

# Exploring how innovative entrepreneurs develop and adapt their business models to gain or maintain legitimacy

*The case of the bicycle delivery service industry in the Netherlands*

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## **Abstract**

The goal of this study was to explore how innovative entrepreneurs develop and adapt their business models to gain or maintain legitimacy. For this, an explorative case study research design was implemented. The unit of analysis was the growing phenomenon of the bicycle delivery service industry and the units of observation were innovative entrepreneurs that operate in this industry in the Netherlands. This exemplary case was chosen because research shows that bicycles can play an important role in the transition to a more sustainable transport system. Consequently, the following research question was formulated: *“How do innovative entrepreneurs in the bicycle delivery service industry develop and adapt their business models to gain or maintain legitimacy for their organizations?”*. Subsequently, a framework was constructed that captures the effect of the institutional environment in the forming of an innovative entrepreneur’s business model and, in turn, its development focused on affecting the institutional environment through institutional work. Data was collected through desk research and semi-structured interviews. In the case of innovative entrepreneurs operating in the bicycle delivery service industry, two totally different institutional playing fields were identified, due to the focus on the non-food or food delivery market. Nevertheless, it was found that regulative and normative elements of institutions mostly affect innovative entrepreneurs’ business model developments. However, how the innovative entrepreneurs in turn focus on affecting the institutional environment through their business model differs due to their individual characteristics. Subsequently, three different types of innovative entrepreneurs were identified. Yet, all innovative entrepreneurs predominantly conduct institutional work focused on creating new industries to gain or maintain legitimacy. The results indicate that institutional environments directly affect organizational behavior, and the initiation of institutional work by these organizations can be empirically observed by investigating organizations’ business models. This can increase the overall understanding of the transition towards a more sustainable future transport system.



# Table of contents

Abstract .....	3
1. Introduction.....	7
2. Theoretical background.....	9
2.1 The bicycle delivery service industry.....	9
2.2 Institutional theory.....	9
2.3 Institutional work .....	10
2.4 The business model concept .....	11
2.4.1 The business model generation canvas.....	12
2.5 Conceptual model .....	14
3. Methodology .....	15
3.1 Research design.....	15
3.2 Data collection.....	15
3.2.1 Desk research .....	15
3.2.2 Interviews .....	16
3.3 The selected units of observation .....	16
3.4 Data analysis.....	19
3.5 Research quality indicators .....	19
4. Results .....	21
4.1 Short case description: the bicycle delivery service industry in the Netherlands .....	21
4.2 The innovative entrepreneurs.....	23
4.2.1 Firm1, Firm2, Firm3, and Firm4.....	23
4.2.2 Firm5.....	26
4.2.6 Firm6.....	28
4.2.7 Firm7.....	29
4.2.7 Firm8.....	31
4.2.7 Firm9 and Firm10 .....	32
4.3 Insights from government agencies .....	34
4.4 Further analysis of the results .....	36
4.4.1 Institutions and the innovative entrepreneurs' business model development.....	36
4.4.2 Business model development and institutional work.....	37
5. Conclusion .....	42
6. Discussion .....	43
6.1 Practical implications.....	44
6.2 Limitations.....	44

References.....	46
Acknowledgements.....	49
Appendix A.....	50
Appendix B.....	51
Interview guideline innovative entrepreneurs.....	51
Interview guideline government agencies.....	54

## 1. Introduction

With over half of the worldwide population currently living in urban areas (United Nations, 2016) and accommodating for an estimated 64% of all travel kilometers (Lerner & Van Audenhove, 2012), organizing sustainable urban mobility is a major challenge. As part of the solution, cycling has gained more attention due to various individual and societal advantages. Recent research states that cycling increases health, decreases air- and noise pollution, and reduces traffic congestion (Woodcock, et al., 2009; Fishman, 2014; Handy, Van Wee, & Kroesen, 2014; Fishman & Cherry, 2016).

Consequently, interest in cycling as an alternative mode of transport has grown. Cycling has become a fast-growing segment within the transport system thanks to recent advancements in technology<sup>1</sup>. These developments have triggered the introduction of new cycling related innovations. A growing phenomenon in the Netherlands are delivery services that rely heavily on bicycle couriers. Though the concept is not new, bicycle couriers are being rediscovered as a serious alternative for the transport of goods (EPOMM, 2012). Being cheaper, better for the environment, healthier for the courier, and better for the image of the delivery service, bicycle couriers are taking over at the expense of conventional delivery (Wanders, 2017). Moreover, the bicycle delivery service industry has gained in attention due to the launch of food delivery services that deliver by bike (Bueters, 2016). Because of the current rise of this industry, the term *innovative entrepreneur* is used to refer to these organizations.

From this it follows that there is increasing potential for cycling to play a significant role in a more sustainable future transport system, especially in urban environments. However, research has pointed out that such sustainable transitions are slow to spread. Transport systems in industrial economies are locked into fossil-fuel based energy systems, impeding the diffusion of sustainable alternative technologies (Unruh, 2000; Unruh, 2002). According to institutional theory, a main barrier is formed by the effects of socially structured forces. These *institutions* structure social interactions by acting as systems of vested and accustomed 'guidelines' (Hodgson, 2006). Existing institutions favor stability and hamper change (Unruh, 2000; Smink, Hekkert, & Negro, 2015). For the innovative entrepreneurs, a strategy for survival is to gain *legitimacy* by adapting to existing institutional environments. Legitimacy encompasses the general perception that an entity behaves in a way that is in accordance to institutional frameworks (Meyer & Rowan, 1977; Suchman, 1995; Scott, 2008). On the other hand, the introduction of innovative products or services encompasses changes in the institutional environment (Hage & Meeus, 2006). From a strategic point of view, the innovative entrepreneurs must then increase societal support to gain legitimacy (Suchman, 1995). Thus, besides adapting to existing institutions to gain legitimacy, innovative entrepreneurs can also try to gain legitimacy by attempting to create or disrupt an institutional environment (Lawrence & Suddaby, 2006).

However, initiating such institutional change is a complex process (Battilana, Leca, & Boxenbaum, 2009). Innovative entrepreneurs face many challenges when launching new products or services. Before being able to capture economic value from a new idea, innovative entrepreneurs must construct some sort of *business model* for commercialization (Chesbrough, 2010). Keeping in mind economic, social, cultural, and other contexts, the description of how an organization plans to create, deliver, and capture value is defined through such a model (Osterwalder & Pigneur, 2010). Strategies pursued can differ substantially due to organizational characteristics. Nevertheless, whatever strategy

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<sup>1</sup> Examples are the great increase in the use of e-bikes (Macarthur, Dill, & Person, 2014; Fishman & Cherry, 2016) and the development of bicycle sharing schemes into becoming mainstream public transport options (Midgley, 2011).

pursued the innovative entrepreneur can execute this through its business model. From this it follows that a better understanding of the business models of innovative entrepreneurs can increase our understanding of how they cope with institutional incentives and barriers.

Existing literature has already shown that, within the context of sustainable innovation, business models can link the activities of firms to the larger production and consumption systems they take part in (Boons, Montalvo, Quist, & Wagner, 2013). In another research, Boons & Lüdeke-Freund (2013) explored the links between the sustainable innovation literature and the business model concept, arguing that combining them helps understand the way a firm brings a sustainable innovation to the market.

These studies show the potential of linking the business model concept to other literature strands. However, no study yet has sought to combine institutional theory with the business model concept. This study aims to close this gap. Due to the significance of the bicycle delivery service industry discussed above, the unit of analysis is the growing phenomenon of the bicycle delivery service industry. The units of observation are innovative entrepreneurs that operate in this industry in the Netherlands. As the goal of this research is to explore this specific case to increase the overall understanding of the dynamics between institutional environments and the actions and reactions of innovative entrepreneurs, the research question is:

***How do innovative entrepreneurs in the bicycle delivery service industry develop and adapt their business models to gain or maintain legitimacy for their organizations?***

The scientific relevance of this research is that institutional theory and the business model concept are combined. Investigating the business models of innovative entrepreneurs can increase the understanding of how they cope with institutional incentives or barriers, and how they thereby strive for legitimacy for their organizations. Thereby, this research follows the suggestion of Boons & Lüdeke-Freund (2013) that combining the business model concept with sustainable innovation literature can increase understanding of how a firm brings a sustainable innovation to the market. Furthermore, this study sheds light on the developments that are occurring in the bicycle delivery service industry. The societal relevance of this research is its contribution to the overall understanding of the transition towards a more sustainable future transport system. This makes it possible to better guide such a transition.

This thesis is structured as follows. The theoretical background is presented in section two and mainly builds on the literature strands of institutional theory and business models. The conceptual model, which is used as the foundation of this research, is presented last in section two. In the third section the methodology of this research is described. Section four presents the results of this research. In section five the research question is answered. In section six the implications and limitations of this research are discussed.

## 2. Theoretical background

This chapter presents the theoretical background of this research. Developments of the bicycle delivery service industry in general are discussed in section 2.1. Section 2.2 explains institutional theory, followed by the description of institutional work in section 2.3. The business model concept is described in section 2.4. In the last section, these theoretical concepts are merged in a conceptual model.

### 2.1 The bicycle delivery service industry

Since its invention over a hundred years ago, the bicycle has been used to deliver communications (Fincham, 2006). Simply put, bicycle couriers' activities involve the picking up of any kind of shipment and delivering these to another address per bike (Fincham, 2006; Maes, Sys, & Vanelslander, 2011).

According to Maes, Sys, & Vanelslander (2011), bicycle couriers are mostly active in urban environments where delivering by bicycle has some socio-economic advantages. Foremost, a bicycle courier can move relatively fast in high density, urban environments. They are less effected by congestion and regulation (e.g. environmental zones and time windows for delivery) compared to motorized modes of transport. Moreover, bicycles are relatively cheap in terms of purchase and use. In addition, Maes, Sys, & Vanelslander (2011) argue that bicycle couriers provide a more sustainable shipping method.

However, bicycle couriers traditionally have a few characteristics that can impede their diffusion as a major means of transport in the logistics sector. They are only useful within a certain range (mostly within city limits) and up to a certain volume (Maes, Sys, & Vanelslander, 2011). Furthermore, many bicycle couriers have trouble in growing due to public awareness. They have the image of being small, individual companies that only deliver small and light items (Maes, Sys, & Vanelslander, 2011). In other words, potential customers are in many cases still unaware of what services bicycle couriers exactly offer.

### 2.2 Institutional theory

Institutional theory focuses on how institutions shape organizational behavior (Meyer & Rowan, 1977; DiMaggio & Powell, 1983; DiMaggio & Powell, 1991; Scott, 2008). From an institutional perspective, institutions guide social action and thereby underpin an organization's practices. For organizations, this entails conforming to existing institutional environments to gain legitimacy (Meyer & Rowan, 1977; Suchman, 1995; Scott, 2008).

The concept of institutions has been interpreted and used in different manners (Lawrence & Suddaby, 2006; Scott, 2008). Considering that institutions are multifaceted, durable social structures made up of symbolic elements, social activities, and material resources, Scott (2008, p. 48) gives the following broad definition: *"institutions are comprised of regulative, normative, and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life"*.

The regulative elements of institutions include establishing rules, monitoring conformity to these rules, and rewarding conformity or punishing non-conformity through sanctions. The normative elements of institutions reflect the acceptance of certain *values* and *norms*. Values are abstract conceptions of what is preferred and desirable. They encompass *general* guidelines for behavior. Norms are more *specific* guidelines. Through rules and expectations, norms determine appropriate behavior in different social settings. Cultural-cognitive elements of institutions *"constitute the nature of social reality and the frames through which meaning is made"* (Scott, 2008, p. 57). Within the cognitive dimension, meanings attributed to objects and activities are shaped by the interpretation of symbols (words, signs,

and gestures). The cultural element highlights the importance of cultural frameworks for the shaping of interpretation. Within the cultural-cognitive realm, a common frame of reference initiates shared understanding and the alignment of actors with the same cultural background.

The regulative, normative, and cultural-cognitive elements of institutions capture the fundamental factors institutions exist of. Within these three pillars, Scott (2008) has organized supporting principle dimensions (see table 1). Together, these elements and dimensions both constrain and enable the behavior of actors. Existing institutions can form significant barriers, such as the lock-in of the transport system in the use of fossil fuels (Unruh, 2000; Unruh, 2002), but existing institutions can also allow for change and opportunity windows for innovative entrepreneurs. For instance, to improve the inner-city air quality, municipalities of Amsterdam and Utrecht have made regulatory changes by introducing low emission zones (Trommelen, 2015). This might be inconvenient for delivery services that use delivery vans, but may be an incentive for innovative entrepreneurs introducing bicycle delivery services as an alternative.

**Table 1: the three pillars of institutions and principle dimensions** (Scott, 2008, p. 51).

	<b>Regulative</b>	<b>Normative</b>	<b>Cultural-Cognitive</b>
<b>Basis of compliance</b>	<i>Expedience</i>	<i>Social obligation</i>	<i>Taken-for-grantedness</i> <i>Shared understanding</i>
<b>Basis of order</b>	<i>Regulative rules</i>	<i>Binding expectations</i>	<i>Constitutive schema</i>
<b>Mechanisms</b>	<i>Coercive</i>	<i>Normative</i>	<i>Mimetic</i>
<b>Logic</b>	<i>Instrumentality</i>	<i>Appropriateness</i>	<i>Orthodoxy</i>
<b>Indicators</b>	<i>Rules</i> <i>Laws</i> <i>Sanctions</i>	<i>Certification</i> <i>Accreditation</i>	<i>Common beliefs</i> <i>Shared logics of action</i> <i>Isomorphism</i>
<b>Affect</b>	<i>Fear guilt</i> <i>Innocence</i>	<i>Shame</i> <i>Honor</i>	<i>Certainty</i> <i>Confusion</i>
<b>Basis of legitimacy</b>	<i>Legally sanctioned</i>	<i>Morally governed</i>	<i>Comprehensible</i> <i>Recognizable</i> <i>Culturally supported</i>

Within the context of this research, interest lies not only in the ways institutions affect organizational action, but also in how the actions of organizations affect institutions. One literature strand within institutional theory that focusses more on the way organizations try to shape the institutional environment is *institutional work*.

### 2.3 Institutional work

Institutional work is “*the purposive action of individuals and organizations aimed at creating, maintaining, and disrupting institutions*” (Lawrence & Suddaby, 2006, p. 215). Studies of institutional work focus on how institutional work takes place, who is involved in institutional work, and what constitutes institutional work (Lawrence, Leca, & Zilber, 2013). Because this study focuses on increasing the overall understanding of the dynamics between institutions and the behavior of innovative entrepreneurs, how institutional work takes place is especially relevant. This involves a wide range of actors, from entrepreneurs to supportive or facilitative actors of entrepreneurial efforts (Lawrence & Suddaby, 2006).

For organizations aiming to create or disrupt institutions with new products or services, institutional work entails that they must somehow increase societal support to gain legitimacy (Suchman, 1995). In

this context, a notion that largely covers how organizations realize institutional work in practice is *institutional entrepreneurship* (Lawrence, Leca, & Zilber, 2013). Institutional entrepreneurs are individuals and organizations who change existing institutions or create new institutions (DiMaggio, 1988; Lawrence & Suddaby, 2006; Battilana, Leca, & Boxenbaum, 2009). Institutional entrepreneurship focusses on the ways actors work to influence institutional contexts through certain strategies (e.g. technology focus, market leadership, lobbying, etc.) (Lawrence & Suddaby, 2006).

Besides initiating institutional work to create or disrupt institutions, some of these innovative entrepreneurs might pursue strategies to maintain institutions. Lawrence & Suddaby (2006) identify different categories with distinct forms of institutional work that each focus specifically on creating, maintaining, or disrupting institutions (see Appendix A for an overview).

