stage	2007/13
M	Cycling program for youth of color	Innovator	f	black	Suburbs	Early Stage/Partly Conceptual	2013

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[1] independent projects initiated by the same person

The stage of development represents the interviewed innovators. Despite being relatively new, most innovators had an established user base. Only three innovators were still in a very early development stage. In the case of [J] and [M], this meant that the projects are, despite being mostly conceptualized, not yet fully implemented. Further programs, such as bike repair training or other events, are planned. [I], on the other hand, started his webpage only shortly before the interview was held.

3.2.2 Defining BUSI in Detroit

In order to work further with the term BUSI, one is required to define the research objects as such. Earlier in this thesis, the following criteria have been identified to define BUSI:

- Novelty
- Generated by Civil Society
- Improvement
- Meets a Social Need
- Justice, Empowerment and Equality
- Underlying process from Ideas to Impact

Those criteria shall now serve as a way to define the researched cases as BUSI. Each bullet point listed above will be applied onto the researched innovation. This occurs under due consideration of the distinct context of this research.

To furnish proof for the *novelty* of the researched ventures, one has to take a look at Table 3-1 provided in the previous section. Almost every venture was established within the last five years and can, therefore, be regarded as a new concept to the city. In addition to that, all interviewed people mentioned their "own novelty" by referring to the visibly growing number of bicyclists in the city.

The criteria that the innovation has been *created by civil society* also holds true to the in this case study's researched ventures. In this respect, civil society means that the innovation emerged out of an environment that is distinct from business and government. This feature applies, as all the innovations are born from individuals, which initially started to conceptualize and implement the projects in their leisure time.

An *improvement* to the status quo is given insofar since all researched cases provide tools to overcome, for instance, the problems emerging from the mono-functional infrastructure

system in the city. Giving the people a way to move within the city without depending on unreliable services or overly expensive means of transportation measurably improves the current situation. In this respect, Chapter 4 is especially of interest because it examines the underlying structural problems of the city, implied here, in more detail. Future follow-up studies could reveal additional improvements regarding the efficiency and effectiveness of already-existing solutions.

Further, the criteria of *meeting a social need, creating justice, empowerment* and *equality* all applied for the examined innovators and will be highlighted in more detail in Chapter 5 and Chapter 7.

A key element of BUSI, as defined earlier in this thesis, characterizes social innovation as not only an outcome, but also a *process*. However, the last stage of *impact* cannot and shall not be the subject of this research. Only a long-term investigation on the topic would provide satisfactory results. Since this exceeds the (time) capacity of this research project, a detailed analysis of only the first 3 stages of Hochgerner's *4-I Process* shall function as a foundation for a potential future benchmark study. An in-depth analysis of this process follows in Chapter 5, Chapter 6 and Chapter 7.

4. Detroit – The Motor City

This chapter tries to unveil the underlying structural and social problems of the city through an intense literature research. By doing this, it simultaneously builds the foundation of the earlier formulated hypothesis that the researched BUSI are an answer to those very problems. Yin (2009) claims that only by investigating on the context of a distinct case, a true understanding of the researched phenomenon can be achieved. It is, therefore, important to pay equal attention to the context of a case than to the case itself. To round the chapter off, a brief introduction of current trends regarding bicycling will serve to illuminate the developments in the city.

4.1 Excursus: Urban Shrinkage

"A shrinking city can be defined as an urban area – a city, a part of a city, an entire metropolitan area or a town – that has experienced population loss, economic downturn, employment decline and social problems as symptoms of a structural crisis." (Martinez-Fernandez et al, 2012) The terms of urban shrinking and shrinking cities are tightly linked to recent scientific discourses in Germany and the U.S. (Audirac, 2009). In Germany, the discourse about urban shrinking was characterized by the two German scholars Häußermann and Siebel (1988), who started to regard the set of problems as a structural and durable process. Since those theories evolved under the specific circumstances of the eastern German cities after the collapse of the Wall and the Iron Curtain, the term 'schrumpfende Städte' is widely used to refer to a loss of population and employment in a city or urban area. This definition was recently broadened after the effects of the global economic crisis, giving space to additional subjects such as the demolishing of vacant buildings and the downsizing of a city (Baron et al, 2010).

Urban Shrinkage can be regarded as an effect of Globalization and as its "spatial manifestation" (Aglietta and Boyer, 1982). Classical models of urban shrinkage no longer fit into the current issues being only able to explain an economic environment, which is based on Fordist industrialization. Today, in a time of restructuring, those theories seem to be less relevant and need to be adapted to the more service orientated post-industrial city (Bontje, 2004). However, some cities succeeded in adapting to the new situation whereas others, mostly industrial cities, could not find their niche in the international competition for capital (Martinez-Fernandez, 2010).

Over decades, planning paradigms were only focused on growth (Logan and Molotch, 1987). Urban shrinkage thus confronts planners and citizens with a bunch of unsolved problems. For example, what to do if there is a surplus of buildings? Detroit and also other shrinking cities face the problem of vacant buildings and wasteland. Their extraordinary visibility throughout the city has detrimental impacts on the residents' quality of life. The consequential decrease of external investment, declining revenues and subsequently rising unemployment could be just the start of a vicious circle, which causes even more people to move out (Bontje, 2004). Left behind is a city held together with a physical infrastructure that is completely oversized for the population it serves (Schlappa & Neill, 2013). Urban sprawl and low population density lead to growing operating costs in urban infrastructure, which hamper the maintenance of the latter. Increasing costs for municipal services in general intensify the downward spiral: "[…] there is a reduction of social and retail activity; there is a lack of social energy and dynamism; people's sense of safety is reduced; urban fabric is lost and disjointed urban areas appear amid 'wild zones' beset by illegal activity and vandalism." (Martinez-Fernandez et al., 2012, p .221)

That every city suffering shrinkage faces its very own challenges should be self-explanatory. However, Schlappa & Neill (2013) mention Detroit as an example of how not to address urban shrinkage. The subsequent chapter, thus, focuses on the very specific conditions and problems of Detroit caused through urban shrinkage.

4.2 The Decline and Ruin of Detroit

Comprehension of the depths into which Detroit plunged after decades of urban decay requires an understanding of how it initially started. The subsequent section highlights first how the decline of the city took place. After that, the focus will shift towards the structural problems of the current Detroit.

4.2.1 The Decline of Detroit

The city of Detroit has experienced a tremendous economic and social decline since the 1960's. Once proudly the home of nearly two million inhabitants, it has now lost more than half of its population with an estimated number of approximately 700,000 inhabitants (U.S. Census Bureau, 2014). Even during its grand heights, Detroit had already numerous underlying problems and it was only a matter of time for them to surface. There are mainly

two reasons for the decline of Detroit according to Enelow (2013): the *diminishing importance of distance* and *poor race relations*.

Falling costs in transportation and communication are mainly responsible for the decline of cities within the so-called American Rust Belt, the former industrial powerhouse of the United States (Glaeser & Ponzetto, 2007). The reduction of costs made it possible to move manufacturing to the suburban areas – and later to the developing world – where land property prices were much lower than in the dense urban areas. The flight of manufacturing resulted in decreasing property values within the city. While low transport costs were definitely an incentive to leave the city, so were "[…] the pursuit of low labor costs, low taxes, and weak labor unions." (Enelow, 2013, p. 3) The death of distance led not only to a flight of manufacturing but also to a flight of people through suburbanization. By 1961, a decade after Detroit's population peaked and only five years after the installment of the highway, suburbanization's effects were already felt when the city proper lost 180,000 people while the suburbs gained nearly one million people (U.S. Census Bureau, 2014).

However, diminishing costs in transportation and communication alone cannot explain the complexity underlying the city's decline. Enelow (2013), therefore, also mentions racial inequality and segregation as a second cause. It does not occur without reason that Detroit was also known as the most "northernmost Southern city" in the U.S. Racial segregation and discrimination always played a dominant role within the city, be it the segregationist employment structure and policies or enduring racial prejudice among citizens (Sugrue, 1996). The nationwide phenomenon of suburbanization led to the famous pattern of 'chocolate' cities and 'vanilla' suburbs (Farley et al., 1978). This pattern came to existence because not every racial group was shared equally within the process of suburbanization. It is argued that the movement of jobs from the cities to the suburban rings of Detroit went along with strict segregation (Sugrue, 1996). While the white middle-class left for the suburbs, black citizens arrived in large numbers in the 1960s to take their place. Strict segregationist politics, however, prevented black people from moving to the suburbs. Once the manufacturing left the city, a large portion of the African-American population was left behind (Sugrue, 1996). The 1967 race riots hastened the decline of the city and revealed the underlying tensions that finally boiled over in protests and violence.

In the addition to the already mentioned problems of suburbanization and racial tensions, other factors such as an inadequate educational funding, a lack of industrial diversity and finally deindustrialization predicated the downfall of Detroit. Galster (2012) further argues that the geographic conditions have proven to be a curse in disguise. The widespread expansion of the city created a 'featureless plain' that left no vibrant old urban core to fall back on after the industry left. What remains is a city full of structural, economical and social challenges.

4.2.2   The Ruin of Detroit

Detroit gives the people many incentives to leave the city. Those who remain are faced with numerous problems by dealing with the many underlying structural and social issues. Even basic needs of the citizens cannot be satisfied anymore. A high unemployment rate, poverty, racial inequality, poor infrastructure and low density are just a few of the problems citizens face. The most important issues are examined in the following chapter. Some of them are interlinked and overlap quite closely. For clarity's sake, separate features have been developed. Those are as follows:

- Unemployment
- Crime
- Racial Inequality and Segregation
- Urban Decay and Vacancy
- Transportation and Urban Sprawl

Detroit has the highest *unemployment* rate among the 50 largest cities of the U.S. with a percentage of 23.5% in 2010 (Bureau of Labor Statistics, 2010). The city also brings up the rear in terms of poverty with the highest rates among all cities for which data were collected (U.S. Census Bureau, 2009). In 2012, 36.4% of the Detroiters lived below the *poverty* line (U.S. Census Bureau, 2012).

Another issue is the continuously high *crime* rate. Despite the rate shrinking, Detroit is still listed as the most dangerous city with a population of more than 100,000 in the U.S. according to the FBI crime statistics (Uniform Crime Reports, 2015). 14,507 violent crimes in 2013 meant a change of -507 compared to 2012 but gave the city still the lead in the ranking list of per capita crime rates in the country (Uniform Crime Reports, 2015).

Murders fell 18% within one year with a total number of 316 reported for 2013 (Uniform Crime Reports, 2015).

The previous section mentioned that *racial inequality* and *segregation* encompass a range of problems for today's Detroit and its citizens. With a share of 82.7%, Detroit is the city with the highest percentage of African American population in the country (U.S. Census Bureau, 2014). This is offset by a 77.7% white population in Oakland County and 85.4% white population in Macomb County, which also contains Detroit's northern and eastern suburbs. Detroit's western suburbs are located in Monroe County, which has a share of 95.1% white population (U.S. Census Bureau, 2014). Logan and Stults (2011) claim that Detroit is the most segregated major metropolitan area in the U.S. They came to this conclusion by comparing median income and unemployment rates between the white and black population of the city. While the median household income of the white population was $56,300 in 2013, the black population earned at the same time $35,451 in average (U.S. Census Bureau, 2013a). The unemployment rate is also marked with disparities between the white and black population. 30.1% of the black population had no job in 2013, which compares unfavorably to the 19.6% of the white population without a job (U.S. Census Bureau, 2013b).

A tremendous population loss and a several decade-lasting economic decline led to *urban decay* without compare. Vacant structures and the demolition of such lead to neighborhoods now known as *urban prairies*. Central areas of the city resemble rather farmland than an actual urban area. To put it in figures, 84,641 blighted structures and vacant lots can be found throughout the city (Time to End Blight, 2014). In addition to that, 114,000 parcels within the city are vacant, which equals a share of 30% (Time to End Blight, 2014).

Low density, vacant structures and high crime rates also negatively influence prices on the real estate market. Despite the fact that the median selling price of residential real estate in Metro Detroit climbed consecutively for the last 22 months, it is still low with a median sales price of $138,000 (Reindl, 2015). In 2014, Detroit's mayor Mike Duggan even introduced a new program to auction off homes for $1,000 (Abbey-Lambertz, 2014).

In addition to all the issues resulting from vacant structures and low density, the city also faces a challenge with *property tax* levy. An independent analysis reports that only about

half of the property tax levy is being collected in the years that it is due (McDonald, 2013). Detroit has about 305,000 properties of which only about 150,000 of the owners pay taxes. This was causing a loss of $131 million for the city in 2012 alone. The highest property taxes of big cities in the U.S. are coupled with the highest rate of poverty in the country (McDonald, 2013). This is the result of the combination of two factors. First, over-challenged treasury officials of Wayne County are unable to keep up with vast amount of foreclosures (Reese et al., 2014). Second, the city prefers to keep houses occupied instead of letting them go to rack and ruin (McDonald, 2013). This only further puts stress on the already limited financial resources of the city.

The one-sided infrastructure of the city confronts the citizens with many challenges. Easy accessibility of the suburbs by car makes it attractive to move to the outskirts of the city where living conditions are generally better. The poor *public transportation* system services within the city make Detroit difficult to access without a car. This conflicts with the ratio of car ownership in the city. Up to 24% of Detroit's households own no car (Reese et al., 2014, p. 15). It is difficult to walk due to the long distances, which in other words means that 24% of Detroit's households are depending on public transportation. Evidently, the public transportation system, or rather the lack of thereof, is an issue that is apparent in several ways.

According to calculations of Lavelle and Ogbonna (2013) based on data from the U.S. Census Bureau, 62% of Detroiters are not employed in Detroit itself and 72% of the city's workforce does not live in the city. Surprisingly or not, the share of citizens working outside of Detroit is higher than the much smaller neighboring city of Ann Arbor, for example. Thus, it can be said that Detroit is a city of commuters.

