CHANGE IN THE CAGE
Exploring an Organisational Field: Sweden’s Biofuel Region

Christopher G. Nicol

Akademisk avhandling

som med vederbörligt tillstånd av Rektor vid Umeå universitet för
avläggande av filosofie doktorsexamen framläggs till offentligt
försvar i
Hörsal A, Samhällsvetarhuset,
Fredagen den 1 mars. Kl. 13:15
Avhandlingen kommer att försvaras på engelska.

Fakultetsopponent: Professor Stefan Jonsson,
Department of Business Studies, Uppsala Universitet, Uppsala,
Sverige.

Umeå School of Business and Economics
Umeå, 2013
Exploring an Organisational Field: Sweden’s Biofuel Region

Abstract
This Ph.D. thesis seeks to better understand how change occurs within a group of organisations. Aiming to make a contribution to institutional theory, it brings together three main schools, namely: old, new and neoinstitutionalism, in an integrative approach for understanding organisational field change. The study seeks to examine and explore a community of organisations who have come together to form an organisational field. More specifically, the object is to better understand how an organisational field is formed and developed and how change is driven, at an organisational and organisational field level, as a consequence of this field formation. Moreover, the study investigates the impact of triggers for change upon the field, and the role that institutional forces and individuals play in the process of organisational field change.

The theoretical chapters, as discussed, integrate the concepts of change from three schools developing a comprehensive framework of organisational field change with which the empirical material can be analysed, in order to make the theoretical contribution.

The empirical work is based on a case study, incorporating two rounds of interviews and secondary data collection, undertaken from 2007 – 2011. The case study examines the development of the Biofuel Region, a collection of organisations based, principally, in Örnsköldsvik - Northern Sweden, that have worked together to develop a public and private biofuel transportation infrastructure. Besides being a fascinating case of regional development and having the reassuring object of creating an eco-efficient fuel the Biofuel Region, regarded as an organisational field, provided good access to respondents and useful insights into the way that fields form and change.

The contributions of this thesis offer an insight into the manner with which the formation of an organisational field can begin with a drive for a legitimisation of the field’s endeavours. Underscored is how the field can restructure continuously as a consequence of triggers for change, and that consequently fields are dynamic and not static and are thus changing frequently. Furthermore, it highlights that given the correct conditions individuals can play a key role in the management of an organisational field. The overarching contribution is that change occurs in a plethora of different ways within a field as a consequence of its formation, development, triggers for change, individual contributions and institutional forces.

Keywords
Institutional theory, organisational field change, institutional forces, structuration processes, triggers for change

Language | ISBN | ISSN | Number of pages
---|---|---|---
English | 978-91-7459-560-4 | 0346-8291 | 199
CHANGE IN THE CAGE
Exploring an Organisational Field: Sweden’s Biofuel Region

Christopher G. Nicol
Everybody's got a different way of telling a story - and has different stories to tell.

Keith Richards
# Table of Contents

<table>
<thead>
<tr>
<th>Tables</th>
<th>iv</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figures</td>
<td>v</td>
</tr>
<tr>
<td>Pictures</td>
<td>v</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>vii</td>
</tr>
<tr>
<td>Abstract</td>
<td>ix</td>
</tr>
<tr>
<td>Abstrakt</td>
<td>xi</td>
</tr>
</tbody>
</table>

## 1 Introduction

1.1 Organisational Change 1  
1.2 Institutional Theory 3  
1.3 Different Schools of Institutional Theory 5  
1.4 Underresearched Areas within Institutional Theory and the Pathway towards Empirical Enquiry 6  
1.5 The Purposes of the Study 9  
1.6 Outline of the Thesis 10

## 2 Identifying the Structuration Processes and Triggers for Change

2.1 Organisational Fields and their Formation 13  
2.2 Institutionalisation – Adaptive Change 16  
2.3 Institutionalisation - Infusion with Value 20  
2.4 Triggers for Change 22  
2.5 Summary and Synthesis 25

## 3 Making Sense of the Structuration Processes and Triggers for Change

3.1 Institutional Entrepreneurship and Agency 31  
3.2 Isomorphism 35  
3.3 Legitimacy 38  
3.4 Deinstitutionalisation and Reinstitutionalisation 39  
3.5 Summary and Synthesis 43

## 4 Research Perspective and Methodology

4.1 Research Perspective 48  
4.1.1 Worldview – Ontological Standing 48  
4.1.2 Studying Change as a Process – Epistemological Standing 49  
4.2 Defining the Empirical Study - Methodology 53  
4.2.1 Data Collection Method 57  
4.2.2 The Interviews 58  
4.2.3 Conducting the Interviews 60  
4.2.4 Other Research Materials 62  
4.3 Presenting the Information 64  
4.4 Analysing the Material 65  
4.5 Limitations 66

## 5 Development and Change in Sweden’s Biofuel Region

68
5.1 Research Context – Background to the Biofuel Region (1904-1986) 69
5.2 Period ONE (1986 – 1994) – The Emergence of a New Field 71
  5.2.1 Pilot Test of Ethanol Buses 71
  5.2.2 Stockholm City Council Purchase Buses 74
  5.2.3 Pilot Test of Flexi-fuel Vehicles (FFVs) 74
5.3 Period TWO (1995 – 2000) – The Expansion of the Field 76
  5.3.1 Import of a Further 50 FFVs 76
  5.3.2 Import of a Further 300 FFVs 79
  5.3.3 Adverse Media Attention – How Green is the Ford Taurus FFV? 79
  5.3.4 Public Purchase Order for a European FFV 80
5.4 Period THREE – (2001 – 2006) 81
  5.4.1 The Availability of the Ford Focus FFV 81
  5.4.2 The Establishment of BFR AB (2003) 81
  5.4.3 Legislation for Biofuel Sales (2006) 86
5.5 Period FOUR – (2007 – 2009) 88
  5.5.1 Adverse Media Attention - Sustainable Criteria (2007- ) 88
  5.5.2 The Development of Verified Sustainable Ethanol (2008) 91
  5.5.3 Financial Crisis 93
  5.5.4 The Effect on the Biofuel Region 94
  5.5.5 Oil Shock 95
  5.5.6 The Effect on the Biofuel Region 99
  5.5.7 Swedish Ethanol Efforts in Africa: The Cost to the Tax Payer and Land Grabbing 100
  5.5.8 The Effect on the Biofuel Region 108

6 Analysis I – Identifying the Structuration Processes and Triggers for Change 116
  6.1 Introduction 116
  6.2 Period ONE (1986-1994) – The Emergence of a New Field 118
    6.2.1 The Pilot Test of Ethanol Powered Buses (1986) – "Legitimising Event" 118
    6.2.2 Stockholm City Council Purchase 30 Ethanol Buses (1989) "Landmark" 121
    6.2.3 The Pilot Test of Ethanol Powered Cars (1994) - "Legitimising Event" 125
    6.3.1 The import of a Further 50 Ford Taurus FFVs (1995) - "Landmark" 127
    6.3.2 The conference at Arken (1995) – "Field Configuring Event" 130
    6.3.3 The Import of a Further 300 Ford Tauruses (1997-1998) - "Landmark" 130
    6.3.4 Adverse Media Attention 1 – How Green is the Ford Taurus FFV? (1998) - "Disruptive Event" 132
    6.3.5 Public Purchase Order (1998) – "Legitimising Event" 132
    6.4.1 The Availability of Ford Focus FFVs (2001) – "Landmark" 134
    6.4.2 The Establishment of BFR AB (2003) -“Landmark” 136
    6.4.3 Governmental Legislation for Biofuel Sales (2006) - “Shock” 137
  6.5 Period FOUR – (2007 – 2009) 139
6.5.1 Adverse Media Attention 2 - Sustainable Criteria (2007) – “Disruptive Event” 139
6.5.2 The Development of Verified Sustainable Ethanol (2008) – “Legitimising Event” 140
6.5.3 Oil Shock (2008) – “Jolt” 141
6.5.4 Adverse Media Attention 3 – The Cost to the Taxpayer and Land Grabbing (2009) – “Disruptive Event” 143
6.6 Discussion 145
6.6.1 Triggers 145
6.6.2 Structuration Processes 148
7 Analysis II – Making Sense of the Structuration Processes and Triggers for Change 152
7.1 Period ONE (1986-1994) 152
7.3 Period THREE - (2001-2006) 162
7.4 Period FOUR - (2007-2009) 165
8 Discussion and Conclusions 170
8.1 Theoretical Implications 171
8.2 Managerial Implications 183
8.3 Limitations 184
8.4 Future Research 185
References 187
Appendix 1 - Tables of Interviews (Legs 1 & 2) 201
Appendix 2 - Interview Guides (Legs 1 & 2) 203
Appendix 3 - Verification Process (SEKAB, 2011) 205
Tables

Table 1 – The eight structuration processes .................................................. 27

Table 2 – Triggers for change....................................................................... 28

Table 3 – Drivers for organisational field change – individual contributions ......................................................................................................................... 43

Table 4 – Drivers for organisational field change – institutional forces...... 44

Table 5 – A typology for studying organisational change.......................... 52

Table 6 – The “Eight “Big-Tent” criteria for excellent qualitative research” and how they are achieved ............................................................................. 55

Table 7 - Members of BFR AB (2011)............................................................ 112

Table 8 – A summary of the concepts that will be used in Analysis I ......... 117

Table 9 - Triggers and Structuration Processes (Periods One and Two) .... 150

Table 10 - Triggers and Structuration Processes (Periods Three and Four) 151

Table 11 – Triggers and Structuration Processes and their effects on the field ....................................................................................................................... 168

Table 12 – The appearance of institutional concepts and their effects on the field ..................................................................................................................... 169
Figures

Figure 1 - The organisational design of SEKAB (before the change) ..........109
Figure 2 - The organisational design of SEKAB (after the change) ..........110
Figure 3 - The history of ethanol in Sweden................................................. 115

Pictures

Picture 1 - A typical Scania ethanol powered bus ...........................................72
Picture 2 - 50 imported Ford Taurus FFVs being displayed at The Conference at Arken ................................................................. 78
Picture 3 - A "green car" sticker in the rear window of a Ford Taurus ..........80
Picture 4 - A promotional emblem for "verified sustainable ethanol" .......93
Acknowledgements

Essential to the writing of this thesis were my supervisors. Professor Tommy Jensen, the Great Dane, who has offered a thorough and all-encompassing supervisory service, as a tireless tower of strength, support, enthusiasm and inspiration. As well as Dr. Kiflemariam Hamde, who has read through my work and offered a constant stream of constructive criticism, advice and support. Thank you very much gentlemen.

I would like to express my gratitude to Dr. Peter Hultén, Dr. Sara Thorgren, and Ulla Niemi-Ylänenn for their reviewing of, and suggestions for improving the manuscript at my internal seminar.

I’d also like to thank Jan Lindstedt and the other individuals involved in the Biofuel Region for their candid responses to my interview questions and their kind and open attitude towards my work.

Generally speaking USBE is a lovely environment within which to work, not least because of the collegial spirit and the lovely group of people who work here. I’d like to thank all of my fellow researchers and teachers, the administrative staff and my friends.

Special thanks to Dr. Vladimir Vanyushyn and Dr. Mattias Jacobsson who are both dear friends, and who made significant contributions to this thesis in the form of constructive comments on my text, and invaluable moral support.

Thanks too to my friend Herman Stål for his Swedish language expertise and for many useful discussions about institutional theory. I also would like to thank Niklas Schmidt and Dr. Rickard Olsson for their support and friendship and for the wonderfully distracting conversations and time spent together.

Thanks to my office mates who have kept me company over the years, Dr. Malin Näsholm, Dr. Thomas Biedenbach and Virginia Rosales.

I’d like to thank my good friends Niklas, Pia, Melker, Sixten and Alfred Brinkfeldt, from whom I have rented my apartment during my time writing this thesis, and who have made me feel like one of the family.

Finally, thank you to my family back home in England, for their support and encouragement. Thanks to my mother Elaine, my sister Emily, my father

Chris Nicol
Umeå, 31st January 2013
Abstract

This Ph.D. thesis seeks to better understand how change occurs within a group of organisations. Aiming to make a contribution to institutional theory, it brings together three main schools, namely: old, new and neoinstitutionalism, in an integrative approach for understanding organisational field change. The study seeks to examine and explore a community of organisations who have come together to form an organisational field. More specifically, the object is to better understand how an organisational field is formed and developed and how change is driven, at an organisational and organisational field level, as a consequence of this field formation. Moreover, the study investigates the impact of triggers for change upon the field, and the role that institutional forces and individuals play in the process of organisational field change.

The theoretical chapters, as discussed, integrate the concepts of change from three schools developing a comprehensive framework of organisational field change with which the empirical material can be analysed, in order to make the theoretical contribution.

The empirical work is based on a case study, incorporating two rounds of interviews and secondary data collection, undertaken from 2007 – 2011. The case study examines the development of the Biofuel Region, a collection of organisations based, principally, in Örnsköldsvik - Northern Sweden, that have worked together to develop a public and private biofuel transportation infrastructure. Besides being a fascinating case of regional development and having the reassuring object of creating an eco-efficient fuel the Biofuel Region, regarded as an organisational field, provided good access to respondents and useful insights into the way that fields form and change.

The contributions of this thesis offer an insight into the manner with which the formation of an organisational field can begin with a drive for a legitimisation of the field’s endeavours. Underscored is how the field can restructure continuously as a consequence of triggers for change, and that consequently fields are dynamic and not static and are thus changing frequently. Furthermore, it highlights that given the correct conditions individuals can play a key role in the management of an organisational field. The overarching contribution is that change occurs in a plethora of different ways within a field as a consequence of its formation, development, triggers for change, individual contributions and institutional forces.

Keywords
Institutional theory, organisational field change, institutional forces, structuration processes, triggers for change
Abstrakt


De teoretiska kapitlen inte grerar begreppen förändring utifrån de tre skolorna i utvecklandet av ett övergripande ramverk, med vilket det empiriska materialet analyseras; resulterande i ett teoretiskt bidrag.


Sökord
Institutionell teori, organisatorisk fält förändring, institutionella krafter, struktureringssteori, processer, utlösare av förändring
1 Introduction

1.1 Organisational Change

Explaining how and why organisations change has been a pivotal and constant objective for management academics. In fact, the study of change and development has been described as: “one of the great themes in social science” (Pettigrew et al., 2001: 697).

Research within the field of management has been criticised in the past for being acontextual, ahistorical, and aprocessual (Pettigrew, 1985). More recent developments have, however, acknowledged that organisational change is changing, highlighted the importance of context-action connections, and recognised that time is an essential facet of change studies if processes are to be unearthed (Van de Ven, & Poole, 1995; Weick and Quinn, 1999). There has also been a move towards examining the process itself, that is, changing rather than change, and in particular the need to explore continuity as well as change. The overarching support is for
pluralism - that is, the diversity of views and perspectives, including those that arise from a stronger engagement between management and social science (Pettigrew et al., 2001).

A great deal of research efforts have been channelled into understanding organisational change and have resulted in numerous models and conceptualisations. For example, Van de Ven and Poole (1995) induced four basic process theories of change, each characterised by a different event sequence and generative mechanism. First, “Life-cycle theory” reflects the adoption that some management scholars (Nisbet, 1970, Featherman, 1986) have made of organic growth as a tool to explain development in an organisational entity from inception to end. Second, “Teleological theory” of change relies on teleology – the philosophical doctrine that: “purpose or goal is the final cause for guiding movement of an entity” (Van de Ven and Poole, 1995: 516). Third, “dialectical theory” assumes that organisations exist within a pluralistic world of colliding events, forces, or contradictory values that compete with one another for control and ultimately domination. Finally, “evolutionary theory” here the concept of evolution is used, in a restrictive sense, focussing upon cumulative change within structural forms of populations of organisational entities across communities, industries or societies (Aldrich, 1979).

In a similar fashion Weick and Quinn (1999) induced the concepts of “continuous change” and “episodic change”. The former is used to categorise organisational changes that are given to be on-going, evolving, and cumulative. Typically, the distinctive characteristic of continuous change is a culmination of small and continuous adjustments, created at the same time across units which together create substantial change; hence it is viewed as a constant. The latter, “episodic change”, describes organisational changes that are infrequent, discontinuous, and intentional (Weick and Quinn, 1999). Episodic change occurs within periods of divergence which result from a growing misalignment between the organisation’s structure and the perceived demands of the environment within which they operate. This kind of change is labelled “episodic” because it, “tends to occur in distinct periods during which shifts are precipitated by external events such as technology change or internal events such as change in key personnel” (Weick and Quinn, 1999: 365).

Despite advances such as these in the literature, it is the assertion of Pettigrew et al. (2001) that the field of organisational change is not yet mature in terms of understanding the “dynamics and effects of time, process, discontinuity and context. In particular, in a complex, dynamic, and
internationally conscious world, a search for general patterns of change requires even more focus on temporal and spatial context” (p.697).

Moreover, understanding how an organisation changes requires elevating the level of inquiry from an individual organisation to the collectives of organisations and patterns of change and interaction within these collectives. Just as “No man is an island entire of himself” (Donne, 1624/1959: 108), so too no organisation is an island, it is inextricably linked to others whose actions inevitably impact upon it. Consequently, one must examine change within the context that it occurs. In other words, to understand the manner with which an organisation changes, one has to consider external elements, that is, the impact of other organisations, laws, regulators, stakeholders and public expectations and demands. Thus, a more appropriate approach is to examine change that is inter-organisational, or at a meso-level, in addition to the organisational level, or micro-level.

The issues raised thus call for a theoretical perspective that incorporates time, different types of context, and different levels of analysis. Among the existing approaches to understanding change the one that stands out is institutional theory, the cornerstone of which is the explicit recognition of the influence of context - be it temporal, spatial or social - on the process of change. Hence, this work relies much on the writing of institutional theorists. Next, a brief background and overview of the theory will be offered, followed by a more detailed overview of the specific theoretical gaps that this thesis seeks to fill with it.

1.2 Institutional Theory

Institutional theory is an umbrella term that describes a varying collection of approaches. At least since the writings of Selznik (1957), the theory evolved considerably, with different schools. Nonetheless, they all share certain basic premises.

Institutional theory rejects the assumption that individuals representing organisations are rational decision makers with self-regarding preferences. Rationality consists of two assumptions: first that individuals form correct beliefs about the environment in which they work and about other people’s behaviour. The second assumption is that individuals choose actions which best satisfy their requirements, linked to their beliefs (Cameron and Fehr, 2006).

These perspectives derive from the concept of “Homo Economicus”, or the “Economic Man” (Robson, 1965). "Economic Man" is essentially an
approximate definition of individuals, which assumes that they (individuals) are able to decide how to act in a rational manner (Robson, 1965). Discussing the subject March (1978: 587) averred, “Rational choice involves two guesses, a guess about uncertain future consequences and a guess about uncertain future preferences”. Partly as a result of behavioural studies of choice, modifications were made on how uncertain future consequences and preferences could be judged. This led to the concept of “bounded rationality”.

The foundations for bounded rationality were laid by Simon (1955) who examined the informational and computational limits on rationality by humans. This argument essentially purports that intendedly rational behaviour is in fact behaviour within constraints (March, 1978). These constraints can manifest themselves as systematically biased beliefs about external events, or the behaviour of others, as well as systematic deviations from action which best satisfy an individual’s preferences (Cameron and Fehr, 2006). Given that information is seldom perfect, bounded rationality might also be the result of imperfect information.

Just as the rational behaviour of individual’s comes into question, so does the assumption of the rational behaviour of organisations. Institutional theory purports that organisational behaviour is motivated not by rationality, but external forces and elements (DiMaggio and Powell, 1983; Zucker, 1977; Meyer and Rowan, 1977). This is asserted by March and Olsen (1989) who argue that organisational behaviour is chiefly rule-governed rather than consequence governed, and moreover that organisational action heeds the logic of appropriateness, and not, as the theory of rational choice would have it - the logic of consequentiality (Czarniawska and Sevon, 1996). In other words, the actions of actors are decided upon on the basis of their classifications of the situations within which they are in (Meyer, 2008). This is therefore contrary to previous research on organisational change (Kotter, 1995; Quattronea and Hopper, 2001; Paton and McCalman, 2008) which assumed that changes were made within organisations as a consequence of rationale. Much of the early work in the area of institutionalism was concerned with an alternative to the functional and rational explanations of organisational forms (Meyer and Rowan, 1977; DiMaggio and Powell, 1983; Zucker, 1977; Clemens et al., 1999).

In elaboration, prevailing perspectives within the field of organisation theory usually portrayed organisations as, “agentic actors responding to situational circumstances” within which “[...] Managers steered organisations by interpreting their contexts and taking appropriate actions” (Greenwood et al., 2008: 3). Institutional theory incorporates the concept of “institutionalisation”, implying that in fact these managers might well be
steering their organisations, not as a result of the individual organisational context but of the institutional one. Furthermore, the “appropriate actions” could be shaped by factors imposed upon the organisations by forces other than the market within which they operate, to which they are required to react in a certain way, consciously or unconsciously, (Greenwood et al., 2008; Barley et al., 1997).