Innovative entrepreneurs in the upcoming bicycle delivery service industry can be seen as institutional entrepreneurs, for they develop strategies to gain institutional legitimacy and increase the use of bicycles as an alternative mode of transport. For instance, although large logistical service providers might increasingly use bicycle couriers for inner-city transport, they also have incentives to maintain legitimacy for their other interests. Hence, different strategies can be pursued when initiating institutional work.

To sum up, institutions consist of regulative, normative, and cultural-cognitive elements. Institutions can enable and/or constrain the introduction of new products or services by innovative entrepreneurs. On the other hand, through institutional work, actors can create, maintain, or disrupt institutions. This involves complex dynamic processes that go both ways, affecting the activities innovative entrepreneurs pursue to gain or maintain legitimacy. This research argues that the way they cope with both institutional incentives and/or barriers in practice can be analyzed through the business model. The following section introduces this concept.

#### 2.4 The business model concept

The business model is a relatively recent concept that has been gaining increased attention, by both academics and practitioners, since the mid-90s (Zott & Amit, 2008; Zott, Amit, & Massa, 2011). For firms, a good business model can lead to competitive advantage (Casadesus-Masanell & Ricart, 2011), or even astonishing growth and the reshaping of industries (Johnson, Christensen, & Kagermann, 2008). Moreover, every successful firm operates according to a successful business model (Johnson, Christensen, & Kagermann, 2008). Hence, a key decision for an (innovative) entrepreneur is designing an appropriate business model (Zott & Amit, 2010).

However, due to the relative newness of the concept, consensus has yet to be reached on what a business model exactly is (Casadesus-Masanell & Ricart, 2011; Zott, Amit, & Massa, 2011; Trimi & Berbegal-Mirabent, 2012). This research uses the business model generation canvas (Osterwalder & Pigneur, 2010) as a common thread to define and analyze the business model concept. This 'tool' has proven to be useful and popular among entrepreneurs for the creation of business models (Trimis & Berbegal-Mirabent, 2012).

Prior to explaining the concept of business models through the business model generation canvas (see the following section), it is important to note that, though related, the terms strategy, business models, and tactics are still used interchangeably (Casadesus-Masanell & Ricart, 2011; Trimi & Berbegal-Mirabent, 2012). A clear distinction is necessary to prevent confusion. According to Casadesus-Masanell & Ricart (2011), strategy refers to the path a firm will take to achieve its goals, expressed in the use of certain activities to create a unique and valuable position. On the other hand, a business model is the core of a firm, defining how it operates to create and capture value. Tactics are the choices

made by a firm to carry out certain activities. Available tactics are determined by the firm's business model.

#### *2.4.1 The business model generation canvas*

The rationale of how a firm creates, delivers, and captures value is described in a business model (Osterwalder & Pigneur, 2010). It is the blueprint for the implementation of a strategy in the organizational setting. Broadly speaking, it helps define the underlying logic of how a firm intends to become profitable. Among other things, it describes the way a firm exploits business opportunities and how its economic transactions with external actors are structured to create value between them (Zott & Amit, 2008; Zott & Amit, 2010).

The business model generation canvas is a tool for describing, analyzing, and designing business models. Osterwalder & Pigneur (2010) argue that it helps a firm to make the right decisions concerning their business model. This is important because many business models tend to fail (Casadesu-Masanell & Ricart, 2011) and once a business model is designed and put into practice, changing it is challenging due to inertia and resistance towards change (Zott & Amit, 2010).

For the creation of a business model, various researchers have suggested several relevant main themes<sup>2</sup>. For instance, Johnson, Christensen, & Kagermann (2008) state that customer value proposition, profit formula, key resources, and key processes are the main elements of a successful business model. According to Osterwalder & Pigneur (2010), a good business model covers four main areas: customers, offer, infrastructure, and financial viability. What makes the business model generation canvas so useful is that it is structured through nine building blocks. These can be used to analyze the innovative entrepreneurs' business models. Together, these building blocks cover most of the suggested main themes. The nine building blocks are: (1) customer segments, (2) value proposition, (3) channels, (4) customer relationships, (5) revenue streams, (6) key resources, (7) key activities, (8) key partnerships, and (9) cost structure. An overview of these building blocks and related considerations is depicted in table 2.

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<sup>2</sup> Zott, Amit, & Massa (2011) provide an extensive overview of different main themes suggested in literature.

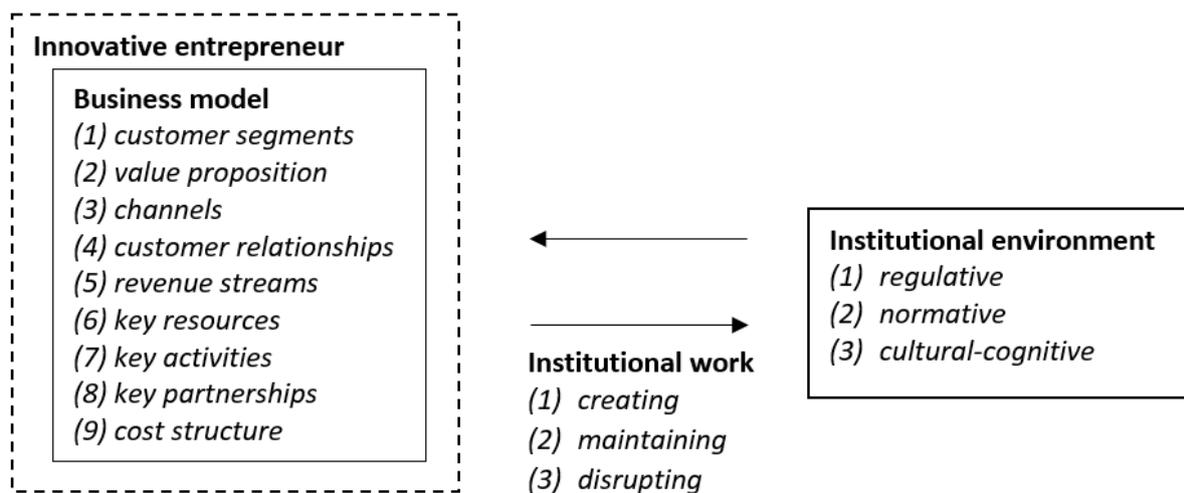
**Table 2: the nine building blocks of the business model** (Osterwalder & Pigneur, 2010).

<b>1. Customer segments</b>		<b>2. Value proposition</b>	
Considerations:	Types:	Considerations:	Types:
<i>Who are the customers? What are their common attributes?</i>	<i>Mass market, niche market, segmented, diversified, multi-sided platforms (or multi-sided markets)</i>	<i>What value is delivered? What customer needs are satisfied?</i>	<i>Newness, performance, customization, getting the job done, design, brand/status, price, cost reduction, risk reduction, accessibility, convenience/usability</i>
<b>3. Channels</b>		<b>4. Customer relationships</b>	
Considerations:	Types:	Considerations:	Types:
<i>How is a firm's value proposition delivered? How are customers reached? How can they be reached efficiently? How does the competition reach customers?</i>	<i>Own channels or partner channels, direct (sales force, web sales, own stores) or indirect (partner stores, wholesaler)</i>	<i>How are customers obtained and retained? What type of relationship is realized? What relationships are in place? What is the cost of these relationships?</i>	<i>Personal, automated, self-service, communities, co-creation</i>
<b>5. Revenue streams</b>		<b>6. Key resources</b>	
Considerations:	Types:	Considerations:	Types:
<i>For what value are customers willing to pay? How are they willing to pay? What is the firm's pricing tactic? How is overall revenue gained? What factors influence pricing?</i>	<i>Asset sales, usage fee, subscription fee, lending/renting/leasing, licensing, brokerage fees, advertising</i>	<i>What resources are necessary for a firm's value proposition, distribution channels, customer relationships, and revenue streams?</i>	<i>Physical, intellectual, human, financial</i>
<b>7. Key activities</b>		<b>8. Key partnerships</b>	
Considerations:	Types:	Considerations:	Types:
<i>What activities are necessary for a firm's value proposition, distribution channels, customer relationships, and revenue streams?</i>	<i>Production, problem solving, platform/network</i>	<i>Who are the key partners? Who are the key suppliers? What resources are gained from partners and suppliers?</i>	<i>Optimization and economy of scale, reduction of risk and uncertainty, acquisition of activities and resources</i>
<b>9. Cost structure</b>			
Considerations:		Types:	
<i>What are the costs related to our business model? What are the costs for necessary resources/activities?</i>		<i>Cost-driven, value-driven, fixed costs, variable costs, economies of scale, economies of scope,</i>	

## 2.5 Conceptual model

The conceptual model, see figure 1, depicts the relationship between institutional theory and the business model concept. The arrow representing 'institutional work' captures the activities an innovative entrepreneur conducts to maintain, create, or disrupt institutions. The way this is pursued affects the layout of the innovative entrepreneur's business model. On the other hand, the arrow pointing in the opposite direction captures the pressure institutional environments exert on the innovative entrepreneur, in turn also affecting its business model.

Hence, the conceptual model portrays how the business model of the innovative entrepreneur is adapted by the influence of regulative, normative, and cultural-cognitive elements of the institutional environment, and how business model developments in turn try to influence these institutions. This involves complex dynamic processes that go both ways. In other words, the conceptual model depicts the ongoing process between the institutional environment and the innovative entrepreneur's business model. Observing this requires gaining information about past, present, and future strategies an innovative entrepreneur plans to follow to gain or maintain legitimacy. How this is operationalized is explained in more detail in the following section.



**Figure 1: conceptual model.**

### 3. Methodology

#### 3.1 Research design

To explore how innovative entrepreneurs develop and adapt their business models to gain or maintain legitimacy, a qualitative case study design was implemented. This research is characterized as qualitative because it focuses on the understanding of a phenomenon, the described institutional dynamics, through the interpretation by its participants, the innovative entrepreneurs and their business models (Bryman, 2012). A case study was chosen as the focus was to answer a 'how' question and the aim was to uncover contextual conditions that are relevant to the phenomenon under study (Yin, 2003; Baxter & Jack, 2008).

The unit of analysis was the growing phenomenon of the bicycle delivery service industry. The units of observation were innovative entrepreneurs that operate in the bicycle delivery service industry in the Netherlands. The Netherlands was chosen to ensure that innovative entrepreneurs operate in a similar institutional environment. Both new firms as well as incumbent firms that have engaged in the delivery of parcels and/or food by bicycle, as an alternative to traditional delivery by mopeds or cars, were classified as innovative entrepreneurs. These innovative entrepreneurs may operate in different ways. To also analyze the data within and between different subunits, this research followed an embedded design. Hence, it can be specified as a single case study with embedded units (Baxter & Jack, 2008). This made it possible to explore the case, yet consider the influence of other factors, such as differences in organizational characteristics and their business models.

#### 3.2 Data collection

Data was acquired in two steps, namely: (1) desk research and (2) semi-structured interviews. Combining these two different data types was done as a mean to enlarge the amount of data and to cross-validate findings by using multiple sources (Bryman, 2012).

##### *3.2.1 Desk research*

First, through desk research, also referred to as secondary research, existing data was collected. The focus was to find freely available data about innovative entrepreneurs and other related stakeholders that operate or have an interest in the bicycle delivery service industry in the Netherlands. Hereby, the purpose was to find information that reveals who the relevant innovative entrepreneurs are and how they try to affect, or are affected by, the institutional environment. This step was necessary to identify and select the units of observation and potential interviewees.

The database used was LexisNexis Academic. Various search terms were tested<sup>3</sup>. This resulted in a large amount of hits, and filtering them all proved difficult and time-consuming. Hence, the search term that proved to have the most hits over a large timespan was chosen, namely: 'fietskoerier'. After filtering all results<sup>4</sup>, 178 articles were regarded as relevant to the research at hand. To provide a clear overview of the activities and developments over time of both smaller and larger innovative entrepreneurs operating in the bicycle delivery service industry, articles were included from various sources<sup>5</sup>.

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<sup>3</sup> E.g. 'fiets', 'koerier', 'fietskoerier', 'fiets koerier', 'fiets bezorgdienst'. Because focus is on the bicycle delivery service industry in the Netherlands, used search terms were in Dutch.

<sup>4</sup> Meaning that any irrelevant or double articles were removed.

<sup>5</sup> Including national, regional, and local newspaper articles.

The oldest article was published on December 12, 1992 and the youngest on September 16, 2017. These articles were then analyzed with the intent to identify innovative entrepreneurs in the bicycle delivery service industry in the Netherlands.

In total over 35 innovative entrepreneurs<sup>6</sup> were identified that deliver all kinds of goods by bicycle (or delivered, as some organizations have ceased to exist). Based on this extensive list, contact information was found by accessing the websites of these firms.

#### *The analyzed articles database*

Besides identifying the relevant innovative entrepreneurs, the articles were further analyzed. The purpose was to find any information relevant for answering the research question. Due to anonymity purposes (see section 3.3), the reference list of referred to articles<sup>7</sup> is stored in an external document. Access to the analyzed articles database, including the reference list of referred to articles, can be granted by contacting the author. How the articles were stored for further analysis is explained in section 3.4.

#### *3.2.2 Interviews*

The second step consisted of conducting semi-structured interviews, so as to structure the general terms of the interview, yet leave enough room for respondents to answer in their own manner. Such an approach was chosen because of the explorative nature of this research, as it allows alternative, sometimes unexpected answers to be derived from respondents (Bryman, 2012). To capture the complex dynamics that are at play between business models that adapt to existing institutional environments, or aim at changing them, the interviews comprised questions such as how an innovative entrepreneur initially constructed his or her business model concerning the institutional environment, what problems they thereby faced/face/or expect to face, and how dealing with this affected or affects their business model.

The interview protocol used can be found in Appendix B. The interviews were held in the Dutch language, as this was the mother tongue of all interviewees. Note that the interview protocol is merely a guideline based on the theoretical background presented in section 2. Because the interviews were semi-structured, the actual line of questioning can differ among interviewees.

#### *Interview sampling strategy*

Based on the data received through desk research, 15 innovative entrepreneurs that operate in the bicycle delivery service industry in the Netherlands were selected, contacted by phone or email, and asked for the possibility of an interview. Nine of them were willing to cooperate. Thus, purposive sampling was followed so that interviewees were selected in a strategic way that is relevant to the research question (Bryman, 2012). This also encompassed that innovative entrepreneurs with varying characteristics were selected for an honest representation of the bicycle delivery service industry.

### 3.3 The selected units of observation

Based on the data collection procedures and willingness to cooperate with this research, a total of ten innovative entrepreneurs were eventually included for further study. All interviews were recorded and took approximately 45-60 minutes. In accordance with the informed consent process, the research

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<sup>6</sup> This only includes businesses that have the delivery of goods by bicycle as part of their core business. Businesses (e.g. a supermarket) that also deliver their goods to consumers by bicycle as an extra service are not included.

<sup>7</sup> Articles from the analyzed articles database are referred to with 'DB' followed by an identification number. E.g. [DB12].

was briefly explained prior to each interview. Furthermore, confidentiality matters were discussed. Some representatives from innovative entrepreneurs wished to remain anonymous. Consequently, it was chosen to describe them all anonymously. Table 3 depicts an overview of these innovative entrepreneurs.

Firm1 to Firm4 are small, locally operational firms. **Firm1** was founded as a partnership between bicycle couriers in 2004 and is currently active in two large cities in the Netherlands. **Firm2** was founded in 2011 and is currently active in a large provincial city. It was later taken over by its current owner. **Firm3** was founded in 2002 as a partnership between two cycling enthusiasts in a medium-sized provincial city. **Firm4** was founded in 2004 by a former student bicycle courier and is currently active in four medium-sized provincial cities. All of these firms focus on bicycle delivery as their core business. None of these firms are active in the same city.

**Firm5** was founded in 2012 outside the Netherlands and has since expanded rapidly as a delivery service specialized in inner-city transportation. Firm5 is currently active in a few large cities in the Netherlands, and thus has a local and national focus. Bicycle delivery is not the core focus of Firm5, however it is incorporated in their business model. Hence, Firm5 is active in the bicycle delivery service industry.