Many people, therefore, rely on owning a car or using public transportation on a daily basis. The share of car ownership, however, as previously mentioned is relatively low. Why is this? Car ownership decreases mainly due to the combination of two reasons. First, there is a general nationwide decrease in car ownership and car driving (U.S. Department of Transportation, 2011). Second, as with many things in life, owning a car puts tremendous financial stress on people; especially on the poor. If we now look back to what has been previously discussed in this section, it becomes evident that owning a car conflicts with the high rate of poverty in the city. But what makes owning car that expensive? One factor is

the fluctuating and steadily increasing prices of gasoline in the U.S. (EIA, 2015a). Another factor is that Detroiters are facing the highest car insurance rates in the whole country. According to a study, car insurance in Metro Detroit is 165% greater than the U.S. average (insuranceQuotes, 2014).

A functioning and coordinated regional transit network could compensate this deficit. However, many do not even have access to public transportation – not to mention its reliability and functionality. As stated by Data Driven Detroit, about 74,000 people, which equals more than 10% of Detroit's population, are living in blocks which are at least 0.25 miles away from a bus stop (Data Driven Detroit, 2010). The result is an extremely low public transportation usage for commuting in Metro Detroit with less than 2% (American Community Survey Reports, 2011).

The insufficient public transportation system and the one-sided infrastructure, which is based on single-occupant vehicle trips, is intensified by the low density urban expansion of the city – that is, *urban sprawl*. Urban sprawl leads to various problems, including job sprawl and complicated access to food. According to Stoll (2005), there is a positive correlation between job sprawl (or the decentralization of jobs) and a worse accessibility to the job market for African Americans. This is insofar relevant for Detroit since the city held "[…] the highest level of racially determined mismatch and job sprawl […]" of all metropolitan areas in the country with a population over 500,000 (Enelow, 2013, p. 5).

Urban sprawl additionally affects people's access to food. As with many aspects of Detroit, it is also marked by racial inequality. Zenk et al. (2005) found that predominantly low-income black neighborhoods had worse access to supermarkets than their predominantly white counterparts. Poorer access to supermarkets directly translates into an increase of obesity and other diet-related diseases.

That is the reason why a functioning public transportation system is necessary for Detroit. It not only alleviates problems caused through urban sprawl, it also decreases the segregation of the poor and mostly black people (Glaeser et al., 2007). It is namely inadequate public transportation and transit that explains the central location of poor in urban areas. Therefore, it is useful to expand the horizon by looking at public transportation in Detroit. What subsequently follows is a short overview of the status quo

of the public transportation in the greater Detroit region, the actors involved and a summary of current projects and initiatives regarding that issue.

4.3 Public Transportation and Transit in Metro Detroit

James Robertson is just a normal man. His commute to work, however, is not. Since his old car broke down, the 51-year-old Detroit-based factory worker walks every weekday 21 miles from Detroit to his workplace in Rochester Hills and back. According to him, a lack of commuting alternatives has driven him to this extreme step (Mullen and Gallman, 2015). While this might be an unconventional case, it shows off some severe issues regarding public transportation in Detroit. Subsequently, three important questions shall be answered: what kind of public transportation and transit is available in Detroit, what exactly makes it so insufficient and what is being done to improve it?

The transit options available in Detroit are basically served by three service operators: the *Detroit Department of Transportation (DDOT),* the *Suburban Mobility Authority for Rapid Transit (SMART)* and the *Detroit Transportation Corporation (DTC).* While the DDOT operates bus services within the city boundaries of Detroit[2], SMART buses connect Detroit to its suburbs[3]. The third operator in the city is the DTC, who is running the Detroit People Mover (DPM), one of the most controversial infrastructure projects in the history of Detroit. The DPM is an automated people mover system that encircles Downtown Detroit.

Transit services in Detroit are facing various issues and have endured harsh criticism. Those include unreliable, infrequent, underfunded and unprofitable services with underlying issues of racism, home rule and a general lack of intermodal cooperation and coordination (Owens, 2014).

In order to catalyze economic development, the People Mover was initially planned to serve a wider range of the city than it does today. However, the whole project ended up in being an ultra-expensive, isolated, standalone infrastructure project in Downtown Detroit with only very poor transit connections to other (already existing) services with merely a fraction of the initially projected ridership numbers[4] (Risen, 1985). This given issue demonstrates the general lack of intermodal cooperation and coordination in planning and

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[2] DDOT serves approximately 100,000 rides a day for $1.5/ride (TRU, 2015)
[3] SMART serves approximately 35,000 rides a day for $2/ride (TRU, 2015)
[4] The DTM was projected to carry 67,000 passengers daily (Wendel Cox, 2000). In 2013, the DPM had 2,207,200 riders which equals an approximate number of 6,000 passengers daily (APTA, 2014).

operating public transit in metropolitan Detroit. SMART and DDOT services are also being criticized for their isolated operations. While transit operates frequently on the big traffic arteries such as Woodward Avenue, neighborhoods far off are especially disconnected and poorly served. Home rule issues, including underlying racial tensions, intensify the difficult conditions. The former, however, is less a Detroit-specific issue than it is part of a fragmented system throughout the nation, which hampers coordination of transport planning (Buehler et al., 2014). In the past, 51 communities in Metro Detroit have opted-out of the SMART, creating gaps in the route system (Lawrence and Gallagher, 2015). Instead of improving public transit, funds are being cut.

Besides not operating in accordance with other services, DDOT services are especially known for being unreliable. Closely intertwined with issues of infrequent and unreliable transit services is its low cost-effectiveness. The People Mover, for example, has operating costs of \$4.28 per passenger and mile, which is extremely expensive[5] compared to \$0.82 to move the average rider one mile in a DDOT bus (Gantert, 2011). Voices about the legitimacy of using federal and state money for an insufficient service are becoming loud. Additionally, DDOT and SMART bus services have an extremely low fare recovery ratio. Merely a total of 13% of the operating expenses of SMART services and 15% of DDOT services are being met by the fare revenue (NTD, 2015a; NTD, 2015b). The rest of the expenses are being funded through local, state and federal assistance, whereof the shrinking city budget covers approximately one-third each.

Despite shifts towards the support of alternatives to car driving, federal transport funding is still substantially dedicated to roadways (Weiner, 2013). By contrast to other countries such as Germany, low tax rates on gasoline in the U.S. favor the prioritization of highways by federal and state transport plans (Weiner, 2013). In February 2015, a gallon of gasoline cost about \$2.5 in the U.S. compared to about \$6 in Germany (EIA, 2015b). What remains is an underfunded public transportation system that struggles to encourage people to switch from single-occupant vehicle trips to public transit. As a result, metropolitan Detroit ranked second to last in transit ridership in comparison with the 25 major metropolitan areas in the U.S. in 1998. Only 60 riders per 1,000 people in 1998 used public transit on a daily basis, compared to 589 in Metropolitan New York (SEMCOG, 2001, p. 30).

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[5] The DPM fare is \$0.75 per ride (DPM, 2015)

The authority created to address some of these issues in metropolitan Detroit is the newly founded *Southeast Michigan's Regional Transit Authority (RTA)*. The RTA was founded in December of 2012 and coordinates, for the first time in the history of the metropolitan region, several transit agencies simultaneously. In order to enhance mobility in Metro Detroit, other major project initiatives have been introduced, such as the *M1 Rail Project*, a new *Bus Rapid Transit (BRT)* and a planned commuter rail service connecting Ann Arbor and Detroit.

This could ignite some further developments, but due to the relative newness of this process, the actual impact is still unknown. However, an improved operation of the public transit in metropolitan Detroit is of high importance, especially under consideration of the mentioned constraints for the citizens caused through its insufficiency. An alternative, or rather a complement, of existing and future public transit in Detroit could exist in the form of bicycling. As the thesis focuses on bottom-up social innovation within the cycling scene of Detroit, aspects that might or might not define the city as a "cycling city" shall be highlighted in the following chapter.

4.4   Detroit – The Cycling City?

Whenever asking for directions, many people refer to Detroit as the wheel of a bicycle, with downtown in the center and all important traffic arteries running like the spokes to the outskirts of the city – a funny fact about a city which is mostly known for its car culture. But what is not well known is that Detroit has a long tradition in cycling which started well before the domination of the automobile. The cycling culture of today's Detroit is making a steady comeback, in part thanks to a nationwide revival of two-wheeled non-motorized transportation. This chapter focuses on cycling in the U.S. while putting it in the specific context of the city of Detroit.

The developments of the last few years regarding cycling show a trend towards a growing cycling community nationwide. More specifically, bicycling as a means of commuting is experiencing robust growth. Even though the share of commuters on bicycles nationwide is still relatively low with a total of about 0.6%, it is steadily growing with a growth rate of 62% from 2000 to 2013 (League of American Bicyclists, 2014, p. 2). Detroit ranks 45th among the 70 largest cities with the highest share of bicycle commuters in 2013 (League of American Bicyclists, 2014, p. 10). The share of the commuting population who identified

themselves as cyclists in the city was 0.6% and equals, thus, the nationwide average. Yet, Detroit experienced the 4th fastest growth among all cities for which data were collected with a growth rate of 255.1% compared to 2000 and even 428.3% compared to 1990 (League of American Bicyclists, 2014, p. 13). Only already well known cycling cities such as Washington DC (1st; 498.5%), Kansas City (2nd; 451.6%) and Pittsburgh (3rd; 440.1%) ranked higher in the list of the fastest growing cycling communities in the United States. Detroit has even grown faster than the famous model city Portland (5th; 408.2%).

While cycling is steadily increasing, car usage is on a decline after six straight decades of growth (see Figure 4-1). The *millenials,* that is, the generation of people born between 1983 and 2000, especially tend to use the car less and thus significantly contributed toward the recent end of the driving boom (Dutzig and Baxandall, 2013). Population-wise, the *millenials* form the largest group in the country with growing influence on the direction of how transportation will develop in the future. They tend to get their driver license later than in 1983 and car ownership is becoming increasingly unlikely (Sivak and Schoettle, 2013).

The reason for this change in behavior presumably comes down to two things. First, after growing up during a financial crisis, the *millennials* tend to save more money while at the same time being less willing to invest large amounts of money into owning a car. Car ownership in the U.S. is down to 1.15 today compared to its peak in 2007 with 1.2 vehicles per driver (Dutzig and Baxandall, 2013).

Figure 4-1: Vehicle-Miles of Travel per Licensed Driver in 2001 and 2009
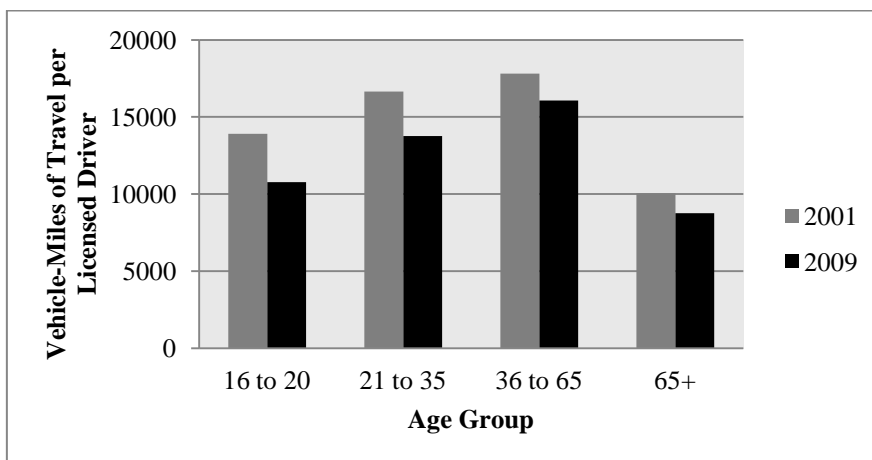
Source: based on (U.S. Department of Transportation, 2011, p. 28)

Second, as the tendency of living in urban centers increases, two things have to be taken into account: the worsening driving conditions in urban areas and the proliferation of social media and smartphones (Dutzig and Baxandall, 2013). Boyd (2014, p. 20) underlines that "what the drive-in was to teens in the 1950s and the mall in the 1980s, Facebook, texting, Twitter, instant messaging, and other social media are to teens now."

It would only be consistent to assume that it is also this generation that led to the recent cycling boom. While biking rates in this age group are in fact steadily growing, it is surprisingly the group of the 35 to 54 year old cyclists that is growing the fastest (see Figure 4-2 and 4-3).

Figure 4-2: Biking Rates by Age Group in 1995 and 2009
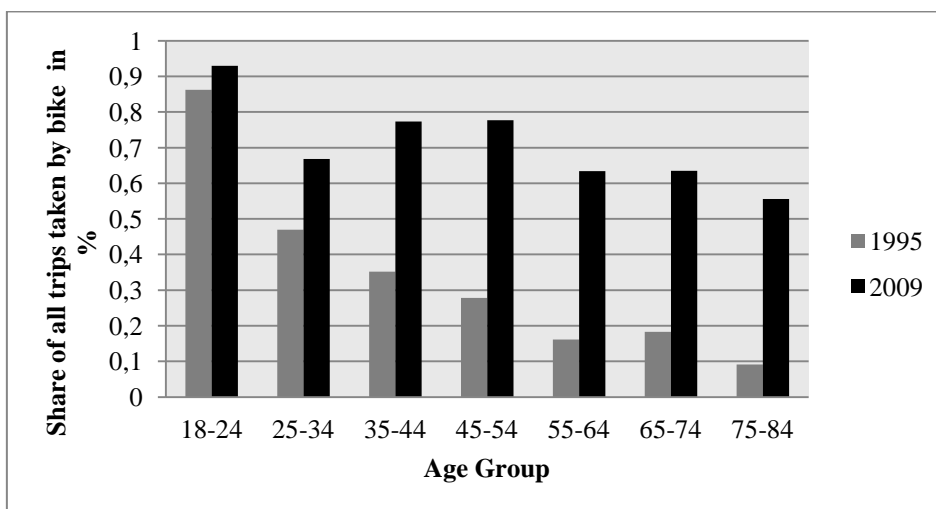
Source: based on NHTS (2015)

Between 1995 and 2009, bike usage of people in the United States grew the most in the group of people between the age of 45 and 64 with a contribution of 54% to the overall growth of bicycling in the country. Despite spanning nearly three decades, the group of the 18 to 44 year old people contributed only a relatively low 29% to the overall growth.