Institutional theory specifically highlights the importance of cultural and social aspects of an organisation’s environment, rather than the task and technical facets which are given prominence in contingency theory and resource dependency theory (Oliver, 1991). In fact, it has even been claimed that “Institutionalists have contributed significantly to the understanding of the relationship between organisational structures and the wider social environment within which organisations are situated” (Beckert, 1999: 777).

1.3 Different Schools of Institutional Theory

Institutional theory aids comprehension of “the tendency for social structures and processes to acquire meaning and stability in their own right rather than as instrumental tools for the achievement of specialised ends” (Lincoln, 1995: 1147). Therefore, whilst institutions serve both to powerfully drive change and to shape the nature of change across levels and contexts, they also themselves change in character and potency over time (Dacin et al., 2000). The issue of change has been addressed in different ways within institutional theory.

Institutional theory has development over the past (circa) 70 years. In general, one can distinguish 3 major schools, and these 3 schools shall be used together in an integrative approach to studying organisational change. First, old institutionalism focussed upon changes within organisations as they become institutionalised (Selznick, 1957), i.e. those which had over time established practices and processes which were difficult to change as a consequence of expectations and forces imposed upon the organisation by its competitors, suppliers and regulators.

Second, new institutionalism sought to better understand how organisations become “institutionalised” and the series of actions that drive the process. Here came the concept of organisational field: “those organisations that, in aggregate, constitute a recognised area of institutional life; key suppliers, resource and product consumers, regulatory agencies, and other organisations that produce similar services or products” (DiMaggio and Powell, 1983: 148). Organisational field corresponds to the meso-level and from here on in; I shall talk about the field level.
An explanation of the way that organisational fields develop was termed, “field formation”. This field formation is not a static process and in the wake of triggering events new forms of debate emerge, which cause a reconfiguration of membership or interaction patterns within the field (DiMaggio and Powell, 1983). Furthermore, the trend underscored the way that organisations became increasingly similar as they became institutionalised as a result of isomorphism, as well as their necessary quest for legitimacy (Meyer and Rowan, 1977; DiMaggio and Powell, 1983; Zucker, 1977) that is, the generalised perception or assumption that the actions of a venture are desirable, proper or appropriate (Suchmann, 1995; Tolbert and Zucker, 1996). Furthermore, this school examined the way that change can ensue as a consequence of deinstitutionalism, the process of institutional weakening and disappearing (Oliver, 1992; Scott, 1995), as well as reinstitutionalisation, the process of institutional releitimisation and reappearance.

Finally, neoinstitutionalism brought in new concepts of change, specifically examining how certain triggers affect an institutionalised group of organisations, breaking what was termed the institutional inertia. Such triggers include jolts (Meyer, 1982), technical discontinuities (Lorange et al., 1986), shocks (Fligstein, 1991), disruptive events (Hoffman, 1999) and field configuring events (Lampel and Meyer, 2008) all of which will be described in detail in the theoretical chapter. Furthermore, neoinstitutionalism sought to better understand the manner with which organisations and individuals can drive change in the form of institutional entrepreneurship (Beckert, 1999).

1.4 Underresearched Areas within Institutional Theory and the Pathway towards Empirical Enquiry

Despite its maturity, within institutional theory one can still identify areas that require further development. The object of this section is to undertake a literature review of such areas, in order to pave the way towards the methodology and the purposes of the thesis, as well as to motivate the choice of the empirical area that will be investigated.

A significant amount of organisational research within the area of institutionism comes from North America and is quantitative, and therefore well suited to counting the outcome of institutional processes. One potential downside with the quantitative approach, however, is that if the outcomes of an institutional process are counted then there is potential that
other interesting elements of the “institutional story” can be overlooked. Qualitative research can therefore complement the quantitative work by measuring meanings, systems, symbols, myths and the processes that are used by organisations to interpret their institutional environments (Suddaby, 2010). With this in mind, Dacin et al. (2002) declared that institutional research should attend to instances of “profound” or field level change.

If the ideational aspects of institutions are to be considered, research must move from the quantitative approach towards interpretivist methods that pay attention to the subjective ways that organisations experience institutions (Suddaby, 2010). There is consequently a need to go back to the case study approach of early institutional theorists like Selznick. There are some more recent researchers who take into consideration the symbolic and interpretive elements of institutionalism such as Zilber (2002), Barley (1986), and Elsbach (1994), among others. These authors, however, do not generally categorise their research as work within institutional theory, even if they are studying institutional processes.

Considering the purposes of this thesis, 3 underresearched areas were identified within the relevant literature; first the need to investigate organisational field formation and development. Second, the need to investigate the role of individuals within the formation and development of an organisational field, and third, organisational field change. These will now be discussed in more detail.

First, there is a need to observe the processes by which institutions are created and maintained (Lawrence et al., 2011). Or in other words, the manner with which organisational fields are formed and the way that they develop. Suddaby’s (2010) concern is that previous research in institutional theory has regarded institutions as “black boxes” and, owing principally to the quantitative approach, has focused upon the effects of institutions on organisations, instead of the institutions themselves. There is considerable potential, Suddaby writes, for research attempting to directly examine the processes of institutionalisation, or the development of an organisational field. This is a tough task because institutions generally only reveal their inner workings at times of disruption, or if “the institutional fabric is torn and we can observe, however temporarily, the inner mechanisms of institutions” (Suddaby, 2010: 17). An interesting additional issue is that these disruptions themselves can be triggers for change within the field (e.g. Meyer, 1982; Fligstein, 1991; Lorange et al., 1986; Hoffman, 1999; Lampel and Meyer, 2008). Understanding organisational field formation and development, as well as the triggers for change that influence them requires
a solid empirical foundation. One needs to examine the organisational level, but also look beyond that to the organisational field, integrating the 2 levels.

Second, within institutions the concept of institutional work underlines the idea that individuals are actively engaged in the process of field formation, development and change. The relationship between individuals and institutions is a complicated one and despite the fact that it is a fundamental part of social theory, it is seldom attended to in institutional studies of organisations (Suddaby, 2010). This is reinforced within a recent publication by Greenwood et al. (2008) who claim that the individual has “largely disappeared”.

Previous research by Zucker (1977) sought to see how institutionalised constructs such as “role” influence individual’s perception and behaviour. There is, however, very little research examining the effects of individual influence and agency (Suddaby, 2010). Understanding the role of individuals within the formation and development of an organisational field also requires a solid empirical setting. One which has been developed as a consequence of individual efforts and tenacity, or has at least has been influenced by individual efforts.

Third, in their introduction to the Academy of Management Journal, special issue on institutional theory and change, Dacin et al. (2002: 48) commented that, “Like most of the wider institutional literature, our collection of articles tends to focus on more micro-levels, shorter time periods, and incremental change processes”. These studies highlight the importance of the interplay of meanings, actions, and rationalities in the complex process of contest that might result in a variety of outcomes around change. With this emphasis on scrutinising the processes of institutionalised organisational change however, there has been less focus upon organisational field change (Greenwood and Hinings, 2002).

Consequently, an empirical arena is required that not only offers the opportunity to examine the formation and development of an organisational field, and of individual efforts but one within which organisational field change can be examined. Interestingly, and of importance to this thesis, is the fact that the process of field formation and development is in fact a type of change itself.

An important issue, in terms of empirical setting for the research, stems from Sturdy and Grey (2003), whose special issue article explored alternative accounts of organisational change, and who highlight that what remains inviolate and unexplored in the “new” perspectives of change
research are that it should be directed principally towards a given “practical relevance.” Further that change is occurring in an “ever-changing world of practice” (Pettigrew et al. 2001: 709). In other words, to understand what individuals are doing, it is necessary to study practice.

Taking these areas into consideration, this thesis will investigate the development of the Biofuel Region in Sweden, a group of organisations who together established a bio-ethanol public and ultimately private transportation infrastructure. An in-depth case study will be undertaken, to examine the processes by which the field formed, and developed, from its inception until 2010. Furthermore, an analysis of this formation period will examine the processes of change that took place as a consequence of the formation and development itself, and also look specifically for triggers for change within the field. Additionally, examples of individual agency will be looked for, as well as additional organisational field change within the field’s formation and development.

1.5 The Purposes of the Study

Considering the areas that have been identified for further development, four research questions have been generated.

**Research Question 1** - How are organisational fields formed and developed?

According to institutional theory, organisational fields only exist to the extent that they can be institutionally defined, and this definition requires empirical investigation (DiMaggio & Powell, 1983). In line with this issue another interesting question is:

**Research Question 2** – How do triggers for change influence the process of field formation and development?

Previous research, such as the work by Meyer (1982), Fligstein (1991) and Hoffman (1999) have introduced concepts such as jolts, shocks and disruptive events. The object of this research is to combine these approaches to establish a comprehensive framework and attain a better understanding of in what way these kinds of triggers can drive change in the field. In this way the study will examine, not only the effects of the institution upon the organisations but the organisational field itself and change within it. Together these two questions can contribute to the third research question, which is;
**Research Question 3** – What role can individuals play in the formation, development and change of an organisational field?

This thesis will consider individual contributions to the field’s formation and development and examine it using the concepts of agency (Beckert, 1999, Fligstein, 1997; Maguire et al., 2004) and institutional entrepreneurship (DiMaggio, 1988).

**Research Question 4** - How does change occur within an organisational field?

Using the organisational field as the unit of analysis, this thesis will examine the manner with which change has occurred during the field’s formation and development and as a consequence of the triggers for change that have affected it during the process. This will be done by combining the concepts within old, new and neoinstitutional theory, namely; isomorphism, legitimacy, deinstitutionalisation and reinstitutionalisation.

These four research questions lead to the two purposes of this thesis. Research questions 1 & 2 lead to purpose one, whilst research questions 3 & 4 lead to purpose two.

**Purpose one** - To examine and explore the process of organisational field change by investigating the manner with which an organisational field is formed, and how it changes as a consequence of this formation, taking into account change driven by any triggers that it incurs along the way.

**Purpose two** - To examine and explore the process of organisational field level change driven by individual contributions, isomorphism, legitimacy and de/reinstitutionalisation.

### 1.6 Outline of the Thesis

The following two chapters will undertake a review of the institutional theory literature, within the three schools of institutionalism that have been highlighted, namely; old institutionalism, new institutionalism and neoinstitutionalism. These literature reviews aim to establish two nuanced theoretical frameworks with which to examine the case study that will facilitate the purposes of the thesis.

More specifically, **chapter 2** will develop a theoretical framework to fulfil purpose one. This will be made up of concepts concerned with the formation
of an organisational field (DiMaggio and Powell, 1983), and the changes that occur in organisations as they become institutionalised (Selznick, 1957). Collectively these concepts shall be referred to as structuration processes. Then a review of the literature concerned with triggers for change will be made in order to develop a comprehensive framework for understanding how such triggers, in their various forms, can affect an organisational field.

**Chapter 3** will develop a theoretical framework to fulfil purpose two. The concepts of institutional entrepreneurship and agency (Garud et al., 2002; Fligstein, 1997; Maguire et al., 2004; Emirbayer and Mische, 1998) will be examined in order to explore the extent to which individuals played a part in the formation, development and change of the field. Additionally, the concepts of isomorphism, legitimacy and de/reinstitutionalisation will be explored to examine the way that they can, theoretically, drive change within an organisational field.

**Chapter 4** offers an insight into the way that the study was undertaken, paying particular attention to ontological, epistemological and methodological considerations. This chapter will also describe the way that interviewees were chosen and the manner with which secondary material was selected. Moreover, it will make a detailed explanation of the way that the material is presented and analysed. In addition, it will pay attention to the steps that were undertaken to make this study as good quality as possible.

**Chapter 5** is the story of the Biofuel Region, from its origins and historical roots through its development stages and various changes until 2009. This chapter pays attention to the way that the series of organisations involved developed the Biofuel Region, the key individuals and their efforts, as well as the external events and institutional forces that drove change within it.

**Chapter 6** is the first analytical chapter, analysis I, the first of two analyses, which seeks to identify within the empirical case, the structuration processes and triggers for change that occurred during the narrative, using the theoretical framework drawn up in the first theoretical chapter. This first analysis seeks to fulfil purpose one, by applying the theoretical concepts from the first theoretical chapter.

**Chapter 7** is the second analytical chapter, analysis II, which seeks to fulfil purpose two by using the second theoretical framework to examine and explore individual contributions to the formation, development and change
of the field, as well as to explore how the process of organisational field level change occurs.

Finally chapter 8 is the concluding chapter which seeks to bring together the two analyses and draw conclusions to the research questions, as well as highlight the managerial implications of the study, and its limitations, and avenues for future research.
2 Identifying the Structuration Processes and Triggers for Change

2.1 Organisational Fields and their Formation

Organisational fields have been described in a number of slightly nuanced manners. The first and perhaps most widely used description, already made in the introduction, is that of DiMaggio and Powell (1983) who define a field as, “those organisations that, in aggregate, constitute a recognised area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organisations that produce similar services or products” (p.148).

Scott (1995: 56) claimed that an organisational field is “a community of organisations that partakes of a common meaning system and whose participants interact more frequently and fatefuly with one another than
with actors outside the field”. I would argue that a “common meaning system” and “a recognised area of institutional life” are very similar, and that both imply an interactive group of heterogeneous actors.

Another description is from Bourdieu (1990) who claimed that an organisational field is a structured system of social positions, within which struggles take place over resources, stakes, and access. Hence, in Bourdieu’s (1990) opinion, the activities within fields are not always harmonious and might even be chaotic at times.

And finally, Hoffman (1999) described a field as more than just a collection of influential organisations. It was his suggestion that actually a field is the centre of common channels of dialogue and discussion, “a field is not formed around technologies or common industries, but around issues that bring together various field constituents with disparate purposes” (p.352). Therefore, whilst not all members may realise an impact upon the resulting debate, they are frequently fortified with differing perspectives as opposed to common rhetoric, and it has even been claimed that a field might resemble institutional war (White, 1992). That is to say that significant disagreement might occur between organisations within an organisational field - in line with Bourdieu’s (1990) propositions.

According to DiMaggio and Powell (1983), the virtue of the organisational field as a unit of analysis is that it is directed to the totality of relevant actors (i.e. stakeholders, suppliers, governing bodies, and partners) and not merely to competing firms. Therefore, the field idea comprehends the importance of both connectedness and structural equivalence. In order to identify the processes involved in the creation of the organisational field, I shall examine the manner with which they are formed and developed.

DiMaggio and Powell (1983) assert that the process of field formation consists of four stages. The first stage observes an increase in the amount of interaction between organisations within the field in the form of communication, cooperation or competition, where there is generally considerable diversity in terms of the approach and form of organisations. It is through these repeated interactions that groups of organisations develop mutual practices and understandings that shape the rules and resources that define the field (Philips et al., 2000). This increase might occur formally though contractual relationships or professional associations, and informally through intra-organisational flows of ideas (Bonnedahl and Jensen, 2007).

During stage two, defined inter-organisational structures of domination and patterns of coalition emerge. This is where the field begins to take shape
and hierarchies begin to be established in the form of pecking orders (DiMaggio and Powell, 1983), essentially this is when more dominant organisations within the field begin to emerge. Some of the organisations are, at this stage, conceptualised as superior and dominating which demonstrates the claim of Philips et al. (2000) that the creation of social rules from the institutionalisation of practices and structures promotes the development of a set of power relations within an organisational field.

The organisations must begin to contend, in the third stage, with an increase in information load. This might be the result of increased complexity in the field, and generally this in turn creates uncertainty, which becomes gradually less manageable, thus triggering organisations to follow suit (DiMaggio and Powell, 1983). In other words, organisations become increasingly bombarded with information, and in their uncertainty of how to deal with it they tend to emulate other organisations in the field who seem to be faring better with the issue.

Within the organisational field at the fourth and final stage, the organisations are said to begin to develop a mutual awareness of the fact that they are involved within a common enterprise (DiMaggio and Powell, 1983). Or, to put it another way as Bonnedahl and Jensen (2007), they become increasingly aware that they are involved within the same adventure. Essentially this means that they have established routines and are operating harmoniously together as a group.

These processes are presented as if they always appear in a linear fashion, one after the other. This is an interesting point concerning research question 1, namely: “How are organisational fields formed and developed?” because whether they actually do remains to be seen within this empirical investigation.

Furthermore, it is important to note that field formation is not a static process and in the wake of triggering events new forms of debate emerge, which cause a reconfiguration of membership and or interaction patterns within the field (DiMaggio and Powell, 1983). This is also interesting because firstly, nothing more is said about the reconfiguration of membership and interaction patterns. And secondly, the concept of triggering events is not explored with regard to how they drive the reconfiguration.

Therefore, a very promising line of enquiry and potentially a profound contribution for thesis is to explore the salient presence of the field formation processes, to investigate the order in which they appear in the case.
study, and the manner with which the process can be interrupted by triggers as well as what happens when it is.

The fields themselves are subject to a variety of different rules and shared resources, at varying levels throughout the field formation process, and increasingly so as it progresses. A key facet of institutional theory is that these fields will be underpinned by institutional logics that drive the organising principles within them (Powell and DiMaggio, 1991). Such logics provide the foundation for taken-for-granted rules and “refer to the belief systems and related principles that predominate in an organisational field” (Scott, 2001: 139).

Further “structuration processes”, that is, concepts which promote the understanding of field formation maintenance can be found in literature covering old institutional theory. These include the processes of adaptive change, and infusion with value and shall be further explained. These were originally devised to examine individual, institutionalised organisations, however it is my averment that they can be dusted off and used within this work afresh, as useful structuration processes, to contribute to the answering of research question 1. An explanation of them is made in the following section, firstly from the point of view of Selznick (1957), their original author, then later I shall argue for how and why I believe that they can be useful on a field level as well.

### 2.2 Institutionalisation – Adaptive Change

Selznick’s “Leadership in Administration” (1957) is often cited as a source of “old institutional theory”. Here, he drew upon two previous works, namely; “TVA and the Grass Roots” (1949) and “The Organisational weapon” (1952) which were focussed upon organisational character and competence (Selznick, 1957). Selznick applied institutional theory to examine the Tennessee valley authority, which was formed over time, and in the course of responding to external threats the agency adopted strategies that decisively affected its capacity to uphold standards of environmental protection and, in the early years, its willingness to reach out to poor African Americans and farm tenants. The typical methodology was that of the case study, with an emphasis upon adaptive change.

An important issue to be made here is that, in institutional theory, there is a difference between an organisation and an institution. Selznick (1957) makes such a distinction. A distinguishable element of organisations is their formal system of rules and objectives. Within the organisation, tasks, procedures and powers are laid out according to some officially approved
Identifying the Structuration Processes and Triggers for Change

pattern, the result of an official “philosophy” that creates a distinct identity. It is this “pattern” that dictates how the organisation is to be carried on, whether the organisation is involved with services, technological or industrial production or teaching. Tasks are allocated, authorities are delegated, information is communicated and ways are found to co-ordinate the various activities. The term “organisation” here therefore implies a lean, no-nonsense system of consciously co-ordinating activities. Considered to be an “expendable tool”, and of particular importance here a “rational instrument” crafted specifically to do a job (Selznick, 1957).

Selznick (1957: 5) summarises: “The term “organisation” thus suggests a certain bareness, a lean, no-nonsense system of consciously co-ordinated activities. It refers to an expendable tool, a rational instrument engineered to do a job”. Whereas an institution Selznick (1957: 5) avers, “is more nearly a natural product of social needs and pressures – a responsive, adaptive organism”.

Institutionalisation, according to Selznick (1957), is a process, something that happens to an organisation over time, reflecting the organisation’s distinctive history, its former employees, the groups that it embodies and the vested interests that they have created, as well as the manner with which it has adapted to the environment. A useful definition of institutionalisation is, “the emergence of orderly, stable, socially integrating patterns out of unstable, loosely organised or narrowly technical activities” (Broom and Selznick, 1955: 238). An important distinction here is that when Selznick (1957) talks about the process of institutionalisation, he is referring to what happens to an individual organisation. This is different to new institutionalisation and DiMaggio and Powell’s (1983) field formation processes because they focus specifically upon the organisational field development, or in other words they have a meso-level focus, and Selznick has a micro-level focus.

The degree to which an organisation becomes institutionalised depends, according to Selznick (1957), upon the amount of leeway there is for personal and group development. That is to say, the more specific an organisation’s objectives and the more specialised and technical its operations, the less likely social forces will affect its development. Conversely, if an organisation has less well defined goals it is more susceptible to the forces. One key point here, however, is that “no organisation of any duration is completely free of institutionalisation” (Selznick, 1957: 16); in other words no organisation is completely free of external forces.
Selznick (1957) discusses how, by taking into account both external forces (from outside the organisation) and internal forces (from within the organisation), institutional studies highlight potential changes that can occur within organisations as they become institutionalised. Change in Selznick’s instance is referred to as “adaptive change” and consists of an evolution of organisational forms and practices. This type of change is concerned, essentially, with the manner in which new patterns of organisational forms and practices emerge, and accordingly how old ones decline. These (adaptive changes) result not from conscious design, asserts Selznick (1957), but from incremental organisational responses and generally unplanned adaptations to new situations, and they occur during the institutionalisation process. The most accurate analyses of this type show the organisation responding to a problem posed by its history, an adaptation changing the role and character of the organisation significantly. This emphasis upon “adaptive change” suggests that drawing upon what is already known about communities can promote the understanding of large and relatively enduring organisations, given that within society one can also observe such (institutional) change. In so doing, it is Selznick’s (1957) assertion that there are three different issues to consider.