**Firm6** was founded in a large city in the Netherlands in 2016 and has since then expanded to a total of three locations in the same city. Firm6 introduces a new concept to the market and thereby incorporates bicycle couriers as part of their business model. Firm6 is also a small, locally operational firm.

**Firm7** is a subsidiary of one of the world's largest logistical service provider. Firm7 offers international courier services, specifically focusing on the worldwide on-time delivery of goods from door-to-door. Hence, Firm7 is a large organization and is not a bicycle delivery service. However, Firm7 has increasingly integrated delivery by bicycles over the past few years as part of their multimodal transport network.

In 2012, **Firm8** merged into one of the largest delivery service providers active in the Netherlands. Firm8 focusses on the on-time delivery of parcels and mail in the Netherlands. It is not a bicycle delivery service. However, Firm8 works with bicycle delivery services as subcontractors.

Where Firm1 to Firm8 are all active in the delivery of mainly parcels and mail, **Firm9** and **Firm10** are both active in a different market segment, namely that of food delivery. However, this segment has considerable overlap with the bicycle delivery service industry, as both firms currently use bicycle couriers as a mean of delivery. Thereby, Firm9 has been active in the segment of food delivery for over a decade and is the market leader in the Netherlands, while Firm10 is a new entrant. However, Firm9 incorporated the use of bicycle couriers shortly after Firm10 entered the Dutch food delivery market. It is important to note that Firm10 was not represented by an additional interviewee. An interview could not be arranged with Firm10, or a similar firm. However, the bicycle delivery service industry has gained significant media attention due to the developments occurring related to food delivery. Moreover, the adjustments of Firm9's business model cannot be seen independently from the entrance of Firm10 (and other similar firms). Hence, Firm10 was included to better represent this segment within the bicycle delivery service industry. The considerable number of articles in the analyzed articles database concerning Firm10 proved to encompass sufficient data to depict a realistic overview of Firm10's business model development.

**Table 3: overview of the ten innovative entrepreneurs.**

No.	Name	Used data sources	Interviewee function	Interviewee label
1.	Firm1	Interview, desk research	Co-owner	Int1
2.	Firm2	Interview, desk research	Owner	Int2
3.	Firm3	Interview, desk research	Founder & owner	Int3
4.	Firm4	Interview, desk research	Owner	Int4
5.	Firm5	Interview, desk research	Sales development manager	Int5
6.	Firm6	Interview, desk research	Founder & owner	Int6
7.	Firm7	Interview, desk research	Logistics engineer	Int7
8.	Firm8	Interview, desk research	Account manager	Int8
9.	Firm9	Interview, desk research	Manager investor relations	Int9
10.	Firm10	Desk research	NA	NA

*Interviews with representatives of government agencies*

In addition to the nine conducted interviews with representatives of the innovative entrepreneurs, three interviews were conducted with representatives of government agencies (see table 4 for an overview).

The rationale for also including representatives of government agencies as part of the research at hand was twofold. First, theory suggests that institutional environments are largely affected and enforced involving the use of authority (Scott, 2008). This is especially the case when considering the developments of regulative institutional environments. Second, innovative entrepreneurs might maintain contacts with these government agencies considering these same developments. In literature, this is especially the case when innovative entrepreneurs set out to create institutions by pursuing political work (Lawrence & Suddaby, 2006).

To achieve a fair representation of the various government agencies, two municipality representatives were interviewed. One from Amsterdam, where bicycle couriers are increasingly visible throughout the city, and one from Venlo, where this is not yet the case. Furthermore, a representative of the Dutch Cyclists' Union (de Fietsersbond) was interviewed. This is an organization that represents the interests of all cyclists in the Netherlands. Thereby, they work together with the industry and with government on multiple topics (e.g. urban planning and regulations). These interviewees were identified and approached through the interpersonal network of the researcher.

To sum, it was deemed not only interesting, but also important to incorporate the role of government agencies and, if applicable, detect any connections, discrepancies, and/or additional information concerning the research question at hand.

**Table 4: the interviews conducted with the representatives of government agencies.**

No.	Name	Agency	Location	Interviewee function	Interviewee label
1.	Wim Bot	Dutch Cyclists' Union	Utrecht	Policy advisor on bicycle and public transport	Int10
2.	Vera van den Bos	Municipality of Amsterdam	Amsterdam	Policy advisor infrastructure, traffic and transport services	Int11
3.	Tom Jacobs	Municipality of Venlo	Venlo	Policy advisor urban transport planning	Int12

### 3.4 Data analysis

After the articles were filtered for relevance, and the recorded interviews were transcribed<sup>8</sup>, the next step was to codify the data. Coding entailed breaking down the raw data into component parts, and labeling these (Bryman, 2012). This organizing and subsequent labelling of potential significant data was accomplished more effectively by using the computer program *Nvivo*. Moreover, by using *Nvivo* as a database to store, track, and retrieve data sources, the reliability of this research was enhanced (Yin, 2003; Baxter & Jack, 2008). Because a significant amount of data was to be analyzed, the articles were stored and analyzed in one *Nvivo* database (referred to as the analyzed articles database) and each interview transcript was analyzed individually and subsequently added to that database.

The labeling of the data was classified in two levels, namely that of categories and concepts. Where concepts are labels given to discrete phenomena, categories are concepts that have been elaborated in such a manner that they can be regarded as representing real-world phenomena (Bryman, 2012). Based on the theoretical background and the derived conceptual model, the following main organizing categories were identified: the institutional environment consisting of regulative, normative, and cultural-cognitive elements, institutional work, and the business model<sup>9</sup>.

Each of the organizing categories exists of various underlying concepts (Bryman, 2012). In other words, these concepts form 'the building blocks' of the main categories. The aim was to identify these concepts, as this is crucial to understand more about the way innovative entrepreneurs develop their business models to change the institutional environment, or adapt them to fit with the institutional environment, to gain or maintain legitimacy. In other words, the focus was to identify descriptions that mention any cause-and-effect related to answering the research question. In addition, if related to underlying theoretical concepts<sup>10</sup>, these concepts were classified as such.

### 3.5 Research quality indicators

*External reliability* refers to the degree to which a study can be replicated (LeCompte & Goetz, 1982; Bryman, 2012). Achieving external reliability with a qualitative research approach is hard, as the dynamics underpinning social settings constantly change (LeCompte & Goetz, 1982). This is also the case with this research. Institutional environments surrounding innovative entrepreneurs are constantly changing. Consequently, the innovative entrepreneur's business model also changes. In this

<sup>8</sup> Interview transcriptions are stored and can be shared by the author if requested.

<sup>9</sup> Divided into the four main areas: customers, offer, infrastructure, and financial viability (Osterwalder & Pigneur, 2010).

<sup>10</sup> E.g. one of the business model's building blocks mentioned by Osterwalder & Pigneur (2010), or one of the forms of institutional work mentioned by Lawrence & Suddaby (2006).

respect, the external reliability of this research is anticipated to be low. However, the main categories (see section 3.4) are grounded in theory and are thus expected to recur if this research is replicated.

*Internal validity* is the extent to which there is a good match between the researcher's observations and the developed theoretical ideas (Bryman, 2012). By conducting semi-structured interviews in the mother tongue of the interviewees, internal validity is enhanced as interviewees can answer in their own manner without having to frame their perceptions into specific theoretical concepts. Furthermore, the findings of the interviews are cross-validated by using multiple sources of data (see section 3.2), further enhancing internal validity.

*External validity* refers to the degree to which the results can be generalized (LeCompte & Goetz, 1982; Bryman, 2012). A recurring issue when conducting case studies with small samples is that the generalizability is low (LeCompte & Goetz, 1982). It is expected that this is also the case for the research at hand, as institutional environments differ across regions and national borders, and business models of innovative entrepreneurs focus on a specific industry. However, the main categories (see section 3.4) and derived concepts are expected to be generalizable to some extent, or at least increase overall understanding of the complex dynamics at play between institutional environments and the actions and reactions of innovative entrepreneurs.

## 4. Results

This chapter describes the results obtained through the desk research and the interviews. The following section briefly describes the current situation of the bicycle delivery service industry in the Netherlands. In section 4.2, the results per innovative entrepreneur are discussed. Section 4.3 describes the view of the government agencies. In the last section, the results are further analyzed. Illustrative quotes are used throughout this section to further explain and support the content. These quotes were derived from the analyzed articles or the interviews and translated according to the context in which they were mentioned (i.e. from Dutch to English).

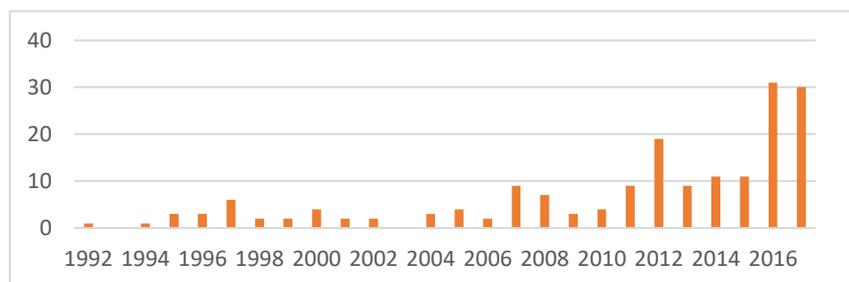
### 4.1 Short case description: the bicycle delivery service industry in the Netherlands

*“The concept originated in the USA. During the 70s they discovered that, in the congested city centers, couriers by bike were faster than couriers by car”* [DB1]. Following this trend, cities in Germany and Denmark were the first in Europe to ban delivery vans from courier services in the city centers. *“Meanwhile, in Germany and Denmark it has become less accepted that businesses deliver goods by delivery vans in the city centers”* [DB2].

From analyzing the data, it becomes apparent that, in the Netherlands, traffic congestion in the cities became increasingly problematic during the 90s. Consequently, the concept of the bicycle courier gained attention during the early-90s. By the mid-90s, privately owned bicycle delivery services were active in Amsterdam, Rotterdam, The Hague, Groningen, and Arnhem. Their value proposition mainly focused on fast, sustainable delivery in urban environments.

The analyzed articles show that, since the ‘90s, an increasing amount of bicycle delivery services have entered the market and offered their services. Some failed, others survived and/or even succeeded to grow significantly. However, the recognition of the bicycle courier as a fully adequate mean of delivery somehow never really took off, until more recently. Figure 2 shows the year of publication of the articles in the analyzed articles database. Clearly, the attention for the bicycle delivery service industry has grown. *“More and more businesses and individuals are using the fast services and trained legs of the bicycle courier”* [DB3].

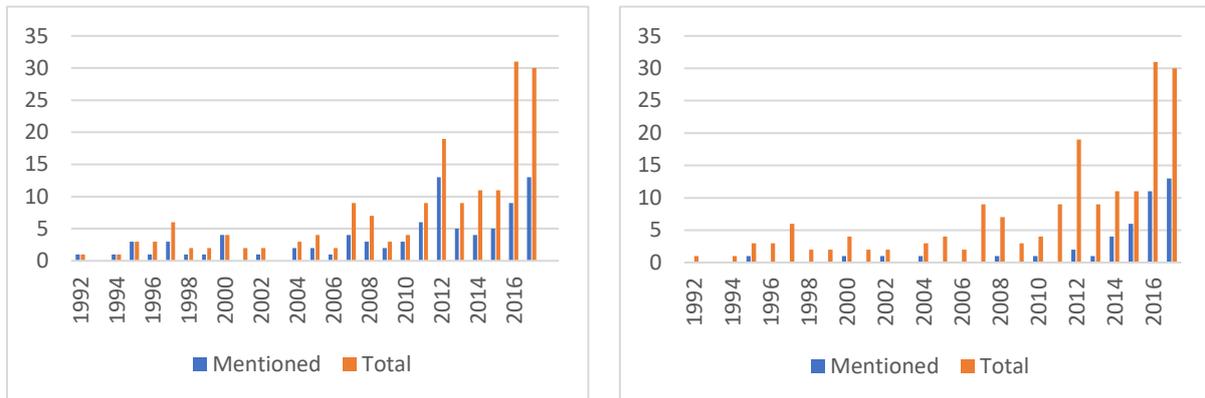
Moreover, it becomes apparent that every large and almost every medium-sized city in the Netherlands currently has one or more organizations that are somehow active in this industry.



**Figure 2: relevant articles published per year.**

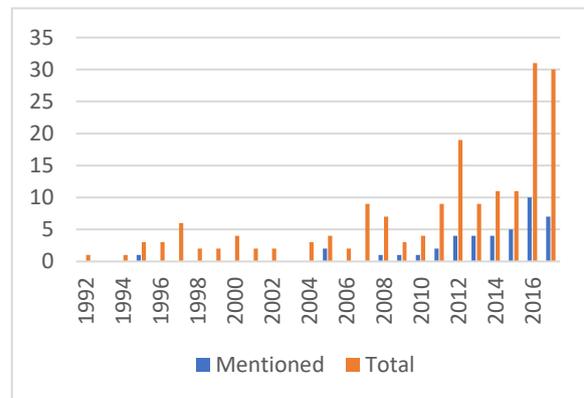
The articles clearly show that the industry has diversified significantly since its emergence. At present, there are various types of firms with different business models that are somehow active in the bicycle delivery service industry. Nevertheless, the way different businesses develop and integrate bicycle delivery services into their business models is for a large part affected by two major societal trends. First, the increased awareness of sustainability throughout society has picked up momentum. Second, the emergence of the internet has drastically changed the way businesses communicate (the ‘digitization’) and has opened opportunities for digitized business processes (e.g. e-commerce and collaboration platforms). Figure 3 illustrates the rise in number of articles that mention these two changes. These developments significantly changed the institutional environment in which the researched firms operate, affecting the behavior of these firms and how they developed and adapted

their business model to gain or maintain legitimacy. This is explained in more detail during the following sections.



**Figure 3: number of articles in the analyzed articles database that mention sustainability (left, search terms: ‘duurzaam’, ‘milieu’, ‘schoon’) and number of articles that mention the emergence of internet related developments (right, search terms: ‘digitalisatie’, ‘internet’, ‘web’, ‘email’, ‘commerce’).**

Another development that has significantly broadened the possibilities of the bicycle delivery courier over the past years are technological developments of the bicycle itself. With the introduction of electrically assisted bicycles (e-bikes) the range of delivery increased. To increase the total volume of goods delivered, bicycle couriers started experimenting with small carts attached to the rear of a bicycle and/or more recently with cargo bikes. Moreover, by combining the electric assistance of the e-bike with the larger volume of such cargo bikes, bicycle couriers are increasingly able to offer their services for larger volumes, and hence be interesting for a larger group of potential customers<sup>11</sup>. Figure 4 shows the increased interest in these developments.



**Figure 4: amount of articles in the analyzed articles database that mention technological developments of the bicycle (search terms: ‘elektrisch’, ‘bakfiets’, ‘cargobike’, ‘e-bike’).**

<sup>11</sup> This development is also mentioned by Maes, Sys, & Vanelslander (2011).

## 4.2 The innovative entrepreneurs

In this section, the results with respect to the selected units of observation (the ten innovative entrepreneurs as discussed in section 3.3) are discussed.

### 4.2.1 Firm1, Firm2, Firm3, and Firm4

During the data analysis, it became apparent that Firm1 to Firm4 have many mutual similarities concerning their business model. Therefore, they are discussed together in this section.

Firm1 to Firm4 are best described as more traditional bicycle delivery services. This is illustrated by the following two quotes: *“We are a bicycle courier service firm. We provide services as a courier. So, we try to transport everything within urban environments by bike”* [Int3] and *“What we do is deliver, can actually be anything, from A to B”* [Int1]. Hence, these firms best fit the image of bicycle couriers’ activities as described by Fincham (2006) and Maes, Sys, & Vanellander (2011)<sup>12</sup>.