Figure 4-3: Contribution to Bicycling Growth 1995-2009 by Age Group
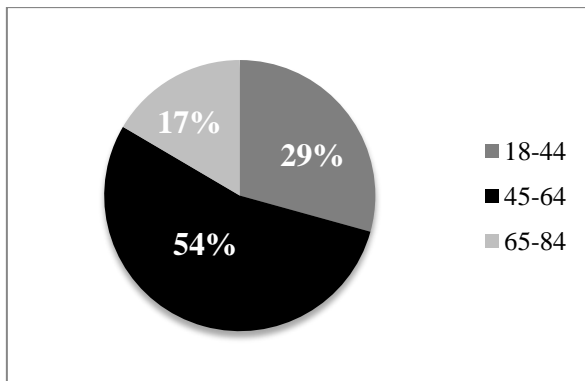
Source: based on NHTS (2015)

Not only age but also gender matters when it comes to bicycling. The League of American Bicyclists published a report in 2013 that highlights aspects of women biking (League of American Bicyclists, 2013). According to the report, the number of women participating in bicycling rose by 20% from 2003 to 2012. This increase in bicycling usage gave the group of 17 to 28 year old women a 60% share of all bicycle owners. Despite vast progress within the last number of years, cycling is still a male-dominant mode of transportation. In 2009, women made only 24% of the biking trips in the country (NHTS, 2015). Sibley (2010) points out that women can function as an indicator of a community's bike-friendliness. The more balanced the ratio between women and men, the more bike-friendly a community. Women were more affected by bicycle-friendly changes in a community, such as the addition of new bike lanes. The cycling behavior also seems to be influenced by the size of the community. While women from rural areas or suburbs tend to cycle further distances, women living in urban areas were more likely to use their bicycle on a daily basis (Silbey, 2010). According to a study by Emond et al. (2009), women's decision to use bicycles is affected by different factors than men in the United States. The strongest influence on whether or not a woman decides to use a bicycle was how comfortable she would feel using bicycle facilities.

4.5   Conclusions

Detroit has experienced tremendous economic and social decline within the last 60 years. With more than half of its population lost, Detroit is now a shell of its former self. This has led to many structural and social problems within the city. High crime rates, unemployment, poverty and widespread urban decay epitomize these issues. Underlying

racial tension between the city and its suburbs as well as home rule issues make it nearly impossible to work towards a common solution. An overwhelming number of vacant buildings coupled with urban sprawl intensify this situation while a dysfunctional transportation system is unable to compensate for this deficit. Ironically, the limited services serve only a fraction of Detroit's population that belongs to the part of society the most in need. Simultaneously, a nationwide trend indicates more and more people utilizing their bicycles. Young people in particular tend to drive less and cycle more. However, a masculinist environment dominates this new community, discriminating all sorts of minority groups.

5. From the Idea to the Implementation of BUSI in Detroit

In order to answer the research question adequately, a three step approach has been chosen based on the three subchapters discussed in the theoretical framework: *the Definition of BUSI, the Process of BUSI* and *the Barriers of BUSI*. The first point has already been forestalled in Section 3.2 by applying the definition of BUSI to the real life cases which showed that all cases reveal main characteristics of BUSI. Therefore, only the Process of BUSI and the Barriers of BUSI remain to be applied to the collected data. Thus, Chapter 5 focuses on the innovation process by analyzing the individual stages of the *4-I-Process* by Hochgerner. Finally, the barriers and enablers of BUSI will be highlighted in more detail in Chapter 6.

5.1 Why does BUSI emerge?

In this section, the first three stages of the *4-I-Process* will be applied to the results from the empirical analysis. In order to be in line with the research question, the emphasis will be put unequally on the different parts. First, the idea stage will be examined by discussing the initial cause of each researched case. Hereby, the (social) need the innovators are responding to is of special interest. The subsequent chapters will focus on the *intervention* and *implementation* stages. However, due to the blurred boundaries in between them, both stages will be regarded as a whole and not as two artificially separated causes. Distinct methods and measures the innovators used have been identified. Thus, it follows a thematic analysis thereof and an illustration of the reasons behind the innovation's context-sensitive changes.

5.1.1 Triggers and Catalysts for BUSI

Where do BUSI come from? Ideas. But where did those ideas come from initially? This question will be answered shortly. A detailed insight into the original triggers and motivation of the initiators of such innovation will allow us to develop a better understanding of why and how such BUSI started.

Table 5-1 describes the catalysts for BUSI in Detroit. In each case, the innovators were driven by a distinct personal motivation to start the project and pursue their ideas. In this chapter, the aim is to unveil what initially triggered the innovative process.

Table 5-1: Triggers and Catalysts for BUSI

Triggers and Catalysts for BUSI	A	B	C	D	E	F	G	H	I	J	K	L	M
Unmet Social Need	X	X	(X)	(X)	X	X	X	X	X	X	(X)	X	X
Financial Gain	(X)	X		(X)							(X)		
Lack of Alternatives	X									X		X	
Personal Crisis							X				X		
Recreation & Enjoyment	X	X	X	X			X			X	X	X	X
Incisive Experience	X	X							X				X

One finding from this chapter was that all cases emerged out of a *crisis*, trying to meet a specific need. Interestingly, this does not necessarily imply an increase of social value. While in all cases the innovators developed a social purpose to meet a social need, in only 10 of the 13 cases creating social value was an initial purpose. Case [C], [D] and [K] started off with a rather random and recreational idea to create a place for the innovators and their friends to meet:

"In its beginning of the inception, it didn't have this crazy social message behind it. It was literally just, we wanted to ride with our friends." [K]

This finding points to two potentially distinct communities regarding the initial triggers: those who were driven by an *intentional* attempt to face a social need and those who rather *unintentionally* picked up the idea of creating social value after they began to pursue their initial idea.

For four innovators, an *incisive experience* marked the start of the innovative action. All four experienced an incident which fundamentally defined the subsequent measures and activities. This incisive experience was, for instance, an encounter with another person:

"Ok, I was in the city at the [coffee shop], […], there is this bike outside, that's my bike and we were talking and then it came out that it was his bike." [I]

The story [I] describes here refers to an incident when he found out that the bike he owned was actually stolen and sold to an unknowing person. This was, thus, involving him in a criminal activity to some extent. In order to counter that development, the innovator decided to take action by providing an online platform for people to find and report stolen bikes.

For other innovators, it was rather a *personal crisis* that symbolized the beginning of their projects. After meeting the future partner who sparked his initial interest in bicycling, case [K] used it as an individual means of personal therapy in order to overcome the death of a family member:

"You know one of the things which was keeping me here for so many years was either my business or my dad's failing health, you know. Once I kinda let it go I reached that point where I was pretty much ready to leave. But that was when I met him and I was getting really excited riding bikes together and yeah it was, it just became this thing really fast. And we just had so much fun riding and doing stuff together, we created this bike club and this rocketed from there." [K]

Another strong theme emerging from the thematic analysis was the trigger *recreational reasons*. For 9 of the 13 cases, recreational features were credited as catalysts for innovation. Five cases created their project for their own enjoyment. While this was more of a positive side effect for [B] and [L], it was the main reason to start the venture for [C], [K] and [D]. As already described above, the social message developed in a later stage. [A] would further use bicycling to improve his health and herald a change to a healthier lifestyle:

"At the age of 30, my doctor said you're prime for a heart attack. I owned a couple of businesses, I was a type-A personality, I wasn't really taking care of myself. So I got on the bike again and started riding through Southfield where we did the trails and I'm like, 'Oh, they could use some help' and I opened them up." [A]

A *lack of alternatives* precipitated the start for some other innovations. Because nobody else was tackling the given problem, the innovators would – partly out of *frustration* – start planning and implementing their own projects:

"And I ride my bike pass people sitting in their bus shelters in the cold and I'm sweating hot, getting there faster than they do and it's like, you know, if you just give them the tools they need and the education, then they don't have to wait around for the RTA (Regional Transit Authority) to get their funding, or the bus system to come online. It's probably not gonna happen for 10 years. […]. You know, screw all this crap and bureaucracy, I'm sick of watching it not happen." [J]

The cases [C] and [J] both started off with massive *public* and *media attention*. Both gained encouragement through that dynamic at the beginning:

"This project started like crazy. We made the fundraiser, the papers, we were in the news. It was huge. Everybody was talking about it." [C]

While being at the center of attention triggered the project in the beginning, the innovators were soon confronted with a harsh reality that might have hindered the innovation process if it had been present from the start:

"I guess last year when we started this, every single day there was 20+ people working. Now just us. So I think we got really excited about the project and didn't realize how much work it actually is."[C]

When comparing those findings to the triggers discussed in Section 2.2.1 of the theoretical framework, it becomes evident that two types especially stood out. First, all of the mentioned innovators were responding to either an *internal/personal* or an *external* (social) *crisis*. The initial triggers to that were heralded through various ways, such as an incisive experience, a personal crisis or frustration over the existing services. This leads us directly to the next trigger from the literature research that also became evident through the analysis. The *poor performance of (public) services* was explicitly mentioned in literature and was also responsible for some of the ventures to start in this case study. Instead of relying on dysfunctional public services, people would find their own way to escape their own misery.

5.1.2 Social Need

As already discussed in the previous chapter, all initiatives were responding to a *(social) need* resulting from a (social) crisis. Some initiatives were designed directly to address social issues while others developed that purpose later on – rather *unintentionally* – after their influence and popularity increased. Partly overlapping themes of needs with predominantly social characteristics emerged from the analysis (see Table 5-2).

Table 5-2: Innovators addressing an unmet Social Need

Unmet Social Need	A	B	C	D	E	F	G	H	I	J	K	L	M
Dysfunctional Communities	X	X			X	X	X				X		
Dysfunctional Transportation/Transit	X			X				X		X		X	X
Exclusion/Segregation/Discrimination			X		X	X		X		X	X	X	X
Poverty								X		X			X
Crime/Safety	X		X				X		X	X			

In some cases the innovation functioned as a response to a *dysfunctional community*. A dysfunctional community in this sense refers to a decline of social capital within a community (Putnam, 2000). Four cases addressed their projects to the neglected youth of the city, while others further tried to rebuild a functioning bond between the city and its suburbs. The theme of *community building* became hereby apparent as an important motive. This is of importance insofar since it emphasizes two underlying problems which were also mentioned in Chapter 4: the poor (race) relations between the impoverished city and its rich suburbs and the corrupted society within the city, infused with crime, poverty and other social problems. Interestingly enough, only three of the interviewed innovators were people of color, whereas the rest were of white ethnicity. This implies that – at least in this case study – a bigger part of the grassroots movement came from a small white community within the city or from the outside.

A *dysfunctional transportation system* evidently was another important theme elicited from the analysis:

"One of the biggest issues is that Detroit itself has, almost 40 percent of the people in driving age who don't have access to a car and the transportation system is abysmal […]."[J]

Necessary to note are the unreliable and geographically-limited transit services that contrast with the low share of car ownership among Detroit's citizens (see Chapter 4). Further, besides the theme of intentional and unintentional behavior, *implicit* and *explicit* ways to meet a social need have been identified. In this context, three innovators were predominantly dedicated to empowering the people who are affected the most by a dysfunctional transportation and transit. They *explicitly* tried to achieve this by providing the people with the necessary tools to take the initiative by themselves. This ranged from bicycle lessons to bike repair training. [M], on the other hand, is only *implicitly* involved in working towards a solution to a better transportation within the city. Her program helps deprived kids to participate in competitive sports. Helping in this sense means also that she transports the kids, who would not be able to come to one of the few sport sites on their own.

The *exclusion* and *segregation* of minorities is a major underlying issue in the city. However, those are rather broad terms and, thus, hard to grasp. On these grounds, a context-specific approximation shall clarify matters. Five innovators devoted their projects

to an excluded and neglected youth. Exclusion in this context means, for instance, exclusion through a transportation system that is in favor of other road users. An important notion hereby is the one of empowerment:

"We started this 10 years ago and this neighborhood was completely run down and these kids were running around. A lot of people who started [the community center of 'F'] grew up learning how to ride bikes with their parents or with other people in the neighborhood. So I think it was just like a very natural process to wanna teach the youth how to do those things if they didn't have the ability to learn elsewhere." [F]

[H] and [J] further expand the radius to other discriminated groups such as women, queer and transgender people. Discrimination can be based on societal issues such as gender and racial segregation:

"I've always had this feeling throughout my three years with [transportation orientated online publication] that there was not a lot attention paid to the needs of women in the city. It's a highly impoverished city, it's highly underdeveloped, most families are single mother families, trying to do their groceries, trying to ride on the buses that are late, […]. It's a really crappy situation, so how do you empower them?" [J]

But segregation and discrimination can also refer to the mostly male-dominant bicycling culture where it is difficult for female bicyclists to stand their ground against male bicyclists (cf. Holli, 2014). Again, the theme of empowerment dominates:

"[…] so many bike spaces in the city are really 'dudely', like male centric and kind of 'masculinist' and these kind of things, you know, where women had troubles and people from gender, queer people who do not fit into this kind of 'masculinist' kind of being." [H]

[L] applies his project *implicitly* to the same issue but broadens the spectrum to all bicyclists – regardless of gender, sexuality, race, et cetera. The focus of the project lies rather on enabling the somewhat discriminated bicycling community in general by promoting bicycling-related topics through his bike rides and *Facebook* group. Additionally, his goal is to address the – according to him – unsubstantiated discrimination and prejudice against Detroit as a whole.