The first one is “the development of administrative ideologies as conscious and unconscious devices of communication and self-defence” (Selznick, 1957: 14). In elaborative terms, just as religions and other doctrinal orthodoxies help to maintain social order in societies, so in organisations official technical procedures and programs that illustrate the manner with which employees should undertake their jobs, often become elaborated into official “philosophies”. These, it is said, promote the development of an homogeneous staff and establish institutional continuity. On occasion they are created and facilitated purposively. Most administrative ideologies emerge spontaneously, however, and in an unplanned fashion as natural aids to organisational security. A well-established philosophy of this kind can benefit the organisation by promoting internal morale - establishing a way of working that can motivate and inspire, communicating the bases for decisions as well as repelling external criticisms.

As has been underscored this concept was derived from communities, it is my assertion that it need not pose a problem therefore to apply this concept to the organisational field, as well as to organisations, as a structuration process. A community consists of several individuals living in the same place, who are generally regarded to form a group, of sorts, just as an organisational field is a group of organisations (of sorts). If it is possible for Selznick to identify, “the development of administrative ideologies” within a large organisation, why wouldn’t it be possible to identify them within an
organisational field? It is my assertion that the answer to that question is that it would, and therefore I argue that this is an example of a “structuration process”.

Second is “the creation and protection of elites” (Selznick, 1957: 14). Just as elite individuals play an important role in the natural community creating and protecting values, so in organisations and particularly those that endeavour for some special identity, the formation of elites is a very important practical problem. The selective recruitment of specialist employees and specialised academics for example, can help to establish self-consciousness and the confidence of leaders, current and potential. It is possible that counter-pressures exist that strive to break down the insulation of these elites and shake their confidence, as in the natural environment. Selznick (1957) claims that a significant issue linked to institutional leadership, as with statesmanship in society, is that they can frequently become more concerned with their own progress than that of the enterprise as a whole.

It was my earlier contention that the role that individuals play in the formation, development and change within an organisational field is an underresearched area, indeed research question 3 asked, “What role can individuals play in the formation, development and change of an organisational field?” This concept: “the creation and protection of elites” could shed light upon the manner with which individuals, who hold an elite position within an organisation, are able to promote the formation and development of a field and also drive change within it. Again, I would like to argue that this concept can be used both on an organisational and organisational field level, because whilst elite individuals exist within organisations, it would be interesting to see if they can exist within organisational fields too. Moreover, an additional interesting issue is whether organisations can be elites within the field. DiMaggio and Powell (1983) discuss the establishment of coalitions and pecking orders, which incorporates the establishment of hierarchies and dominant organisations, but this is slightly different from the idea that an organisation can create and protect values. The reason is that a large player within a field might well be dominant because it is the chief supplier or purchaser, but that dominance does not imply that it attaches value to the field or that it, in itself, creates or protects the values of the field.

Third is, “the emergence of contending interest-groups, many of which bid for dominant influence in society” (Selznick, 1957: 15). In order to protect their identity and in an attempt to control the conditions of existence, organisations frequently compete between themselves in a bid for social
dominance. The same rivalry exists within organisations often stimulating rivalry between different departments which can sometimes create factions that can cut across official lines of communication and command. These changes cannot, however, be explained as simply the products of bureaucratic manoeuvre. The outcome of the competition is conditioned by a shift in the character and the role of the enterprise itself. Internal controversies, although stimulated by narrow impulses, provide the channels via which broader pressures upon the organisation are absorbed (Selznick, 1957). Looking back to the definition of an organisational field by Bourdieu (1990), who described them as structured systems of social positions within which struggles take place over resources, stakes, and access, one could argue that a similar situation exists within a field, consequently “adaptive change” might also be used as a “structuration process” in the analysis of the empirical example of an organisational field.

2.3 Institutionalisation - Infusion with Value

An important part of the institutionalisation process is, “to infuse with value above and beyond the technical requirements of a task” (Selznick, 1957: 16). Whenever individuals become attached to an organisation or a manner of undertaking tasks as people, rather than as technicians, the result is a “prizing of the device for its own sake” (Selznick, 1959: 17): that is to say that they attach value to the organisation. Consequently, for a committed individual the organisation is changed from an expendable tool into an important source of personal satisfaction. Accordingly, this can impact upon administrative changes which can be more difficult to implement because individuals can become habituated to long-established processes. When business relationships become personal ones for example, the shifting of personnel is inhibited. Moreover, it is Selznick’s (1957) assertion that a good deal of energy is expended in organisations in a continuous effort to preserve the rational, technical and impersonal system against such counterpressures. According to Selznick (1957), the extent to which an organisation is “infused with value” can be measured by the degree of “expendability” that the organisation exhibits. By way of explanation, if an organisation is merely an “instrument” then it will be altered or discarded when a more efficient tool becomes available. According to that assertion one could argue that organisations are expendable, that when they have served their purpose they will be superseded or usurped. Be that as it may, if they are infused with value then individuals can feel a sense of loss if the organisation is superseded or usurped. Moreover, the identity of the group of individuals can seem to be violated, hence the greater the extent that the organisation is
“infused with value” the more likely they are to give in to economic or technological considerations, reluctantly and regretfully. Despite the fact that the process of “value-infusion” might be perceived as a change process in itself: because it observes a decrease in the expendability of the organisation, it is Selznick’s (1957) assertion that when this process takes place then there is a resistance, or fight back, to the technological and economic change.

Interestingly, Selznick (1957) does address this “infusion with value” concept from the point of view of social systems as well as individuals. It is his claim that organisations become infused with value as they progressively represent the aspirations and sense of identity of the community. This is a relative matter and one of degree in the sense that many of the thousands of organisations that exist are not valued for themselves, although certain values upon which they are based such as free speech or competition may have deep cultural roots. Some special groups, such as university alumni for example, might be urged to keep some organisations from dying from lack of support. For those individuals who were once members of it, an organisation may acquire great institutional value, whilst from the perspective of most the organisation might be absolutely expendable. Indeed the technical significance of organisations can be weakened by both personal and social commitments. Initially the organisation derives added meaning from the social and psychological function that this tool can perform, and in doing so it becomes valued itself (Selznick, 1957).

The transformation of expendable organisations into institutions is noticeable by a “concern for self-maintenance”. The technical aims and procedures of the organisation are combined with personal desires and group interests. As a direct consequence various elements within the association have a stake in its continued existence. There is a need to accommodate internal interests and adapt to outside forces in order to maintain the organisations place in the market or public sector, minimise risks and achieve both long-term and short-term objectives. An important manifestation of this is when leaders become security conscious and sacrifice quick returns for the sake of stability.

Selznick (1957) claims that there is a close relationship between “infusion with value” and “self-maintenance”. To clarify, as an organisation acquires a distinct identity it becomes an institution. This process involves the taking on of values; ways of acting and believing that are considered important for its own sake. From that point onwards the “self-maintenance” becomes a constant struggle for preserving the uniqueness of the group in the light of altering circumstances and new problems.
I should like to argue that this concept of “infusion with value” could shed light on the role that individuals play in the formation, development and change within an organisational field. The reason for this is because it (infusion with value) is specifically concerned with the effect that the attachment of value to an organisation, by an individual, has upon that organisation. An interesting issue here is whether an individual can attach value to an organisational field, and whether therefore an organisational field can be changed into a source of satisfaction. In this sense the concept of “infusion with value” is subtly different from DiMaggio and Powell’s (1983) “common adventure” because it is orientated towards individuals and values, rather than coherent operations and mutual understanding.

Having outlined the eight “structuration processes”, incorporating the four stages of the field formation process (DiMaggio and Powell, 1983), three types of adaptive change and the concept of “infusion with value”, the following section will examine how changes within the field can be driven by “triggers”, from both internal and external sources according to neoinstitutionalism.

2.4 Triggers for Change

Attempting to move away from the previous perspective of institutions as places of stability wherein change occurred merely as a consequence of institutionalisation (Selznick, 1957), or organisation field formation, or of organisations becoming more similar to one another in their strive to abide by the rules (DiMaggio and Powell, 1983; Zucker, 1977; Meyer and Rowan, 1977) various authors attempted to examine the manner with which change might occur. These include: Meyer (1982) who came up with the concept of “jolts”, Lorange et al. (1986) who coined the concept of “technical discontinuity”, Fligstein’s (1991) “shocks”, Hoffmann’s (1999) “disruptive events” and Lampel and Meyer’s (2008) “field configuring events” and finally Hannigan’s (1995) “landmarks”. Each of these will now be explored and explained.

Meyer (1982) (who is technically from the new institutionalist school), coined the term “jolt” to explain the kind of trigger for change that his research unearthed. Examining how a doctor’s strike (resulting from an increase in insurance premiums for 4000 physicians of 384%) affected the voluntary hospitals in the area of San Francisco, the focus of the study is a series of organisations within a mature field. In fact “The doctor’s strike afforded a fortuitous natural experiment” (Meyer, 1983: 516). By jolting hospitals away from their equilibria the strike revealed certain properties
Identifying the Structuration Processes and Triggers for Change

that had not been previously highlighted. Using a sample of 19 hospitals and triangulating between data from observations, anecdotes, surveys, documents, and archives, Meyer (1982) sought to show how organisations adapt to jolts.

Meyer (1982) made a number of useful discoveries in his study. Whilst some researchers presume that sudden changes in the environment can place organisations in jeopardy, it is possible that “sudden changes are ambiguous events that also benefit organisations” (Meyer, 1982: 535). Since, as in this case, they can offer propitious opportunities for organisational learning and the introduction of unrelated changes because by “plunging organisations into unfamiliar circumstances, jolts can legitimate unorthodox experiments that revitalize them, teach lessons that reacquaint them with their environments, and inspire dramas celebrating their ideologies” (p.535). The definition of jolt is described as “a sudden and unprecedented event” (Meyer, 1982: 515).

Similarly Lorange, et al. (1986) came up with the concept of Technical Discontinuities, the term used for new; radically superior technologies which displace old; inferior ones, making possible order of magnitude change or significant improvements in organisational performance that consequently drive change within organisations.

Another author talks about how change can ensue within organisational fields as a result of “shocks” (Fliqstein, 1991). Examining the structural transformation of American Industry from 1919 to 1979 and the causes of diversification for the hundred largest corporations, it is Fliqstein’s (1991) assertion that the state or the organisational field will create shocks that are a reflection of either a reconstruction of current rules or models of organisational strategies that undermine those rules. This can occur on an organisational level as a result of an individual’s perceived requirement for change, necessary in order for a decision about change in an organisation to be made. The overarching point here is that it is possible for individuals or the state to promote organisational change, essentially providing arguments or interpretations by offering a particular construction and/or an organisational “crisis” or “problem” and a solution to that “crisis” or “problem” and, in so doing, alter the organisation’s course. Within an organisational field actors have a particular way of looking at the world, as a result of institutionalisation, the idea behind the concept of the “shock” is that it is only when some event of major proportion occurs, such as the shifting of organisational strategy or legislation that unambiguously changes their world that change can occur. The important point about this is that it can come from an external source or from within the field itself.
The overarching point here is that it is possible for individuals or regulating bodies to promote organisational field change, essentially providing arguments or interpretations by offering a particular construction of an organisational “crisis” or “problem” and a solution to that “crisis” or “problem” and in so doing alter the organisation’s course (Fligstein, 1991).

Later Hoffman (1999), who undertook a longitudinal study into the effect of environmental regulations upon the United States Chemical Industry, coined the term “disruptive event”. The choice of case was motivated by the fact that he saw the chemical industry as one where because of the “pressure and scrutiny accompanying this industry’s special position, environmental concerns emerged earlier and developed with more intensity within it than they did in other, less controversial industries” (Hoffman: 354). Compiling an “institutional history” of chemical industry environmentalism, Hoffman (1999) noted that the conceptions of environmental management moved through four different stages. Each stage initiated corresponded with the emergence of one or more of what Hoffman (1999) referred to as “disruptive events”. As a result it is Hoffman’s claim that change, in the context of institutional theory, occurs as a result of an initiating event or trigger. It is his assertion that disruptive events can even end sharply certain elements of organisations that have become locked in by institutional inertia.

Writing as guest editors for a special edition of the Journal of Management Studies, Lampel and Meyer (2008) discuss “Field Configuring Events” (F.C.E.s). They argue that these represent an important and understudied concept, which drives change within an organisational field. Field-Configuring Events (FCEs) are defined as temporary social organisations such as tradeshows, technology contests, professional gatherings, and business ceremonies that summarise and shape the development of professions, technologies, markets, and industries (Meyer et al., 2005). The authors describe them: “they are settings in which people from diverse organisations and with diverse purposes assemble periodically, or on a one-time basis, to announce new products, develop industry standards, construct social networks, recognise accomplishments, share and interpret information, and transact business” (Lampel and Meyer, 2008: 1025).

Hardy and Maguire (2010) explored the discursive processes through which a field-configuring event can change an organisational field and organisations. They examined the case of the United Nations conference which led to the Stockholm Convention on Persistent Organic Pollutants, which, in turn, established new global regulations for a number of dangerous chemicals. Such international conferences are important catalysts of change,
Identifying the Structuration Processes and Triggers for Change

they argue, especially as organisations and governments struggle to create global solutions to complex problems (Bernauer, 1995). One example of such an occurrence is that of the 1987 Montreal Protocols on Substances That Deplete the Ozone Layer, which is considered by a number of people to be one of the most successful of the UN's international agreements and which led to change in numerous industries as organisations began to adapt to the bans on ozone-depleting substances. Later the UN conference on Environment and Development had even wider consequences since it actually initiated the process that led to the Kyoto Protocol.

The final type of trigger is that of landmarks. Hannigan (1995) a sociologist, describes these as important events in the development or history of something. This type of trigger is therefore different from the others in the sense that it is in itself a type of change, a significant step in the development (in this case of the Biofuel Region). In addition it has not been regarded as a trigger for change previously and the term has merely been borrowed here. It will be used within the analysis to identify the key steps in the development process. What remains to be seen is the extent to which a landmark, that is a step in development and a change in itself, can actually promote other changes, and in that sense be a trigger for change.

Six distinct types of triggers have been identified; first, “Jolts” (Meyer, 1982) which are sudden or unprecedented events that importantly have never existed in the past. Second, “Technical Discontinuities” (Lorange et al., 1986) which are new technologies which are exceptionally more advanced than their predecessors and that consequently drive order of magnitude change. Third, “shocks” (Fligstein, 1991) which emanate from internal or external desires to drive change in the field. Fourth, “disruptive events” (Hoffman, 1999) which are not purposive and which come from external sources and end institutional inertia by creating confusion and disorder in the field. Fifth “field configuring events” which are temporary social organisations purposely engineered to shape development (Meyer, 2008), and finally, sixth “landmarks”.

2.5 Summary and Synthesis

The object here is to sum up the concepts that have been discussed at length, in order to clarify the manner with which they can be utilised in analysis I (chapter 6) of the thesis. As has been highlighted the aim of this first theoretical chapter was to develop a theoretical framework to fulfil purpose one, “To examine and explore the process of organisational field change by investigating the manner with which an organisational field is formed, and
how it changes as a consequence of this formation, taking into account change driven by any triggers that it incurs along the way.”

Tables 1 and 2 on the following pages offer an overview of the concepts that have been identified within the chapter. Firstly table 1 illustrates the eight structuration processes, and table 2 the triggers for change.
### Table 1 – The eight structuration processes

<table>
<thead>
<tr>
<th>Source</th>
<th>Process</th>
<th>Description</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NEW INSTITUTIONALISM</strong></td>
<td>1</td>
<td>An increase in the amount of interaction between organisations within the field in terms of more frequent communication and cooperation, where there is considerable diversity in terms of the approach and forms of the organisations (DiMaggio and Powell, 1983).</td>
<td>Increased interaction</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Intra-organisational structures of dominance and distinct patterns of coalition begin to be formed. Here the field takes shape, and hierarchies begin to be formed as dominant organisations emerge. Here a set of power relations emerge (DiMaggio and Powell, 1983).</td>
<td>Establishment of coalitions and pecking orders</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Increase in information load, increased complexity in the field, which in turn creates uncertainty, which becomes unmanageable triggering organisations to follow suit. This process drives isomorphism as the uncertainty promotes increased copying in the field (DiMaggio and Powell, 1983).</td>
<td>Information overload</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>The organisations are said to begin to develop a mutual understanding that they are involved within a common enterprise or adventure (DiMaggio and Powell, 1983).</td>
<td>A common Endeavour</td>
</tr>
<tr>
<td><strong>OLD INSTITUTIONALISM</strong></td>
<td>5</td>
<td>Adaptive Change 1 Official technical procedures and programs are elaborated into “official philosophies” (Selznick, 1957).</td>
<td>Official Philosophies</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Adaptive Change 2 - Just as in the natural community elite individuals play an important role in the natural community creating and protecting values, so in organisations elite individuals are established (Selznick, 1957).</td>
<td>Establishment of Elites</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Adaptive Change 3 - In order to promote their own identity and in an attempt to control the conditions of existence, organisations frequently compete between themselves in a bid for social dominance (Selznick, 1957).</td>
<td>Competition</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>The attachment of value to an organisation by an individual. For a committed individual then the organisation is changed from an expendable tool into an important source of satisfaction (Selznick, 1957).</td>
<td>Infusion with Value</td>
</tr>
</tbody>
</table>
Identifying the Structuration Processes and Triggers for Change

<table>
<thead>
<tr>
<th>Source</th>
<th>Trigger</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEO INSTITUTIONALISM</td>
<td>Jolts</td>
<td>A sudden or unprecedented event, never having happened or existed in the past (Meyer, 1982).</td>
</tr>
<tr>
<td></td>
<td>Technical Discontinuity</td>
<td>New, radically advanced technology which displaces old, inferior ones (Lorange et al. 1986).</td>
</tr>
<tr>
<td></td>
<td>Shocks</td>
<td>Trigger for change which create a reconstruction of current rules, or models of organisational strategies that undermine those rules, created by the state or the organisational field (Fligstein, 1991).</td>
</tr>
<tr>
<td></td>
<td>Disruptive Events</td>
<td>A trigger which can end sharply certain elements of organisations that have become locked in by institutional inertia. Disruptive events emanate from external sources and throw the field into confusion or disorder by interrupting or impeding its progress (Hoffman, 1999).</td>
</tr>
<tr>
<td></td>
<td>Field Configuring Event</td>
<td>Temporary social organisations that summarise and shape the development of an organisational field (Lampel and Meyer, 2008).</td>
</tr>
<tr>
<td></td>
<td>Landmarks</td>
<td>An important event in the development or history of something (Hannigan, 1995).</td>
</tr>
</tbody>
</table>

Table 2 – Triggers for change

The first part of the chapter sought to explore the eight structuration processes that will be used within analysis I to ultimately examine organisational field formation, development and change. The first four, which are DiMaggio and Powell’s (1983) stages of field formation, are useful because they offer an overview of the way that an organisational field forms, in theory. As has been emphasised the four stages are said to appear linearly, and very little is said about what happens when they reconfigure in the wake of triggering events. In addition, these stages are themselves manifestations of change within the field and upon their examination light will be shed, not only upon research question 1; “How are organisational fields formed and developed?” but also upon research question 4; “How does change occur within an organisational field?” This latter part will require further consideration however in analysis II, which will be discussed in the following chapter.

The second set of four structuration processes come from the work of Selznick (1957) who sought to understand the way that an individual
organisation becomes institutionalised. These offer an insight into the way that organisations change as they become institutionalised, highlighting both stages of development which can contribute to research question 1, as well as an insight into the individual’s role within both change and institutional development, which can make a small contribution to research question 3; “What role can individuals play in the formation, development and change of an organisational field?” Once again, however, this research question is part of purpose two and will accordingly be addressed principally in analysis II.

The second part of the chapter looks at the manner with which organisational field change can ensue as a consequence of a “trigger”. An important point with regard to these concepts is that whilst they have all being described as triggers for change within organisational fields, the previous research from which they have been developed examined fields that were mature. To further contribute theoretically, these concepts will be used to examine the case study for particular events which drove change, both within the context of mature fields, and of fields in the process of formation and development.
3 Making Sense of the Structuration Processes and Triggers for Change

The objective of this second theoretical chapter is to develop a theoretical framework in order to fulfil purpose two; “To examine and explore the process of organisational field level change driven by individual contributions, isomorphism, legitimacy and de/reinstitutionalisation.” This purpose emanated from research questions 3 and 4; “What role can individuals play in the formation, development and change of an organisational field?” and, “How does change occur within an organisational field?”

After having identified the structuration processes and triggers for change, this chapter will elaborate upon them and explore how and why certain events occurred as they did, to further examine and explore organisational field change. First of all, the chapter will introduce the concepts of
institutional entrepreneurship and agency (Garud et al., 2002; Fligstein, 1997; Maguire et al., 2004 and Emirbayer and Mische, 1998) to explore the contribution that individuals made to the process of organisational field formation, development and change, in response to research question 3.