#### *Foundation*

Firm1, Firm2, Firm3, and Firm4 all clearly encountered initial impediments with creating brand awareness, goodwill, and hence legitimacy. This fits the description that bicycle delivery services experience difficulty in growing due to a negative public awareness (Maes, Sys, & Vanellander, 2011). Potential customers were sceptic towards the professionalism of these newly founded businesses. For instance, businesses questioned the safety of transport by bicycle compared to by car [Int3]. Especially for Firm2, Firm3, and Firm4, which were founded in provincial cities, this formed a significant barrier for growth. Here, potential customers were simply even less used to the delivery of their goods by bicycles compared to customers in the large cities. Nevertheless, all these firms encountered the same problem, namely that the professional standards and expectations of potential customers were aligned with conventional modes of delivery, for instance delivery by vans. This is clearly a normative institution affecting Firm1 to Firm4.

Firm1 to Firm4 were all aware of this normative institution impeding their image, as illustrated by the following quote: *“People knew the bicycle courier phenomenon especially from the big cities. From America, or Amsterdam. [...] They had quite some distrust towards our professionalism”* [Int3]. This affected all four firms’ business models in relation to the customer segments they turned to. Initially, they targeted niche markets (within the overarching delivery industry) by focusing on the urgent delivery of small goods, such as documents, as a key activity. *“15 years ago, almost all our activities were focused on the urgent delivery of documents”* [Int3]. Thus, they formed their business model’s value proposition in such a manner to fit their services with more specific and specialized customer needs (Osterwalder & Pigneur, 2010). Especially for Firm1, Firm3, and Firm4 (Firm2 is significantly younger with its foundation in 2011), the business model was formed to fit the already existing image of the bicycle messenger delivering pressing items as fast as possible and within a specific timeframe. In other words, through mimicry (Lawrence & Suddaby, 2006), Firm1 to Firm4 attempted to associate the existing image of bicycle messengers with their value proposition. Correspondingly, their value propositions focused on flexible, fast delivery within specific timeframes and with the certainty of delivery on time.

However, since their foundation a lot has changed for these firms. Certain developments have occurred that together required these firms to adjust and adapt to changes in the institutional environment. Overarching these developments are the emergence of the internet and the increased

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<sup>12</sup> See section 2.1

perceived importance of sustainability (see section 4.1). Hence, the following section describes the business developments concerning Firm1 to Firm4 correspondingly.

#### *Business development*

##### *The emergence of the internet (and other technological developments)*

The digitization, as result of the emergence of the internet, is a development that resulted in a shift in the institutional environment that clearly affected Firm1 to Firm4. Documents were (and still are) increasingly communicated through the use of electronic mail. This had a major impact on the customer segments that these bicycle couriers served, as illustrated by the following two quotes: *“The type of work for customers has changed for like 90% in 15 years’ time”* [Int3] and *“Initially we had a lot of notary offices and law firms. At a certain moment this was good for about 50% of our turnover. Now that is only like 10%, as more and more was communicated digitally”* [Int1]. Hence, for Firm1 to Firm4 the number of customers that required the use of urgent delivery services for paper documents decreased<sup>13</sup>.

Another institutional shift mentioned that increasingly affects Firm1 to Firm4 is also a direct result of the emergence of the internet, namely: the emergence of e-commerce. However, on the contrary to digitization, the increasing number of packages ordered online has created a business opportunity for these bicycle delivery services. *“The online ordering of packages destined for consumers living in the city is becoming increasingly problematic for couriers and web shops. Online shopping has grown explosively in the Netherlands, eight percent in 2013 alone [..]”* [DB5]. As consumers increasingly started ordering stuff online, potential customer businesses of Firm1 to Firm4 increasingly focused on selling their goods through web shops. Hence, this upcoming normative institution affected the customers’ needs of Firm1 to Firm4.

An additional institutional environment that affected the business models of Firm1 to Firm4 was a change in regulation, namely: the liberalization of the postal market in 2009. As of January the first, 2011, all EU member states were obligated to fully liberalize their national postal market. However, in the Netherlands the postal market has gradually opened to free competition since 2000. Approximately 50% of the postal market had already opened for competition until on the first of April, 2009, the entire Dutch postal market was completely liberalized.

The major change in the institutional environment caused by the digitization drastically changed the design of many bicycle delivery service firms’ business models. For the sake of survival, the three older firms were gradually forced to reconfigure their business models, specifically by identifying, and subsequently adapting to new customer segments. Because Firm2 was founded later, when it was already apparent that the digitization changed the institutional environment forever, Firm2 better anticipated on this change<sup>14</sup>. When founded, Firm2 focused on two key activities, namely: (1) urgent

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<sup>13</sup> Interestingly, the first mention of the potential change due to digitization in the relevant articles is in 1995: *“On the horizon, a development is emerging that has the potential to change the way things are communicated. [..] Eventually, urgent deliveries will not have to be ‘physically’ delivered. Much like the fax machine did compared to sending physical mail”* [DB2].

<sup>14</sup> When Firm2 was founded it also mainly focused on the delivery of urgent goods, even though the other firms clearly state that the amount of customers for this type of service had been decreasing due to the digitization. Because Firm2 was the only bicycle delivery service active in its city of operation when founded, it is expected that the founder deliberately chose to match with the existing image of bicycle couriers to better gain legitimacy. Hence, by initiating mimicry Firm2 tried to gain legitimacy.

delivery (as mentioned earlier) and (2) postal services<sup>15</sup>. For Firm1, Firm3, and Firm4, postal services were gradually incorporated in their business model to reach new customers<sup>16</sup>. This development required significant changes in the business models of these firms. The delivery of urgent packages requires flexibility, speed, and a firm's focus on offering a personalized service of high quality. On the contrary, offering postal services requires these firms to reduce costs to be competitive, correspondingly asking for a highly standardized method of operation (e.g. working with fixed routes). In addition, the focus in customer segments is thereby on mass markets instead of niche markets (Osterwalder & Pigneur, 2010). This is because cost reduction is the most important aspect in gaining legitimacy in this sector, as illustrated by the following quote: *"We distinguish ourselves from the competition because we bring your mail to you for less money. Why? Because you are part of a larger route with more customers. That makes us cheaper"* [Int2]. Firm1 to Firm4 all incorporated postal services as a key activity. Currently, this entails that these firms focus on two key activities that require a different operational focus. This is illustrated by the following quote: *"There are two main sectors we are currently active in. The first focuses on quality and speed of delivery. The second, something we have been focusing on more recently, is what we call 'B2C', with many web shops. That is totally different, and requires less flexibility and more standardization"* [Int1].

With respect to the increased e-commerce, the limited range and capacity of bicycle couriers had always been the Achilles' heel for bicycle delivery services. To achieve nationwide coverage, bicycle delivery services that offer postal services have joined forces by launching a collaborative platform in May, 2016<sup>17</sup>. Firm1, Firm2, and Firm3 are a partner in this platform. Firm4 is currently not, but is following these developments with great interest. Hence, Firm1 to Firm3 have set up key partnerships, by constructing normative networks (Lawrence & Suddaby, 2006), in their business models with the purpose to increase their legitimacy. Moreover, due to technological advancements of the bicycle itself, the range and capacity of bicycle delivery services is also increased. *"The difference between bicycles and cars is becoming smaller. Sorts of hybrid forms are literally arising"* [Int3]. Both the expansion of coverage, whereby inter-organizational connections are constructed, and the experimentation and development of better ways of transporting more volume, are clear manners in which these firms try to increase their legitimacy.

#### *Societal increase in perceived importance of sustainability*

Firm1, Firm2, Firm3, and Firm4 all mention that the societal shift towards increasing support for sustainability played a major role for the developments concerning their business model. This is clearly illustrated by the following quote: *"The stories of climate change and pollution slowly became part of the consciousness of people, as civilian or as employee. The need for change has penetrated society"* [Int3]. Interestingly, Firm1, Firm3, and Firm4 mention that when they were founded, sustainability did not yet have a significant impact on the way they designed their business model, specifically concerning their value proposition. *"The customers' perceived importance of sustainability is something that only became important a few years later"* [Int4]. However, relevant articles published in the mid-90s already mention the environmental gain of using bicycle couriers in urban environments

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<sup>15</sup> The picking up and delivery of mail and small packages for businesses.

<sup>16</sup> As the change in the regulative institutional environment, the liberalization of the postal market, offered them a business opportunity.

<sup>17</sup> As of May, 2016, Fietskoeriers.nl provides package delivery in 29 cities in the Netherlands. Customers can thereby indicate the time and location of delivery. By connecting bicycle delivery services throughout the Netherlands, Fietskoeriers.nl currently has approximately 600 bicycle couriers at its disposal that deliver an average of 2.500 packages every day [DB6].

compared to delivery vans (see section 4.1). This is exemplified by the following quote from an article published in 1994: *“An increasing number of individuals and businesses in the capital city are using the possibility to deliver their packages by bicycle. This is not only better for the environment, but is in most cases also faster, considering all the cars in the city”* [DB4]. Moreover, these firms were aware of this: *“The most important motivation in 2002, for me and my partner to set up this business, was that we wanted to do something which we love and simultaneously stimulate societal change by doing something socially responsible”* [Int3].

There are two main reasons for this perceived discrepancy: (1) developments in Amsterdam tend to be ahead compared to developments in other cities, especially smaller ones, and (2) though society increasingly perceived sustainability as important, it took time before businesses (and potential customers of Firm1 to Firm4) started incorporating this in their business model to increase their own gain in legitimacy. This development was also stimulated by the implementation of certain regulations. For instance, partners of municipalities were increasingly required to focus on corporate social responsibility, including sustainability.

The aforementioned developments in the business models of Firm1 to Firm4 were increasingly enforced by the implementation of offering an eco-friendly alternative in their value proposition. This entails that, as more potential customers increasingly focused on incorporating social corporate responsibility in their own business models, due to changing normative and regulative institutions, Firm1, Firm3, and Firm4 started actively integrating sustainability as part of their value proposition. Firm2, founded after sustainability and subsequent organizational social corporate responsibility had popularized, integrated this aspect into its business model from the beginning. *“The time is just ripe for a business such as mine. If you are downtown you see bicycles everywhere, even just hanging in the shop windows. [...] they are very hip. That works in my advantage. Sustainability is really hot”* [Int2]. Currently, all firms actively promote themselves as the alternative and sustainable way of delivery, thereby reducing congestion and increasing air quality in the city. This is clearly illustrated by the following quote: *“What we really believe in, and it is also sort of our slogan, is that cycling makes the city more beautiful. [...] thanks to us there is less congestion and less emission”* [Int1].

#### 4.2.2 Firm5

Firm5 does not describe itself as a bicycle delivery service. Namely, Firm5 uses different types of eco-friendly vehicles, such as electrically assisted cargo bikes, electric vehicles, and vehicles that are fueled by compressed natural gas. *“We are an inner-city logistical service provider, not necessarily a bicycle courier service”* [Int5]. Yet, in the cities in which Firm5 is operational, the aim is to deliver approximately 60-70 percent by e-bikes [DB7], or even 95 percent in the city centers [DB8]. Hence, Firm5 is a direct competitor of bicycle delivery services in urban environments<sup>18</sup>.

#### Foundation

The inner-city traffic congestion, combined with the increased perceived importance of sustainability, were a direct cause for the municipality of a large city outside the Netherlands to set up regulations. This was the main reason for the foundation of Firm5. *“The urbanization is increasing rapidly, in 2050, 70% of the people will live in cities. In the Netherlands that will be more than 90%. So, we must take measures. Some municipalities already do. In the city in which we were founded, traffic was banned*

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<sup>18</sup> Interestingly, Firm1 has responded positively to the introduction of Firm5's services in their city of operation. *“Firm1 has welcomed the arrival of a new competitor by stating that it is nice to see that more logistical services are offering inner-city delivery by bicycle”* [DB7]. However, Firm1 offers a more flexible service compared to Firm5. This shows that these firms are trying to distinguish themselves differently, by focusing on offering different value propositions, through their business model, to gain and maintain legitimacy.

*from the city center. There are literally whole areas which you cannot enter with a vehicle” [Int5]. Firm5’s foundation was a direct response to the change in the regulative institution regarding the blocking of traffic in the city center. Consequently, the need for other modes of transport rose and Firm5 saw an opportunity to set up a business case. Initially, Firm5’s value proposition focused on offering a mean for the eco-friendly transport of people in the city (i.e. a taxi service).*

#### *Business development*

After foundation, Firm5 quickly expanded its operations with providing a sustainable and efficient alternative for city delivery. Firm5 saw the opportunity to expand its initial taxi service due to high customer satisfaction. *“The enthusiastic reactions of city inhabitants were proof for our legitimacy. Consequently, we expanded our business operations with a cargo service focused on city distribution” [Int5].* The demand for Firm5’s eco-friendly first and last mile delivery service grew rapidly as Firm5 focused on proving themselves as a worthy alternative to the more conventional delivery methods. Their main way of gaining legitimacy was hence by changing normative associations (Lawrence & Suddaby, 2006).

In addition, increased regulation in other cities focused on blocking traffic also created new opportunities for expansion. Consequently, Firm5 expanded its area of operation and is currently active in multiple cities in its land of origin and a few cities in the Netherlands. Firm5’s focus is to grow, and it sees much potential for expansion. The main reason for this is made clear by the following quote: *“The potential for growth is enormous as only 2% in the city is delivered by these types of vehicles” [Int5].* For financial reasons, Firm5 mobilized support from potential investors to become financially viable, and be able to expand. In addition, Firm5 sees certain government agencies, such as the municipalities of the cities in which it is active (or wants to be active), as key partners. To keep up-to-date about regulations, Firm5 works together with such agencies. Moreover, they are lobbying with certain municipalities to explore the possibilities to expand to that city, as illustrated by the following quote: *“Many municipalities are interested in firms that offer what we offer. Hence, if certain municipalities offer certain additional subsidies and/or other interesting exemptions, such as the delivery outside delivery time-windows, then we are more than willing to negotiate” [Int5].* Both the mobilization of support and lobbying with municipalities fit the description of advocacy (Lawrence & Suddaby, 2006).

Currently, Firm5’s core business focusses on setting up depots towards the edge of the city, just outside potential environmental zones, with a maximum bicycle route of approximately ten minutes from the city center [Int5]. Subsequently, goods are delivered to and from these depots, before they are dispatched to their destination. Firm5’s customers are both businesses (B2B) and individual consumers (B2C). To increase legitimacy, Firm5 actively profiles itself as an alternative delivery service that counters congestion in the city center (caused by delivery vans). This is clearly illustrated by the following quote from Int5: *“We want to make the city cleaner and emptier while at the same time making people happier because that is happening” [Int5].* Furthermore, to increase legitimacy, Firm5 incorporates the names of well-known customers into their business model’s value proposition. This also goes the other way, as these types of customers often use the fact that they use Firm5’s services as a mean to boost their own image. *“That particular customer did a survey amongst its customers and discovered that, for 62%, the image of their organization had positively increased because they used our services. Of course, we also use this fact in our own sales presentations” [Int5].* In other words, Firm5 constructs normative networks to increase the legitimacy of their customers, as well as their own legitimacy (Lawrence & Suddaby, 2006).

For Firm5 the increase in regulations also has a potential negative side effect. *“Once cities decide to block traffic, you see an enormous increase in the amount of bicycle couriers. For instance, in Amsterdam you see bicycle couriers everywhere nowadays. All those couriers that race through the city delivering meals might target other customers, but that is not what the public sees. If we are not careful, it may not be the delivery vans that cause traffic jams in the future, but the electrically assisted bicycles or other electric vehicles. We have to watch out that that does not happen”* [Int5]. Two institutional environments that affect Firm5 because of this side effect are: (1) there is an increasing number of competitors offering a similar service and (2) public image of bicycle couriers can be affected negatively.