Being listed as the most criminal city in the United States and being known for anything but bike friendliness are also apparent in the findings of the analysis, where *safety* emerged

as an additional theme. This again can be divided into (social) needs which were met by the BUSI in an *implicit* or in an *explicit* way. The safety issues and concerns basically address two different topics. The first one is the general safety in the city concerning the high crime rates. This group divides again into two subgroups of which one is tackling the problem *explicitly*. After finding out that [I]'s bike was someone else's stolen bike, he came to the following conclusion:

"But then I started realizing, in this scenario I'm kinda interacting with the world in a bad way, you know. I'm part of this market for goods. And it's a negative thing to be associated with, to be a part of. So I was like, what can I do about this experience? So I tried to figure out how to heal that interaction with the world instead of being passive." [I]

Consequently, [I] created a homepage for people to look for or report stolen bikes. The purpose of this webpage was to explicitly fight crime in the city and also to provide information about potential crime patterns the police and the city government can work with.

The people from the other subgroup allocate their time and energy towards crime and safety in a more *implicit* way by fighting blight or removing other crime-promoting factors:

"There was all this overgrowth of thorn bushes and stuff where people would hollow it out, climb in and live there basically. And that was a major problem that people would sit there and wait because it's so close to the sports stadium and it's all free parking over there. They would wait for people to come back from the sport events to jump on them, to steal their money." [C]

A second main group deals rather with safety issues for bicyclists, such as infrastructure with safety hazards for certain road users:

"And I know probably 80 people who have been hurt riding in these complete street bike lanes. And when you deal with wives and kids, my focus is on children. Really, where is the place for kids to be safe riding their bike?" [A]

The focus lies, thus, on the *explicit* removal of those safety hazards in order to create a more bike-friendly environment by clearing trails or building new bike paths. This is also in favor of the advocacy work to which most innovators are dedicated. Improving the

physical infrastructure for bicyclists also facilitates bringing more bicycles on the city's roads.

Poverty is another major problem in Detroit and also appeared as a primary subject from the analysis. Again, it is closely linked to the empowerment of people. [H], [J] and [M] all try to achieve that by *explicitly* or *implicitly* providing a way to facilitate transportation for the poor in the city. Not being limited to certain geographical spots enables people to look for jobs in a larger geographical range. It further helps to save money and allows for the access to (healthy) food and, therefore, also fights obesity, diabetes and other poor man's diseases (cf. Zenk et al., 2005).

The themes of *implicitly* and *explicitly* addressing a (social) need in the city again reflect a very distinct feature of the BUSI in this case study. The projects that did not aim to create any social value for others in their initial development stage were not the only ones that evolved randomly. Other projects also naturally developed and their initiators would sometimes address a need unconsciously. It appears that BUSI is subject to an unplanned development that is conceptualized only to varying degrees. That is, BUSI does not necessarily address certain (social) deficits on purpose.

Further, many of the discussed issues overlap and have blurred boundaries in between them. It was evident, however, that similar themes, such as *empowerment* and *community building,* emerged. Subsequently, those themes shall be subject of discussion.

5.1.3 Context-Sensitive Transformation

The researched innovations often underwent *context-sensitive transformation* processes, that is, a continuous adaptation to changing *internal* or *external* conditions and needs (see Section 2.2.3). Those include adaptations in the form of new methods, measures and resources. The already discussed transformation into a venture with the ambition to add some sort of social value occurred in three cases. Additional adjustment processes, which mutated some of the ventures into forms that substantially differ from their first 'prototypes', follow in the subsequent section.

Financial interests often intensify once a project starts to grow. Reaching as many people as possible and staying financially independent can become key tensions in a progressed development stage of the BUSI. In this case study, four cases developed a model at some

stage to become *financially sustainable*. While – through *external* forces – the operation costs increased, a steady revenue stream would allow the innovators to maintain the project (see Section 6.1.1). This is in line with Caulier-Grice et al. (2012), who argue that the social mission of social innovation implies trying to have as much impact on the targeted society as possible. This is at odds with the constraints caused through the urge to financially sustain the project. Three cases, therefore, switched from an operation solely based on voluntary work to a model where parts of the staff could be paid. [K], on the other hand, never reached the point where it would have been impossible to maintain the project merely on a voluntary basis; the financial interests would just evolve naturally as a next step. In this specific case, the innovators are further expanding their commercial interests by introducing new business models. Notable examples of this are newly compulsory membership or opening a bicycle-friendly bar.

Some ventures *internally* reoriented themselves by introducing a *new concept,* besides expanding a social mission. In the case of [D], this means that the rather unconventional and recreational concept turned into a fundraising model. Several bike events spread out over the year are held in order to raise money for infrastructure improvements for non-motorized road users. [E] and [F], on the other hand, both opened a retail storefront in order to maintain their business. A similar concept also evolved in both projects due to a tight informal collaboration in-between them. [F] functioned as a leading guide for the still less developed and established project of [E]. Even though they emerged independently from each other, [E] is trying to develop a similar concept as [F] in their respective neighborhood.

A *change in personnel* was causing the transformation process in two cases. This is partly overlapping with the previously mentioned adjustments concerning the introduction of a new concept and a social mission. The new staff would come along with fresh ideas and a new motivation to run and maintain the project that ended up in a new conceptual orientation. However, a change in personnel was not responsible for a transformation in all cases. In the case of [F], the whole adjustment process already started before the personnel changed. [H], on the other hand, was not really affected by the introduction of new staff and remained the same conceptually.

Internal personal matters would force two innovators to adjust their projects. A conflict with a former partner would end the collaboration between the two parties in the case of [A]. Their operations are not affiliated in a professional sense anymore. In the case of [J], a serious injury would make it impossible to proceed working on the project for some time, which is because the start of the initially conceptualized project's main part was delayed.

In conclusion, it can be said that context-sensitive transformation processes in this case study occurred either as an answer to a *change of personnel, personal matters* or as a result of a *better understanding of the problem space*. Dorst and Cross (2011) claim that creativity and defining the problem space are closely related. The more time an innovator spends on comprehending the specific need, the more likely it is that they actually achieve a creative outcome (Christiaans, 1992). In the form of context-sensitive transformation processes, the innovators adjusted to their chosen problem space. While former methods and measures proved unpractical or ill fitting to address the (social) need, new practices were developed to counter this deficit. [M] has undertaken the most transformation processes of all innovators while also being the least experienced and least anchored in the respective (bicycle) community of all *intentional* BUSI, that is, of all innovators who started their project with the purpose to create social value. This could be partially due to her – perhaps too tight – restriction to very specific content within her project. Very few places in the country – including only one within metropolitan Detroit – would be suitable as a project site.

5.2   How does BUSI emerge?

In due consideration of the previously discussed topics and as a key outcome of the empirical analysis of this research, it became evident that the underlying BUSI can be divided into two groups concerning both the methods and measures applied to pursue their mission. Those groups further include 'in-between' cases which are dedicated to both purposes.

The first group focuses mainly on the *empowerment* of people in Detroit, especially those in need such as the poor or other disadvantaged minorities. A second group elicited from the research consists of the people trying to reconnect communities. They are, thus, engaged in *community building* processes. The groups just mentioned include those within the city boundaries, as well as the community of metropolitan Detroit divided into the city

and its suburbs. All BUSI developed distinct methods and measures to achieve that goal. Those shall be discussed in the following section.

The group of people hoping to foster *empowerment* for the mostly underrepresented or underprivileged in the city consists of the eight cases of [A, D, E, F, H, I, J, M]. The second group, on the other hand, is committed to *community building* and includes the ten cases of [A, B, C, D, E, G, I, K, L, M]. Besides the five overlapping cases, the five additional ventures [B, C, G, K, L] join this group. Six methods and measures to pursue the goal of either case were identified: *Education*, *Advocacy*, *Improving the Physical Infrastructure*, *Financial Support*, *Providing a Platform* and *Stimulating the Economy*.

Six of the eight cases use *education* as a method. The nature of this method embraces basically five different kinds of measures. Bike repair training is used by five cases. Improving the stamina or generally teaching people how to ride a bike safely is part of the program of six cases. The two projects of [J] and [M] further include training for competitive sports. [E] see themselves as youth entrepreneurship training, where one can learn how to build a website, budget a project and other things that are not necessarily related to bicycles but more to business themes. Lastly, teaching ethics to their participants play a large role for [F] and [M].

Education empowers people by providing them with tools to take matters into their own hands. Also, the innovators engaging in community building are heavily utilizing education as a tool to work towards their goals. However, this method is mostly used by cases which overlap with the first group and which are, therefore, engaged in community building and the empowerment of people. Solely two cases, which predominately tend to engage in community building, tried to use education as a method. [L] tries to educate people how to ride a bike respectfully and according to the law. On the other hand, ethics played an important role for [C], who would educate the participating kids by acting as a role model.

The second method used to empower people or to bridge communities is the one of *advocacy*. This method is more popular among the innovators merely involved in community building and can be split into two subgroups. First, there are those innovators who are engaged in *biking advocacy*, that is, promoting the bicycle as an alternative mean of transportation. Second, there is the group of people whose purpose lies additionally with

Detroit advocacy, which means promoting the city to non-Detroiters – in particular to the suburban population. The most prominent measure in both groups is the bike ride.

Advocacy is empowering for the people for two reasons. First, biking itself empowers people, that is, biking advocacy promotes empowering tools to them. Second, the more people that get involved in what is happening in the city, the more the people of the city are empowered in return. This is further tightly linked to community building processes. Advocacy is a very direct way of connecting communities since a big part of the strict segregation is based on racism and prejudice. Thus, trying to educate people about that matter opposes those conditions.

Improving the physical infrastructure and therefore building a stronger basis for the people to cycle in the city is a very concrete method used by two ventures. [D] employs measures like fundraising events to collect money for that purpose while [A] actually performs labor and involves his landscape architecture firm into the operations. None of the ventures engaged in community building used that as a tool.

[E], [F] and [M] try to create incentives by *financially supporting* the mostly poor participants. This takes the form of an 'earn-a-bike program' in the case of [E] and [F]. [M], on the other hand, pays her students to participate in the program. Only the innovators with the goal of empowering people used this method.

Providing a platform for users to report their stolen bikes is a method case [I] used to both empower people and build communities. While [I] is actively involved in the empowerment of people, his approach also contributes *indirectly* to community building. Enabling people to post online and unite against bicycle theft creates solidarity and a way to work together for the same purpose.

Exclusive to the group of the community building innovators is the attempt to *stimulate the economy* in the city through various measures. Stimulating the economy is a quite vague term and requires further explanation by way of some measures from the case study. [A] and [L] are actively engaged in trying to persuade people to move to Detroit and, thus, build a new community. In this regard, both emphasize the role of the suburban population. Other ventures attempt to bring (suburban) money to the city by encouraging people to

consume at various places located on the route of their rides. Those groups, therefore, try to (re-)connect the communities, not only in a social, but also in an economical sense.

One should note that the boundaries between both groups are loose. The examples just mentioned demonstrate that matter sufficiently. Despite being predominantly engaged in community building processes, stimulating the economy by encouraging people to consume at specific places in the city also empowers those very people *implicitly* to a certain degree by strengthening their socio-economic status. Thus, it can be said that most cases are *explicitly* and *implicitly* engaged in both directions. This does not necessarily pose a problem since both purposes are aimed in the same direction by trying to bridge and close certain deficits.

5.3   Conclusions

In the preceding chapter, the question of *why* and *how* bottom-up social innovation emerged within the city has been explored by using the findings from the semi-structured interviews. When compared to the *4-I Process* by Hochgerner, those two questions focus on the three initial stages including *idea*, *intervention* and *implementation*.

Several catalysts and motivations became evident during the analysis. Most cases would respond to a *crisis* in order to meet a *social need*. However, interesting hereby was that not all innovators started off with the goal to add social value, but developed that ambition later on. In addition to that, other impulses came about due to an *incisive experience*, a *personal crisis*, frustration over a *lack of alternatives*, or solely *recreational reasons*.

The social need the innovators were responding to was then discussed in more detail in Section 5.1.2. Even though this was not the case for all ventures from the beginning, all innovators would seek to meet a social need. These would focus an *empowering* and *community building* themes such as *dysfunctionality* (within the community or in terms of transportation), the *marginalization* of people (from excluded, segregated and impoverished minorities) and general *safety* issues within the city.

The second part focused more on *how* bottom-up social innovation would emerge within the city. Hereby of interest were the methods and measures developed in order to meet that distinct social need. Most innovators would focus on *education* and *advocacy* in order to create   a   bond   between   the   disconnected   communities   and   also   encourage   the

empowerment of marginalized groups. Further methods include the concrete improvement of the physical infrastructure in the city, as well as the financial support of the participants, provision of a platform and the stimulation of the city's economy.

The last finding discussed in Chapter 5 was the one of *context-sensitive transformation processes*. Innovators would adjust to a changing environment and conditions caused either by a *better understanding of the problem space*, *changes in personnel* or *private matters*. In almost all cases, a context-sensitive transformation was a response to a *barrier* in the innovation process. In the next chapter, the barriers as well as enablers of BUSI in Detroit will be highlighted in more detail.

6. Barriers and Enablers of BUSI

In this section, a closer look will be taken at the enablers and barriers of BUSI in Detroit. It seemed beneficial for the presentation of the results to distance from the strict structure of the theoretical framework. Therefore, an attempt has been made to discuss and confront not only enabling, but also hindering factors to BUSI in the same section, instead of separating them. Enablers refer here in particular to the available and obtained resources of the innovators discussed in Section 2.2, as well as additional motivations which did not function as initial triggers of the BUSI. The barriers will be examined according to the literature discussed in Section 2.3.