Second, the concepts of isomorphism and legitimacy (DiMaggio and Powell, 1983; Scott, 1995 and Suchman, 1995, Tolbert and Zucker, 1983) (new institutionalism) will be introduced to explore the extent to which they were present during the formation and development period. Typically, these concepts have been used to explain why organisational field members become more similar as the field forms. In line with research question 4, I would like to investigate the extent to which these forces were present and how they drove change within the field throughout its formation and development period. In addition, it could aid a better understanding of how and why the field formed, developed and changed as it did (in line with research question 1).

Third, to further explore organisational field change, I shall introduce the concept of deinstitutionalisation (Oliver, 1992) (neoinstitutionalism). This will be followed by reinstitutionalisation, which is the process through which an institution is renewed (Scott, 2001). These are important concepts which can contribute to purpose two, because they offer an insight into how fields can be delegitimised and re-legitimised, which inevitably involves change of some sort.

### 3.1 Institutional Entrepreneurship and Agency

An issue facing institutional theory is the question of how to deal with interest-driven behaviour and institutional change. If organisational structures are shaped by the institutional environment within which they exist (DiMaggio and Powell, 1983) what then is the role of “strategic choice” in the management of organisations (Beckert 1999)?

This question is important and it becomes fairly obvious when one considers the more rationalist literature on strategic planning and managerial roles, which emphasise the manager as a part of the decision making process, responsible for seeking opportunities that partly evolve from a deliberate deviation from institutionalised structures and strategies (Beckert, 1999). Goal-orientated agency is negligible for the explanation of outcomes, only if one assumes that there is a weak correlation between intentionality and outcome. Beckert (1999) argues that if we assume that agents do in fact make a difference then a weakness in institutional theory is highlighted if it cannot account for the role of strategic agency, which refers
to “the systematic attempt to reach conceived ends through the planned and purposeful application of means” (Beckert, 1999: 782), in processes of organisational development.

This is not a new idea and has been addressed by a number of authors aiming to better understand heterogeneity and change (Fligstein, 1997; Oliver, 1992; Scott, 1991, 1995). These scholars have relied upon the principle of institutional entrepreneurship, which incorporates the role of interests and of active agency in neoinstitutional theory. Institutional entrepreneurship is defined as, “activities of actors who have an interest in particular institutional arrangements and who leverage resources to create new institutions or to transform existing ones” (Maguire et al., 2004: 657).

As has been emphasised repeatedly, institutional theory has traditionally focused on continuity (DiMaggio and Powell, 1983, Zucker 1977) although increasingly it incorporates the importance of change. On the other hand, work within the field of entrepreneurship has focused on change, regardless of the fact that it acknowledges that change is in fact difficult to accomplish. On combining the two concepts Garaud et al. (2007: 961) comment, “This juxtaposing of institutional and entrepreneurial forces into a single concept, institutional entrepreneurship, thus offers considerable promise for understanding how and why certain novel organising solutions– new practices or new organisational forms, for example – come into existence and become well established over time.”

Institutional entrepreneurs are themselves individuals working within the field that have an interest in particular (institutional) arrangements, and who consequently mobilise resources in order to create new institutions or indeed to transform existing ones (DiMaggio, 1988). In this vein, it is DiMaggio’s (1988: 14) assertion that, “new institutions arise when organised actors with sufficient resources (institutional entrepreneurs) see in them an opportunity to realise interests that they value highly.”

Institutional entrepreneurs themselves can take different forms. They might be individuals, or groups of individuals (Fligstein, 1997; Maguire et al., 2004) or organisations, or groups of organisations (Garud et al., 2002; Greenwood et al., 2002). As has been previously emphasised, the role of individuals is seldom recognised in institutional studies (Suddaby, 2010) and this has motivated research question 3: “What role can individuals play in the formation, development and change of an organisational field?”

From the perspective of individuals and groups of individuals, willingness and capacity to act as an institutional entrepreneur might vary from one to
the other. In order to act as such, individuals must have an interest, as well as sufficient resources to do so, as highlighted in DiMaggio’s (1988) definition. It is the assertion of Battilana (2006) that an individual’s social position within a field is an important key variable for the understanding of the manner with which they are enabled to act as an institutional entrepreneur, despite institutional pressures. This averment is based upon Bourdieu’s (1990) definition of the organisational field who, as previously explained, described them as structured systems of social positions in which struggles take place between individuals over resources, and access.

Bourdieu (1994) regards individuals as “agents” and dealing with the importance of their social position within a given field, highlights that an agent’s social position determines their perspective of the field, the points of view that they take on the maintenance of the status quo or transformation of the field, as well as their access to resources. Depending on an institutional entrepreneur’s social position within the field, they may, from one point of view, be more or less willing to transform the field, and from another, more or less able to actually do so. It certainly seems that individuals are important to change within the field, and as such this thesis aims to attempt to observe such agency.

Institutional entrepreneurship has previously been presented as a useful concept to explain voluntarist institutional change, i.e. that emanating from within the field. This concept has however caused disagreement between institutional theorists (Scott, 2001; Greenwood and Suddaby, 2005). The controversy questions the ability of actors, who are supposed to be embedded within the institution, to be able to distance themselves from the institutional pressures and to act in a strategic fashion (Battilana, 2006). The question as Battilana (2006: 654) puts it is, “How can organisations or individuals innovate if their beliefs and actions are all determined by the very institutional environment they wish to change?” In other words “If, as institutional theory asserts, behaviour is substantially shaped by taken-for-granted institutional prescriptions, how can actors envision and enact changes to the context in which they are embedded?” (Greenwood and Suddaby, 2006: 3) This question alludes to the paradox of embedded agency (Seo and Creed, 2002; Holm, 1995).

Looking at organisations as institutional entrepreneurs, Greenwood and Suddaby (2006) looked at a case of embedded agency, which they define as agency within a highly institutionalised field, by examining the introduction of a new organisational form which they term “the multidisciplinary practice” (Greenwood and Suddaby, 2006: 3) or MDP, which is within the field of professional business services. The multidisciplinary practices are
defined as: “firms that combine several professions, typically accounting and consulting, and later, law” (Greenwood and Suddaby, 2006: 3). This new form of organisation was pioneered by elite accounting firms (Greenwood et al., 2002). It is an example of institutional entrepreneurship that flies in the face of prevailing theory, because change is originated from the centre of an organisational field. The motivation behind their work was to answer the question: “Why and under what circumstances are embedded elites enabled and motivated to act as institutional entrepreneurs in highly institutionalized contexts?” (Greenwood et al.: 3)

Utilising a qualitative research approach Greenwood and Suddaby (2006) explored the conditions that prompt elite firms to promote change. Contrary to previous research they demonstrate that such a field position can raise an organisation’s awareness of alternatives. Furthermore, they find that elite and central organisations are more likely than others to come into contact with contradictory logics owing to the fact that they bridge the organisational field. Moreover, these elites become resistant to normative and coercive processes, because their market activities actually go beyond the boundary of the jurisdiction of field-level regulations. That is, they are powerful enough in their own right not to be affected adversely by the restrictions imposed by the organisational field within which they lie.

Greenwood and Suddaby (2006) claim that these two processes, which they call “boundary bridging” and “boundary misalignment” can actually open up central actors to field-level ‘contradictions’ (Seo & Creed, 2002) and lower their level of embeddedness. Furthermore, it is their claim that when low levels of embeddedness are combined with a motivation to change, then central and elite organisations can become institutional entrepreneurs. An important issue within this work is as to whether these conclusions are also true for an individual.

An important question here is what about those organisations or individuals that are not central or elite, is it possible for them to drive change within an organisational field? The central actors in a given field may have the wherewithal to promote change, but often lack the motivation. Whilst on the other hand, peripheral organisations might have the incentive to create and promote new practices, but lack the means necessary. Garud et al. (2007) suggest that a solution to the problem lies in the conceptualisation of agency as being distributed within the structures that actors themselves have created. Accordingly, embedding structures do not merely create constraints on agency; but they can provide a platform for entrepreneurial activities. From this point of view actors can become informed agents, who are able to act in ways other than those laid down by the rules of the institutional field.
Agency is defined as “the temporally constructed engagement by actors of different structural environments, the temporal relational contexts of action which, through the interplay of habit, imagination, and judgment, both reproduces and transforms those structures in interactive response to the problems posed by changing historical situations” (Emirbayer and Mische, 1998:970). Conceptualised in this manner, the structure of a field need not constrain agency, on the contrary, it may even serve as the basis for entrepreneurial activities (Garud et al., 2007).

Institutional entrepreneurship involves not only the ability to conceive different options, it also necessitates the ability to put previous habits and future projects into context in the contingencies of the moment if institutions are to be changed (Emirbayer and Mische, 1998). In order to qualify as institutional entrepreneurs, individuals must break away from the practices and rules related to the central institutional logics linked to the organisational field, and institutionalise the new rules, logics or practices that they are aiming to promote (Battilana, 2006). It is thus crucial to establish plans in order to embed change in fields which are populated with a diverse group of organisations, many of whom are committed to, and benefit from, the existing structural arrangements. Accordingly institutional entrepreneurship is regarded as a very political process (Fligstein, 1997; Seo and Creed, 2002).

3.2 Isomorphism

One could argue that a key concept within new institutional theory is concerned with organisational change (DiMaggio and Powell, 1983) and the forces that promote it. This concept is isomorphism, namely the manner with which organisations become increasingly similar as they become institutionalised.

The change phenomenon of “isomorphism” the explanation of organisational similarity is based, according to new institutional theory, upon institutional conditions. On the subject DiMaggio and Powell (1983) wrote a landmark article, “The Iron Cage Revisited” where they proposed that no longer were organisations imprisoned within an iron cage as a consequence of “the rationalist order”, which was the alleged claim of Weber (1952), but they were now in fact imprisoned as a consequence of external institutional forces, in other words as a consequence of them being institutionalised. On the subject they assert that, “once a set of organisations emerges as a field, a paradox arises: rational actors make their organisations

1 It is to this landmark article that the title of this thesis makes reference.
increasingly similar as they try to change them” (DiMaggio and Powell, 1983: 147). This indicates that the characteristics of an organisation are modified in the direction of increasing compatibility with environmental characteristics.

The concept of isomorphism has been criticised by some authors (Hoffman, 1999; Hardy and Maguire, 2010; Lampel and Meyer, 2008) in the sense that it was viewed as the only way that change could be observed in institutional theory, and regarded as limited. However, it is my ambition to present it here as a useful tool that might further aid an understanding of change, as well as field formation and development.

This so called “isomorphism” occurs through three mechanisms, or pillars coercive, mimetic and normative (Powell and DiMaggio, 1991; Scott, 1995). These mechanisms are seen as theoretically distinct, although scholars acknowledge that they are not easy to distinguish empirically. The mechanisms shall now be explained in more detail.

First, coercive isomorphism results from both formal and informal pressures exerted upon organisations, resulting from power relationships and politics (DiMaggio and Powell, 1983) Prototypically, these are demands of the state in the form of legislation, or affiliated organisations who require certain procedures or protocols to be followed, each coercing the organisation to adopt specific practices or structures on pain of sanctions. It is therefore noteworthy that coercive pressures can occur not only by fiat but might result from resource dependency (Boxenbaum and Jonsson, 2008). As in the previous section when the subject of field formation was discussed, these forces are often the result of power relations within the field, the less-powerful organisations are more likely to be coerced into isomorphic change by the more powerful ones. In more straightforward terms, organisations are sometimes forced to do business or perform their assigned tasks in a certain way, being compelled by rules and regulations, but in certain circumstances they must change their models according to the availability of raw materials or staff.

The second mechanism is mimetic isomorphism, which results from the pressures of uncertainty (DiMaggio and Powell, 1983) under which organisations often imitate those of their peers who are perceived to be more successful or influential (Powell and DiMaggio, 1991). Essentially then, organisations copy other organisations that are doing things which seem to be successful for them. When the second organisation starts to do the same thing as the first, according to new institutionalism, they begin to look more alike. Mimetic forces explain, for example, the widespread management
practices for which there is very little empirical evidence of improved performance, that is, it can be referred to as the following of fads and fashions (Abrahamson, 1996).

Finally normative isomorphism stems from professionalisation (DiMaggio and Powell, 1983) resulting from the pressure of conforming to what is considered to be a “proper” course of action or even a moral duty (Suchman, 1995). This could involve such things as a perceived correct way of looking after employees, producing products that are environmentally friendly, offering sound advice and customer service or benefitting individuals within the organisation’s locale. The professionalisation process is linked to a desire for increased competence and efficiency within an organisation (Ashworth et al., 2009) and in turn leads individuals themselves to become more homogenised (Powell and DiMaggio, 1991). This is especially the case since the idea of what is professional, proper and morally correct is often institutionalised within, at least the organisational field and perhaps the society at large. An important mechanism for encouraging normative isomorphism is the filtering of personnel, this filtering occurs during the recruitment of people from other firms within the same industry, people from a narrow range of training institutions for fast track promotion, through promotion practices and from skill-level requirements for particular jobs. Professional career paths are often closely guarded from start to finish and therefore the people who make it to the top are often indistinguishable from one another (DiMaggio and Powell, 1983).

Each of these isomorphic forces alter the organisations within the field in one way or another, in the sense that the organisations are said to become more alike and to do so, at least some of them must implement changes. That is to say that they must implement procedures, produce products or services or make strategic alterations that bring them in line with other organisations within the organisational field.

Highly structured organisational fields are a context within which individual efforts to deal with uncertainty and constraint in a rational manner frequently lead, in aggregate, to homogeneity in culture, structure and output. A major empirical prediction made by DiMaggio and Powell (1983) is that over time organisations within a field will yield to the isomorphic pressures that they are confronted by. If they do not their level of external support, and ultimately their survival might be at risk (Ashworth et al., 2009). Isomorphism is, subsequently, fundamentally linked to the attainment of legitimacy, another key concept within new institutional theory and one which will be addressed next.
3.3 Legitimacy

According to institutional theory organisations require a societal mandate, or legitimacy, to operate and this is attained by conforming to societal expectations (Deephouse and Suchman, 2008) adhering to rules and regulations, becoming a successful enterprise and by attaining a level of professionalism. The concept of legitimacy is an important one within new institutional theory. Legitimacy is a generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions (Suchman, 1995; Tolbert and Zucker, 1983).

Importantly Scott (1995) divides the idea of legitimacy into two dimensions; firstly cognitive legitimacy refers to the spread of knowledge about a new venture, essentially the extent to which people are aware of the venture and its potential benefits. The second dimension is socio-political legitimacy, which refers to the process by which limited stakeholders; key opinion leaders, the general public, or government officials accept a venture as appropriate and right considering existing laws and norms. Seeking to attain such legitimacy inevitably involves change in organisations, most likely along the lines of the three isomorphic mechanisms (DiMaggio and Powell, 1983) that have been discussed in the previous section, namely coercive, mimetic and normative isomorphism.

When organisations face environments characterised by strong belief systems and rules, survival and effectiveness depend more upon the legitimacy acquired from conforming to widely held expectations than on efficient production (DiMaggio and Powell, 1983; Zucker, 1977). This conformity to institutionalised rules conflicts frequently with criteria linked to efficiency, whilst conversely in order to control and coordinate activity to promote efficiency attenuates an organisation’s ceremonial conformity and can sacrifice its support and legitimacy (Meyer and Rowan, 1977; DiMaggio and Powell, 1983). This situation often leads to hypocrisy (Brunsson, 2003) which essentially means that organisations say one thing and do another. Brunsson (2003: 203) described hypocrisy as “a response to a world in which values, ideas, or people are in conflict – a way in which individuals and organisations handle such conflicts”. In other words organisations talk about and show different things to different stakeholders, in different circumstances and contexts, according to what those stakeholders “want” to hear at certain times. The focus during a shareholder meeting for example might be profit maximization, and the organisations on going and relentless quest therefor. Whilst, during a meeting of employees the organisation might
focus upon employee benefits, and with environmentalists the organisation might stress its focus upon sustainability.

An interesting point here is that the legitimacy is itself fundamentally homogenising, promoting conformity along any dimensions that the prevailing rational myths establish as legitimacy defining (Deephouse and Suchman, 2008). In other words in their quest for legitimacy organisations often follow the same paths as other organisations within the organisational field, which can make them look similar as a result.

Organisations that share the same environment tend to take on similar forms seeking the optimal “fit” with their environment, which might promote legitimacy (DiMaggio and Powell, 1983; Zucker, 1977; Meyer and Rowan, 1977). First, organisations adapt not only to technical pressures, but additional adaptation occurs according to what they believe society expects of them (legitimacy) which leads to institutional isomorphism. Second, when the internal efficiency needs are contradicted by adaptations to institutional pressures, organisations sometimes claim to adapt, when in reality they do not, instead de-coupling action from structure in order to maintain organisational efficiency (Deephouse and Suchman, 2008) and maintain legitimacy.

In effect, de-coupling implies that organisations abide superficially to institutional pressures, adopting new structures without necessarily implementing the related practices (Deephouse and Suchman, 2008). This seems to be quite similar to Brunsson’s (2003) hypocrisy, in the sense that the organisation is essentially doing one thing and claiming another. Consequently, it would seem that organisations are sometimes able to act independently of the institutional pressures which are enforced upon them, as long as they maintain legitimacy by essentially pretending to abide by the institutional rules. Therefore, on the subject of change one can surmise that it is important to look carefully at what an organisation is doing and not just what they say that they are doing, in order to ascertain an accurate picture of what is actually occurring in reality, hence the need for empirical investigation.

3.4 Deinstitutionalisation and Reinstitutionalisation

Another driver for change and an insight into the destruction or demise of an organisational field can be found in the new institutional literature in the form of deinstitutionalisation and reinstitutionalisation.
Deinstitutionalisation, according to Scott (2008: 196), refers to processes by which “institutions weaken and disappear, and phenomena such as “enfeebled laws”, “increasing noncompliance”, “eroding norms”, and “the erosion of cultural beliefs and the increasing questioning of what was once taken for granted”.

Oliver (1992) underlines how the possibility of change is identified and associated with opportunities created by a variety of “antecedents of deinstitutionalisation” (preceding circumstances) after which institutional norms might be challenged. In elaborative terms, after an organisational field has formed it might later demise and this process is referred to as Deinstitutionalism. Scott (2001) defines this as “The process by which institutions weaken and disappear” (p.182). De-institutionalisation has been succinctly defined as the contraction of traditional institutional settings (Bachrach, 1976). In other words it represents the breaking of inertia within an institution or an organisational field.

Previous research examining processes of deinstitutionalisation tend to observe change chiefly as a process of erosion, which emanates from pressures from the organisation’s environment (Bourdieu, 2006; Oliver, 1991). To be more specific, deinstitutionalisation is the process by which the legitimacy of an established or institutionalised organisational practice erodes or discontinues. In particular “deinstitutionalisation refers to the delegitimation of an established organisational practice or procedure as a result of organisational challenges to, or the failure of, organisations to reproduce previously legitimated taken-for-granted actions” (Oliver, 1992: 564). Another definition is offered by Kraatz and Moore (2002) who claim that deinstitutionalisation is the abandonment of institutionalised practices, structures and goals and/or the adoption of institutionally contradictory practices, structures and goals by an individual organisation or field of organisations.

Oliver (1992) identified three significant sources of antecedents that imposed themselves on institutionalised norms or practices, namely functional, political, and social sources. First, functional pressures for deinstitutionalisation emanate from perceived problems in performance levels or the perceived usefulness associated with institutionalised practices. These pressures may be tied to broad environmental changes, such as intensified competition for resources (Dacin et al., 2002). Lounsbury (2002) highlights a related modification in institutional logics which was driven by environmental change in the finance industry of the United States. There was a move towards deregulation which apparently significantly transformed the prevailing regulatory logic within the field, and which led to an
increasing emphasis on a market logic which, in turn, offered new opportunities to finance professionals for the promotion of their own interests.

The second source of antecedents, according to Oliver (1992), are political pressures which emanate chiefly from shifts in the interests and power distributions that exist and have previously been legitimated and that held up existing institutional arrangements. These shifts may happen as a reaction to environmental changes, performance crises, or any other triggers that might drive organisations to question a practice’s legitimacy (Dacin et al., 2002). Greenwood et al. (2002) undertook an organisational field level study of institutional change in the Canadian accounting profession. The principle focus of the work is the manner with which professional associations, who were reacting to demands from the market for a new range of services, changed the accounting firms’ political context and consequently redefined the range of services that they provided, leading them to go beyond “traditional accounting services” to include management advisory services as well. Professional associations provided the setting for "intraprofessional discourse” with regard to the legitimacy of the change. In their endeavours to promote this extension of services, these professional associations referred to the prevailing values and practices of the profession, highlighting in particular the importance of customer service.

The third source of antecedents, social pressures (Oliver, 1992), are linked to the differentiation of groups (e.g. workforce diversity), the existence of different or conflicting beliefs and practices (e.g. as a result of mergers between organisations) and changes in the law or in social expectations that may hamper the continued practice of something (e.g. the implementation of an affirmative action) (Oliver, 1992; Scott, 2001). In previous research, Zilber (2002) looked at the manner with which prevailing feminist ideology in a rape crisis centre in Israel was changed as a consequence of an increased number of organisational participants with a therapeutic focus. This study affirms Oliver’s (1992) insight that; "New members with backgrounds and experiences that differ from existing members bring different interpretive frameworks and social definitions of behaviour to the organization that act to diminish consensus and unquestioning adherence to taken-for-granted practices" (1992: 575). In particular, Zilber (2002: 236) highlights the "interplay between actors, actions, and meanings" for the better comprehension of the “micro-politics” of institutional change.