As mentioned earlier, Firm5 uses various eco-friendly vehicles to offer their delivery service. The electrically assisted cargo bikes, that are currently used for delivery, were developed by Firm5 in collaboration with another firm and are still under constant development.

To distinguish itself from other, smaller competitors and to increase the range of customers that can use Firm5’s logistical services, Firm5 has implemented the transportation of refrigerated goods. This way, Firm5 can also offer their services to customers (e.g. restaurants) that initially had no alternative way of delivering their goods (compared to delivery vans/trucks)<sup>19</sup>.

Furthermore, Firm5 has implemented an ICT planning system to work as efficiently as possible. This makes it possible for customers to track deliveries live (accurately up to seven minutes). *“With our online distribution system, we can see where our drivers and our goods are. If we must pick up certain goods on demand, we can implement this efficiently in the route. This also reduces costs”* [DB8].

#### 4.2.6 Firm6

With the establishment of Firm6 a new concept was introduced to the market, namely the introduction of a service point where people can let their packages be delivered. *“It is a concept of setting up locations in neighborhoods, with approximately 20.000 households, to stimulate consumers not to let their packages be delivered by various parties, but by us. The packages are delivered to one of our locations and we can then deliver it to the consumer by bicycle, or they can pick it up”* [Int6]. This entails that customers can order anything online and let it deliver at a location of Firm6. Subsequently, they can pick it up for free or let it be delivered for a fee at an appointed time on location. Delivery is done by bicycle, making Firm6 a competitor with other bicycle delivery services. The height of the fee is determined by the timeframe of delivery. Besides the pick up or delivery service, Firm6 also sells meals at their locations. This is done through a partnership with a caterer.

The main reason for the founder of Firm6 to set up a business case was the increasing amount of delivery vans in the city due to the growth of e-commerce. Moreover, because of the liberalization of the postal market, significantly more delivery couriers started offering their services. This had a direct and significant impact on the livability in neighborhoods, as illustrated by the following quote: *“The*

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<sup>19</sup> Firm5 states not to want to compete with, for instance, truck delivery couriers, but sees them as potential customers. *“What we tell them is come deliver goods to us and we will deliver it into the city. That way nobody is bothered. We ride three times a day. In the morning we do refrigerated transport, B2B for the hospitality sector. In the afternoon we do dry B2B deliveries. In the evening we do B2C”* [Int5]. Hence, by setting up their business model in such a way that they offer a range of services, Firm5 aims to gain the interest of different customer segments.

*problems I saw were from a societal point of view. If you go to certain neighborhoods on a weekday, you see an unbelievable amount of different delivery services making stops and causing traffic problems. I thought to myself: that can be done in a much more efficient manner” [Int6].*

Because Firm6 is relatively new, and simultaneously introduces a new concept to the market, it is still working on creating public familiarity and image, and hence legitimacy. In other words, Firm6 is still exploring who their customers exactly are, what they want, and what they are prepared to pay for Firm6’s services<sup>20</sup>. *“We have just begun and are thus still in the phase of explaining exactly what it is that we offer to potential customers. Strangely, it costs us a lot of effort to explain ourselves, even though we think our concept is straightforward. The awareness that any party can deliver to our locations is hard to explain” [Int6].* In other words, Firm6 is pursuing institutional work through educating<sup>21</sup> (Lawrence & Suddaby, 2006). Furthermore, Firm6 currently focusses on providing accessibility and convenience combined with a highly personalized service to gain legitimacy.

Because margins in the postal market are small, Firm6 expects many small initiatives, such as local bicycle services, to withdraw from this market and, subsequently, other parties to collaborate more in the future. However, larger logistical services are currently blocking these developments because they are focused on cornering the market [Int6]. Nevertheless, Firm6 hopes that these parties will become partners or even customers of the firm for the last mile delivery of goods. In the meantime, though Firm6 currently has bicycle couriers employed for the delivery of goods, Firm6 is considering setting up partnerships with parties that already work as bicycle couriers to become more cost effective.

#### 4.2.7 Firm7

Firm7 has been experimenting with alternative delivery methods<sup>22</sup> since the mid-90s in large cities in the Netherlands. This was mainly due to the increased problems caused by too much traffic. *“Firm7 is tired of the traffic jams, congestion, irritated motorists, parking tickets, and wheel clamps they encounter daily during their deliveries in the overcrowded inner-city of Amsterdam” [DB9].* Moreover, during that time, Firm7 was already anticipating on the blockade of traffic in the large cities. Because Firm7 is a large commercial logistical service company, securing legitimacy requires being competitive in the market [Int7]. Therefore, cost reduction is important. Initially, increased efficiency and speed of delivery, in turn decreasing costs, was the main reason for Firm7 to increasingly switch to the use of bicycle couriers, as illustrated by the following quote: *“Switching to more bicycle use only has advantages. It requires lower investments and there are no additional fuel costs” [Int7].*

It took over a decade before Firm7 started increasingly deploying bicycle couriers in highly urbanized environments. From the data analysis it becomes apparent that mainly the societal increase in perceived importance of sustainability and the cost effectiveness of implementation played a major role herein. Because sustainability became an increasingly important topic for international businesses, Firm7 decided to invest in its sustainable image approximately ten years ago. In 2025, Firm7’s ambition is a reduction of its total CO<sub>2</sub> emissions by 50% and that the last mile routes from all its divisions worldwide are for 70% emission free. This entails that Firm7 increasingly delivers goods by foot, bicycles, and/or light electric vehicles in urban environments, and increasingly uses electric vehicles for longer distances. Biofuels are used as much as possible to reduce emissions in other areas

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<sup>20</sup> Currently, Firm6 considers all neighborhood inhabitants potential customers.

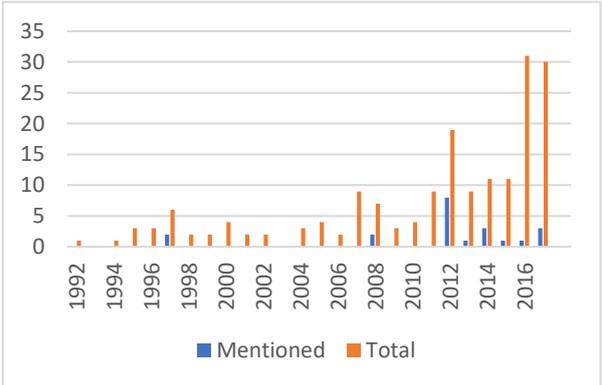
<sup>21</sup> This observation contradicts what literature suggests, namely that educating is associated with larger, central actors in a field (Lawrence & Suddaby, 2006).

<sup>22</sup> Including the use of bicycle couriers for last mile delivery in Amsterdam. *“The way of using bicycles as an answer to congestion and increased difficulty in the delivery of goods was introduced in Amsterdam in 1997” [Int7].*

of operation. Hence, Firm7 is consciously implementing sustainable transport modes in their business model to project the image of being a frontrunner in offering sustainable logistical services for customers. This fits the description of changing normative associations (Lawrence & Suddaby, 2006). This way, Firm7’s legitimacy is increased by connecting to the needs of customer businesses in their increasing focus on corporate social responsibility. On the other hand, it is also meant to attain new customers that find sustainability matters important [Int7].

After the abovementioned increased focus towards sustainability, Firm7 started increasingly deploying bicycle couriers for last mile deliveries in various city centers. However, this required significant changes in Firm7’s business model, as illustrated by the following quote: *“Everything must fit with the strategy, and bicycles do. But you must alter the model of operations. You cannot cycle from a service center to customers, that is simply too far away. You must organize it in a different manner. That was quite a change”* [Int7]<sup>23</sup>. Moreover, implementing bicycle couriers as the delivery method for first and last mile delivery proved costly for Firm7: *“Potential locations for depots in the city are costly. We try to convince the municipality in facilitating that for us, so we can stall emission free vehicles there. That way we can offer services to the city emission free”* [Int7]. These procedures tend to take time due to negotiations between Firm7 and municipalities<sup>24</sup>: *“Municipalities want to work together with us to set up alternative, more sustainable modes of delivery. However, they are in many cases so stuck to certain procedures that many experimental projects are never launched”* [Int7]. In this respect, Firm7 is clearly lobbying to increase political and regulatory support. Hence, Firm7 tries to gain legitimacy by incorporating advocacy measures in its business model (Lawrence & Suddaby, 2006).

Since 2012, Firm7 has increasingly deployed bicycles if, within a limited radius, enough smaller shipments can be expected [DB11]. This is also illustrated by the increase in articles published about Firm7 in the analyzed articles database (see figure 5). Correspondingly, Firm7 has been experimenting with regular bicycles, cargo bikes and, more recently, with electrically assisted cargo bikes<sup>25</sup>. Firm7 expects to increasingly use bicycles for the first and last mile delivery as cities increasingly become more clogged up with traffic. *“We certainly expect more use of bicycles in the increasingly busier urban environments. However, we must always take efficiency, costs and the environment in consideration when deploying means of transportation. We only deploy bicycles if that is the most optimal solution”* [DB13]. Though Firm7 increasingly uses bicycle couriers for first and last mile delivery, they specifically implement this in their business model as part of their multimodal



**Figure 5: increase in number of articles published about Firm7 in the analyzed articles database.**

<sup>23</sup> An example is the change in logistical operations due to the use of more locations, rather than operating solely from a service center. *“The deployment of cargo bikes also has drawbacks. The logistics is more complicated. Packages have to be distributed to more locations prior to being picked up and delivered by the bicycle couriers. This requires adjustments”* [DB10].

<sup>24</sup> Firm7 works together with various leading groups and they attain many contacts with government agencies. This way Firm7 tries to negotiate exemptions (such as good locations for setting up depots) for implementing sustainable alternative modes of transports.

<sup>25</sup> I.e. an electrically assisted, four-wheeled bicycle with a container that can carry up to 125 kilos of packages [DB12].

transport network. Firm7 thereby frames the use of bicycle couriers as a supplement to other necessary modes of transportation for long range delivery. In this sense, Firm7 is valorizing and demonizing (Lawrence & Suddaby, 2006).

#### 4.2.7 Firm8

Firm8 was founded in the late-90s as a courier service that only deploys couriers with poor job prospects (i.e. with a physical handicap or a chronic disease). To gain financial viability, Firm8's founder worked together with a non-profit organization to gain publicity and subsequently acquired additional subsidies from a few commercial organizations that liked the plan. Firm8 managed to gradually grow until it was taken over.

Firm8 was taken over to better connect to the broadening customer needs<sup>26</sup> of the larger delivery service provider in which Firm8 merged. Within this larger organization, Firm8 currently has two main value propositions, namely: (1) providing a highly customizable and personalized delivery service that (2) focusses on corporate social responsibility.

In this sense, using bicycle couriers fits with the current activities Firm8 practices to deliver its value proposition. This is also illustrated by the following quote: *"We think that bicycle couriers are a good sustainable alternative for deliveries in highly urbanized environments. Therefore, we also want to work together with bicycle courier services"* [Int8]. In a few large cities, Firm8 already works together with bicycle courier services for the faster delivery of goods<sup>27</sup>. Hence, bicycle delivery services are incorporated as key partners in the business model of Firm8. In other words, Firm8 pursues the construction of normative networks (Lawrence & Suddaby, 2006) with bicycle delivery services to gain in legitimacy as a 'normal' courier service. However, because Firm8 focusses on offering a complete package, it sees the delivery by bicycle couriers only as an option for the first and last mile in their multimodal transport network. In this sense, Firm8 pursues the same strategies as Firm7. The difference is however that where Firm7 incorporates the use of bicycle couriers through its own business model channels, Firm8 outsources it in its business model by setting up key partnerships with subcontractors. *"We see bicycle couriers as a very attractive alternative in the large cities. However, we focus on offering a complete package. With our delivery vans we can deliver over longer distances, so the delivery by bicycles is a supplement"* [Int8]. Hence, by framing the use of bicycle couriers as a supplement to other necessary modes of transportation, Firm8 is also valorizing and demonizing (Lawrence & Suddaby, 2006). Nevertheless, Firm8 expects that they will have to increasingly implement the use of bicycle couriers, as illustrated by the following quote: *"Looking at the technological developments of bicycles, then it is obvious that it has become more interesting to use bicycle couriers. And, because we cannot enter many cities anymore with our cars, we will have to do something with that"* [Int8].

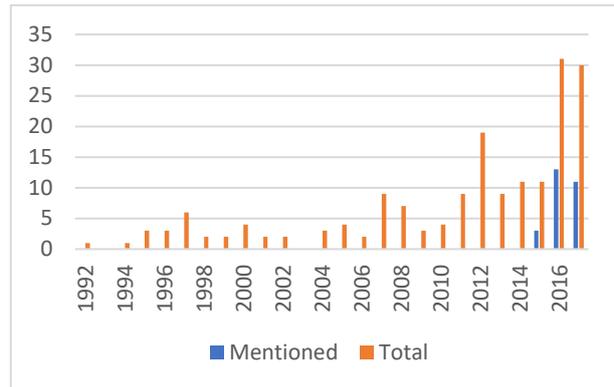
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<sup>26</sup> Namely, the increasing need for delivery on specific locations within a specific timeframe, fitting the customizable and personalized value proposition (Osterwalder & Pigneur, 2010) Firm8 offered.

<sup>27</sup> Compared to delivery by cars, vans, or trucks from A to B in highly urbanized environments [Int8].

#### 4.2.7 Firm9 and Firm10

As mentioned in section 3.3, Firm9 and Firm10 are active in a different market segment compared to the previous firms, namely that of food delivery. That these two firms have recently significantly increased the gain in attention for the bicycle delivery service industry is illustrated by the increased amount of publications in the media (see figure 6). Furthermore, the implementation of bicycle couriers by Firm9 and Firm10 illustrates the diversity of the bicycle delivery service industry.



**Figure 6: number of articles that mention Firm9 and/or Firm10 in the analyzed articles database.**

These firms have recently tried to increase their legitimacy by offering ‘something new’ (as is explained in more detail below). In essence, both firms’ business models revolve around connecting restaurants with consumers through the implementation of communication technology<sup>28</sup>. Hence, they have a multi-sided business model (Osterwalder & Pigneur, 2010). This entails bringing together two or more interdependent customer segments, in this case restaurant holders and consumers. The business model’s value proposition of these innovative entrepreneurs focus on offering convenience and an on-demand service for consumers. In other words, these firms’ business models are based on the on-demand economy<sup>29</sup>. Revenue is earned by asking for a commission for each individual order.

#### Foundation

Firm9 has been active in the Dutch food delivery industry for over a decade. Their core business focusses on connecting consumers to restaurants, as illustrated by the following quote: *“We are a tech company that communicates orders from consumers to restaurants. These restaurants then prepare the food and deliver it to the consumers”* [Int9]. Firm9 was founded to meet with consumers’ needs to order food online and restaurants’ needs to expand their customer base. Since its foundation, Firm9 has become market leader in the Netherlands. Approximately two years ago, Firm10 entered the food delivery market in the Netherlands. However, besides solely connecting consumers and restaurants, Firm10 also incorporates the delivery of the food to the consumers. Hence, the big difference between Firm9 and Firm10 is that the latter not only offers an ordering platform, but also a logistics platform [DB14].

Firm10 saw opportunity to set up such a business model due to a few shifting customer needs. Most importantly, food delivery is a growing market with much potential, also due to a shift in consumer needs towards convenience (i.e. increasingly ordering food instead of cooking it themselves). In addition, more consumers wish to order healthier food. On the other hand, by also offering a logistics platform, restaurants that do not offer a delivery service can nevertheless offer the delivery of food. In turn, as more restaurants can offer their food for delivery, this also enlarges the choice of food for the consumers to order. These shifts in needs, to which Firm10 focusses to gain legitimacy, is captured by the following quote: *“Food delivery is an interesting and growing market. We clearly identify a shift*

<sup>28</sup> I.e. they offer their service through an internet platform. Consumers can reach this platform through the firms’ websites and/or by using their mobile applications. The emergence of businesses that operate through a collaboration platform, such as Firm9 and Firm10, is a direct result of the emergence of the internet.