Table 6-1: Overview of Enablers & Barriers to BUSI in Detroit

Enablers & Barriers of BUSI	A	B	C	D	E	F	G	H	I	J	K	L	M
Financial Resources	+	+	+	+	+	+	+	+	+	+	+	+	+
				−	−	−		−		−			−
Social Capital	+	+	+	+	+	+	+	+	+	+	+	+	+
	−			−			−	−		−		−	
Government Policy	+			+	+		+		+		+	+	
	−	−	−		−	−	−	−		−	−	−	−
Tacit Knowledge and Experience	+			+	+			+		+	+	+	
													−
Time												+	+
				−	−			−	−	−			
Further Enablers:													
Human Capital	+	+	+	+	+	+		+		+	+	+	+
Publicity			+						+		+		
Existing Infrastructure	+												
Personal Motivation:													
Own Achievement			+										+
Growing up with Bicycling	+				+					+			
Passion for Detroit	+	+	+	+				+		+	+		
Recreation & Enjoyment	+	+	+	+		+	+	+	+	+	+	+	+
Socializing	+	+	+	+		+	+	+		+	+	+	+
Knowledge Gain									+		+		
Further Barriers:													
Conflicts with other Road Users				−	−	−					−	−	
Further Prejudice & Discrimination	−	−	−										
Gentrification & Displacement			−	−			−		−				
Finding a Location				−				−					−
Establishing & Maintaining a User Base	−		−										−
Geographic Spread of the City											−		−
Fear of Failure									−				
(Physical) Injury									−				

6.1 Main Enablers and Barriers of BUSI

6.1.1 Financial Resources

Financial resources played an essential role in enabling BUSI. Five cases were able to implement their projects on an almost *zero cost* basis. They belong, thus, to the biggest group of innovators: those who are *self-funding*. All of the mentioned projects are being paid for either completely or at least partially with the respective innovator's personal money. This is in line with the discussed literature (see Section 2.3), which claims that some innovators even intentionally oppose the development of financial sustainability for their projects (Chalmers, 2012).

"So Detroit has always been this leader. […] Now we're gonna show the world what's next, when you say, how do you thrive in urban environments. Because there is all this shit urban environments all over the world, we built a bunch of these cities but they aren't thriving, you know. […] We're realizing that we don't wanna be a part of someone else's plan. […] And now we have all this land out of the city, so we can grow food. We are having local organic food within an urban environment. […] We wanna set our own intentions and form our own intentional communities."[B]

However, some innovators developed ways to further fund their project through different channels. For instance, *crowdfunding* and *fundraising* methods to raise money are being used to varying degrees by five innovators. This represents the biggest form of income for [D] and is also an important financial resource for [E] and [H]. All three have to maintain a rented space. The rather loose affiliations of [B] and [C] on the other hand use this method only occasionally to earn some extra money. Additionally, some seven innovators receive and accept monetary and material *donations*. Moreover, one venture received a low-interest *loan* from a foundation and another two procured additional financial support through other actors such as community organizations.

In the three cases of [D, F, K], those measures led to *financial sustainability* of the venture. Those three BUSI are also the largest in user base and the most complex in operation. According to Mulgan et al. (2007), this is an important step towards achieving social impact because only a financially sustainable innovation can scale up enough to exert influence on the respective community or society in the long term. However, it is also at this stage that the social missions of those very innovations are put to the test (Caulier-Grice et al., 2012). While it is important to gain financial sustainability, the purpose of

creating social value might be sacrificed more and more for commercial interests. The two ventures of [D] and [F] benefited first from being able to start small with an almost zero cost operation. However, after the venture gained in popularity, the expenses grew exponentially, so that both innovators had to find a way to make their project financially sustainable:

"I mean, when it started it was an actually less expensive operation. I mean, 200 people versus 7500 people, it's not a multiplier. I mean, to close streets for so many people versus having some police riding alongside people is a totally different situation. So the cost thing, it became a problem as we got big."[D]

The financial barriers, mentioned in the theoretical framework (see Section 2.3.1), also became apparent in this case study. [D], for example, had to undergo several steps in order to gain non-profit status. While now being able to have easier access to financial resources from moneylenders or the government, other constraints hinder the operation and make decisions more complex (cf. Jankel, 2011). This includes, for instance, the creation of a board of directors, which consists of people from the public and private sector who now consequently also limit the innovators' flexibility and openness in making decisions.

While most innovators were able to start small, the three innovators [E, J, M] required substantial financial resources to jumpstart their projects. All three named this as their main barrier:

"But again you need to have people on the ground and money to go out reach to get more people involved. So I know that it's something people want, now we just need to find the people that can actually help run it and also the money to fund the work that needs to be done." [J]

6.1.2 Social Capital

The *social capital* derived from the cooperation between the individual innovators proved to be beneficial but also hampering for BUSI to various degrees. The *network* within the bicycling scene is dense on a local and (inter-)national level. An *already established network* on which the innovators could fall back turned out to be helpful in at least two of the researched cases. Both [C] and [J] facilitated the initial implementation by knowing the right people:

"Our friend [name] has a name in the city established already. He is a known photographer, when it came down to things becoming public, it was his name that got us in the end. Just because people

saw that he was part of what we were doing, it started growing and growing just by the people who were already following him." [C]

But even if no established connections could pave the way in the beginning, the very tight *network within the biking community* of Detroit emerged to be useful in 12 of the 13 cases. All stated that they know each other and that collaboration exists to some degree. Generally, there seemed to be a strong sense of community within the bicycling scene. In this respect, [K] appeared to function as an anchor thereof. Almost every interviewed person would refer to [K] when being asked about whether the bicycling movement in the city is growing. A further step in this direction is the annual expo [K] hosts in which many of the interviewed innovators participate.

In addition to the tight bonds within the bicycling community of the city, six innovators mentioned links to the *national* or, in one case, even *international bicycling scene*. In the case of [K], international connections were used to expand the model to a global audience in different countries (Detroit Greenways Coalition, 2015). Another group of innovators would, for instance, have connections to the actors on a national level, which helped them to gain foothold in the respective scene:

"We were featured on the biggest BMX magazines, like on their online websites they've posted our stuff. Like a couple of weeks ago we had a group of 20 people from Kentucky which came here to ride." [C]

Networking is not only limited to actors within the bicycling community; it also embraces *actors outside of the bicycling community*. [H] especially emphasizes in this context that the relationships to other ventures and innovators consist mainly of people involved in non-biking related issues. An example of the bicycling community embracing outside actors includes its interactions with social and environmental justice organizations. They would provide space to meet or organize bike tours for the people within these organizations, and in return would benefit from their knowledge and international relations. This is in line with the overall focus of the venture on more emancipatory factors and is less related to bicycling advocacy issues. Further, some ventures emerged out of a specific neighborhood in Detroit and are, thus, closely intertwined with their respective communities. They would, therefore, try to adjust to the specific needs of that neighborhood and in return receive volunteers as well as moral and financial support.

Despite obvious beneficial factors of social capital for the development of BUSI, hampering features thereof also became evident through the analysis. A strong barrier looming from the analysis was the *competition with other innovators* and the somewhat difficult relations between them. Six innovators mentioned that they felt impeded by other co-innovators to some degree.

Perhaps the biggest 'conflict' in this context is related to the success story of [K]. While initially starting small, [K] now attracts thousands of people to their weekly bike rides and other events. This entails a great deal of spotlight and, thus, more responsibility towards the biking community itself. This very responsibility was the subject of criticism. Four competitors did not agree with the way [K] runs their operations:

"I try to be the really responsible one. So that's the challenge. How do I maintain what I want to see without being, how can I say, exclusive, elitist? Elitist is a good word. I don't wanna be elitist and I don't wanna have appearances of being elitist. They say actually your rides are different, well you sort of obey the law, people wear helmets like that, you don't have loud music and people don't use loud whistles but that's a good thing, that's why we like it." [L]

By setting rules, [I] felt it was then pegged as an 'elitist' venture that excludes a certain kind of 'consumer'. This is in line with [D], who notes that [K] generates expectations to end users by offering a completely free ride in which the rules are not enforced and, therefore, are disregarded:

"The more events that there are and I'm not saying this is just [K], we made a choice a long time ago to be a completely legitimate entity, so we follow rules that we made for ourselves. But it makes it a little bit hard sometimes. And it also kind of creates that culture of expectation, like, oh, I've been on rides for free, why does yours cost money? Not just because of the police, I mean we're also providing them with drinking and a t-shirt. It's a very different thing." [D]

[J] and [L], both highly engaged in biking advocacy, further complain that [K] does not comply with their duty as ambassador by engaging in advocacy issues:

"So [bike ride of 'K'] is almost sort of a touristy, rah-rah kind of thing, it's a very fun event. But they haven't been really involved in advocacy issues or how they can translate what [bike ride of 'K'] does in meeting the needs of the community." [J]

Having a venture of this size comes along with a certain degree of responsibility that – according to some innovators – has not been fulfilled yet, if not opposed. However, despite all the criticism, all innovators agreed on the overall positive effect of [K] on the bicycling scene in Detroit. And as mentioned previously, in nearly every interview, people would refer to [K] as a positive example of how widespread the bicycle scene in the city is growing. According to Hubert (2010), it is in particular the tight network within the innovation scene that is beneficial, but also hampering, if not sufficiently governed. [K] could fulfill this need through its overall anchoring function within the bicycle community of the city by acting as a leader.

Discrimination of women within the male-dominant bicycling culture of Detroit was expressed by [H] as another obstructing factor. According to [H], male bikers would not take female advocacy work seriously. This is less a Detroit-specific than a nationwide problem. According to data of NHTS (2015), bicycling is still dominated by men with a share of 76% of all biking trips in the country.

Finally, [F] came up with the *competition for funding*:

"Like the [Association in Detroit], which is a part of the first greenways project that I worked on – and with all due respect, they are awesome people – but not one of them is someone who rides their bike to work and would be like, how could I make this easier for me? But there is money out there for greenways and, you know, people say things like bike lanes make for a more livable neighborhood, people are putting together studies that say bike lanes bring dollars to local businesses. So whether or not you're being a user of the amenity, you might try to find a way to make it happen." [D]

The self-ascribed privilege for funding of bike-related projects led in this case to 'conflicts' with other actors. A crucial question in this context is the one of legitimacy for money. This is closely intertwined with the previously mentioned financial constraints some of the innovators have to deal with. Financial barriers are, as also described in literature, a major hampering factor for BUSI during the scaling-up process.

A serious *conflict from the past* lies between [A] and the community organization with which [G] collaborates. Both sides used to collaborate to a certain degree[6], but are not affiliated with each other anymore:

"Totally mine, I'm the founder of [Community Organization] but they took all the credit for it, writing in a magazine or whatever. So basically I don't talk to those people anymore because they are part of old Detroit again. They don't have what it takes, they judge and they criticize, but then when it's finally good, they take all the credit for it. And that's part of the old Detroit thinking." [A]

The community organization countered:

"There is a big story there, you know. He's a little crazy. I still don't believe a lot of the things he says. He started out volunteering, helping us, clear the trails and things like that. But he is not affiliated with our organization anymore." [L][7]

Interesting hereby is that both stories differ in content. Each party takes credit for founding the community organization. This conflict has an extensive impact on both sides since it unnecessarily impedes their ventures' operation even though both are working for the same goal. In literature (see Section 2.3.4), the lack of coordination and governance was displayed as a strong hindering feature of many communities in which BUSI grow (cf. Hubert, 2010). Only by overcoming that structural issue, a long lasting and sustainable impact of BUSI, that is also large enough in scale, can be ensured.

6.1.3 Government Policy

The *relationship with the city government* or other official authorities turned out to be a fruitful and beneficial factor for some innovators (see also Section 2.3.4). In this respect, some of them referred in particular to Detroit's *police* department. Those relationships are mostly either based on former collaborations and experiences in that field or on a successful reversal of an initial conflict. [L], for instance, could rely on his experience gained through his career as a policeman. Established connections, knowledge, experience and even just being powerful enough to exert influence gave some innovators a certain *bargaining power* in order to emphatically pursue their interests:

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[6] The information provided about the degree of the collaboration differs in both party's accounts
[7] This quote refers to interviewee 'S' from the interview of case [L]. Despite being in the same interview, both have to be distinguished from each other and are not affiliated in a professional sense. 'S' is part of a non-profit community organization that is trying to revitalize a public park in Detroit. [G] is collaborating with this organization.

"We're part of the dialogue that goes on where transportation goes. [...] . And that's what it does for the city now. Hopefully, they won't just build things because they want to. They start talking to the people in the biking community. They start reaching out to [their own venture] and saying what are bikers doing? And that gives us a voice." [K]

Finally, three of the innovators noted the shift towards biking friendly interests and policies by the city government itself. However, amidst the city government's contributions towards the bicycling culture of Detroit, counterproductive actions also became evident. *Government policy* hindered the innovation process in at least eleven cases either on a local or on a national level. Five themes of conflicts with the government emerged out of the analysis: *differing interests, antagonizing actions by the government, conflict with the police, insufficient support* and *a high level of bureaucracy.*

In five cases, *differing interests* of the city government concerning bicycling issues were the subject of criticism. The ventures of [A, J, L], all highly involved in bicycling advocacy, especially expressed disappointment towards the city government's 'visionless' bicycling concept.

"There is just nobody with that much of a vision in the city government to really do what's right. There is like this 'good enough' mentality instead of 'let's get it right before the roads get clogged again with new traffic because we have new people moving here.' Let's build the infrastructure right so we're not fighting with cars." [J]

What is being criticized here is the fragmented planning of non-motorized infrastructure in the city. There is a non-motorized plan for Detroit's new riverfront project and other small-scale studies and visions have also been formulated in recent years. However, the only existing non-motorized transportation plan that embraces the city as a whole has not been updated since 2008 (Detroit Greenways Coalition, 2015). In this context, [H] further expressed concerns from a broader inequality point of view, less regarding bicycling issues.