It is Oliver’s (1992) averment that the rate of deinstitutionalisation is moderated by entropy and inertial pressures, competing processes within organisations. In elaboration organisational entropy, or decline in order
Making Sense of the Structuration Processes and Triggers for Change

within an organisation, promotes the acceleration of deinstitutionalisation. Organisational inertia on the other hand generally impedes it. With this in mind it is useful to take a look at the two distinct manners with which deinstitutionalisation can occur in terms, essentially, of pace. According to Oliver (1991) dissipation refers to the gradual deterioration in the acceptance and use of a particular institutionalised practice. An organisation might for example discontinue the enforcement of dress codes in the office, or the use of formal committees to investigate organisational problems. In this case the process of deinstitutionalisation or delegitimation is a gradual one, and the result of gradual atrophy.

A more direct approach is that of rejection. Oliver (1992) cites the example of direct challenges to the appropriateness of traditional job classifications on the basis of stereotypical gender roles which have led to the deinstitutionalisation of this practice in many organisations.

Another succinct, and yet detailed, explanation of deinstitutionalisation is provided by Olsen (2010: 128) who claims deinstitutionalisation implies that; “existing institutional borders, identities, rules and practices, descriptions, explanations, and justifications, and resources and powers are becoming more contested and possibly even discontinued. There is increasing uncertainty, disorientation, and conflict”.

Underlining the importance of this deinstitutionalisation, Scott purported “it is useful to place studies of deinstitutionalisation in a broader context of institutional change, since the weakening and disappearance of one set of beliefs and practices is likely to be associated with the arrival of new beliefs and practices” (2001: 184) or the process of reinstitutionalisation, where an existing logic or governance structure is replaced by a new logic or governance structure (Scott, 2001). Olsen (2010: 128) elaborated upon this, claiming that reinstitutionalisation implies, “...a transformation from one order to another, constituted on different normative and organisational principles”.

A recent interesting study, exploring the concepts of deinstitutionalism and reinstitutionalise was undertaken by Kwiek (2012) who examined the demise of research in Polish Universities following the collapse of the Communist system. The “norm” of research which had been previously taken for granted was questioned, particularly within social science, as social norms changed dramatically. Further, universities were no longer able or willing to “provide proper legitimation for an established organisational practice of academic research” (Kwiek, 2012: 3). In addition, social pressures for undertaking research were low and a “declining normative consensus”
about what made up the core of academic activities promoted an erosion of institutionalised rules. The Reinstitutionalisation of the academic norms is linked to reform initiatives of 2005 and a comprehensible programme of reforms in 2010-2011. This period also coincided with a new era of stability both economically and politically in Poland, stemming from EU membership.

3.5 Summary and Synthesis

The object here is to sum up the concepts that have been discussed at length, in order to clarify the manner with which they can be utilised in analysis II (chapter 7) for purpose two; “To examine and explore the process of organisational field level change driven by individual contributions, isomorphism, legitimacy and de/reinstitutionalisation.” Table 3 summarises the concepts of institutional entrepreneurship and agency. Table 4 summarises isomorphism and legitimacy, as well as deinstitutionalisation and reinstitutionalisation.

<table>
<thead>
<tr>
<th>Source</th>
<th>Concept</th>
<th>Description</th>
</tr>
</thead>
</table>
| Neo-institutionalism | Institutional Entrepreneurship | “Activities of actors who have an interest in particular institutional arrangements, and who leverage resources to create new institutions or to transform existing ones” (Maguire et al., 2004: 657). Can take different forms;  
  - Organisations or groups of individuals (Garud et al., 2002).  
  - Individuals or groups of individuals (Fligstein, 1997; Maguire et al., 2004)  
  Importantly “New institutions arise when organised actors with sufficient resources (institutional entrepreneurs) see in them an opportunity to realise interests that they value highly”. (DiMaggio, 1988: 14) |
|                      | Agency                         | “The temporally constructed engagement by actors of different structural environments, the temporal relational contexts of action which, through the interplay of habit, imagination, and judgment, both reproduces and transforms those structures in interactive response to the problems posed by changing historical situations” (Emirbayer and Mische, 1998: 970) |
### Table 4 – Drivers for organisational field change – institutional forces

<table>
<thead>
<tr>
<th>Source</th>
<th>Concept</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW INSTITUTIONALISM</td>
<td>Isomorphism</td>
<td>The manner with which organisations become increasingly similar as they become institutionalised, driven by 3 mechanisms (DiMaggio and Powell, 1983; Scott, 1995).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Coercive (from formal and informal pressures)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Mimetic (from pressures of uncertainty)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Normative (from professionalization)</td>
</tr>
<tr>
<td></td>
<td>Legitimacy</td>
<td>Legitimacy is the generalised perception or assumption that the actions of a venture are desirable, proper or appropriate (Suchman, 1995; Tolbert and Zucker, 1983).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cognitive legitimacy (spread of knowledge about a new venture (Scott, 1995)).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Socio-political legitimacy (Process by which a venture is accepted by important stakeholders, investors and regulators (Scott, 1995)).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Importantly legitimacy is attained by “conforming” to societal expectations (Meyer and Rowan, 1977)</td>
</tr>
<tr>
<td></td>
<td>Deinstitutionalisation</td>
<td>“Deinstitutionalisation refers to the delegitimation of an established organisational practice or procedure as a result of organisational challenges to, or the failure of organisations to reproduce previously legitimated for taken-for-granted actions” (Oliver, 1992: 564) driven by sets of antecedents;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Functional (from perceived problems in performance or usefulness associated with institutionalised practices)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Political (from shifts in interests and power distributions that exist and have been previously legitimised)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Social (from differentiated groups and the existence of different or conflicting beliefs and practices)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pacing of Deinstitutionalisation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Dissipation (gradual deterioration in acceptance and use of particular institutionalised practice)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Rejection (a reaction to direct challenges)</td>
</tr>
<tr>
<td></td>
<td>Reinstitutionalisation</td>
<td>Where an existing logic or governance structure is replaced by a new logic or governance structure (Scott, 2001).</td>
</tr>
</tbody>
</table>
The first concepts that was discussed, in part as an attempt to contribute to research question 3; “What role can individuals play in the formation, development and change of an organisational field?” Institutional entrepreneurship and agency were introduced. According to DiMaggio (1988: 14), “New institutions arise when actors with sufficient resources see in them an opportunity to realise interests that they value highly”. Furthermore, individuals can act as change agents only when they have the willingness or interest, and capacity or resources to do. Institutional entrepreneurs might act if their level of embeddedness within the field is reduced, and if they have a motivation to make changes. Combined, these concepts facilitate a richer understanding of how change is driven within organisational fields and the extent to which it is driven by individuals.

Next was that of isomorphism, which essentially describes the way that organisations become more similar to one another as they become institutionalised or part of an organisational field (DiMaggio and Powell, 1983). Isomorphism occurs as a consequence of three mechanisms, namely, coercive, mimetic and normative (DiMaggio and Powell, 1983) and thus it takes into consideration a broad range of pressures that can exert themselves upon an organisational field, and will be able to shed light upon why the structuration of the field occurred as it did, offering an insight into how and why organisations behaved as they did, and how and why change occurred as a result.

Following on the concept of legitimacy was described, which is a generalised perception that the actions of an entity are proper or appropriate (Suchman, 1995; Tolbert and Zucker, 1983). This is a key element of new institutionalism, the quest for which is said to frequently create isomorphism. It is useful in this thesis because again it can offer an insight into both the driving forces for change and the behaviour of organisations as a consequence of those forces. It is also a broad concept incorporating cognitive legitimacy (spread of knowledge) and socio-political legitimacy (acceptance of venture) which should facilitate a better understanding of how and why some structuration processes appear and how and why certain changes occur as a consequence.

No investigation in the formation, development and change within organisational fields could be complete without exploring two other important institutional change processes, namely deinstitutionalisation, “the process by which institutions weaken and disappear” (Scott, 2001: 182), and reinstitutionalisation, where an existing logic or governance structure is replaced by a new logic or governance structure (Scott, 2001).
Deinstitutionalisation can occur as a consequence of three different pressures, political, social and inertial. It therefore offers a coherent overview of how an institution can be driven into the ground. Together these two concepts will be used in analysis II of this thesis in two different ways. Firstly, they will aid clarification of how an organisational field can be de-legitimised and re-legitimised. And secondly, they will offer an insight into the order of some structuration processes, specifically how and why they occurred, when they did, and the change that they drove as a consequence. Collectively this will help in answering research question 4; “How does change occur within an organisational field?”
The object of this chapter is to describe the link between the study’s purpose, and the research perspective (that is both the assumptions about reality - the ontological question, and how knowledge is produced – the epistemological question). These are important issues because one’s metatheoretical assumptions have very practical consequences for the manner with which research is undertaken in terms of the topic, focus of the study and what is regarded as “data”, how this “data” is collected and analysed, as well as how one theorizes and writes up one’s research account (Cunliffe, 2011). This chapter will also include a reflection of the implications of such perspectives upon the choice of research method, the analysis of the empirical data and the final conclusions that are drawn in order to build a crafted, persuasive, consistent and credible research account.
4.1 Research Perspective

4.1.1 Worldview – Ontological Standing

This thesis is written from the perspective that reality is subjective, that is to say, it is viewed differently by different people at different times owing to a plethora of differing circumstances and perspectives (Berger and Luckmann, 1966). Moreover, reality is affected by the individuals themselves, that is, it is affected by their behaviour and even presence. This implies that reality changes constantly. In other words, social phenomena are created from the perceptions and consequent actions of actors. Reality is constructed therefore by human beings, and through this we can view reality as selectively perceived, collectively rearranged and negotiated interpersonally (Berger and Luckmann, 1966).

This point of view is in line with the social constructivist perspective. From this perspective the social world is viewed as a continuous process, refreshed by each encounter of everyday life as individuals impose themselves upon their world in order to establish a realm of meaningful definition. This is undertaken via the medium of language, labels, actions and routines, which together constitute symbolic modes of being in the world. Social reality is implanted within the inherent features and use of these modes of symbolic action. Accordingly, the realm of social reality has no concrete status of any kind (as it would within a more objectivist assumption) it is a symbolic construction (Morgan and Smircich, 1980).

Within this thesis, it should be noted, that institutions are social constructs, defined as “institutions” given that this suits the researcher’s observations and research paradigm. This is also true with the concept of organisational field, an integral concept within this thesis. These too are regarded as social constructs. Noteworthy is that an important issue within this work is the development of an organisational field, these being social constructs in themselves; expected to occur along the lines of DiMaggio and Powell (1983) which was described in the previous chapter. Furthermore, it is assumed that organisations are not the result of natural laws but that they are part of our social reality, constructed by human beings.

Social constructionism is a subjectivist assumption, viewing reality as imagined in, and thus a product of the human mind. From this point of view humans are autonomous, they give meanings to their surroundings and are creative, in addition knowledge is personal and experimental and consequently research methods need to explore individual understandings and subjective experiences of the world (Cunliffe, 2011). This is different
from objectivist assumptions, which view reality as a concrete given, something that is external, imposing, and that can even determine individual behaviour wherein knowledge is real in the sense that it has observable and measurable laws, patterns and regularities (Morgan and Smircich, 1980).

The focal point of this thesis is ultimately a group of organisations that came together to form the Biofuel Region. From this ontological assumption organisations exist only as groups of actors who have a representation of the organisation that they belong to in their minds, and in the documents that they use. Importantly, however, the organisations do not have an objective existence but once they are created they have a life of their own. Furthermore, the actors themselves are social constructs, in the sense that they are people who share an inter-subjective perspective of the same meanings, for example they work with common endeavours within the same organisation. As a consequence there are no other carriers for the knowledge of the organisation other than actors and documents, save for technological developments. The information about these, however, would be attained via actors or documents. The documents themselves are not seen as factual or objective, but are subjective case studies or accounts of reality that must be interpreted. Given that they (the documents) were written by actors (themselves social constructs) it could be argued then that the documents themselves are social constructions of reality (Saunders et al. 1997).

The reality that I am studying is in fact a socially constructed reality, because the formation of the Biofuel Region was by no means a naturally occurring one. On the contrary, the Biofuel Region came to be developed by a number of actors (both organisations and individuals) during a particular period of time and in a particular place. Once constructed as the Biofuel Region however, it began to be treated as if it had an objective existence (Berger & Luckmann, 1966), and then all aspects of objective reality were attributed to it. Consequently, the Biofuel Region a socially constructed reality was later treated as if it had an objective reality and can only be relevantly studied (epistemologically) through the process method, and an interpretivist approach to it, which will be described in detail in the following section. Thus the ontological standpoint leads to the epistemological standing, or how change should be studied.

4.1.2 Studying Change as a Process – Epistemological Standing

The concept of change, within the Biofuel Region, is viewed as a cultural phenomenon which is also a social construct, that is to say that it is not the result of natural laws, but is created by people, historically and socially
(Berger and Luckmann, 1966). In other words changes are the by-product of countless human choices, rather than laws resulting from divine will or nature. Change is furthermore an on-going process. This is in line with Tsoukas (2005) who distinguished between two different versions of the social world. The first is one in which the world is made up of things in which processes represent change in things. Applicable here, however, is the second classification, a world of processes in which things are reifications of processes. According to Poole et al. (2000) process studies explore a sequence of events as they unfold over time.

Field studies examining organisational change are frequently undertaken in order to develop a process theory of change. In order to move from merely surface observations toward a process theory one must move from description to explanation (Van de Ven and Poole, 2005). Explanation necessitates a story, and these stories can be understood as process theories (Czarniawska, 2004). Of importance is that a process theory should include the following features within the story (Pentland 1999; pp.712-713)

1. **Sequence in time.** A narrative must include a clear beginning, middle, and end. The chronology is an important organising tool. Indeed the events that are referred to within a narrative are understood to occur in order.

2. **Focal actor or actors.** Narratives tell the story of someone or something. There is generally a protagonist, as well as frequently an antagonist. The characters themselves need not be identified by name or developed, along with the sequence however they provide a red thread that ties together the events of the narrative.

3. **Identifiable narrative voice.** A narrative is something that is told by someone. Thus there should be an identifiable voice doing the narrating. Importantly that voice reflects a specific point of view (Rimmon-Kenan, 1983).

4. **“Canonical” or evaluative frame of reference.** Narratives carry meaning and cultural values because they encode, either implicitly or explicitly, standards against which actions can be judged...But even without any explicit moral, narratives embody a sense of what is right and wrong, appropriate or inappropriate, and so forth.

5. **Other indicators of content or context.** Narrative texts typically contain more than just bare events. In particular, they contain a variety of textual devices that are used to indicate time, place, attributes of the
characters, attributes of the context, and so on. These indicators do not advance the plot, but they provide information that may be essential to the interpretation of the events (e.g. knowing that the scene is a wedding changes the significance of the utterance “I do”).

Van de Ven and Poole (2005) developed alternative approaches for studying organisational change. The four different approaches are illustrated in table 5, on the following page. The authors argue that change is important to understand, but what change is, is dependent upon how one views the organisation (as a noun or a verb). A noun represents an understanding of the organisation as an entity and something stable, whilst a verb represents an understanding of the organisation as something that is in a state of constant change. They make reference to the Democritan view that nature consists of changeable interrelations among stable, unchanging units of existence, which is contrary to the Heraclitean doctrine that “all things flow”. Both of these views of the organisation can be studied through the variance and the process approach (Mohr, 1982) – resulting accordingly in four different approaches.
As was emphasised in the introduction to the thesis, my interest lies with the ideational aspects of institutions and therefore the process narrative is, as already argued, the most appropriate. Moreover, this thesis is underlined with the perspective that ours is a world of processes in which things are reifications of processes (Tsoukas, 2005). Therefore organisations are seen as verbs, in this work, having no objective existence in line with them being a social construct and being in a state of emergent flux. Accordingly, approach III is selected for this study, wherein reality can only be understood by interpretation of its subjective meaning. Further explanation of the methodology will be made in the following section.

Table 5 – A typology for studying organisational change (Van de Ven and Poole, 2005: 1387)
4.2 Defining the Empirical Study - Methodology

As was underscored in the introduction this thesis has two purposes, in reiteration:

**Purpose one** - To examine and explore the process of organisational field change by investigating the manner with which an organisational field is formed, and how it changes as a consequence of this formation, taking into account change driven by any triggers that it incurs along the way.

**Purpose two** - To examine and explore the process of organisational field level change driven by individual contributions, isomorphism, legitimacy and de/reinstitutionalisation.

As has been emphasised, the importance and centrality of organisational change in management research is unequivocal (Pettigrew et al., 2001). However there are disagreements between scholars as to the manner with which it should be studied (Van de Ven and Poole, 2005). In the introduction of this thesis, whilst highlighting the underresearched areas within institutional theory and working towards the research questions and purposes, I underscored the assertion of Suddaby (2010) who argued that using a quantitative approach can overlook the “institutional story”. Moreover, in order to consider the ideational aspects of institutions, Suddaby (2010) called for qualitative approaches to their study, and more specifically the case study approach used by earlier Institutionals such as Selznick (1957). Conveniently this is also inline, as discussed, with the ontological and epistemological underpinnings of this thesis.

Writing in a special article for the Academy of Management, the editors of the journal, Bansal and Corby (2011), commented on the benefits of such an approach within management research;

“Qualitative researchers have the opportunity to raise new research questions, or even challenge the questions they or others have already asked. New questions will reveal deeper insights into management, organisations, and society, which are critical to understanding and potentially shaping our world” (Bansal and Corby, 2011: 235).

A quantitative study featuring a survey and a statistical analysis might, on the other hand, have an advantage considering the assessment of quality of the final work. As with all social knowledge, values of quality for qualitative research change and are context dependent (Tracy, 2010). Taking quality
into consideration I have followed an eight point conceptualisation of qualitative quality suggested by Tracy (2010).

Referred to by the author as, “Eight “Big-Tent” Criteria for Excellent Qualitative Research” (see table 6) Tracy has essentially brought together criteria from a number of different authors, in order to create a universal framework for the undertaking of a good quality qualitative research project. The framework is concerned with a number of areas such as the topic of the research, the rigour with which the research is undertaken, and the sincerity of the researcher. Moreover, the credibility of the research, its resonance, contribution, ethical considerations and coherence are underscored. Where appropriate this chapter will refer to the table in order to verify the means, practices and methods that were used to achieve the criteria. In addition, the table succinctly documents the manner with which the criteria have been achieved within this thesis.