<sup>29</sup> The on-demand economy is a growing phenomenon where consumers order products or services, at their convenience, through online platforms (Colby & Bell, 2016).

*in needs from consumers. More people want to order food instead of cooking themselves. This fits the overall increasing consumer tendency towards comfort and good food*" [DB15]. By connecting their services to more prominent restaurants, Firm9 and Firm10 pursue the changing of normative associations (Lawrence & Suddaby, 2006). This entails that they are actively investing in the image towards customers that ordering online food can also be healthy.

#### *Business development*

Since Firm10's introduction in the Dutch food delivery market, Firm9 has also implemented a logistical platform for the delivery of food in their business model. On the one hand this is a defensive reaction to block Firm10, and others like it, to capture market share. *"We do not accept another player to gain market share and to subsequently grow"* [Int9].

On the other hand, Firm9 sees a few positive effects the extra logistics platform has on its overall image. *"The consumer likes having more offer. Moreover, they like being able to also order at quality restaurants they already know. [...] On the other hand, although the delivery service itself is unprofitable<sup>30</sup>, we see that consumers order at normal restaurants the next time. That is then profitable for us"* [Int9]. Furthermore, Firm9 has also implemented this strategy because it also observed the shift in consumer needs towards more convenience and healthier food. Hence, from this perspective the implementation of a logistical platform in Firm9's business model is a strategy to gain additional legitimacy and subsequently increase its market share.

A key activity both Firm9 and Firm10 pursue is marketing, on which both firms spend tens of millions of euro's each year. The main reason for this is because these types of business models require as much participants (i.e. restaurants) on their platform as possible to become more interesting for consumers. Hence, brand awareness plays a significant role for both Firm9 and Firm10 (Osterwalder & Pigneur, 2010) and both firms subsequently try to gain legitimacy through educating (Lawrence & Suddaby, 2006). Firm9 recently acquired capital to expand its marketing budget through an initial public offering (IPO). Firm10 has raised hundreds of millions of euros from venture capital funds.

The way Firm9 and Firm10 have currently implemented their logistics platform differs. This is mainly because Firm10 reduces its operational costs by deploying freelance bicycle couriers. Firm10 used to employ bicycle couriers, but switched to using freelancers due to flexibility matters. These freelancers deliver food using their own bicycles. On the other hand, Firm9 employs bicycle couriers and provides the use of e-bikes or e-scooters for delivery. This entails that Firm9 pays its couriers an hourly fee, and takes care of additional employment conditions, such as insurances. Employing bicycle couriers is done to increase reputation and hence legitimacy: *"It is also marketing. We invest much in image and find it important, contrarily to other food delivery services, that our couriers are paid a fair salary, have good equipment, are motivated, and are well insured"* [Int9]. Both firms offer their couriers clothes, food delivery boxes, and other essentials for delivery.

This manner of hiring personnel has recently gained significant media attention<sup>31</sup>, as is illustrated by the fact that six of the eleven articles (in the analyzed articles database) published in 2017 mention this discussion (no articles published before 2017 mention this concerning the food delivery industry). Government agencies, including the Minister of Social Affairs and Employment, relevant labor unions,

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<sup>30</sup> Firm9 thinks that the delivery service as a standalone business model, such as Firm10 employs, will not become profitable. Main reasons are that the market is too small and the food is too expensive [Int9].

<sup>31</sup> This is not only the case for Firm10 and related firms that operate similarly in the food delivery market, but for various organizations that work through internet platforms and thereby deploy workers in a similar fashion [DB16].

and an increasing group of bicycle couriers have stated their concerns with this course of events. On the other hand, Firm10 tries to increase legitimacy for the way they incorporated the deployment of freelancers in their business model by stating that it is necessary to offer flexibility and it better fits the wishes of part-time couriers. *“According to the director of Firm10 in the Benelux, not enough flexibility could be offered with bicycle couriers on a payroll. In addition, it is argued that this better fits because most couriers only work part-time, and it grants Firm10 the possibility of better anticipating on the fluctuating demand”* [DB16]. In addition, they argue that labor legislation is outdated for use with internet platforms. Moreover, it forms a significant barrier for Firm10 (and other internet platforms) to take care of additional employment conditions without directly being an employer by the law [DB17]. In other words, Firm10 is conducting institutional work by both trying to break and change the existing connections between the practice of hiring freelancers and what is deemed morally acceptable and legitimate. Hence, a combination of institutional work forms is pursued. On the one hand, changing existing connections between practice and moral foundations fits the description of changing normative associations (Lawrence & Suddaby, 2006). On the other hand, trying to break links between practices and what is deemed moral fits the description of disassociating moral foundations (Lawrence & Suddaby, 2006). Thus, these two forms of institutional work complement each other and are both pursued by Firm10 to increase legitimacy.

#### 4.3 Insights from government agencies

All government agencies’ general reactions towards the developments that have occurred considering the growth of the bicycle delivery service industry, especially in urban environments, are positive. *“I find these developments very interesting and we absolutely welcome them”* [Int10].

When asked why these developments are occurring, various reasons were given. The congestion in the city centers caused by delivery vans is mentioned [Int10; Int11; Int12]. *“With the city centers clogging up, the bicycle as a possible smarter, faster, and cheaper alternative becomes more interesting”* [Int10]. In turn, this is for a large part caused by the rise of e-commerce [Int10; Int12]. *“The growth in e-commerce has increased the supply of goods to and from the city”* [Int12]. Furthermore, technological developments have increased the potential of delivering goods by bicycles [Int10; Int11; Int12]. *“Technological change is of course an institutional environment that plays an important role. A normal bicycle is limited for logistical purposes, while electrically assisted cargo bikes increase the possibilities significantly”* [Int10]. The increased importance of sustainability was also mentioned by all government agencies. *“These developments fit the sort of new and different upcoming image where being healthy and thinking about the environment is important”* [Int11]. In turn, logistical services respond correspondingly to increase their legitimacy. *“Businesses know that only providing financial arguments for the launch of different or new services is not enough. To gain legitimacy they must also respond to public values”* [Int12]. Hence, the government agencies mainly see institutional environments in the form of normative and cultural-cognitive institutions stimulating the logistical sector to the increased use of bicycle couriers. However, the Dutch Cyclists’ Union also mentions the European Unions’ increasing subsidy legislation, with respect to sustainable cities, as a possible regulative institutional incentive.

Besides the general positive attitude of the government agencies, there are some concerns towards certain aspects relevant to the upcoming bicycle delivery services. Here, there is a discrepancy between the Dutch Cyclists’ Union and the municipality of Amsterdam, who mainly reason from the perspective of large cities, and the municipality of Venlo, which represents a medium-sized provincial city. The first two mention the increased activity on bicycle routes throughout the city as a potential problem. This is especially the case with respect to the increasing volume of cargo bikes. This is

exemplified by the following quote: *“These developments also require us to consider changes in our current infrastructure. Those new cargo bikes and other hip electric vehicles are now still allowed on the bicycle routes. However, the question is what effect this increased activity on the bicycle routes has”* [Int11]. For this matter, both the Dutch Cyclists’ Union and the municipality of Amsterdam mention the need for research and potential regulations. On the other hand, the municipality of Venlo has significantly less direct problems caused by crammed bicycle routes. They see more problems arising in the adjustment of already existing regulations for stimulation. More specific, it is expected that existing parties that benefit from the current situation might resist the roll out of new regulations (e.g. setting up environmental zones in the city center). *“We cannot adjust our regulations so that it has a positive effect on certain parties. This could give the established order a legal basis for intervention. We cannot give one delivery service exemption without granting the same exemption to other services”* [Int12].

Nevertheless, the government agencies are supportive of this upcoming industry and they all follow the developments occurring in the bicycle delivery service industry. Thereby, contacts are maintained with the logistical service industry. For example, the Dutch Cyclists’ Union has been approached by the collaborative platform launched by bicycle delivery services: *“The platform fietskoeriers.nl has approached us for collaborative purposes. We are considering a marketing campaign to stimulate web shops to use bicycle delivery services”* [Int10]. However, all government agencies state that a clear-cut lobbying strategy and/or vision with respect to bicycle delivery services has not (yet) been implemented.

#### 4.4 Further analysis of the results

Clearly, the sample of innovative entrepreneurs included in this research is heterogenous. The response of each innovative entrepreneur to changes in the institutional environment, the corresponding business model development, and the initiated forms of conducted institutional work can vary significantly. Nevertheless, certain patterns can be identified. Table 5 depicts an overview of the most important effects of the institutional environment on business model development and vice versa. How the dynamics represented in table 5 can be understood is explained in more detail in this section.

##### *4.4.1 Institutions and the innovative entrepreneurs' business model development*

An important observation is that there are two totally different institutional playing fields within the bicycle delivery service industry. Firm9 and Firm10 focus on the delivery of "ready-to-serve meals", while Firm1 to Firm8 mainly focus on the delivery of parcels and mail. Hence, a distinction can be made between the focus on delivery for the food or non-food market.

The innovative entrepreneurs focused on the food delivery market are mostly affected by overarching cultural-cognitive institutional shifts with respect to the emergence of the internet, an increased need for convenience, and an increased focus on health. The emergence of the internet has enabled them to set up a *multi-sided* business model through an internet platform. The institutional shifts considering the increased need for convenience is directly integrated in the *value proposition* of these firms' business models, and can be considered their core business because they focus on connecting consumers with restaurants. The increased focus on health is also directly implemented in these firms' business model's *value proposition*. However, the introduction of Firm10, with a focus on the higher qualitative niche market of food delivery, was necessary for Firm9 to also implement this in their business model. In addition, the same applies for the integration of a logistical platform as a *key resource* to deliver the food of higher quality restaurants. From this perspective, competitiveness has a significant impact on the firm's business model development. Besides the aforementioned similarities in business model development, this competitiveness also explains significant differences in observed business model development as a reaction to certain institutions. In other words, in some cases, these innovative entrepreneurs try to distinct themselves differently. For instance, the unclear government stance concerning regulations for the deployment of freelancers is integrated into these firms' business models *cost structure* in a totally different manner.

The innovative entrepreneurs focused on the non-food delivery market all operate in a relatively similar institutional environment. For them, society's gradual increase in support of sustainable initiatives and the emergence of the internet are two cultural-cognitive institutional shifts with the most observable overall impact. However, the response of these innovative entrepreneurs to changes in the institutional environment and the corresponding business model development varies. Based on collective similarities, the innovative entrepreneurs focused on non-food delivery can be roughly split into two groups. Firm1 to Firm4, as mentioned earlier, can be seen as traditional bicycle delivery services. Thereby, they are solely active in the bicycle delivery service industry. Firm5 to Firm8 is a more heterogeneous group, but all have the common characteristic that they operate at the intersection of fields, mainly including the overarching delivery service industry and the more specific bicycle delivery service industry. This distinction can be directly seen in the implemented business models of the different firms. The traditional bicycle delivery services focus on the delivery by bicycle as part of their core business. This is directly integrated in their business model's *value proposition*. On the other hand, the firms that operate on the intersection of fields integrate bicycle couriers as a mean to leverage their overarching business strategies. This entails that bicycle couriers are deployed as a

*key resource* to deliver the firms' underlying *value propositions*<sup>32</sup>. An example that illustrates this is the cultural-cognitive institutional shift of increased awareness of sustainability towards an increasing focus on integrating corporate social responsibility by potential customer organizations. For the traditional bicycle delivery services, this shift formed an opportunity to sell their already existing business model correspondingly. The second group of firms also incorporated sustainability measures into their *value proposition*, however their focus was thereby not specifically on the bicycle delivery service industry. For them, deploying bicycle couriers is an extra mean to deliver their overarching *value proposition*. In other words, the first group uses bicycle delivery as the starting point for setting up their business model, while the second group uses bicycle delivery as an accessory to increase legitimacy for the overall picture.

To sum, identified overarching institutional shifts differently affect the innovative entrepreneurs operating in the bicycle delivery service industry, mainly due to differences of focus on the food or non-food delivery market.

Yet, there is a general pattern observable. Most of the changes institutions cause considering the business models of the innovative entrepreneurs are only observed after it started affecting their operational environment directly. For instance, though various firms active in the non-food delivery market state that they were aware of the cultural-cognitive institutional shift considering sustainability, they only incorporated this into their business models after it became *morally governed* and/or *legally sanctioned* (see table 1 in section 2.2). Another example, considering the firms focused on food delivery, is that these innovative entrepreneurs integrated a logistical platform mainly to meet with customers' increased needs for the delivery of food from higher quality restaurants.

From this perspective, the main driver for business model developments and adjustments implemented by innovative entrepreneurs in the bicycle delivery service industry is based on extrinsic motivation. In other words, it seems that the innovative entrepreneurs mainly react to gain or maintain legitimacy once they *ought* or *have* to. Hence, normative and regulative elements of the institutional environment exert the most direct pressure on their business model development. This is also illustrated by the observation that, for the more recently founded firms, shifts in the normative and regulative institutional environment clearly form the main direct reasons to set up businesses.

#### 4.4.2 Business model development and institutional work

The previous section discusses how the innovative entrepreneurs' business models are developed corresponding to the institutional environment. Though the different entrepreneurs can react differently, observable is that business model developments in most cases also focus on influencing the institutional environment. In general, this is done to 'sell' their business models. The institutional environment largely determines how business models are developed, and in most cases these developments are, in turn, focused on gaining more grip within and for the institutional environment. Hence, institutional work is conducted.

The differences in business model developments because of the influence of institutions also explains why the three groups of innovative entrepreneurs perform different forms of institutional work. However, it must be noted that there are also observable differences between the innovative entrepreneurs within each group. For instance, due to a high degree of competitiveness in the food delivery market, Firm9 and Firm10 try to gain legitimacy concerning the manner they hire personnel

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<sup>32</sup> Following the distinction made between the terms: strategy, business models, and tactics (see section 2.4) by Casadesus-Masanell & Ricart (2011), deploying bicycle couriers is arguably a tactic pursued by these firms.

as bicycle couriers in a totally different manner. Thereby, Firm10 tries to justify the hiring of freelancers, mainly through a combination of the institutional work forms of *changing normative associations* and *disassociating moral foundations*. On the other hand, Firm9 disassociates itself from this strategy by trying to show the market that they hire personnel in an 'honest' fashion, and hence in accordance with the relevant existing regulative and normative institutional environments.

Though differences are thus observable between individual innovative entrepreneurs, in general the innovative entrepreneurs within the previously mentioned three groups perform similar forms of institutional work. Differences between these groups are more evident. For instance, the traditional bicycle courier services try to mobilize themselves by conducting institutional work in the form of *constructing normative networks*. On the other hand, the innovative entrepreneurs active in the food delivery market are more focused on gaining *brand awareness* by conducting the institutional work form of *educating*.

Yet, a general observation can be made. When looking specifically at the bicycle delivery service industry, all the innovative entrepreneurs predominantly conduct institutional work focused on creating new institutions. More specifically, it seems that most innovative entrepreneurs focus on strengthening the occurred shifts in the institutional environment. For instance, regulations focused on blocking traffic enabled bicycle courier services to offer themselves as an alternative. By showing that the delivery of goods could also be achieved by bike, they strengthened the, in this case, existing regulative institutional environment. An important notion hereby is that the development of the bicycle delivery service industry is complementary to existing institutions involved around the non-food and food delivery market. This also in large part clarifies why especially the institutional work form of *changing normative associations* is observed<sup>33</sup>.

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<sup>33</sup> Lawrence & Suddaby (2006) state that changing normative associations is an institutional work form that often leads to new institutions which are complementary to existing institutions.