"But there has been this incredible increase in policing here, so the state cares about us but not in a good way. [...] One of our members, [...] she and her dad were unloading a bunch of donations that we got because her dad has a big truck. And so they came here right on this alley and were unloading them into the basement [...]. And these two cops rolled up and were basically accusing them of stealing bikes from the church. You know, this is just racial profiling, they're just trying to keep unwanted people out." [H]

This is in accordance with the accusation against the city government that goes even further than just differing interests. [A, H, L] emphasized *antagonizing actions* directly pointed towards their ventures:

"A lot of the people of the Department of Recs [Recreation Department], [...] they're afraid of me. Everybody is worried about what I could build based on what's been done to me. And they know that I'm very outspoken." [A]

The *police,* as an appendage of the city government, was ascribed an important role in this interplay between city officials and the grassroots movement. Four innovators experienced less positive encounters with the Detroit police. However, in the three cases of [B, C, K] the initial skeptical relationship turned into a fruitful cooperation. Only [H] remains in a reluctant position in terms of their relationship with the police.

"The first time the police came by there, they came with their guns out, they said what's going on in here? [...] . And then I say, hi, I'm [name], I give them my little business card which says what I'm doing. [...] . And out of maybe 6 policemen that were there at that time in the spring, one comes and what is he saying? 'Could I help a little bit?' And he turned some wrenches, you know, and helped them kids, he is interacting in his uniform with kids." [B, bicycle collective]

Insufficient support on the part of the city government was mentioned in four cases. The request for funding biking-related matters was expressed. However, they further mentioned that they have sympathy for the city's difficult situation and that financial constraints limit its actions to a great degree.

Criticism of the city government on a national level was only implicitly brought up in the form of an excessive level of *bureaucracy*. Many BUSI in Detroit applied for nonprofit legal status. [E] and [J] complained about the required process and paper work. The literature review in Section 2.3 came to the same conclusion. National support for social innovation is still inadequate, according to Mulgan (2006).

6.1.4 Tacit Knowledge and Experience

Tacit knowledge and *experience* in related fields appeared to be an important resource to rely on when planning and implementing a project. Most innovators mainly relied on tacit knowledge gained through a current or former job experience. This mostly includes

knowledge about how to run and set up a project or business. In addition to working experience as a landscape architect, [A] conducted his own research to support his project.

However, *lacking appropriate experience* and *knowledge* can lead to an underestimation of the complexity and scale needed to get a venture up and running. This was a major hindrance to at least one innovator. While trying to plan everything perfectly from the beginning, [M] ran into several obstacles which could have been avoided. Noteworthy is, for example, the very specific content of the venture, which could have been better adjusted to the circumstances. It proved difficult to attract people for the project and also to gain access to the only sport site which would be suitable for the core part of the program.

This issue is further intertwined with the neglect of BUSI in science (see Section 2.3.2). As argued in the theoretical framework, a lack of funding not only holds back scientific research itself, but also exerts influence on the community or voluntary sector (cf. Henderson, 1996; Jain et al., 2008; Caulier-Grice et al. 2012). Inexperienced actors from that sector could especially benefit and draw from established models. Thus, insufficient support from science and policy hampered the innovation process in this case study, as well.

6.1.5   Time

In two cases, available *time* turned out to be a beneficial resource for the innovator. [L] and [M] are both retired and can, thus, fully devote themselves and their time to their projects. When the innovators would have a regular full-time job in addition to their project, time was available only in the evenings or on weekends.

"I have a job. But then it means that I've to devote my free energy to this […]. You work all day long and you come home, you have 4, 5 hours to whatever you want but the reality is if you don't have the energy, you slump down and watch like TV or something like that, that's what you're gonna do. It's not because you're lazy, it's because you don't have the energy to do it." [I]

Three innovators took this as an incentive to create paid positions within their ventures. Instead of dedicating leisure time, they could dedicate portions of their working towards the project.

6.2 Further Enablers

The resources and enabling factors of BUSI are of high importance in the *intervention* stage, thus, during the conceptualization of the social innovation (Hochgerner, 2012a). However, also later during the realization, or *implementation* of the project, the available resources are ascribed a crucial role (see Section 2.2.2 and Section 2.2.3). Main enablers such as financial resources, social capital, the political environment or knowledge and time have been discussed in the prior section. In this section, resources and enablers are discussed further.

Most innovators depended on their *human capital*. Only one innovator pledged to run the project single-handedly without collaborating with others. Seven innovators partnered up with at least one other person. Even more based part or all of their work on the help of external volunteers. Interestingly, the financially sustainable cases all consisted of a heavily voluntary work force for their purpose. Finally, there are those cases that can afford having paid employees or getting paid by themselves to some extent. It is important to note that, in the case of [A], the paid employees are not directly part of the venture but employees of [A]'s landscape architecture firm.

All researched innovators were seeking *publicity* for their project. This ranges from their own web site and articles in the newspaper to appearances on radio and television. Three ventures attracted immense public attention. [K], for instance, was featured in a multinational corporation's commercial for tablet computers. A steady stream of newspaper and television appearances contributed toward increasing the ventures' popularity. For all three, this was a major enabler during the implementation phase and also later on in the case of [K] when trying to establish the project.

For the operation of one venture, already *existing infrastructure* was beneficial. This was closely related to the unique methods, measures and mission of this venture. [A]'s mission is to clear and open overgrown trails in order to create a network of greenways throughout Detroit.

As already discussed, the innovators were responding to unmet needs in all 13 cases, although this was not the only *motivation* that inspired their innovations. Numerous additional and partly overlapping *internal* factors, which motivated the innovators, became

evident through the thematic analysis of the research. Firstly, establishing a project from the very start and on their own was a crucial factor that motivated two innovators.

"That's also what [project name] has done for me. [...] It's never been that I've started from the ground up. And that's what brings the most excitement to this whole thing is that it's mine. I started this from the ground up. It's mine. That's where I get the pleasure from."[M]

A fruitful experience for some ventures in this context was being able to start small with little access to resources. Most innovators need not much more than a bicycle to ride at the beginning.

Others mentioned the fact that *growing up with bicycling* helped them to develop a passion for what they are doing. Many innovators would have positive memories linked to bicycling, which would then function as an initial incentive to choose the bicycle as a tool to push forward their mission:

"I grew up with bikes and I fell out of my life a little bit and it wasn't until, yeah it was a while I started riding a bike again, just riding a friend's bike for a while. No one really got to change my perspective until they got me back on my bikes." [K]

Detroit itself was a major motivating resource for eight of the innovators. A number of them were fascinated by the city's *rewarding culture towards risk taking* and *innovation*:

"The things that are going on here in the city, it's happening right now. You can actually add something to the city. [...] I tried to start this in Philadelphia, but I felt like it was already created. I wouldn't have gotten further than the idea." [I]

Open space, low cost and other innovation-friendly conditions are also of importance. The advantage lies in that even small-scale projects with a limited budget may have a chance to survive in the competitive market. Immediate feedback and the active involvement of the consumer can further stimulate the innovation process (Murray et al., 2010).

Others just felt *passionate about the city itself* because they either grew up in it or they found something in this place they could not find somewhere else, like the possibility to add something meaningful to the city:

"And my motivation is the city of Detroit, man. [...] I was born and raised here. And I come from a time where it was different. You know, when people treated each other differently than they're to

each other now. And I needed to go back to that. I need people to care about each other and I need people to care about the city. So that's my 100 per cent motivation on this. It is the improvement of the image of Detroit globally, the repopulating of the city and that's it."[K]

The *recreational aspects of bicycling* were acknowledged as a valuable motivation in 11 cases. For most people, this meant that recreation and enjoyment through bicycling were perceived as a positive side effect of being involved in bicycling-related experiences. This further seemed to be a dominant feature of the researched BUSI. Most innovations would start either out of random recreational affiliations or recreational aspects would awake the passion inside of the innovators. It is most likely a mixture of both.

Being able to *socialize* while riding on a bicycle drives 11 cases:

"Cycling is amazing because when you are in cars then you don't talk to each other. Cycling builds community naturally. When one cyclist passes another cyclist on the street, eye contact, you have the possibility to talk to each other, you can talk to pedestrians. It's very open to communication." *[B]*

That said, socializing was not only acknowledged as beneficial for one's private and individual life, but also in a much broader sense regarding the overall purpose of the venture. In particular, those BUSI engaged in *community building* emphasized that specific aspect of bicycling.

Three interviewed persons spoke of reasons concerning the *environment* and *sustainability* as motivation:

"It's what is in it for me, it's what can we do for us and what I'm thinking 'us' is in 25 years from now, what do my kids get to inherit. […] 'Stretch the bow and you let the arrow fly'; you're not gonna be here when it lands but if that's not what you're planning for, then what?" [A]

The bicycle is characterized as a tool in this case because it represents a means of transportation that is, due to the lack of an engine and motor, especially environmental friendly.

In two cases, the possibility of *knowledge gain* motivated the innovators – in particular gaining knowledge about a specific matter. It was either the outcome of the collected data which interested the innovator or the new experience and knowledge they would gain through operating the venture.

6.3 Further Barriers

Literature defined many barriers to social innovation. Political, financial and social aspects were all mentioned to hamper the innovation process to various degrees. Because of the many boundaries, some even blame social innovation for being an overestimated tool to meet social issues (Jankel, 2011). It is, therefore, of high importance to identify those barriers. Consequently, further barriers the innovators faced in this case study are being identified in the following section.

Hampering *conflicts with other road users* were mentioned by five cases. Those conflicts were essentially with two different types of road users: other bicyclists and car drivers. The ventures of [D, E, L], all heavily involved in biking advocacy, had conflicts with *other bicyclists*. According to them, inappropriate behavior and disrespecting traffic rules might cast a damning light on the bicycling culture in general. This would endanger the whole purpose of their advocacy work.

"What I don't want to see happen when it's cars versus bicycles. And politicians versus bicycles." *[L]*

Jain et al. (2008) argue that social values themselves may function as barriers to social innovation (see Section 2.3.3). This is because of the markedly strong connectedness between social innovation and values, which makes it impossible to perceive them as two separate causes. If those values are not shared commonly in society, implementation might be especially troublesome for the innovation. In four cases, bicyclists described having difficulty gaining ground in Detroit's *car-centric environment*. In the case of [K], streets blocked because of their bike events provoke some car drivers who have to wait:

"I mean the biggest negative reaction we get is from cars. You know, sometimes you get to stop traffic and it takes a little while but we just adapted. We see a barrier and discuss how we can make it better. And we do that by, you know, someone's in a hurry, we just stop the ride and let it through." *[K]*

In order to counter resentment, a communicative approach has been chosen. In order to obviate potential resistance, [K] would approach and talk to waiting car drivers and create more breaks in between the constant stream of cyclists to let some of the waiting cars pass. Further noteworthy is that some of those values might be opposed on purpose (cf. Seyfang

and Smith, 2007). On these grounds, bicycling ventures confront the car-centric environment intentionally in order to create better conditions for themselves.

Social values also played an important role in the cases of [A, B, C]. All three innovators faced *further prejudice* and *resistance*, either indirectly or not whatsoever, associated with bicycling related issues. They experienced resistance in the communities they were implementing their projects. However, at least in the case of [B] and [C], the attitude toward them eventually changed to a supportive one.

"It happened one day. This guy comes out of the prison, walks into the bike shop, says 'you're running this shit around here' and I'm like, 'yeah, I'm running the bike shop'. 'So now you're running this shit on my block', picks up my screwdriver and stabs it right into my shoulder. [...] But in the end where do we stand right now? The man who stabbed me, I built bicycles for his children and we have solidarity because you have to work through that. You cannot just hold back, you stabbed me, but you know what, I understand why you did that, let's work through that and that's it."[B, bicycle collective]

It would be counterproductive to just implement ideas to a community and expect them to 'buy it'. The project is more likely to gain legitimacy if the innovators make an effort to listen to the people (Simon & Davis, 2013).

For some innovators, *gentrification* and subsequent *displacement* processes are endangering their projects. This concern was mentioned by some of those innovators which require and run a fixed locality to operate their projects. The three cases of [C, F, H] are all located in the buzzing Midtown neighborhood and are watching the recent economic developments with concern. Potential displacement through gentrification is further partly linked to the struggles some of the innovators had to *find a suitable location* for their project.

"A lot of this has to do with money, and Detroit doesn't have money. I'm worried that it's gonna get plowed one day or that they're gonna take it back but at the same time the city doesn't have the funds to do it. We're in the best position that we could be, but at the same time the worst position because we don't know what's ever gonna happen." [C]

[E] and [H] are both closely intertwined with the community from which they emerged, so the search for a suitable place was limited to a geographically-small radius. In addition, a limited budget put many constraints on the search.

Again, the very specific nature of [M]'s project hindered its actual realization. There is only one location in metropolitan Detroit where she could practice with the participants. So the success of the venture would rely heavily on whether or not she could gain access to that location.

Establishing and *maintaining a user base* for the innovation turned out to be a barrier for two innovators to some degree. [M] struggled while setting up her project because nobody initially seemed to show interest in her program. On the other hand, [A] and [C] used to be more popular than they are now and, thus, they have problems maintaining their user base.

The barriers mentioned above were all caused through external factors. The researched people also struggled with personal and *internal barriers*.

Detroit is one of the largest municipalities by area in the United States. With 138.75 square miles, the city is so vast that Manhattan, Boston and San Francisco could all fit within its borders, with only a fraction of the population (U.S. Census Bureau, 2014a). This immense *geographic spread* also hampered operations for two of the interviewed innovators:

"In the city of Detroit there are a lot of folks that just don't have access to the internet, you can't just solely focus on digital outreach or marketing. You really need to find other ways to get in touch with people [...] and this is a huge city, 139 square miles. And, you know, to get people out there, running around the city takes time and gas and whatever. So geographically it's pretty daunting..." [J]

This is not only a problem when spreading the word and promoting a project. The physical inconvenience might also put off some potential customers. Again, [M] faces the problem of transporting her program's participants to the specific sport site of which there are only very few in the whole country.

[I] added a completely new aspect when talking about *psychological* barriers. The *fear to fail* and therefore being branded as loser was the main barrier mentioned [I].