Following on from the table will be an explanation of the data collection method which aims, in part, to fulfil the sincerity criteria by being transparent about methods and challenges within the research work.
### Criteria for quality (end goal)

<table>
<thead>
<tr>
<th>Various means, practices, and methods through which to achieve</th>
<th>How it was achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1-Worthy Topic</strong></td>
<td></td>
</tr>
<tr>
<td>The topic of the research is</td>
<td>The topic is relevant socially and politically. The empirical case of the Biofuel Region involves regional development. It also involves combating climate change and the attainment of energy independence. Recently the Biofuel Region has created controversy over its actions and has consequently received criticism. The Biofuel Region is well-known throughout Sweden and many people drive cars that run on biofuels.</td>
</tr>
<tr>
<td>The topic is relevant socially and politically.</td>
<td></td>
</tr>
<tr>
<td>The topic is timely.</td>
<td>1-Worthy Topic</td>
</tr>
<tr>
<td>The topic is significant.</td>
<td></td>
</tr>
<tr>
<td>The topic is interesting.</td>
<td></td>
</tr>
<tr>
<td><strong>2-Rich Rigour</strong></td>
<td></td>
</tr>
<tr>
<td>The study uses sufficient, abundant, appropriate, and complex</td>
<td>This thesis incorporates three different schools of institutional theory, used to develop an integrative framework for the examination of organisational field level change. 27 interviews and a myriad secondary data sources were used to develop the empirical narrative, telling the story of change in the Biofuel Region. An accurate and comprehensive description of the manner with which data was collected and subsequently analysed will be provided in this chapter.</td>
</tr>
<tr>
<td>Theoretical constructs</td>
<td></td>
</tr>
<tr>
<td>Data and time in the field</td>
<td></td>
</tr>
<tr>
<td>Sample(s)</td>
<td></td>
</tr>
<tr>
<td>Context(s)</td>
<td></td>
</tr>
<tr>
<td>Data collection and analysis processes</td>
<td></td>
</tr>
<tr>
<td><strong>3-Sincerity</strong></td>
<td></td>
</tr>
<tr>
<td>The study is characterised by</td>
<td>An outline of the researcher’s perspectives. An explanation of the data collection method. An outline of the research’s limitations and challenges.</td>
</tr>
<tr>
<td>Self-reflexivity about subjective values, biases, and inclinations of the researcher</td>
<td></td>
</tr>
<tr>
<td>Transparency about the methods and challenges</td>
<td></td>
</tr>
<tr>
<td><strong>4-Credibility</strong></td>
<td></td>
</tr>
<tr>
<td>The research is marked by</td>
<td>Primary and secondary data are used, the latter being sourced from a plethora of different places Direct quotes from a variety of respondents and secondary sources will be used within the empirical chapter. Consultation/clarifications were made with key interviewees during the analyses.</td>
</tr>
<tr>
<td>Thick description, concrete detail, explication of tacit (nontextual) knowledge, and showing rather than telling</td>
<td></td>
</tr>
<tr>
<td>Triangulation or crystallization</td>
<td></td>
</tr>
<tr>
<td>Multivocality</td>
<td></td>
</tr>
<tr>
<td>Member reflections</td>
<td></td>
</tr>
</tbody>
</table>

*Table 6 – The “Eight “Big-Tent” criteria for excellent qualitative research” and how they are achieved (Tracy, 2010: 840)*
<table>
<thead>
<tr>
<th>Criteria for quality (end goal)</th>
<th>Various means, practices, and methods through which to achieve</th>
<th>How it was achieved</th>
</tr>
</thead>
</table>
| 5-Resonance                    | The research influences, affects, or moves particular readers or a variety of audiences through  
                                       • Aesthetic, evocative representation  
                                       • Naturalistic generalisations  
                                       • Transferable findings | Every effort has been made to present the empirical material in a manner that is beautiful, evocative and artistic. This includes considerations about fonts, layout and the use of some photographs and pictures (for informative and aesthetic reasons). Useful managerial implications |
| 6-Significant contribution     | The research provides a significant contribution  
                                       • Conceptually/theoretically  
                                       • Practically  
                                       • Morally  
                                       • Methodologically  
                                       • Heuristically | This study incorporates some theoretical contributions. This study incorporates some practical managerial implications. Opens the door for further research. |
| 7-Ethical                      | The research considers  
                                       • Procedural ethics (such as human subjects)  
                                       • Situational and culturally specific ethics  
                                       • Relational ethics  
                                       • Exiting ethics (leaving the scene and sharing the research) | Permissions to record and document the interview material was asked of all the participants (and granted). Permission to quote respondents directly by name was asked of all respondents (and granted). Respect was paid to respondents and results will be shared with them. Care was taken to present the information as accurately as possible. |
| 8-Meaningful coherence         | The study  
                                       • Achieves what it purports to be about  
                                       • Uses methods and procedures that fits its stated goals  
                                       • Meaningfully interconnects literature, research questions/foci, findings, and interpretations with each other | Every effort has been made to ensure that the research questions and purposes are linked carefully to the theoretical framework, methodology, analyses and conclusions. |

Table 6 (continued) – The ‘ Eight “Big-Tent” Criteria for Excellent Qualitative Research” and how they are achieved (Tracy, 2010: 840)
4.2.1 Data Collection Method

Discussing the qualitative approach Malterud, (2001: 483) asserts “Qualitative research methods involve the systematic collection, organisation, and interpretation of textual material derived from talk or observation”. Inherent to these perspectives is the degree of subjectivity and a qualitative approach is deemed most suitable for the attainment of an understanding of the social world through an examination of the interpretation of that world by its participants (Bryman and Bell, 2003).

Within this study a qualitative research approach is used to attain a deeper understanding of how, within the empirical case of the Biofuel Region, the organisational field changed by examining its formation and the triggers for change that occurred along the way, in line with purpose one. Additionally, in line with purpose two, the process of organisational field change driven by institutional forces and individuals will be examined and explored. Therefore an exploratory case study approach (as per Harrison, 2002) is selected in order to attain different perspectives of the development and change, and attain information from different actors within the Biofuel Region.

Given that change is the central concept within this thesis and is viewed here as a process, the case study is viewed as an appropriate manner with which to observe the process because it offers the opportunity for an holistic view of a process (Patton and Applebaum, 2003) because of the fact that, as has been emphasised, multiple sources of evidence are used, and multiple respondents and information are sourced. The case study contributes greatly to our knowledge of individuals, and of organisational, political and social phenomena, and the requirement for case studies arises from an ambition to understand multi-faceted social phenomena. To be more succinct, the case study permits an investigation to retain the holistic and meaningful characteristics of real-life events (Yin, 1984).

More specifically, a case study is an empirical enquiry whose objective is to investigate a contemporary phenomenon within a real-life, in this case real organisational, context. Furthermore, the boundaries between phenomenon and context are generally not clearly evident and multiple sources of evidence are used (Yin, 1984). In this case two different methods of data collection are employed, namely semi-structured interviews, which are non-standardised (Saunders et al., 2003) to offer some latitude to ask further questions in response to what might be seen as significant replies (Bryman and Bell, 2003) and documentary secondary data which consisted of compiled data – further details of each will follow later in the chapter.
The subject of the thesis concerns a topic which is of particular relevance both socially and politically at the time of writing, it is my assertion consequently that it might be deemed a worthy topic. In line with Tracy (2010) who argued that for research to be considered as having a worthy topic then it must be “relevant, timely, significant, interesting, or evocative” (p.840). In addition, given the current trend in the automotive industry of investing money in green cars, the governmental trends of offering tax breaks as incentives for their purchase, and an increasing public awareness of climate change and global warming, as well as the instability in many of the oil producing countries, I believe it to be timely and significant in addition.

Primary data was collected through 27 face-to-face interviews (and 1 telephone interview). Additional information was collated through organisational websites and the internet, and flyers and material offered by the respondents as well as press releases and organisational press releases. The following sections will detail the manner with which this information was gathered, in an attempt to validate that the research has been undertaken with rigour, as per Tracy (2010).

4.2.2 The Interviews

Empirical information gathering work, in the form of interviews, has been undertaken during two periods. The first leg took place between the 5th April 2007 and 8th February 2008 and included 11 face to face interviews. The second took place between 9th March 2010 and 20th May 2011 and included 16 face to face interviews and 1 telephone interview (the latter format was a result of the respondent’s lack of availability). A full list of interviewees, the organisations that they represented and the length of the interviews is available in Appendix 1.

An interview guide was prepared for each leg of the interviews (these are included in appendix 2). The exception was the first general background interview, when an overview of the development of the Biofuel was asked for, given that very little was known about it beforehand. The interview guide can be a brief list of prompts of areas to be covered, or a more structured list of issues or questions to be posed during the interview (Bryman and Bell, 2003). My interview guides consist of general themes to be addressed, which allow the respondents to expand upon what they feel is important (Bryman and Bell, 2003). The interviews begin with a brief overview of the purpose of my study, following which I had a number of open-ended questions, specifically designed to allow the respondents to elaborate and give me
information about what happened. Following these answers I could ask for further details, when and if required.

Before I began my research endeavour my knowledge of the concept of biofuel was limited, let alone my knowledge of the Biofuel Region. During my work at Umeå University I undertook a teaching assignment at the campus in Örnsköldsvik, on the Sustainable Development Masters programme. It was during this period that I became acquainted with Jan Lindstedt, who is a senior employee of SEKAB and a founding father to some extent of the industry based in Örnsköldsvik. He gave a presentation to the students on the Biofuel Region itself. I was consequently aware, from the beginning of my research work that Lindstedt was one of the key players in the Biofuel Region and I decided to contact him first of all and ask him whether he would be willing to be interviewed. This was an example of purposive sampling according to Saunders et al. (2003: p175) who claim that “Purposive sampling enables you to use your judgement to select cases that will best enable you to answer your research question(s) and meet your objectives”.

This first interview was a general background interview, and after having undertaken it I was able to begin to map some of the main organisations that had been involved within the development of the Biofuel Region. From here on in, a snowball technique was used to access respondents during the empirical material collection process and therefore the choice of respondents was made according to information that was gathered during the research process. The “snowball” or “chain referral sampling” method is one that is widely used in qualitative research, yielding a study sample via referrals made amongst individuals who share or know of others who have information that is of research interest (Biernacki and Waldorf, 1981). It was a useful tool because as my knowledge and understanding of the development of the field grew, I was better able to decide which actors to target in order to attain more information about specific areas.

The choice of organisations and individuals selected for the first leg of interviews is not an exhaustive list of all of the actors involved within the development process. It is more a carefully considered series of choices, made step-by-step during the research process, according to the empirical material obtained on the way. An important consideration here is that these interviews were undertaken in a bid to seek to understand how the Biofuel Region had developed, not specifically to answer to my current research questions about organisational field level change. On the other hand however, the development of the field is an integral element of the research and therefore I would argue therefore that the information attained during
the first leg of the interviews can be very useful here. Especially considering the fact that it was often presented as a sequence of events that unfolded in line with the approach suggested by Van de Ven and Poole (2005).

I began the second leg of interviews by arranging interviews with some of the people that I had previously met, because I had already identified them as important actors, and it was my belief that I could get a good general overview from them as to what had been occurring with the Biofuel Region with regard to development and change and the drivers and results thereof. Again the choice of organisations and individuals was not an exhaustive list, but the research was undertaken until the point at which a thorough understanding of what had happened had been attained.

Considering ethical issues, an important consideration was made with regard to the use of the respondent’s names within the final work. The respondents were asked about whether they would mind their names being used in the research and they were each happy for me to do so. From the point of view of secondary data no such consideration was made, given that it was already printed material.

4.2.3 Conducting the Interviews

Each of the chosen respondents were sent introductory letters (via email) within which I provided a brief description of the research project, highlighting my interest in development and change within the Biofuel Region, in order that they could consider whether they were able and willing to contribute to this specific study. In preparation for each of the interviews background information on the organisation was collected beforehand from secondary sources such as the internet and publications.

I began each interview by explaining the overarching ambition in succinct and general terms. By this measure the informants were not confused by theoretical expressions, but the purpose of the interview was clarified. As has been discussed, all but one of the interviews were undertaken face-to-face, the final interview being undertaken via telephone. Given that the respondent and I were acquainted and the line was clear this did not make any difference to the quality of the interview or to the information that was obtained during it.

During the first leg of interviews the respondents were asked about their roles within the organisations that they worked for. After that the questions were orientated to the role that their organisation had played in the development of the Biofuel Region, and the interviewer was left to discuss
the development from their perspective, being re-orientated towards the questions should they stray away. The object was to attain a thorough understanding of the manner with which the field had developed, up until that point, taking into consideration the drivers for development, the key individuals and organisations involved, when and how certain significant steps were made and how barriers had been overcome.

During the second leg of interviews the respondents were asked about the roles that the organisations that they represented played in the Biofuel Region, and how they had changed during the timeframe that they had existed. The driving forces behind such changes were discussed, as well as the organisational responses. An important consideration was that the focus of the research was both organisational change and inter-organisational change, or micro and meso-level change. Therefore it was important to discuss not only the individual organisations, but the Biofuel Region itself and the changes that had occurred on both levels. In both legs of interviews senior members of staff were selected for interviews, from each organisation. The reason for this is that they were the ones most aware of what was going on. In addition, many of them had been employed since the beginning of the development process and consequently were able to speak from their own experience.

At all times during all of the interviews I was careful to provide the respondents with sufficient time to reply to the questions posed and avoided projecting my own thoughts (see Ghauri and Gronhaug, 2002). I also listened carefully in order to ensure that I did not miss any information. In the spirit of sincerity however, I must confess that I was very impressed from the start with the work that the Biofuel Region had done over the years. The implication for the research work, I believe, is that I was enthusiastic and interested, which I hope meant that I was able to get along better with the respondents and consequently obtain more information.

The length of the interviews varies somewhat from 30 minutes to 2 hours and 40 minutes. In accordance with the discussion made on interview durations by Saunders et al., (2003) I tried to establish the amount of time that was required for each interview with the respondents beforehand. I explained that it might take a few hours in order to ensure that the time was available, so that the interview would not be cut short. Owing to the semi-structured interview approach I was not aware, a priori, of precisely how much information the respondents might have to give, and therefore how much time we would require. Thus I requested a period of “about 2 hours” in order that the respondents were able to allocate sufficient time to me so that we could cover all of the material. Some of the interviews lasted less time,
and for some, where the respondents were more informative I used the whole two hours in order to maximise the opportunity for my information gathering. There was only one interview that ran for longer than two hours, but this was as a consequence of the amount of information that the interviewee had to share, and he was happy to spare the time. In all of the other cases the final minutes were often used for clarification and pleasantries.

After having requested permission from the respondents all of the interviews were recorded. Bryman and Bell, (2003) claim that this procedure is essentially mandatory. There are numerous benefits to it according to Heritage (1984), it helps to correct the limitations of our memories, allows a more thorough assessment of what has been said, lets one assess the information repeatedly, permits secondary analysis, it can be used to counter accusations of bias and it allows the information to be used again, if need be, for another purpose. There can be disadvantages however to recording the interview, as pointed out by Bryman and Bell, (2003) the use of recording equipment can be disconcerting for respondents, who might become troubled or self-conscious at the prospect of their answers being preserved. From my perspective I was most anxious about remembering all of the information, and being able to revisit the material in order to more thoroughly assess the information was priceless. In any case Bryman and Bell, (2003) assert that if people do agree to an interview then they generally cooperate, and loosen up following any initial anxiety that they might have felt from being recorded. The potential technical problems with the equipment or disruption of having to change a cassette tape (Ghauri and Gronhaug, 2002) were eliminated by using digital recording equipment and by charging and testing it thoroughly beforehand. During the interviews I did make notes in order to maintain my concentration and focus (Ghauri and Gronhaug, 2002) and to write down the main issues discussed.

4.2.4 Other Research Materials

In addition to the interviews of actors within the organisational field, I collected a plethora of different documentary secondary data (Saunders et al. 2003). This data consisted of compiled data that had received some kind of selection or summarising such as company press releases, newspaper and magazine articles, organisational pamphlets and transcripts of speeches.

These (secondary) sources of information were interesting because they document specific details about the organisations, as well as official terms, procedures and processes. Given that the organisational material reflects the official terms and perspectives of the organisation, then they proved fruitful
in comparison to the views and opinions voiced in the interviews. Moreover, the press releases provided me with a sound mass of information to compose an entire sub-section of the empirical chapter, which is based upon critique of the industry from the press and the impact that that had upon the organisational field.

Secondary data was collected principally to make clarifications and to enrich the description, offer concrete details, and to attain different perspectives on the series of events that unfolded in the change process of the Biofuel Region. The secondary data was collected in two different ways. First, seeking to make clarifications, enrich descriptions and offer concrete details about the story of change and development in the Biofuel Region, material was collected from the websites of the organisations concerned. Many of the organisations post information about their history and activities, as well as press releases that document them on their company websites and these were used as a source of information. It is important to note that the information obtained from the websites represents the organisation’s perspective.

As a direct consequence, in order to explore alternative perspectives, as well as to document opposition to the organisation’s undertakings and further explore the triggers for change outlined by respondents, it was necessary to take a second approach to the secondary data collection. Newspaper and magazine articles documenting adverse media attention were searched for online. This process began with articles which had been referred to by the respondents and progressed on to news articles in newspapers and magazines. Certain keywords were used on search engines, alongside the names of newspapers such as Svenska Dagbladet, Aftonbladet, Stockholm News, The Local, and Dagens Industri. Some of these searches, alongside the newspaper and magazine articles attained on the organisation’s websites proved fruitful in the attainment of alternative perspectives. They allowed me to document some of the opposition that the field had faced.

Since the research takes externalities, specifically triggers for change, into consideration the attainment of alternative perspectives was important. I realised in addition, given that one particular external critique was aimed at the Biofuel Region’s activities in Africa, that voices from outside Sweden were important too. Therefore I repeated my search for articles in Tanzanian and Mozambique newspapers, using a similar technique.
4.3 Presenting the Information

As has been emphasised, change within the Biofuel Region is viewed as a process that is a sequence of unfolding events (Poole et al. 2000). Consequently the information obtained in both legs of the empirical gathering process will be presenting in a narrative, a story that has a beginning and an end. Direct quotes from respondents will be used to both reinforce the points made, and to demonstrate the perspectives of different actors in the field.

Important to the presentation are the secondary data, because this can be used to reinforce, to illustrate, and to elaborate the points that interviewees make. In addition, this information can be used to offer up alternative opinions or more specific information, in circumstances where more information or clarification is required.

The information itself will be presented in chronological order, since time is a key referent in the social world and a significant medium of social life (Van de Venn and Poole, 2005). The narrative has a starting point of 1986, and an end point of 2009. The reason for the starting point is that this is the time at which the activities within the field began to move, purposively, towards the development of the Biofuel Region. The reason for the end point is that this marks the last significant event in the story. In line with Van de Ven and Poole (2005) the story will narrate the actions and activities by which collective endeavors unfolded within the Biofuel Region. This narrative will be broken up into 4 different time periods. The reason is in order to break the material down into smaller sections, like chapters in a book. The time periods were established based upon developments in the field, which led to new and significant directions. Breaking the material up in this way also made it more manageable for analysis. In addition, these breaks in the text are aimed at making it easier to read.

Some photographs have been sourced by the author to add colour and to illustrate certain key events and milestones. The chief reason for the photographs is to add interest and help the reader to visual certain interesting facets of the story. As was discussed in table 6, every effort was made to present the material in a fashion that is both informative and aesthetically pleasing.
4.4 Analysing the Material

The analysis itself will be broken down into two. This is dictated by the purposes. That is, the object of analysis I is to address purpose one, and the object of analysis II is to address purpose two. Within each of the analyses the material will be broken down into the 4 time periods just discussed. Noteworthy is the fact the two analyses will overlap, and to that end are by no means independent of each other.

In elaborative terms, analysis I will seek to answer the first 2 research questions. In order to do so it will identify, within the narrative, the salient structuration processes which were summarized in table 1. There are 8 of these processes and they are made up of 4 concepts taken from DiMaggio and Powell (1983) (new institutionalism) who documented the formation of an organisational field, as well as 4 concepts taken from Selznick (1957) (old institutionalism) who looked at the manner with which an organisation becomes institutionalised. An important issue here is that I am looking for their salient presence, which is their conspicuous or prominent presence, based upon the information that I have in the narrative. These will be documented, discussed and tabulated in order to record the manner with which the field formed and developed.

The second task involved in Analysis I is the identification of triggers for change, within the narrative. A framework of triggers for change was developed in chapter 2, and the different types of triggers were documented in table 2. The objective here is to examine the narrative for these different types of triggers in order to explore the impact that they each had upon the process of field formation and development. As with the structuration processes these will be documented, discussed and tabulated in order to record the influence that they had. To fulfill these tasks, analysis I will examine the narrative by briefly re-telling the story, focusing this time upon the identification of the structuration processes and triggers for change and the effects that they had upon the field and the organisations within it. Therefore the material will include headings which identify the different kinds of triggers for change, both by naming the empirical event and by identifying what kind of trigger for change that it represented. Noteworthy then, is that the identification of both structuration processes and triggers for change will be done concurrently.

Analysis II will seek to answer the latter 2 research questions. It will strive to identify, within the narrative, the role that individuals played within the formation, development and change of the field. In order to do so it will identify and discuss the individual entrepreneur’s activities and
contributions within the field. It will also bring in new concepts from institutional theory, such as isomorphism, legitimacy and the process of de/reinstitutionalisation in an attempt to make sense of the structuration processes, triggers for change and individual contributions, and accordingly better understand how change occurs within an organisational field. Again the material will be broken up into the same 4 time periods, and the identification of individual contributions and institutional forces at work within the field will be undertaken at the same time. In the interests of credibility certain consultations and clarifications were made with key interviewees during the analyses.

4.5 Limitations

Considering research question 2 (How do triggers for change influence the process of field formation and development?) it is important to note that the respondents were asked to discuss significant events within the development of the Biofuel Region. As has been argued, this included certain triggers for change, which are external events that drive change within the field. History and context were both important issues; however there were potential disruptive events that were not mentioned. For example, the financial crisis of 2008, as we shall see in the next chapter, is a key disruptive event. However, the Scandinavian financial crisis of the early 1990s was never discussed at all by the respondents. The chief reason for this I would aver is that the field was small at that time and that was subsequently unaffected by the crisis, despite its scope. The overarching point here is that it is not expected that the significant events included in the empirical chapter and subsequent analyses will not be an exhaustive list of those that occurred in the country, but the ones that were significant from the perspective of the respondents and the secondary information that has been collected.

Another important consideration is the fact that this was not a longitudinal study; consequently it relied heavily upon the memories of the respondents. Accordingly, there might well have been crises or significant events in the past that were overlooked as a result of the fact that they occurred a long time ago and were thus not as fresh in their memories as more recent events.

As has been discussed secondary data was collected in this research. Considering the press releases that were used, an important point is that they were referred to as an extension of the information that was obtained from the interview respondents. That is, the object of collecting them was not to comprehensively document what was said in the press, but to illustrate the key arguments that were made. The key arguments were brought to my
attention first of all by the respondents. Therefore, the empirical chapter is not a review of the debates and critiques of the Biofuel Region, more an overview of the key arguments, represented by a review of the key articles and documents.

Considering research question 3 (What role can individuals play in the formation, development and change of an organisational field?) a key potential limitation to this research endeavour is that one of the key individuals involved in the development of the Biofuel region, Per Carstedt, was not interviewed for this work. This was owing to his unavailability, given in part that he was apparently residing in Tanzania for much of the period over which the thesis was written. In order to deal with this issue his voice will be heard in the narrative via a series of compiled data sources, which quote his words on a number of issues. These were obtained from official SEKAB sources, which were available on their homepage.
5 Development and Change in Sweden’s Biofuel Region

As has been emphasised the empirical focus of this thesis is the Biofuel Region and the organisations that it is made up of and, more specifically, the process of organisational field development and change.