**Table 5: the most important effects of the institutional environment on business model developments and vice versa (including institutional work) identified in the analyzed data.<sup>34</sup>**

Institutional environment (Scott, 2008)	Institutional logics in practice	Effect on <sup>35</sup>	Business model development of organizations active in the bicycle delivery service industry	Form of institutional work <sup>36</sup> (Lawrence & Suddaby, 2006)
Regulative	Regulations focused on blocking traffic (e.g. environmental zones and time windows for delivery vans).	Firm1, Firm2, Firm3, Firm4, Firm5, Firm6, Firm7, Firm8	<ol style="list-style-type: none"> <li>Initially, organizations already active in the bicycle delivery service industry responded by focusing on cost reduction. As citizens became increasingly annoyed by congestion and reduced air quality, a gradual shift can be identified in their business model's value proposition. Bicycle delivery services increasingly focused on offering a more sustainable alternative to gain legitimacy (in addition to being cheaper).</li> <li>The developed business case of Firm5 was a direct reaction to regulations blocking traffic. As they expanded, they offered their services as a sustainable, alternative mean for delivery.</li> </ol>	<p>Changing normative associations</p> <p>Changing normative associations</p>
	Regulations blocking bicycle couriers from entering locations in the city center (e.g. pedestrian area's).	Firm3, Firm4, Firm7	Only Firm3 specifically mentions that they lobbied with the responsible civil servant of the municipality to gain access with their bicycle couriers.	Advocacy
	Liberalization of the postal market in 2009.	Firm1, Firm2, Firm3, Firm4, Firm6	Increased focus on offering postal services as a key activity (Firm1 to Firm4).	

<sup>34</sup> Please note that this table provides a clear overview of main results, but institutional environments and resulting business model developments, and vice versa, cannot be seen independently (i.e. institutions overlap with each other).

<sup>35</sup> It is possible that other firms are also affected by an institutional environment. However, only firms that specifically mention the institutional environment and/or the relevant business model development are included here.

<sup>36</sup> The way in which organizations develop and adapt their business model may have a creating, maintaining or disrupting effect on the institutional context (see section 2.3 and Appendix A). If possible, the form of institutional work (as described literature) is matched.

	Unclear government stance regarding regulations concerning the deployment of freelancers.	Firm1, Firm2, Firm3, Firm4, Firm9, Firm10	<ol style="list-style-type: none"> <li>1. Some firms hire freelancers to reduce operational costs.</li> <li>2. Firm10 actively tries to justify the deployment of freelancers. Both by trying to break and change the existing connections between the practice of hiring freelancers and what is deemed morally acceptable and legitimate.</li> </ol>	Changing normative associations / Disassociating moral foundations
	Regulations blocking experiments with the delivery of goods in an alternative fashion.	Firm7	Firm7 is in constant contact with regulatory agencies to implement alternative modes of delivery.	Advocacy
Normative	Potential customers are used to conventional delivery methods.	Firm1, Firm2, Firm3, Firm4, Firm5	<ol style="list-style-type: none"> <li>1. The business model's value proposition is formed in such a manner to fit the existing image of bicycle messengers.</li> <li>2. Proving to be a worthy/professional alternative delivery method.</li> </ol>	<p>Mimicry</p> <p>Changing normative associations</p>
	Potential customer organizations want cheap delivery of goods.	Firm1, Firm2, Firm3, Firm4, Firm7	<ol style="list-style-type: none"> <li>1. Bicycle couriers are integrated in the business model as a faster and cheaper solution (particularly for first and last mile delivery).</li> <li>2. Through technological advancements, the range and capacity of bicycles is enhanced.</li> <li>3. Bicycle delivery services focus on standardization (e.g. by offering fixed routes to cut costs).</li> </ol>	Mimicry
	Web shops and other potential customers affected by the increase in e-commerce need nationwide coverage of delivery.	Firm1, Firm2, Firm3, Firm4, Firm5, Firm7, Firm8	<ol style="list-style-type: none"> <li>1. Firm1 to Firm4 initiate a partnership through the collaboration platform fietskoeriers.nl to achieve nationwide delivery coverage.</li> <li>2. Firm7 and Firm8 argue that using bicycle delivery services are especially good for the first and last mile delivery, as part of a larger multi-modal transport network.</li> </ol>	Constructing normative networks Valorizing and demonizing
	Potential customer organizations increasingly focus on integrating corporate social responsibility (specifically with regards to	Firm1, Firm2, Firm3, Firm4, Firm5, Firm7	<ol style="list-style-type: none"> <li>1. Organizations active in the bicycle delivery service industry respond by focusing on increasing customer's legitimacy, with respect to the customer's sustainable image, as part of their value proposition. Existing courier services incorporate</li> </ol>	Changing normative associations

	environmental consciousness) in their own business model to gain legitimacy.		<p>this to maintain legitimacy, while bicycle delivery services try to gain legitimacy.</p> <p>2. In turn, the above also goes the other way. Firm1 to Firm4 incorporate the fact that they have the municipality as a customer in their business model's value proposition to increase their own legitimacy. Firm5 does the same by using the brand name of well-known customers.</p>	Constructing normative networks
	Restaurants without a delivery service also want to increase their customer base.	Firm9, Firm10	Firm10 partly launches its logistics platform to fit with these customers' needs. Firm9 follows.	
	Consumers are more interested in ordering online if the offer of restaurants is larger	Firm9, Firm10	Increasing brand awareness is a key activity incorporated in both firms' business models.	Educating
Cultural-cognitive	Public annoyance increases towards congestion in the city centers.	Firm1, Firm2, Firm3, Firm4, Firm5, Firm6, Firm7	<p>1. Most firms incorporate this in their business model to propose themselves as an alternative mean of transport, countering congestion.</p> <p>2. Firm6 introduced a new concept partly based on this institution. They are now focused on increasing their legitimacy by explaining it to potential customers.</p>	<p>Changing normative associations</p> <p>Educating</p>
	The need for convenience is increasingly intertwined with daily life.	Firm6, Firm9, Firm10	Convenience is integrated as part of the value proposition of Firm6, Firm9 and Firm10 (though in a totally different manner).	Changing normative associations
	Customers who order food online for home delivery increasingly demand healthier food.	Firm9, Firm10	Firm9 and Firm10 both focus on connecting prominent restaurants to their platforms and actively promote that ordering online food can be healthy.	Changing normative associations

## 5. Conclusion

Cycling can play an important role in a more sustainable future transport system. However, the dynamics between institutional incentives and barriers determine organizational possibilities to gain and maintain legitimacy, and consequently effect the spread of sustainable transitions. This thesis focused on increasing the overall understanding of the dynamics between institutional environments and the actions and reactions of innovative entrepreneurs. The goal of this study was to explore how innovative entrepreneurs develop and adapt their business models to gain or maintain legitimacy. The following research question was formulated: “*How do innovative entrepreneurs in the bicycle delivery service industry develop and adapt their business models to gain or maintain legitimacy for their organizations?*”.

The presented dynamics depicted in the conceptual model are clearly observable in the results. First, all innovative entrepreneurs indeed try to increase legitimacy by adapting their business models to existing institutions, or shifts in the institutional environment. In most cases, innovative entrepreneurs react to regulative or normative institutional shifts, as these have a more direct effect on their operational environment. These regulative and normative institutions can in many cases be traced back to overarching cultural-cognitive institutions. For instance, the perceived importance of sustainability is clearly a cultural-cognitive institutional shift. Yet, it only becomes integrated in the innovative entrepreneur’s business model once potential customer organizations integrate it in their own business model. From this perspective, it has shifted into a normative institution.

Second, because most business model developments in turn focus on selling the business model, this affects the institutional environment. For example, by showing that deploying bicycle couriers is a reliable alternative delivery mode when other traffic is banned, this regulative institutional environment is strengthened. In other words, innovative entrepreneurs conduct institutional work to increase their own legitimacy, in turn also influencing the institutional environment. All innovative entrepreneurs predominantly conduct institutional work focused on creating new industries to gain or maintain legitimacy. Thereby, the most conducted form is *changing normative associations*. This can be in large part explained due to the development of the bicycle delivery service industry as complementary to existing industries and institutions.

Though the aforementioned general pattern is observable, what institutions, and how they affect business model development, can differ significantly. In the bicycle delivery service industry, there are two totally different institutional playing fields corresponding with the food and non-food delivery market. Overarching cultural-cognitive institutions that play an important role in the non-food delivery market are the perceived importance of sustainability and the emergence of the internet. For the food delivery market, the cultural-cognitive institutions that have the most effect on business model development are the emergence of the internet, the upcoming need for convenience, and the increased perceived importance of health. Based on collective similarities of innovative entrepreneurs’ business models, roughly three groups can be identified. The first two groups consist in firms that focus on the non-food delivery market. The traditional bicycle delivery services are solely active in the bicycle delivery service industry. Institutional shifts are in most cases directly integrated in their business model’s *value proposition*. The second group is more heterogeneous. However, these innovative entrepreneurs have the collective similarity that they are all active on the intersection fields. For them, bicycle couriers are integrated as a *key resource* in the form of an accessory to gain or maintain legitimacy for their overarching *value proposition*. The last group consists in firms that focus on the food delivery market. These firms also integrate bicycle couriers as a *key resource* to gain or maintain legitimacy for their overarching *value proposition*.

## 6. Discussion

The results of this research confirm that institutional theory and the business model concept are complementary literature strands when investigating the relationship between innovative entrepreneurs and their institutional environment. Clearly, the innovative entrepreneurs studied in this research all pursue strategies and implement tactics, through their business model, directly or indirectly influenced by their institutional environment. Hence, as institutional theory suggests, innovative entrepreneurs indeed pursue the strategy of adapting to institutions to gain legitimacy. For firms in the bicycle delivery service industry, most of the institutional shifts observed formed an opportunity, such as the increased perceived importance of sustainability, to increase legitimacy. In turn, to gain or maintain legitimacy for themselves and for the overall bicycle delivery service industry, activities were initiated that can be directly matched to concepts suggested in the institutional work literature.

Hence, by empirically revealing the aforementioned dynamics, this study contributes to the literature. Moreover, a few additional interesting observations can be made.

It seems that there are different “institutional gradations”. The overarching cultural-cognitive institutional environments first have to descent to a more normative or regulative scale before firms seem to react with business model adjustments. However, how these cultural-cognitive institutions eventually develop into, for instance, an opportunity can differ. The most obvious example is the shift caused by the emergence of the internet. For the non-food delivery market, e-commerce became increasingly important. On the other hand, for the food delivery market, this offered an opportunity to set up platform based, multi-sided business models. In turn, the possibilities for a firm to set up a business model and gain or maintain legitimacy can differ significantly, even if they operate in the same industry. Because similar observations can be made based on the results, further research could explore how this can be interpreted. By better understanding how institutions ‘descent’, gain momentum, and subsequently become integrated in firms’ business models, overall understanding of transitions is increased. Recognizing patterns herein is key to understanding the reactions of each individual firm, and subsequently aids in understanding how to best stimulate the industries these firms are active in towards, for instance, a more sustainable future transport system. If the bicycle delivery service industry is thereby chosen for further study, a manner to increase this understanding could be to largen the sample of innovative entrepreneurs.

Increasing the sample is also necessary from another perspective. Namely, this research identified three groups of innovative entrepreneurs, based on collective similarities concerning their business models. However, group two is heterogeneous. For instance, Firm6 is a locally operating firm that brings a new concept to the market, while the other three firms in this group are nationally operating, larger firms. Hence, Firm6 does not fit in this group. However, due to lack of data to place Firm6 in a separate group, it was included in group two because of the collective similarity that these firms are active on the intersection of fields in the non-food delivery market. By increasing the sample of innovative entrepreneurs, a better distinction between groups can be made. In turn, this increases the understanding of how each individual entrepreneur organizes its business model as a reaction to the institutional environment.

Another observation made is that sometimes the way institutional work is conducted contradicts what is mentioned in literature. For instance, *educating* is associated with larger, central actors in a field (Lawrence & Suddaby, 2006). Yet, Firm6 is a small, newly founded firm that focusses mainly on this form of institutional work to gain legitimacy. Another example is presented by the difference in

approach towards the hiring of freelancers between Firm9 and Firm10. Lawrence & Suddaby (2006) suggest that, when conducting disruptive institutional work, *“the ability of an actor to engage in practices that exist just outside of the normative boundaries of an institution reflects a high level of cultural competence”* (p. 238). However, Firm9 was founded in the Netherlands, specifically to serve the Dutch food delivery market, and has been active there for much longer than Firm10. Clearly, in this case, it is the other way around. These findings further illustrate the potential of using the business model concept to research the relationship between the institutional environment and organizations to gain new and interesting insights.

### 6.1 Practical implications

Two practical implications can be made that can affect the bicycle delivery service industry, government agencies, and society.

First, because the results show that mainly regulative and normative institutions directly affect the business model of innovative entrepreneurs in the bicycle delivery service industry in the Netherlands, stimulating regulations could positively affect the further adoption of bicycle couriers. Governmental pressure in the form of regulations and/or through other incentives have enabled bicycle couriers to present themselves as an alternative for the inner-city delivery transport. The results obtained in this research suggest that the regulations put into place have increased the incentive for firms to deliver by bicycle, especially in highly urbanized areas. Other, more indirect measures, such as the increased pressure concerning corporate social responsibility on partners of municipalities, also formed an opportunity for firms operating in the bicycle delivery service industry. Hence, the results show that there are several ways the industry can be stimulated to focus on more sustainable alternatives. However, some government agencies suggest that implementing stimulating measures can provoke opposition from parties, for example from the already operating delivery services. Incremental changes might offer a solution. In other words, by gradually implementing stimulating measures, potential resistance is dispersed over a longer period of time until the industry has proven that alternative, more sustainable measures are possible. Similar incentives may be fruitful elsewhere, so further researching this both in-depth and in other industries is recommended.

The second implication relates to the developments in bicycle technology. Specifically, through the increase in volume and implementation of electrical assistance, bicycles have significantly increased in size. Consequently, the term ‘light electric vehicle’ seems more in place for some of the bicycles that are now being deployed. Though this increases bicycle delivery services’ legitimacy, and hence is a solution to counter the congestion in city centers caused by alternative delivery methods, these developments ought to be followed with precaution, especially if these light electric vehicles start to block other cyclists on bicycle lanes in the city. Both innovative entrepreneurs as well as government agencies acknowledge that this could become problematic. The increased value of using bicycles for delivery is evident. Any emergence of public resistance caused by bicycle delivery couriers, instead of delivery vans and scooters, must be avoided. For the implementation of larger bicycles, collaboration between government agencies and innovative entrepreneurs in the bicycle delivery service industry is thus becoming increasingly important.

### 6.2 Limitations

There are three research limitations. First, because of the explorative and qualitative nature of this research, the observations made and results derived are based on the researcher’s views of what is significant. There is no point in denying that qualitative research can be criticized as being impressionistic and subjective (Bryman, 2012). Hence, it must be noted that the expressed views are those of the researcher, based on all the data used, and do not necessarily reflect the official positions

of the organizations and/or government agencies involved in this research. However, the researcher has followed certain steps to increase the internal validity of this research. As mentioned in the methodology, semi-structured interviews were held in the native language of the interviewees and the results were cross-validated by analyzing data obtained through desk research. Furthermore, great care was taken when matching practical observations with theoretical categories and concepts. Therefore, the results reveal the main aspects of the institutional environment that affect organizations active in the bicycle delivery service industry, and how this is reflected through their business models.

Following the above argumentation, a second limitation arises. Namely, one firm was involved in this research without the researcher being able to set up an interview with a representative of that firm. This entails that the results concerning this firm could not be cross-validated. Nevertheless, it is argued that the large number of articles published concerning this firm (and similar firms), and the additional data acquired through the interview with a direct competitor firm, provided sufficient information for the purpose of this study.