"Well, I was afraid that I'm gonna give up on this project, you know what I mean? Like get 80 or 90 per cent there or whatever and then not finishing it and you put it into a box somewhere and you never get it done and then, you know, that I get old and die eventually. I feel that's essentially the fear of failure or success, it's really just a fear." [I]

In one case [J] a serious *injury* was a major barrier which slowed down the whole development process. The realization could not be pursued for some time due to the rehabilitation and healing process.

6.4   Conclusions

The researched BUSI faced numerous barriers, but there were also many enabling resources on which the innovators could fall back. Starting with the main enabling and hampering factors, it is noteworthy that most of those enablers were, depending on innovator and context, simultaneously barriers to innovation.

Financial resources, the dense network within the bicycling community, government policy and internal constraints in time and experience hindered the innovation process to some degree. In general, it can be emphasized that the themes of externality and internality were dominant characteristics of those enabling and hampering factors.

Moreover, factors predominately beneficial for the innovation process became apparent in the field research. Those include the human capital of each innovation, publicity and already existing infrastructure. Furthermore, additional motivations which drove the innovators, besides from an initial impulse to set up their innovation, became apparent. Notable examples of this are a passion for the city, recreational and socializing aspects, the possibility to gain knowledge, as well as being able to establish a project on one's own.

Besides those enabling resources, additional barriers to social innovation came up during the analysis. Apparent in this context were conflicts with other road users, establishing and maintaining a user base and other confrontation with social norms and values. The economically buzzing greater downtown area also influenced the innovator's operation as several were endangered through gentrification and displacement processes. This exact problem also hindered some innovators in finding a suitable location from which to run their project. Rather, physical barriers – such as the immense geographic spread of the city or (physical) injuries and psychological barriers like the fear of failure – round out the hindering factors faced by the innovators.

7. Detroit - The Motor-less City?

With nearly 60 percent of its population and thus tax base gone, Detroit fell into financial ruin. It had the unwanted distinction of filing for the largest municipal bankruptcy of an American city in history on July 18, 2013 (Kaffer et al., 2013). Also, the large area of the city proper with the smaller amount of residents meant inadequate deliverance of municipal services. A Lack of public transit, with only the insufficient People Mover and undependable bus system on which to rely, limit and obstructs people. Detroit's unfortunate irony is that the city's streets, on which rode the automobiles that catapulted it into glory, now sit empty and void of many vehicles whatsoever.

Every Monday night, however, those streets start to fill again with a seemingly endless stream of bicycles. The usage of the bicycle goes way beyond recreational reasons this time. A grassroots movement started as an answer to some of Detroit's most severe social and structural problems. All over the city, mostly small scale ventures emerged in order to tackle social deficits within their community. With growing influence, their impact on the city and, thus, also on its future becomes visibly stronger.

7.1 The Research in Short

On these grounds, this study aimed to understand the motivation, methods and barriers – or in short the *how* and *why* – of this very grassroots social movement in the bicycling scene of Detroit. The main research question was as follows:

Why and how does Bottom-Up Social Innovation emerge in Detroit's bicycling scene?

In order to find a response to this question, the following three sub-questions have been formulated:

- *What are the catalysts of BUSI?*
- *How did the innovators implement the BUSI?*
- *What are the enablers and barriers of BUSI?*

In the subsequent section, all three sub-questions shall be answered based on the findings of Chapter 4 and Chapter 5. These three sub-questions then jointly answer the main question.

Six catalysts for the researched BUSI could be identified: *(Social) Need, Incisive Experience, Personal Crisis, Recreation & Enjoyment, Lack of Alternatives* and *Publicity.* Murray et al. (2010) mentions six exemplary catalysts for BUSI (see Section 2.2.1). In particular, a (social) *crisis* and the *poor performance* of public services were also apparent as triggers to social innovation in this case study. Ironically, those two lethal components together led to a fruitful environment for social innovation in Detroit. Schlappa & Neill (2013) name Detroit as an example of how not to address urban shrinkage. In combination with this finding and other potential triggers, as when Murray et al. (2010) suggested *urban acupuncture* (see Section 2.2.1), Detroit could benefit from this new twist.

One important finding of this section was that although all cases responded to a specific need, a few ventures developed the social purpose later on. This behavioral change can be tracked back on *context-sensitive transformation* processes, that is, a response to changing *internal* or *external* influences. Changing personnel or a better understanding of the problem space were here the two triggers which heralded the change. Without exception, all transformation processes can be understood as a reaction to a barrier faced by the respective innovator.

Chapter 4 explains to what extent urban shrinkage led to structural problems within the city. By reflecting on the hypothesis of this case study, which claims that the examined BUSI emerged as an answer to social deficits resulting from urban shrinkage, one can now compare the findings from Chapter 4 to the results from the thematic analysis. Those results show that, without exception, all innovators responded to an unmet (social) need. Those include a *dysfunctional community*, *dysfunctional transit*, *exclusion and segregation*, *safety*, *poverty* and *health issues*. All of these needs were also mentioned during the literature analysis in Chapter 4. A dysfunctional community, exclusion and segregation are all examples of the underlying racial and social issues in Detroit. Poverty and safety further represent another layer of apparent problems in the city. Health issues were only indirectly discussed in terms of the racial inequality regarding access to food. Nonetheless, the stated hypothesis can be regarded as true by confirming that the researched bottom-up social innovation was indeed resulting out of necessity caused by urban shrinkage.

In addition to that, the researched cases exhibited many of the characteristics of grassroots and social innovations as reported in the theoretical framework. However, none of the implemented projects would completely match the definition of social innovation as a process by Hochgerner (2012b).

It is pertinent to mention the somewhat blurred boundaries between the four stages of the *4-I Process*. In particular, the stages of *intervention* and *implementation* would go hand in hand. While the *4-I Process* presupposes that each stage will be individual and segregated, the results showed that most innovators would not first develop distinct methods and then respective measures to implement their project. They would rather simultaneously conceptualize and realize their project as part of a dynamic process.

This puzzle may have two reasons. First, a theory is a simplified model of a real life phenomenon. Thus, applying a theory to a real life case always leads to some frictions that make a complete match impossible. Second, the *4-I Process* is based on knowledge gained from corporations or already-established organizational constructs; one might even say a predominantly *top-down* environment. In this respect, applying the *4-I Process* on a *bottom-up* approach could be the reason why some of the discussed inconsistencies emerged from the analysis. Many of the researched cases were spontaneous, or even unintentional, happenings that occurred under random conditions. A consolidation of the organizational structures would happen, if at all, in a later development stage. Only the experienced innovators with well-thought-out projects would show mostly identical characteristics to the ones described by the *4-I Process*.

How did the innovators implement the BUSI?

In the *intervention* stage of a social innovation, the conceptualized *methods* are of interest (Hochgerner, 2010). Distinct methods are developed by the innovators in order to subsequently implement the innovation through various *measures*, mainly in the *implementation* stage. The innovators in the case study resorted to a comprehensive range of methods and measures. The results of the analysis show that *two types of individuals* can be identified. One type was focused more on the *empowerment* of Detroit's citizens, whereas the other type was more engaged in *community building* and not only tried to connect the urban to the suburban community, but also to address the unbalanced and dysfunctional society within the city itself.

The measures largely focused on the *educational* and *advocacy* aspects. Advocacy was not only seen as a way to promote bicycling; most innovators also saw themselves as ambassadors of Detroit trying to bring people from the outside and the inside of the city together. This attempt was in particular distinctive when the venture would emerge from the respective community. The most common measure used in this respect was the *bike ride*. Even the ventures that would mainly concentrate on educational methods, such as bike repair training, also hosted occasional bike rides. The biggest and most visible ventures would be the ones to place their focus predominantly on a single or several bike ride events.

Further implications include the notion of *effective demand* (see Section 2.2.3). Mulgan et al. (2007) argues that advocacy and campaigning are key factors in growing effective demand. Only if there are enough people who are willing to also pay for the "product", can an innovation grow in scale. Advocacy, therefore, is an important tool for an innovator to ensure that the impact of the innovation grows larger in scale and lasts longer in time. While the citizens of the city deal with those issues every day, some of the suburban population might not even be aware of how intense the problems are and how, if they were, they could possibly tackle them.

In this context, it becomes evident that the innovators were engaged in both *implementation* and *institutionalization* processes, as described by Hochgerner (2010) (see Section 2.2.3). While institutionalization processes were prevalent within the ventures' internal structures, the implementation in the form of new habits and lifestyles was much larger in scale and less limited to the innovators' direct operations. People who would not, or only occasionally, participate in the various projects may still have been influenced in their behavior to some extent. The visibility and attention of some BUSI alone already impacts its environment. Large-scale institutionalization may only happen if implemented by some higher authority. However, this contradicts with the very nature of each BUSI that entails that some sort of a preceding grassroots development.

Additional explicit methods included the *improvement of the physical infrastructure,* by clearing overgrown trails or funding non-motorized infrastructural projects, and the *financial support* of the participants in order to enable the deprived youth of the city to participate in various educational programs. In one further case, the *provision of a platform*

helped people to report and find their stolen bike. This empowers not only the victims of theft, but further increases safety while simultaneously creating a bond within the community. Some others would try to *stimulate the economy* by motivating the suburban population to move to the city. Interesting hereby are the partly contradicting characteristics of the researched ventures. One side is endangered by gentrification and trying to work against it to some degree, whereas the other side conversely tries to stimulate this very development.

However, most innovators were involved either *explicitly* or at least *implicitly* in both empowering and community bridging processes. That means that even if not actively involved in one of the two, the distinct measures would also influence aspects contributing to the other. This is insofar not surprising, and in addition it does not pose a problem since both notions strive for the same goal – creating a more just city.

What are the enablers and barriers of BUSI?

Various different kinds of *resources* and other *enabling factors* to BUSI emerged during the analysis. Those could be divided into a group of *external* and a group of *internal* enablers, plus a group of cases that had *both attributes*. Starting with the ones that embrace both attributes, the financial resources and human capital of the researched innovators are evidently beneficial for the innovation process. Despite the numerous ways of financing an innovation, most people relied on their own personal money and therefore had a self-funding financial model. Many innovators benefited here from an almost zero-cost operation of their ventures. The findings about the *human capital* were insofar interesting in that all ventures depend on internal and external voluntary work; even the ventures which became (partly) self-sustainable.

Another *external* resource is, for instance, *social capital*. A dense network of actors within and outside the bicycling scene became apparent. The close connections would entail many benefits and facilitate the operation of the ventures through collaborations. A certain degree of bargaining power, public attention and the perks of already existing infrastructure were revealed as advantageous and enabling resources for BUSI.

Additionally, *internal* motivational aspects, such as the recreational and socializing aspects of bicycling, knowledge gain, environmental reasons, affection for bicycling since the childhood and being able to establish a project on one's own, proved to be favorable.

Not only enabling factors but also hampering *barriers* were revealed through the analysis. Interestingly, what may be an enabling factor for some is a hindering factor for others. Financial issues as well as conflicts with the government were mentioned in this context on both sides. Surprisingly, direct accusation against the city government came up during the research. That is, a contradictory image of the city government was created concerning their position towards the researched innovations.

Also, the dense bicycling community was not free of conflicts. There was a bit of disagreement in particular between some of the big ventures. As argued in the theoretical framework (see Section 2.3.4), a good coordination and governance of social innovation is important for social innovation to scale-up and grow. [K] could accomplish this task with their consolidating role as an anchor of the local bicycling scene and, thus, empower the whole community. First steps toward this direction have already been taken. A closer cooperation with the city government for the 2015 biking season and a newly introduced mandatory membership epitomize this attempt. This can also be regarded as a gentle adaption to the growing concerns from other actors within the community. Moreover, [K] finally seems to fulfill their obligation as potential leader of Detroit's bicycling scene.

Most innovators would also struggle with a lack of time while others could turn this aspect into an important asset of theirs. Finally, an appropriate knowledge and experience would also have an enabling and hindering role ascribed to it depending on whether or not it was already established.

Supplementary *external* barriers, including conflicts with other road users, struggles finding a suitable location and potential displacement through gentrification, emerged during the analysis. The latter two barriers especially are of interest because two groups of innovators are here in *implicit* conflict with each other, although there is no active opposition evident. While one group is supporting a stimulation of the economy in the city by pushing gentrification processes forward, the other group is endangered or has already been displaced through that very development.

Considering the literature about barriers, mentioned in Section 2.3, new themes emerged that allow a different perspective on the whole innovation process.

Physical barriers, for instance, hampered the implementation of some ventures in Detroit and unveiled some underlying infrastructural deficits besides other than a dysfunctional transit system. The immense geographic spread combined with a fragmented access to the internet of the targeted audience are two elements mentioned in this context.

Remarkably, most discussed literature focused on external barriers. However, in the findings *internal* barriers also seemed to be of importance. One theme to mention here are *psychological barriers*. Especially in due consideration of the somewhat risky undertaking of setting up a new project and the subsequent high pressure on the innovators, the weight and importance of psychological matters, such as the fear of failure, become evident.

Further Findings

Also noteworthy are the *implicit* and *explicit* features of many of the findings. This is insofar of importance since it shows some of the distinct characteristics of BUSI in this case study. Many cases would evolve naturally without any concrete or differing social intentions. Still, they would implicitly or explicitly address specific deficits with features that are increasing social value.

Moreover, the themes of *internality* and *externality* run throughout all chapters of the empirical analysis. This finding demonstrates that the innovation process is influenced by internal as well as external factors. While internal factors are difficult to impair, external factors are definitely the object of potential improvement. This refers in particular to leading actors in the city who can actually take action in order to improve some of the conditions. That BUSI might be indeed worth considering the attention it gets in this thesis shall be subject of the next section.