The empirical story incorporates the accounts of organisational happenings from a number of individuals, employed and associated with a variety of different organisations involved with the Biofuel Region both directly and indirectly, as well as excerpts from newspapers, magazines, and organisational literature. The term “Biofuel Region” is facilitated here as an empirical term for the specific organisational field that will be examined. As has been previously underlined, in the methodological chapter, the Biofuel Region consists of a group of organisations that exhibit the characteristics of the structuration process of an organisational field as per DiMaggio and Powell (1983: 148) and Bonnedahl and Jensen (2007). That is to say that they interact with one another, they have emerging patterns of hierarchy and
coalition, and they have an upsurge in information and a mutual awareness of being within a common adventure. This will be investigated further in the analysis.

In order to frame the context of the story and to offer a succinct background to the emergence of the organisational field, the following section will present an historical account of the events that led up to the development of the Biofuel Region in Sweden, from its historical roots in the early 20th century, until the beginning of the case study in 1986. This section also aims to introduce some of the key organisations within the organisational field, in order to set the scene for the narrative.

5.1 Research Context – Background to the Biofuel Region (1904-1986)

Work has been going on for a number of decades in Sweden in the area of rural development, job creation and towards the improvement of local economies through the use of bioenergy (Hillring, 2002). This development process has aimed more recently in addition to purportedly help to combat environmental crises, and in preparation for peak oil through the use of eco-efficient fuels. Bio-ethanol was first produced in the Örnsköldsvik area as a by-product of the pulp and paper making process in 1904 at Mo and Domsjö’s (MoDo’s) sulphite pulp and paper mill\(^2\) at Domsjö.

Modo had been founded during the late nineteenth century by J.C Kempe. Mr Kempe was an entrepreneur who acquired several hundred acres of forest land from trading in wood. He was involved in the construction of sail ships and developed plants to manufacture sail cloths; as well as iron production and Sawmills. In 1903 the company developed their sulphite pulp mill at Domsjö.

By 1904, the ethanol that they produced was used, principally, in the chemical industry although some was sold for human consumption. During the 1930s larger quantities began to be produced as the demand for pulp and paper grew, and ethanol became particularly important during World War II when the demand for oil in the world increased exponentially as a direct consequence of its use in the plethora of military vehicles. In fact “the 1940s, with the Second World War and its blockades, became an extremely dynamic epoch in the Swedish chemical industry (…) (Peterson, 2011; p.194).

\(^2\) The sulphite process produces wood pulp, which is almost pure cellulose fibres, by using various salts of sulphurous acid to extract the lignin from wood chips in large pressure vessels called digesters.
Consequently, during this period ethanol was used in both the chemical industry and for low blending, that is to say it was mixed with petrol – specifically speaking E10\(^3\) or E15. MoDo was responsible for distributing it to the oil companies. The demand for ethanol was so high during that time that MoDo imported more of it from the Caribbean.

Following the end of the War, the cost of oil fell - owing to its decreased demand. The demand for ethanol was subsequently reduced radically and petrochemical plants were developed for refining oil in southern Sweden during the late 1940s and early 1950s. Discussing this period of time Carstedt-Parmlid, a senior employee of BAFF and SEKAB (two significant players in the Biofuel Region that will be introduced in more detail later on in the story) purported that:

There was a lot of development here during the war, and then afterwards everything was being downsized and jobs were moving to the south of Sweden where they were building petrochemical plants. (Carstedt-Parmlid, 2007)

Ethanol continued to be produced over the years, as a by-product of the sulphite pulp and paper making process at Domsjö Fabriker. Despite the demise of the use of ethanol as a transport fuel, the positive development in the Swedish Chemical Industry that began during the war continued into the mid-1960s. When, during this period, a considerable number of chemical products were produced and exported by Modo and their research laboratory (Peterson, 2011).

The competence, knowledge, and traditions that were developed were maintained by two organisations based in Örnsköldsvik, namely Berol and MoDo (who were by now the owners of Domsjö Fabriker). Berol was a state owned organisation that was involved in chemical production. In 1983, in a bid to develop industry in the area, the Swedish Ethanol Development Foundation was established by Örnsköldsvik Kommun\(^4\), Chermatur Engineering AB, Skellefteå Kraft AB\(^5\), and Taurus Energy. The purpose of the foundation of this NGO was initially to support the development of ethanol based chemistry.

\(^3\) E10 is a fuel mixture of ethanol and petrol, 10% ethanol and 90% petrol. E15 is a mixture of consisting of 15% ethanol and 85% petrol.

\(^4\) A Kommun (Municipality in English) is an administrative entity composed of a clearly defined territory and population. A municipality is usually governed by a mayor (currently Elvy Söderström) and a municipal council.

\(^5\) Skellefteå Kraft is the local government owned power company based in Skellefteå, Sweden.
Jan Lindstedt, who has been involved in the arena since the early 1980s, discussed the suggestions of consultants employed at that time to come up with ideas for developing the local industry:

One of the solutions, let’s say, the only solution that they thought of in the possible long run was cellulose ethanol, because we had the raw materials, we had the history. (Lindstedt, 2007)

Later in 1985 SEKAB6 (Svensk Ethanolkemi AB) was established in order to consolidate the knowledge and to undertake research projects in ethanol production from cellulose (which is referred to as 2nd generation ethanol). SEKAB was founded by Berol (50%) and MoDo (50%). Lindstedt elaborated upon the reasons for why the Swedish Ethanol Development Foundation (later called BAFF7) was established:

Actually BAFF was founded as a development organisation that should support both the documentation and establishment of the ethanol based chemistry so actually in 1983, when it started, it was focused on ethanol as a chemical feedstock (...) (Lindstedt, 2007)

The following year, in 1986, the focus of SEKAB and BAFF changed as they planned to expand the reaches and potential market for ethanol, as they ventured into providing ethanol fuel for local public transportation.

5.2 Period ONE (1986 – 1994) – The Emergence of a New Field

5.2.1 Pilot Test of Ethanol Buses

1986 marks the beginning of the empirical story because it was at this point that changes in focus began in the area, and the Biofuel Region was essentially born, beginning with the development of a biofuel for public transportation infrastructure, which started with a pilot test of ethanol powered buses in the Örnsköldsvik area.

6 SEKAB is currently owned by a regional consortium which consists of Örnsköldsvik Energi, Umeå Energi, Skellefteå Kraft, and Länsförsäkringar in Västerbotten, OK Ekonomisk Förening and EcoDevelopment.

7 In 1999 an increasingly international focus was the driving force behind a name change to BioAlcohol Fuel Foundation (BAFF). The foundation manages projects in the area of ethanol production, distribution and usage. (BAFF, 2009)
Whilst discussing the role of BAFF in the endeavour Lindstedt highlighted this point:

(...), but then in 1986 when the buses started it [BAFF] was very much more focused on ethanol as a transport fuel. (Lindstedt, 2007)

In 1986 SEKAB and BAFF began the project in collaboration with Scania and the local bus operating company in Örnsköldsvik. BAFF and SEKAB were responsible for the initiative. The objective was to develop a biofuel based public transportation infrastructure. There were essentially four motivating factors, the first of which was a larger market for the ethanol fuel. The second was regional development, and ultimately the development and production, via local research and development, of cellulose based ethanol (or 2nd generation ethanol), which it was planned at the time would be made from local forestry. The third was the development of an eco-efficient fuel infrastructure and finally fourth, a step towards energy security for Sweden.

---

8 A by-product of their sister company Domsjö.
The first endeavour was the recalibration of two Scania diesel buses9 which were to run on ethanol (ED9510) provided by SEKAB in order to test the technology. The technique requiring adjustments to the engine management system to increase compression for ignition, and an alteration of the fuel injection system in order that it could cope with the more corrosive fuel according to Lindstedt.

The venture was aided by support from local politicians, since the local municipality owned the bus operating company and was keen itself to promote the use of bio-ethanol and the development of the bio-ethanol sector, to create employment opportunities and to promote regional development. In addition, legislative changes had to be made considering the sale of biofuels and the taxation imposed upon them, these were encouraged by BAFF, who were responsible for lobbying at a national level to establish a tax reduction on bio-ethanol in order that it could be cost effective compared to its fossil fuel brethren. Lindstedt (currently the head of Market & Commercialisation at SEKAB and Managing Director of EcoDevelopment11, who was at that time Managing Director of BAFF) reflected upon the changing focus of SEKAB and BAFF, outlining their responsibilities within this initial endeavour:

SEKAB has been focusing very much on ethanol as a chemical feedstock and has been producing and developing the process, until the fuel business started in 1985 and it was at that time a small business, ethanol for heavy vehicles and ethanol for fleet tests on modified Otto engines. So it was just on a small scale, but it was a cooperation, and let’s say that SEKAB has been the supplier of ethanol and chemicals and the business partner, and BAFF has been the organisation that has been lobbying and working with development projects and things like that. (Lindstedt, 2007)

The advantage of such a starting point was that it required merely the modification of existing vehicles and the development of a simple distribution system. The distribution system provided the bus depot with

---

9 Scania manufactures buses that run on ethanol mixed with additives that boost the initial ignition of the engine, as well as denaturants and anti-corrosive agents. The specially adapted Scania buses require 60% more fuel than conventional diesel buses; since ethanol has lower energy content than diesel. (IEA, 1997)

10 ED95 consists of 95% ethanol, and 5% additives which boost the ignition (especially important in the harsh Swedish winters) as well as denaturants (to prevent it from being drunk (in this case methanol)) and anti-corrosive agents.

11 EcoDevelopment was formed in 1991 as a consultancy company, initially employing 5-6 people until 2004 when it was developed so that it might become a parent company for SEKAB. Jan Lindstedt and Per Carstedt own 30% and Örmsoldsvik Kommun 70% of the shares.
ethanol, supplied by SEKAB. A benefit of beginning with buses was that their refuelling is undertaken in one place, namely at the depot, and therefore the distribution system required consisted of merely a delivery of ethanol (ED95) from SEKAB to one central location.

The project began with 2 buses in Örnsköldsvik, in the same year Stockholm City Transport also indicated their interest and later became involved in the project, and began to purchase and run ethanol buses.

5.2.2 Stockholm City Council Purchase Buses

By 1989, 30 ethanol-operated buses were being run in Stockholm. Scania were responsible for providing the re-calibrated vehicles and SEKAB for the ethanol. SEKAB shipped the ethanol to Stockholm by road (SEKAB, 2011).

Despite the potential of the enterprise (according to SEKAB (2012) there are over 600 ethanol-operated buses in service in Sweden) there was naturally an upper limit, with regard to the impact and market for bio-ethanol, which could be achieved with public transport. Consequently, an effort was made to increase the impact and further develop the market.

5.2.3 Pilot Test of Flexi-fuel Vehicles (FFVs12)

In an interview from the first round of empirical data collection, when asked about the change in the Biofuel Region and the particular developments that led to it Jan Nyman (head of trade and Industry at Örnsköldsvik Kommun) commented that:

Jan Lindstedt is the man who has been running these questions all the time, he has been a missionary. (Nyman, 2007)

Lindstedt is the man who has been, and indeed remains, a central figure in the Biofuel Region. In fact it was his initiative that drove the development of the biofuel for private transportation infrastructure. A catalyst leading to this

---

12 A Flexi Fuel Vehicle (FFV) has a combustion engine with a flexible injection system. Any blend of fuel from E85 (85% ethanol and 15% petrol) to 100 % petrol can be used in the car. The car is provided with a sensor that measures the conductivity in the fuel, and determines the ratio of the blend. The signals are later sent to a computer that controls injection, ignition time and quantity of air. Injection is increased and substituted with resistant material for large quantities to be injected. The vehicle is basically a standard car. The obvious differences are that engines with only E85 are about 7% more powerful than pure petrol engines, and the fuel consumption increases by 30%, because the energy content per litre of ethanol is lower. (BAFF, 2011)

Note that the term “Flexifuel Vehicle” is used by the Ford motor company to describe their products, however given that Ford were the first brand of alternative fuel cars on the Swedish market “Flexifuel Vehicle” or “FFV” was used to describe all biofuelled cars by interviewees, and will be used in the same way from here on in.
change was that in 1993 – eight years after the beginning of the development of the biofuel for public transportation sector, the Ford motor company launched its Mondeo. Lindstedt explained in 2011:

*Where did it start? It started in spring 1993 when I saw on TV that they were introducing the Ford Mondeo. This car was built on a world platform [to be produced all over the world] and it was designed for new fuels which would come in the future The next day I went to Per Carstedt and said that I wanted to run a car on ethanol, I was running a Ford Scorpio at the time and wanted to change to a new model. (Lindstedt, 2011)*

Per Carstedt (CEO of SEKAB at that time) a local entrepreneur, Ford Main dealer and environmentalist was interested in the idea. Having spent some time living in Brazil (the country which had the most established ethanol infrastructure in the world at that time) he was unaware that the alcohol fuelled car that he drove there actually ran on the same chemical as the one produced in Örnsköldsvik. Apparently, when he came to understand that he became interested.

Facilitating the relationship with Ford that Carstedt had through his reputable Ford main dealer; in 1994 three Ford Taurus FFVs were imported from California, which had an existing biofuel for transportation sector. These vehicles had been calibrated to run on methanol, a similar chemical to ethanol. Carstedt’s Ford purchased and imported three of these Ford Taurus FFVs from the U.S.A to be leased in Sweden and to be run (following a slight adjustment) on ethanol, or to be more precise E85. These vehicles were the first ethanol-operated cars in Sweden. The object was essentially to demonstrate that their idea was a feasible one. The process was explained by Lindstedt:

*Well the first step was that we [Carstedt and Lindstedt] looked for cars, and then we imported those three cars, and that required a cooperation between SEKAB, BAFF and the local Kommun. The supplier of the cars was Carstedt’s, so they supplied us with those three cars and we organised a filling station in this industrial area*

---

13 E85 is a flexi fuel is a mixture of ethanol and petrol, 85% ethanol and 15% petrol. It is intended for FFVs that are calibrated to run on 100% ethanol, 100% petrol or a combination of the two (BAFF, 2009). The 15% petrol element is required to ensure the vehicles will start in colder months. In Sweden from the 1st November until the end of March the mix is actually 75% ethanol and 25% petrol, owing to the scientifically proven guarantee that this offers of cold starts in the harsh Swedish winter period. (as per Lindstedt interview 2007)
Development and Change in Sweden's Biofuel Region

[the SEKAB facility], so people had to go through the gate and fill up inside the area. (Lindstedt, 2007)

The cars themselves were then leased by Örnsköldsvik Kommun who, as has been previously highlighted, was interested in being involved in the promotion of ethanol as a sustainable fuel, as well as the development of local industries. Nyman highlighted these perspectives during his interview in 2007:

We have always had a good relationship with the local firms here; additionally we have always been keen to promote the environment. We understood that this was good for both the environment and the local community, and hence we got involved very early on. (Nyman, 2007)


5.3.1 Import of a Further 50 FFVs

Following the success of this experiment there was apparently a good deal of interest surrounding the project and a plan was made to import a further 50 cars into the country from the United States. This step would once again facilitate the connections of Carstedt's Ford and once again (the cars were) to be leased on service contracts. This next stage in the development proved to be challenging. It was important for the key players involved, namely, Jan Lindstedt (who was then the Managing Director of BAFF) and Per Carstedt to promote the idea that they were aiming to develop an infrastructure - and that unless everyone worked together then it could not work.

As the infrastructure developed a classic catch-22 situation arose. The issue with the further development of the Biofuel Region was that without an ethanol distribution system, people would not have satisfactory access to fuel since the only existing pump, at that particular point, was within the SEKAB facility and could not therefore be practically facilitated out of hours or by a large group of individuals. Some drivers, who had kept written logs during the pilot test of the first three cars, had expressed concern at the inconvenience of the location, and the opening hours of the SEKAB pump. They therefore required ethanol to be vended at a filling station or filling stations in the city. Without a guarantee of sales however, filling stations were not willing to vend ethanol. Hence the essential nature of the cooperation between the organisations involved, and the necessity for
persuasion and encouragement from the two “missionaries”, Jan Lindstedt and Per Carstedt.

Meanwhile, different oil companies operating filling stations in the locale were asked to vend the ethanol on behalf of SEKAB. Many refused, arguing that it was not worth their while (at the time there were no cars on the roads that ran on ethanol). Moreover, it has been inferred that this type of fuel was not based upon oil and so many were simply not interested at all. One of the filling stations approached was OK. OK were a cooperative, given this status as well as their autonomy to make decisions on a local basis they were in a position to go ahead with the distribution. Lindstedt offered more specific information on the deal:

Then we made this local agreement with OK that if we could supply them with 10 cars on one site then they would set up a pump for E85 and the supplier of the fuel was SEKAB. (Lindstedt, 2007)

Arranging this deal with OK was crucial to the endeavour. OK were quite unique in the sense that they were a cooperative. The background of their establishment is in the 1920s when the cost of petrol in Sweden was higher than the world average, leading a group of motorists to form a co-operative. Since OK was broken up into regions, there were still 6 regional cooperative associations at that time, who traded under the name OK. In addition to them being the first company to vend ethanol, OKQ8 owned 9.8% of SEKAB and consequently had a vested interest.

Having made an agreement with OK to distribute the fuel, and following the interest put forward by a number of different Municipalities in 1995, the another 50 Ford Taurus were imported form the United States. A special conference was arranged in Örnsköldsvik and the cars were put on display outside "Arken" (one of Örnsköldsvik’s municipality buildings) in order to raise awareness and interest. This event is illustrated in the photograph on the following page.

---

14 Which led to the purchase of “Bilgärnas Inköpscentral”, to cut the cost of fuel and other products. The organisation that they formed was called “IC”. A second co-operative, OK Oljekonsumenterna was established in 1945. In 1963 the two merged and in 1969 the name OK prevailed. Later in 1999 OKef and Kuwait Petroleum Sverige AB merged and Kuwait Petroleum International (Q8) was established.
The Ford Taurus had not been introduced on the European market; in fact it was designed exclusively for North America. It was the concern of Ford U.S.A that there was no source of spare parts and servicing equipment in Europe. After the first 50 vehicles were imported the local Ford dealership, Carstedt’s Ford took responsibility not only for the import but also the maintenance and the repair of the cars. This was an important process because it helped to develop a favourable and trusted relationship between Ford U.S.A and Carstedt’s Ford. In turn this helped to facilitate the import of further vehicles from the United States. Jan Lindstedt commented in his first interview that:

One of the reasons that it was a success was because Per [Carstedt] took the responsibility. (Lindstedt, 2011)
5.3.2 Import of a Further 300 FFVs

As has been emphasised all of the vehicles were purchased by Carstedt’s Ford, they were then subsequently leased on service contracts by various Municipalities in Örnsköldsvik, Umeå, Stockholm, Härnösand, Karstadt, Linköping, and Växjö. Such was the interest that between 1997 and 1998 a further 300 Ford Taurus FFVs were introduced into the Swedish market. All of the users were requested to fill out a log and send it to Carstedt’s and SEKAB, according to Lindstedt, in order that they were able to keep abreast of how the vehicles were performing. Given this increased interest, the process of opening ethanol pumps at OK filling stations was gradually rolled out all over the country, according to Nyman, in response to the increased requirement for E85. Moreover, by now the demand for E85 was such that SEKAB were no longer able to produce it themselves and began importing it from Brazil15.

Carstedt and his colleague Charlie Rydén were in charge of the opening of the new ethanol pumps. Apparently they travelled all over the country to be present at the filling stations when it happened. There, they would cut a ribbon and make a speech about how beneficial the Biofuel Region could be for the country, the region, the people of Sweden, and the environment, hoping to further promote the concept.

5.3.3 Adverse Media Attention – How Green is the Ford Taurus FFV?

The next change to the Biofuel Region came in 1998, in response to the demand for FFVs that were specifically designed for Europe. As has been discussed the Ford Taurus was not a car designed for the European market, it was a large family car in European terms, or a mid-size in the USA. The large Taurus was criticised in the press because, despite the fact that it was referred to as a “Miljöbil” (an environmentally friendly car); it consumed significantly more fuel than an average Swedish car (per energy unit). An example of such a critique is from Aftonbladet where speaking retrospectively Robert Collin wrote (translated from Swedish):

> You remember how it began: car dealer Per Carstedt in Örnsköldsvik imported one hundred American Ford Taurus converted to ethanol in the early 1990s. They were Nature Conservation Award’s “Good Environmental Choice”, but after a

15 Brazil was, and remains, a leading country for bio-ethanol production, from sugarcane, having developed that industry in earnest following the energy crises of the 1970s.
test in the real world in which it appeared that the cars had a ravenous appetite for fuel, worse than any other car in Sweden, the pride stickers disappeared very quickly. (Collin, 2011)

As per the photograph on the page 78 (Arken conference), one can observe that many of the imported Taurus were decorated with graphics, advertising their (alleged) green credentials. It is these to which Collin refers.

The sticker illustrates the closed circle of ethanol production; translated from the top it says Photosynthesis, Biomass, Ethanol, and Carbon Dioxide. It describes how photosynthesis facilitates the growth of biomass, the raw material from which ethanol is produced. On combustion this ethanol produces carbon dioxide, which is reabsorbed in photosynthesis, and so on.