A third limitation refers to the overall generalizability of the research at hand. Institutional environments differ across regions and national borders. The business models of innovative entrepreneurs not included in this research might therefore also differ. However, the aim was to include different types of innovative entrepreneurs operating in the bicycle delivery service industry in the Netherlands. The results that were thereby obtained already show the high variation herein. With respect to the generalizability between industries, it is expected that this is low. Yet, due to the embeddedness of the theoretical concepts used for the purpose of this research, it is expected that these are recurring elements within different industries and institutional environments. Exploring other industries through further research can confirm this.

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## Appendix A

Lawrence & Suddaby (2006) identify different categories of activities actors can cover when initiating institutional work to create, maintain, or disrupt institutions. These categories are described through different forms of institutional work. The table below is adapted from their work (pp. 221, 230, 235), providing an overview.

<b>Creating institutions</b>		
Category	Form of institutional work	Definition
<i>Political work</i>	<i>Advocacy</i>	<i>Mobilizing political and regulatory support</i>
	<i>Defining</i>	<i>Constructing rule systems</i>
	<i>Vesting</i>	<i>Creating rule structures</i>
<i>Reconfiguring actors' belief systems</i>	<i>Constructing identities</i>	<i>Defining relationship between actors and the field in which they operate</i>
	<i>Changing normative associations</i>	<i>Re-making connections between practices and their moral and cultural foundations</i>
	<i>Constructing normative networks</i>	<i>Constructing inter-organizational connections</i>
<i>Altering the boundaries of meaning systems</i>	<i>Mimicry</i>	<i>Basing practices on existing 'rules' to ease adoption</i>
	<i>Theorizing</i>	<i>Developing and specifying abstract categories and elaborating chains of cause and effect</i>
	<i>Educating</i>	<i>Enhancing actors' knowledge and skills to increase support</i>
<b>Maintaining institutions</b>		
Category	Form of institutional work	Definition
<i>Ensuring adherence to rule systems</i>	<i>Enabling work</i>	<i>Creating rules that facilitate, supplement, and support institutions</i>
	<i>Policing</i>	<i>Ensuring compliance through enforcement, auditing, and monitoring</i>
	<i>Deterring</i>	<i>Establishing coercive barriers to institutional change</i>
<i>Reproducing existing norms and belief systems</i>	<i>Valorizing and demonizing</i>	<i>Providing, for public consumption, positive and negative examples of the foundations of an institution</i>
	<i>Mythologizing</i>	<i>Preserving underpinnings of an institution by creating and sustaining myths</i>
	<i>Embedding and routinizing</i>	<i>Actively embedding the foundations of an institution into day to day routines and organizational practices</i>
<b>Disrupting institutions</b>		
Category	Form of institutional work	Definition
<i>Attacking</i>	<i>Disconnecting sanctions/rewards</i>	<i>Attempting to disconnect sanctions/rewards from set of practices, technologies, or rules</i>
	<i>Disassociating moral foundations</i>	<i>Disassociating the practice, rule, or technology from its moral foundation as appropriate</i>
<i>Undermining</i>	<i>Undermining assumptions and beliefs</i>	<i>Decreasing perceived risks of innovations by undermining core assumptions and beliefs</i>

## Appendix B

### Interview guideline innovative entrepreneurs

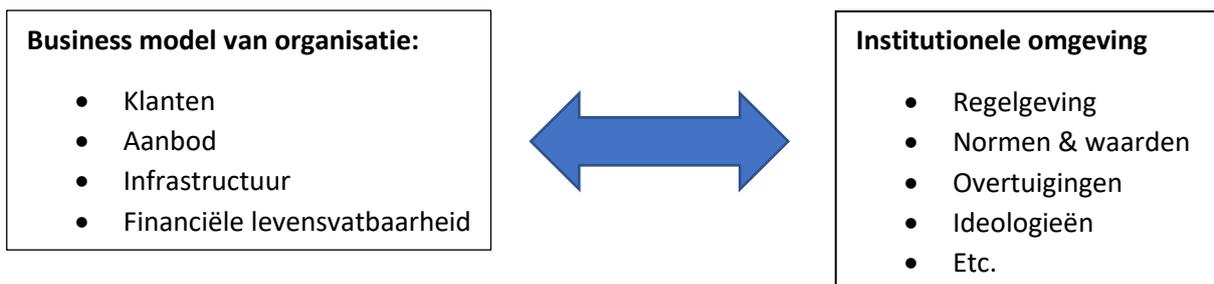
#### Before the interview starts:

- May the interview be recorded?
- Are the results to be anonymized?

#### Background information:

Institutionele krachten spelen een belangrijke rol in de keuzes die een organisatie maakt en de acties die het onderneemt. Deze institutionele krachten bestaan o.a. uit formele en informele regels, normen en waarden, overtuigingen en ideologieën die samen een institutionele omgeving vormen. Bij het streven naar legitimiteit moet een organisatie aansluiten bij een bestaande institutionele omgeving, of op de een of andere manier draagvlak creëren voor een nieuwe institutionele omgeving. Een combinatie van beide is ook mogelijk.

Het doel van dit onderzoek is om te ontdekken hoe bedrijven dit in de praktijk voor elkaar proberen te krijgen. Hiervoor wordt met een 'institutionele bril' gekeken naar het business model van organisaties die opereren in de opkomende fietskoeriers dienstensector. Door te kijken naar het business model van deze organisaties willen wij beter begrijpen wat voor effect de institutionele omgeving heeft op een organisatie en hoe een organisatie eventueel de omgeving probeert te beïnvloeden.



#### Opening questions:

1. Wat is uw leeftijd en wat voor opleiding(en) heeft u gevolgd?
2. Zou u mij kort willen uitleggen wat uw organisatie doet en wat uw rol (functie) daarin is?
3. Waarom en hoe is uw organisatie ontstaan?<sup>37</sup>
  - a. *Was er een bepaalde vraag die een invloed had op het realiseren van jullie concept?*
  - b. *Welke doelstelling had u bij de introductie? Is deze altijd hetzelfde gebleven? Waarom wel/niet?*
  - c. *Welke voordelen kunnen klanten verwachten door gebruik te maken van jullie diensten?*
  - d. *Waren er regels die direct of indirect een invloed hadden op de keuze om jullie concept te realiseren?*
  - e. *Waren er andere factoren die direct of indirect een invloed hadden op de keuze om jullie concept te realiseren?*
  - f. *Denkt u dat uw concept aansluit bij een bepaald marktsegment (of juist niet)? Hoe speelt uw organisatie hier op in?*

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<sup>37</sup> This question is focused on the concepts introduced by startups. For incumbents the focus is on how and why they introduced a new concept (i.e. bicycle delivery service). This also entails for the rest of the interview.

- g. *Op welke manier wijkt uw concept af van concurrenten (of juist niet)?*

**Follow-up questions:**

4. Waren er bepaalde zaken waar uw organisatie tegenaan liep bij de introductie van jullie concept?
  - a. *Welke regels of andere factoren vormden een barrière? Hoe ging uw organisatie hier mee om?*
  - b. *Welke zaken loopt uw organisatie nu tegenaan? Hoe gaat uw organisatie hier mee om?*
  - c. *Zijn er zaken waar uw organisatie in de toekomst nog verwacht tegenaan te lopen? Hoe gaat uw organisatie hier mee om?*
5. Wat kenmerkt de klanten van uw organisatie?
  - a. *Hoe reageerden klanten bij de introductie van jullie concept?*
  - b. *Wat voor effect heeft dit gehad op de verdere ontwikkeling van jullie concept?*
  - c. *Hoe betreft u deze klanten bij de verdere ontwikkeling van jullie concept?*
  - d. *Op welke manier probeert uw organisatie meer klanten te bereiken?*
  - e. *Probeerde of probeert uw organisatie op de een of andere manier de behoeften van klanten te veranderen/beïnvloeden? Hoe dan?*
6. Met welke andere partijen (instanties, organisaties, etc.) werkt uw organisatie nauw samen?
  - a. *Hoe reageerden deze op de introductie van jullie concept?*
  - b. *Welk effect heeft dit gehad op jullie concept?*
  - c. *Zijn er nog andere partijen waar uw organisatie in de toekomst mee wil samenwerken?*
  - d. *Hoe komt u aan personeel? Zijn er factoren die dit beïnvloeden?*
7. Hoe probeert uw organisatie financieel levensvatbaar te blijven (of worden)?
  - a. *Waren er regels of andere factoren die de manier waarop jullie omzet genereerden beïnvloeden bij de introductie van jullie concept? Hoe ging uw organisatie hier mee om? Heeft u dit om de een of andere manier proberen te veranderen/beïnvloeden?*
  - b. *Welke factoren beïnvloeden nu de manier waarop jullie omzet genereren? Hoe gaat uw organisatie hier nu mee om?*
  - c. *Werkt u hierbij samen met andere partijen (vb. investeerders)?*
  - d. *Welke kosten maakt uw organisatie om jullie diensten aan te kunnen bieden?*
  - e. *Welke factoren beïnvloeden deze kosten (vb. materiaal, personeel, concurrentie, etc.)? Hoe gaat uw organisatie hier mee om?*
  - f. *Zijn er zaken waarvan u verwacht dat deze in de toekomst een rol gaan spelen in de financiële levensvatbaarheid van uw organisatie? Hoe gaat uw organisatie hier mee om?*

**General concluding questions:**

8. Hoe ziet u de toekomst van uw organisatie? Wat is jullie voornaamste doel voor de toekomst?
  - a. *Hoe verwachten jullie dit te bereiken?*
  - b. *Hoe denkt u dat dit jullie concept nog gaat beïnvloeden?*
9. Op basis van literatuur onderzoek heb ik bedrijven ingedeeld in 3 categorieën (laten zien):
  - a. *Bent u het eens met deze categorieën? Waarom wel/niet?*
  - b. *Bent u het eens dat uw bedrijf in een bepaalde categorie is ingedeeld? Waarom wel/niet?*
10. Voor het behalen van een duurzamer transportsysteem, denkt u dat fietsen daar nu en in de toekomst een belangrijke rol in (gaan) spelen?
  - a. *JA: speelt uw organisatie hier een rol in? Hoe?*

- b. *NEE: waarom niet? Speelt uw organisatie hier geen rol in?*
- 11. Zijn er verschillen tussen regio's en gemeenten in Nederland waar u uw diensten aanbied (of vergelijkbare diensten worden aangeboden)?
  - a. *Waarom wel / niet?*
  - b. *Hoe gaan jullie hier mee om?*
- 12. Zijn er ook nog dingen die nog niet aan bod zijn gekomen maar die u wel wilt vertellen, of die wellicht belangrijk zijn om mee te nemen in dit onderzoek?
  - a. *Of andere organisaties en instanties die interessant zijn om hierbij te betrekken?*
- 13. Heeft u nog andere vragen en/of opmerkingen over dit interview? Of het onderzoek?

**Thank you for your participation.**

## Interview guideline government agencies

### Before the interview starts:

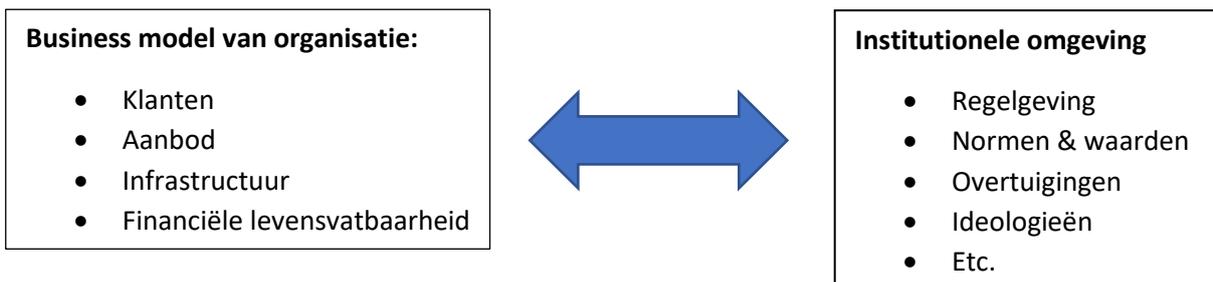
- May the interview be recorded?
- Are the results to be anonymized?

### Background information:

Institutionele krachten spelen een belangrijke rol in de keuzes die een organisatie maakt en de acties die het onderneemt. Deze institutionele krachten bestaan o.a. uit formele en informele regels, normen en waarden, overtuigingen en ideologieën die samen een institutionele omgeving vormen. Bij het streven naar legitimiteit moet een organisatie aansluiten bij een bestaande institutionele omgeving, of op de een of andere manier draagvlak creëren voor een nieuwe institutionele omgeving. Een combinatie van beide is ook mogelijk.

Het doel van dit onderzoek is om te ontdekken hoe bedrijven dit in de praktijk voor elkaar proberen te krijgen. Hiervoor wordt met een 'institutionele bril' gekeken naar het business model van organisaties die opereren in de opkomende fietskoeriers dienstensector. Door te kijken naar het business model van deze organisaties willen wij beter begrijpen wat voor effect de institutionele omgeving heeft op een organisatie en hoe een organisatie eventueel de omgeving probeert te beïnvloeden.

Omdat regels en wetten hierin een grote rol spelen is het ook interessant om te kijken wat voor rol de overheid of andere overkoepelende organisaties spelen.



### Opening questions:

1. Wat is uw leeftijd en wat voor opleiding(en) heeft u gevolgd?
2. Zou u mij kort willen uitleggen wat uw organisatie doet en wat uw rol (functie) daarin is?
3. Wat weet u van de ontwikkelingen die zich afspelen in de 'fietskoeriers dienstensector'?
  - a. *Waar denkt u dat deze ontwikkelingen vandaan komen?*
  - b. *Hoe kijkt uw organisatie tegen deze ontwikkelingen aan?*
  - c. *Is uw organisatie op de een of andere manier betrokken bij deze ontwikkelingen?*
  - d. *Is dit altijd al zo geweest?*

4. Waar komen deze ontwikkelingen vandaan?
  - a. *Wat ziet uw organisatie als de oorsprong(en) van de sterk gestegen populariteit om zaken in de stad met de fiets te bezorgen?*
  - b. *Hoe kijkt uw organisatie aan tegen het feit dat steeds meer zaken met de fiets worden bezorgd t.o.v. vroeger?*
  - c. *Allemaal positief / allemaal negatief?*
5. Hoe ziet uw organisatie de toekomst van de fietskoeriers diensten sector?
  - a. *Probeert uw organisatie relevante zaken op de een of andere manier te stimuleren?*
  - b. *Probeert uw organisatie relevante zaken op de een of andere manier te blokkeren?*
  - c. *Op welke manieren?*
6. Zijn er bepaalde regels die direct of indirect een invloed hebben op de verdere ontwikkeling van deze sector?
  - a. *Of op de bedrijven binnen deze sector?*
  - b. *Of op de manier waarop uw organisatie met deze sector betrokken is?*
7. Zijn er andere factoren die direct of indirect een invloed hebben op de verdere ontwikkeling van deze sector?
  - a. *Of op de bedrijven binnen deze sector?*
  - b. *Of op de manier waarop uw organisatie met deze sector betrokken is?*
8. Werkt uw organisatie samen met andere partijen om gerelateerde zaken te stimuleren of te blokkeren?
  - a. *Welke partijen?*
  - b. *Op welke manier?*
  - c. *Hoe kijken zij aan tegen al de ontwikkelingen in de sector?*
9. Hoe ziet uw de toekomst van de fietskoeriers dienstensector?
  - a. *En t.o.v. het gebruik van de fiets? Speelt de fietskoerier dienstensector hier op de een of andere manier een rol in?*
10. Zijn er ook nog dingen die nog niet aan bod zijn gekomen maar die u wel wilt vertellen, of die wellicht belangrijk zijn om mee te nemen in dit onderzoek?
11. Heeft u nog andere vragen en/of opmerkingen over dit interview? Of het onderzoek?

**Thank you for your participation.**