7.2 Reflection

7.2.1 Content and Method

This research is possibly the first to investigate on grassroots social innovation in Detroit's cycling scene. Its findings provide an in-depth understanding of how and why such innovations are likely to emerge and what conditions are beneficial or counterproductive

for them. As such, it offers an initial step towards harnessing the potential impact of such innovation for Detroit and other places. Combined with future investigations on that topic, a possible alternative tool to overcome the social division and inequality in the city could become a focus of societal, scientific and political attention.

The main limitation of this research lies in its inability to create a picture of the long term. Not including the *impact* stage of social innovation entails some constraints for the overall usability. This deficit can only be overcome on the basis of further research on the same case. Only by knowing the long term impact of BUSI on the social structures within the city, further implications about the potential contributions can be made. It is supposedly the goal of every social innovation to scale-up and spread the social mission as far as possible. If BUSI's contributions to a more just and equal world are indeed as strong as assumed, incentives to grow them should be created by improving the innovation's environment. This, however, is only justifiable if its outcome is indeed better than the status quo.

In addition, progress never occurs without glitches for others. Those "others" have been neglected in this case study and definitely deserve more spotlight. People that are potentially going to be disadvantaged from this development, especially under the consideration of an anticipated more just and equal city, have to be thoroughly considered. Noteworthy in this context are, for instance, people who get displaced through developments stimulated by some of the researched innovators' works. This includes the displacement of prostitutes from Palmer Park or other people being negatively influenced by the gentrification processes in greater downtown Detroit.

7.2.2 Recommendations for Research

Based on the results of this exploratory research, there are several actions and potential research fields that could be considered in order to achieve a better understanding of the given case:

1. Follow-up research, including both interviews and surveys, could later serve as a *benchmark* to measure the development, dynamics and in particular the impact of BUSI on the city. On completion of the research, a workshop could be held to further validate the findings.

2. A better understanding of the impact further entails a better understanding of the *drawbacks of social innovation*. Not only the winners but also the losers of such processes have to be assessed in order to ensure that a more equal and just development actually takes place in the city.

3. Additionally, investigations on the themes of *empowerment* and *community building*, elicited from the thematic analysis, are necessary to understand the potential impact of the researched BUSI on the city.

4. Analyzing and sketching the *social network* in between the different actors would help to unveil the network's internal and external dynamics. Tools to research the networks could be, for example, *Actor-Network Theory* or *Process Tracing*. The latter would be especially fitting to explore the beginning and the diffusion process of the bicycling landscape in the city.

5. Focusing more on the *demand* side of BUSI could further shed light on plain geographic facts such as the origins of the innovators and the participants of the researched ventures. Questions about which neighborhoods socially and economically benefit the most from this development could complete this picture.

6. Further themes of scientific interest could be *agglomeration economies, good governance, guerilla urbanization* or *public space* related questions. All emerged implicitly during the analysis and could function as additional thematic anchor points of the suggested benchmark study.

7.2.3 Recommendations for Praxis

In order to better enable the innovation process and remove the barriers, additional recommended actions should be considered. It is obvious that the researched BUSI were largely hampered through *external* factors. It is therefore advantageous to begin the examination with an analysis and assessment of the individual externally hindering factors whose aggregate will then yield an overall assessment. Compared to the barriers, internal factors had a more dominant role as enablers for BUSI. Still, improving the beneficial external characteristics would help to improve the environment for BUSI in the city. In particular, infrastructural adjustments would be appropriate to strengthen the position of BUSI.

Another starting-point for improvement could be the overall governance of BUSI. While recent measures already show an approach towards a better collaboration between the

bicycling scene and the city's officials, further incentives could be offered to solve insufficiencies within the cycling network. This is an important precondition for the scaling-up mechanism of social innovation and, thus, crucial to guarantee its impact.

The findings of this research further prove where some of the most fundamental structural problems of the city lie. The assumption that BUSI are a response to a social need, formulated in the hypothesis, has been consolidated in the thematic analysis. This delivers a solid basis for further action. If policy would concentrate on improving certain anchor points, such as the infrastructural aspects mentioned above, incentives for a dynamic grassroots movement could be created. That may further lead to a reduction of some of the given social issues in the city.

7.3   From Motor City to Bike City?

"Detroit is big enough to matter in the world but small enough for you to matter in it."
Jeanette Pierce, Detroit Experience Factory

The website *Business Insider* lists Detroit one of the *15 hottest American cities for 2015* (Polland & Stanger, 2014). People are talking about resurgence and after going through a dry spell for decades, economic investment finally seems to have returned to the city. The number of empty major buildings in Downtown Detroit decreased from 48 to 13 within only the last view years (Aguilar, 2015). This development came along with $9 billion investment in real estate projects since 2006 (Hudson-Weber Foundation, 2015). Rentable commercial space fell from 27.3% in 2010 to 16% in 2014 (Hudson-Weber Foundation, 2015). While available space in downtown is decreasing, rents for apartments are rising 3% to 10% a year with an average of $2 per square foot for a newly renovated building (Reindl, 2014). Recent estimates of the U.S. Census Bureau even show that the population loss in Wayne County has been cut in half to roughly 17,000 residents in 2013 (MacDonald, 2015). Considering that, according to experts, this claim is mainly based on people leaving Detroit for the suburbs, it is most likely that the recent development also means that Detroit's population loss is continuing to slow (MacDonald, 2015). Those estimates confirm what has been already known among the people who have recently visited Downtown Detroit or some of its surrounding areas: Detroit is on the up again. But is it really?

What the outside world does not notice is that Detroit's rise is limited to a geographically-small area in the urban core of the city. The other, much larger part of city is full of inequality, crime, poverty and has no jobs to offer to its citizens. Only little of the recent investment is seen there. While the one part of the city is gaining ground by attracting young talent, the rest falls further and further apart.

This is where the contribution of this thesis comes in. By addressing some of the biggest and most crucial problems in the city by means of *empowerment* and *community building*, Detroit could actually embark on a journey to become a more just place. The two strong groups found in this research embrace those potentially influential aspects by their very own nature. BUSI, not necessarily limited to the bicycling scene, has distinct assets that allow one to approach the underlying social issues from new perspectives.

Enelow (2013) defines poor race relations as one of the main reasons for the decline of the city. Logan and Stults (2011) confirm this statement by claiming that Detroit is the most segregated city in the United States. All of this points to an extremely dysfunctional community. Suburbanization and the so-called *white flight* only intensified this tension. This research, however, has found individuals that try to bridge these communities. Community building came forth as one of the main themes running throughout this research. For instance, people would come from the suburbs to the city to participate in bike rides, riding together with those people whom many of them were afraid of for so long.

Simultaneously, empowerment is an important tool to strengthen the position of the people in Detroit. This could help to ensure a just development of the city where all Detroiters benefit from the progress to the same degree. Providing people with tools to take matters into their own hands allows for the chance to choose on their own destiny, instead of simply waiting for the externalities to improve.

Also, from a business point of view, BUSI could create incentives for people to invest in the city – may it be on a large or a small scale – by bringing down the barriers of prejudice that exist between the communities. Showing the city from a different perspective than predominately portrayed by media also helps the local economy. People might be willing to spend more time and money in the city while simultaneously growing together with a community that has grown apart.

So is the somewhat provocatively chosen title accurate and is Detroit truly transforming *from Motor City to Bike City*? Even without statistical proof, there are visibly more bicycles on Detroit's roads than there have been in the past. If this also makes Detroit a 'bike city' remains to be seen. The title rather tries to point towards a growing community that is engaged in improving the somewhat dispiriting status quo, ironically this time on two wheels. Many recent developments indeed show a tendency towards a changing landscape for bicyclists. Nevertheless, coexistence is the key because one cannot create equality through exclusion.

Considering the recent developments in greater downtown Detroit, voices for *good governance* become loud to ensure a greater city for all its citizens. What distinguishes the bicycling movements from the (economic) developments in the city's core is neither its optimism, nor its hipness. Both developments definitely herald a new *post-industrial* era for the city. It is its easy access for everybody – regardless of gender, race or income – that sets a new standard for the city. Along with urban gardening, the artistic movement and various other efforts, which have not yet scaled up enough to gain public attention, might contribute bit by bit for a Detroit in which even future generations want to live.

These assumptions, of course, require further research. Only detailed investigation on the impact of BUSI would completely justify further actions towards a grassroots innovation friendly environment.

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Appendix

Appendix 1: Interview Guide

<u>Idea (Initial Catalyst/Motivation)</u>

- Can you describe yourself and what you are doing?
- Can you talk a bit more about the initiative/project?
    o When and how did it start? Was it planned or rather coincidental?
    o What was the initial purpose/reason to set it up? Did the purpose change over the years? What are the main problems you are addressing your project to?
    o How do you think your initiative/project can solve those?
    o How would you describe your main motivation? What is your own person goal?
    o What are your plans for the future? What would be the next natural step for you? What for the initiative? (<u>or</u> Where do you see yourself/the initiative in 5 years?)
- Do you do this as part-time activity?
    o If yes, what is your regular job?
    o How time consuming is it?
- What is your target audience?
- What is the advantage of biking towards e.g. other means of transport in your opinion? Why biking?

<u>Intervention and Implementation</u>

- How many people are involved in your project?
- What are the requirements for people to participate in your initiative?
- To what extend is Detroit for you a cycling city?
    o How do you perceive cycling in Detroit? Describe your experience!
    o Do you feel save on the streets?
- In Detroit many new initiatives and businesses related to cycling emerge. Do you feel being part of a brought movement? If yes, to what degree do you think your initiative takes part in this?
- *Why do you think this cycling movement is happening right here, right now?*
- *Do you think this is rather a local movement or is it part of nationwide trend?*
- *What do you think lead to it?*
- Do you think your movement has an impact on Detroit as a city and its citizens?
- Can you see a general change in Detroit besides the cycling movement?

- Are you in contact with other innovators/initiatives in the cycling movement in Detroit?
    o If yes, do you work together/collaborate?
    o How does that look like?

<u>Barriers</u>

- What kind of barriers do you face? What is most problematic?

- Do/did you face any resistance from the community?

- I would you describe the political environment? Please describe!
    o Was it easy to set up the initiative in terms of bureaucracy?
    o How supportive is the local, how supportive the national government?
    o What improved over the years? What still has to be improved?

- How do you finance yourself?
    o Do you receive donations? If yes, from what kind of people?
    o Did you have to take a loan? If yes, tell me a bit about your experience.
    o Do you get financial support by the government?
    o Do you make money with your project? If yes, how is this further used?

- Do you face any other resistance not mentioned yet?

- How do you relate yourself to other movements such as urban gardening?

Appendix 2: List of Codes

Barrier: Building/Maintaining User Base

Barrier: Bureaucracy

Barrier: Fear to Fail

Barrier: Financial

Barrier: Finding a suitable Location

Barrier: Gentrification & Displacement

Barrier: Geographic Spread

Barrier: Government: Antagonizing Actions

Barrier: Government: Differing/Contradicting Interests

Barrier: Government: Lack of Support

Barrier: Government: Police

Barrier: Injury

Barrier: Lack of Experience/Knowledge

Barrier: Other Ventures: Competition

Barrier: Other Ventures: Conflict in the Past

Barrier: Other Ventures: Ideology/Operation

Barrier: Prejudice: Car Centrism

Barrier: Prejudice: Community

Barrier: Prejudice: Disrespectful Cyclists

Barrier: Racism

Barrier: Time/Energy

Bicycle-friendly City

Bicycle-unfriendly City

Bottom-Up Approach

Connector: Slow Roll

Context-sensitive Transformation

Diffusion

Enabler: Bargaining Power

Enabler: Existing Infrastructure

Enabler: Financing: (Partial) Self-Sustainability

Enabler: Financing: Crowdfunding/Fundraising

Enabler: Financing: Donations

Enabler: Financing: Loan & Grant

Enabler: Financing: Self-funding

Enabler: Financing: Support from Others

Enabler: Financing: Zero Cost

Enabler: Human Capital: Paid Staff

Enabler: Human Capital: Partners

Enabler: Human Capital: Volunteers

Enabler: Knowledge/Experience

Enabler: Motivation: Environmental & Sustainability

Enabler: Motivation: Growing up with Cycling

Enabler: Motivation: Knowledge Gain

Enabler: Motivation: Own Achievement

Enabler: Motivation: Passion for Detroit

Enabler: Motivation: Recreation & Enjoyment

Enabler: Motivation: Socializing

Enabler: Publicity

Enabler: Social Capital

Enabler: Social Capital: Already Existing Network

Enabler: Social Capital: Biking Community in Detroit

Enabler: Social Capital: Biking Community nationwide

Enabler: Social Capital: City Government

Enabler: Social Capital: Friendship

Enabler: Social Capital: Other Community in Detroit

Enabler: Time

Good Quotes

Impulse & Catalyst

Impulse & Catalyst: Date

Impulse & Catalyst: Incisive Experience

Impulse & Catalyst: Lack of Alternatives

Impulse & Catalyst: Personal Crisis

Impulse & Catalyst: Publicity

Impulse & Catalyst: Recreational

Impulse & Catalyst: Unfulfilled Need

Intervention/Methods/Resources

Legal Status

Measures/Strategy

Measures: Future Plans

Methods & Measures: Education: Bike Repair Training

Methods & Measures: Education: Biking Advocacy

Methods & Measures: Education: Biking Skills

Methods & Measures: Education: Competitive Sports

Methods & Measures: Education: Detroit Advocacy

Methods & Measures: Education: Entrepreneurship Training

Methods & Measures: Education: Ethics

Methods & Measures: Equality

Methods & Measures: Events

Methods & Measures: Financial Support for Participants

Methods & Measures: Improving Infrastructure

Methods & Measures: Labor

Methods & Measures: Research

Methods & Measures: Stimulating Economy

Methods: Bike as Medium

Need: Crime/Safety

Need: Dysfunctional Community

Need: Dysfunctional Transportation/Transit

Need: Exclusion/Segregation/Discrimination

Need: Health & Environmental Issues

Need: Poverty

Operation/Organization

Philosophy