5.3.4 Public Purchase Order for a European FFV

In the face of these criticisms and to develop the market further, the automotive industry was challenged to develop an FFV for the European market. This was a project conducted in cooperation between BAFF, Stockholm Municipality and their environmental department. It was a public purchase, a letter of intent was drawn up and support from a variety of local Municipalities led to an order of circa 3'000 cars. The object was to kick-start the FFV industry in Sweden, by promoting the provision of new FFVs onto the Swedish market that people were familiar with, and that they were more likely to purchase. (Lindstedt, 2007)
At that time Carstedt and Lindstedt apparently approached a number of car manufacturers to build the required cars, most of them were not interested because of the investment required, and the fact that there were very few filling stations vending ethanol. Ford however expressed an interest. Having had experience with FFVs in the United States and in Brazil they had the expertise. Jan Lindstedt talked about the process of the development of the new FFV. He underlined the important role that Carstedt’s Ford played within the process, and the necessary contacts that were required to promote the development:

(...) all levels were involved, there was also a discussion with the development organisation in Detroit who at that time worked a lot with flexifuel cars in the U.S. In addition we had good contact with Ford in Köln and the development organisation, and as Per was involved with this area, the car business and car dealing, and his brother Göran was also involved in Volvo, so they knew the business and they had really good contacts, and it took time and they invited people to come up and discuss possibilities. So we presented our ideas for the development, not only for the flexifuel cars but also for the production and things like that. (Lindstedt, 2011)

At the time, according to Carstedt-Parmlid, the two domestic car manufacturers Volvo Group and Saab AB refused to produce FFVs, arguing (as has been emphasised) that there were insufficient ethanol filling stations.

### 5.4 Period THREE – (2001 – 2006)

#### 5.4.1 The Availability of the Ford Focus FFV

Ford began producing the FFV version of its Focus model, delivering the first cars in November 2001 (selling more than 15,000 FFV Focus by 2005 (BAFF, 2009)). This finally meant that Swedish consumers could purchase a relatively economical, European styled car in an FFV guise. The field continued to grow and nothing of significance (other than the growth) occurred until 2003.

#### 5.4.2 The Establishment of BFR AB (2003)

As has been emphasised one of the key objects of the establishment of the Biofuel Region was to promote local industry, specifically in Örnsköldsvik. One solution, “the only solution” (according to Lindstedt) prescribed back in the early 1980s had been the development of 2nd generation ethanol from
locally produced material. By 2003, Carstedt and Lindstedt attempted to 
prepare for the future and observed the establishment of the Biofuel Region 
AB (BFR AB) in order to promote that objective. During an interview with, 
the then CEO of BFR AB, Eva Fridman she claimed:

One major milestone was that we were able to form this
association, consisting initially of a few local Municipalities, with
the vision of being a “World Leading Region”. The main goal of
BFR AB was to create leadership for the development of the Biofuel
Region and to consolidate the work being done towards the further
development of bioenergy. (Fridman, 2007)

Initially, according to Brändström (managing Director of BFR AB at the
time of writing) the purpose of BFR AB was as a kind of brand for the region,
aiming to highlight that it was within this region where the development of
the biofuel industries would take place. This association invited local
Municipalities, NGOs and governmental organisations to join, and pay an
annual fee for the privilege. This money was to be invested in the promotion
of biofuels in general, but more specifically in the promotion of 2nd
generation ethanol. According to Fridman they were a number of
miscommunications initially concerned with the manner with which the
development would occur. The idea was that the region had an abundance of
forest; which traditionally had been used in the production of paper, timber
and furniture (significant exports for Sweden). Fridman highlighted how
these resources were becoming increasingly uncompetitive on the world
market as countries with lower costs, and more preferable climates, were
undercutting Swedish prices. The idea was therefore that some of the
resources could be channelled instead (when the relevant technology had
been established) into the development of 2nd generation ethanol.

The miscommunications ultimately led to discontent for some members.
Fridman explained the process through which this occurred:

I think that some of them thought that if they joined BFR AB then
they had pretty good chance of getting a production plant, in places
such as Lycksele for example, and I think to some extent the people
out there promoting this initiative bent the truth a little bit in order
to make it [membership] more tempting. (Fridman, 2010)

Fridman went on to be more explicit about what she meant, describing in
more detail how the miscommunication might have occurred in her opinion:
I mean people like Carstedt and Lindstedt, they are very persuasive and they can paint a picture of the future that is very bright, and that was needed at the time. I know that they didn’t promise Lycksele a production plant, because they can’t do that, but I think that it was interpreted as a sort of promise that they would struggle hard to get one because the market [for ethanol] is so big and the demands are so huge that why wouldn’t Lycksele have one? (Fridman)

According to Brändström the individuals involved in the development of BFR AB claimed that they would ultimately build 5 ethanol plants, and they provided an inventory list of the most suitable places for the plants. This claim built up a lot of expectations from the members of BFR AB; Lycksele Kommun for example expected that it would happen in their Kommun, as Fridman underlined.

Despite this retrospective critique of the actions of Lindstedt and Carstedt in the development of BFR AB, at the time the popularity of the two was generally very high. Fridman said that Carstedt in particular (the first Managing Director of BFR AB) was held in high regard by the public. He was already a successful entrepreneur and had been, in part, responsible for the development of the Biofuel for Private Transportation infrastructure. Fridman stressed however:

He was also perceived by some as a missionary, and that was the back side of it all, he is very convinced and persuaded that he was right but sometimes he forgets to listen to the sceptics and during the first years it was okay. But after a while people began to get annoyed or worried because he was not willing to take the discussions about alternatives, or not openly, so it was black or white, good or bad, I think it was seen as that anyway. (Fridman, 2011)

The year after the establishment of BFR AB saw the inauguration (by Prime Minister Göran Persson) of the Ethanol Pilot Plant, funded by the Swedish Energy Administration and the EU. The Ethanol Pilot plant is a research project aimed at optimising large scale processes which have previously been developed in laboratories for the production of 2nd generation ethanol from raw materials, chemical and biological processes. The current raw material used in the development process is wood chips from pine trees; in the future however, other raw materials such as bagasse
from sugarcane, wheat and corn Stover, energy grass and recycled waste could be used for the project (SEKAB, 2009).

The ambitions and vision of BFR AB were discussed retrospectively by Mikael Brändström (Managing Director of BFR AB 2008-11) who highlighted that when he joined the organisation as a project coordinator:

Then the objective was actually to be self-sustained by biofuel, energy independent that we should actually produce the fuel that we were going to use by 2020 in the region. (Brändström, 2010)

Later the timetable was extended when the realisation was made that a lot more research was required before the fuel could be produced. Then, during 2006/7, they came to the conclusion that it was far cheaper for the fuel to be produced in Brazil, plus the fact that there was a very strong demand for the feedstock for other purposes, such that it would turn into a competition.

It therefore became quite difficult for the individuals in charge to progress with the project, and they realised moreover that the technical development would take much longer than they had initially anticipated. Brändström explained the complexity and huge cost of the process of developing a production plant:

You cannot go from a pilot plant to a production plant; you need to make a demonstration plant. A demonstration plant costs 2 billion SEK and you will not earn a penny. Of course it is difficult to make that point and you need to have a lot of grants and funds to do that. A sane industrial partner cannot spend that kind of money and not make money. (Brändström, 2010)

Clas Engström, CEO of Processum16, asserted his belief in Per Carstedt as a competent marketing man, who set out with a series of missions and visions. Engström claimed however that, like many other visionaries, he took a risk in the sense that not everything planned was necessarily realistic, meaning that if they were challenged halfway through the development process not everything would have happened as per the plan.

As previously underlined, the establishment of BFR AB attempted to promote not only the bio-ethanol industry, but the biofuel industry in general. At this time the bio-ethanol industry was significantly larger than

---

16 An organisation focussed on research into green fuels and chemicals.
any other. However, there was one organisation that joined BFR AB. Framtidsbränslen was a member that was not focussed upon bio-ethanol, but synthetic diesel. An organisation based in Sundsvall, Framtidsbränslen had been established in 2001. According to their Managing Director, Bengt Aldén, Framtidsbränslen’s main objective was:

To play a leading role in the field of the development of renewable fuels focused upon Biomass to liquid (BTL) diesel, in order to contribute to decreased climate gas discharge from the transport sector. (Aldén, 2007)

Framtidsbränslen were at that time importing GTL (gas to liquid) synthetic diesel from an undisclosed destination. There were advantages of such a fuel in the sense that its emissions were less toxic than traditional diesel (because of its near-absence of sulphur and aromatics). Aldén also argued that it was more fuel efficient. However, at that time the synthetic diesel that was sold by Framtidsbränslen was made from fossil fuels. It was therefore not a biofuel in the true sense. The company’s ultimate object was to establish a market and infrastructure as a prelude to the development of biomass to liquid (BTL) diesel.

Following the establishment of BFR AB the Biofuel for Private Transportation grew further. In an interview in 2007, Dick Janson, the Managing Director of Sundsvall’s Chamber of Commerce17:

The demand for ethanol increased, BFR AB changed a lot of people’s minds and encouraged them to purchase flexifuel cars. They made this area interesting for the common Swede to save the environment from pollution. (Janson, 2007)

In addition to the growth in E85 sales and the success of the Ford Focus FFV, car manufacturers were motivated to enter the market when the availability of E85 began to grow. It took ten years for the first one hundred filling stations in Sweden to begin to offer E85 for sale.

---

17 Swedish chambers of commerce are private law chambers. The main task of the chambers is to represent the business community when interacting with national, regional or local authorities. The chambers promote development within their region and are recognised as official representatives of the business community. The market economy and free competition are at the cornerstones of the chambers of commerce policies. The chambers actively promote infrastructural projects within their regions, since these are important to the business community. The development of the Biofuel Region is one such example. Chambers also involve themselves in trade fairs and other commercial events. (Swedish chambers, 2009)
5.4.3 Legislation for Biofuel Sales (2006)

In order to further speed up the expansion of filling stations offering biofuels for sale, the Swedish government intervened in 2006. They introduced legislation requiring filling stations that sold over a million litres of fuel per year to also sell some sort of biofuel. This regulation became incrementally stricter since its introduction on 1st April 2006. The objective was to create a gradual enlargement of the biofuel capacity without overwhelming smaller stations. By way of comparison Tjernström claimed that up until the point of that interview (31st January 2008) it had taken only three months for the most recent one hundred filling stations to begin to vend ethanol. He explained how the growth in sales of E85 had driven this:

"Today the ethanol business grows so big so the oil companies are becoming interested in this business too. Because of the law in Sweden, in all big stations they have to sell some biofuel."

(Tjernström, 2007)

This decision did not occur without protest from smaller filling stations however, according to Bengt Kriström (Professor of Resource Economics at Umeå University and SLU18) who explained how the governmental regulations affected some filling stations in Sweden:

Forced distribution systems have created a major trauma for the small stations in the inlands of Sweden, a major difficulty for them. Because suppose you have a gas station in some village up north, then somebody says that you are going to have to have a facility here, you have to have it and it costs hundreds of thousands of crowns. What they did is they forced them and then they subsidised them, which sounds like something from Monty Python. What happened was that if you were in a small village it was a lot of money just to distribute ethanol and it wasn’t feasible for them. If ethanol was a good thing then they would have invested in it, I think, because they would have thought that they would make money because many people are switching into ethanol cars and we really need it for the future. There is not this momentum as far as I can tell. (Kriström, 2010)

Regardless of the controversy, in light of the increased availability of E85, and the success of the Ford Focus FFV, Saab and Volvo, the two native car

---

18Sveriges Lantbruksuniversitet
manufacturers eventually released their own FFVs in 2006. Then in 2007 VW, Renault, Citroën and Peugeot introduced FFV versions of their own popular models, followed in 2008 by the Cadillac BLS amongst others. Despite the fact that the development began in the Örnsköldsvik area, Stockholm remains the city that has the most FFVs per capita. Lindstedt hypothesised that the reason for this could be that if a person drives a flexifuel car then the congestion charge for the city centre is waived.

BAFF lobbied, and together with SEKAB and BFR AB constantly promoted the idea of FFV ownership. Several governmental incentives were consequently implemented. Ethanol, as with other biofuels, was exempt of both CO2 and mineral oil tax, resulting in a 30% price reduction at the pump of E85 fuel over gasoline. By 2006, company FFV drivers benefitted from a reduction in company car tax. Moreover, the government offered a rebate for new FFV retail customers (circa 12,000 SEK) essentially making the cost of an FFV the same as conventional petrol powered vehicle. They introduced a lower registration tax on FFVs, and permitted free parking in sixteen cities in Sweden. Furthermore, Stockholm Municipality began waiving the congestion charges, and FFVs became up to 20% cheaper to insure (BEST, 2009). In addition, the Swedish Government brought in legislation dictating that that 25% of their vehicles (with the exception of police, fire and ambulance vehicles) must be alternative fuel vehicles. As a direct consequence of these incentives, by 2008 the sale of FFVs represented 25% of new car sales in Sweden.

It was Lindstedt’s claim that SEKAB and BFR AB were keen to promote the purchase of FFVs throughout the country, even if the geographical area within which the vehicle is purchased is not near to a filling station that vends ethanol. The reason for this is that it is their estimation that the average car in Sweden is run for fifteen years and so even if the FFV is run on petrol during the early years, at least later owners will have the option of running the vehicle on ethanol. If the same vehicle is purchased as a non-FFV then it must be run on petrol for the following fifteen years or to the end of its life.

---

19 With the SAAB 93 and Volvo S50/V50 respectively
20 The congestion charge was introduced on 1st August 2007, after a trial between 3rd January and 31st July 2006. The main objective of the congestion charge was to reduce congestion in the city area and promote a more environmentally friendly city by disincentivising the use of vehicles by charging a fee for their entry. The area covered by the congestion charge encompasses essentially the entire city centre. (Vägverket, 2009)
21 Meaning that an FFV generally costs about the same amount to run as a conventional petrol car, because whilst the fuel is 30% cheaper it is also 30% less efficient. Although as we shall see later this is only when the oil price is constant over a given period.
As a direct result of the promotional activities of SEKAB, BFR AB, and BAFF, the increasingly wide variety of FFV vehicles available and the governmental incentives, Sweden has achieved the largest E85 FFV fleet in Europe\(^\text{22}\).

By this stage the Biofuel Region was growing and public opinion was generally very high. So much so that (according to Svenska Dagbladet (7\textsuperscript{th} January 2008) on the 25\textsuperscript{th} December 2007 when King Carl XVI Gustaf of Sweden made his traditional Christmas speech he discussed it. During the speech the king told of how he and the Queen travelled to Örnsköldsvik to visit the 2\textsuperscript{nd} generation pilot plant. He said that the visit “inspired confidence” and that the work had taken significant steps forward, declaring “there will be ethanol fever around the world”.

5.5 Period FOUR – (2007 – 2009)

5.5.1 Adverse Media Attention - Sustainable Criteria (2007–)

During the 21 years between 1986 and 2007, as has been touched upon, the Biofuel Region was not without its critics. However the general story seems to be one of development and progress. In December 2007 however a story was published in Svenska Dagbladet that would prove to be the beginning of a series of much more vocal and openly critical publications about the Biofuel Region than had preceded it. One indeed that began a torrent, influencing public opinion by providing “evidence” that brought into question one of the fundamental values of bio-ethanol, namely its eco-efficiency.

\(^{22}\) With a quick growth from 717 vehicles in 2001, to 228,522 in December 2011 (BAFF, 2011).
Behind Clean Ethanol there is a DIRTY production

“In the coal powered factory north of Sao Paulo ethanol is burning at dawn. Next to it the sugarcane workers awaken to a gruelling day in the field.”

This article (published in Svenska Dagbladet 9th December 2007) brought into question the manner with which the bio-ethanol that Swedes purchased at the pump was produced. It claimed that the production facilities were coal-fired, and that as a consequence whilst the physical use of ethanol in combustion engines did not use up fossil fuels and create an increase in CO2 emissions (save of course for the 15% of petrol in Swedish E85) its production did. As did its transportation, after all 2nd generation ethanol was still merely in its early pilot test. At this stage most of Sweden’s ethanol was being imported from Brazil or the United States, and that importation required the use of ships and trucks, both modes using diesel fuel. SvD called for a lifecycle analysis that would offer a clearer understanding of the true cost of bio-ethanol, in terms of its CO2 emissions and environmental toll.

The other assertion of the article sought to highlight the unsuitable conditions within which some of the Brazilian workforce, who toiled the fields and whose efforts were inextricably linked to the production of
bioethanol, had to work in. Earlier that year Lindstedt had claimed about ethanol:

The reason it was a success in Sweden is that there was an interest and a tax reduction. (Lindstedt, 2007)

The interest that people had had in ethanol was principally motivated by their interest in the eco-efficient transport solution that they believed it offered them. Now this key concept had been brought into question. Lindstedt discussed this article and how he perceived it to be unjust:

One issue was that they [the press] started to look at ethanol in terms of its life-cycle, claiming that there was slavery in Brazil. Bad media like the picture of the ethanol plant in Brazil that they claimed was coal fired, and they blackened the smoke, and that picture became the picture of the year for journalists. But they claimed that it was ok because it was “obviously misleading” and there is no coal-based ethanol plant in Brazil, there are some in US but none in Brazil, so it was just a fake from the media, from the journalists. (Lindstedt, 2011)

Later Svenska Dagbladet accepted that the picture had been doctored. By then however according to Lindstedt and Anders Fredriksson (current C.E.O of SEKAB) the damage was done and the image of ethanol as a useful, renewable and favoured choice for the replacement of fossil fuels was tarnished. Lindstedt commented on the apology that SvD published a few months later:

It was just a small note in Svensk Dagbladet to say that it was wrong and that we excuse ourselves for that. It was bad media that has gone on. (Lindstedt, 2011)

This bad media extended to biofuels of other kinds too, in an overarching discussion about their suitability as eco-efficient solutions. For example it was claimed that palm oil was being produced in areas cleared of rainforest for biodiesel production. Lindstedt’s averment was that a broad range of critique was levied at biofuels at the same time that created bad media for biofuels as such. Furthermore he claimed that the “bombardment of adverse press upon ethanol” began partly as a consequence of ethanol’s success.

Having become a part of the biofuel market the oil industry began, Lindstedt claimed, to “strengthen up the forces against it”. As a direct
consequence of ethanol’s growing sales and popularity, the oil lobby observed that the biofuel could be widely produced, distributed and consumed, not only in Brazil, but in the United States and in Europe. Given that this growth would impede upon petrol and diesel consumption in those regions they feared that it might spread further, and such was their concern that they allegedly invested heavily in a campaign against the biofuel. In elaboration Lindstedt claimed:

I think that it was in 2007-8 that general motors CEO claimed that the oil industry put about 2 billion SEK into advertising and advocating against ethanol, and actually the oil industry did not deny that either, at least not in big words. Some said that it was yeah, too much or something like that, but it was never denied as such. (Lindstedt, 2010)

This assertion was echoed somewhat by Fredriksson, who discussed the criticism of the press at length, but who said of the beginnings of the changing perspective towards ethanol that;

Behind all of this, what was, there was a big drive what biofuel does is it shakes really powerful power structures in the society. (Fredriksson, 2011)

Engström underlined his perspective that:

Ethanol in general in Sweden has been debated a lot in a rather Swedish way, in the sense that we have been more negative towards ethanol than in any other countries (...) it might be connected to the world conscience point of view that Sweden has had since Olof Palme was in his Prime. (Engström, 2010)

5.5.2 The Development of Verified Sustainable Ethanol (2008)

In response to the criticism SEKAB developed a framework to ensure that the bio-ethanol purchased from Brazil was sustainable, with criteria that covered the entire lifecycle of ethanol from the sugarcane fields all of the way through to its use as a fuel in motor vehicles.

In 2008 Sweden and Brazil signed an agreement on bioenergy and biofuels. A governmental press release (appearing on the Regeringskansliet website) claimed:
Brazil is the world’s foremost producer of ethanol and has long experience of both production and use of alternative fuels. It is thus important that Sweden enter into a bilateral agreement. As a small but technologically advanced country, Sweden needs international collaboration for development of the next generation of fuels. We already have a collaborative agreement with the United States and are now signing a similar agreement with Brazil. I feel we have much to contribute and much to learn. (Maud Olofsson (2008) - Sweden’s Minister for Industry, Employment and Communications)

According to official SEKAB literature the setup is similar to a quality-management system. Monitoring and verification will be carried out by an independent third party. The requirements include at least an 85% reduction in fossil CO2 compared to petrol, from a lifecycle or well to wheel perspective. Also at least 30% of mechanised harvesting now is required, plus a plan for an increase to 100%. There is, in addition a zero tolerance for child labour (people under 16 years old) and there must be certain rights and safety measures for all of the employees, in accordance with United Nation’s guidelines. A comprehensive list of the guidelines is provided in appendix 3.

According to Lindstedt the agreement is a collaboration to promote bioenergy and the creation of a global market for biofuels. Both countries will also be seeking increased collaboration between their researchers and their companies, in order to develop more efficient technology for sustainable production. Sweden and Brazil will additionally be investigating the possibility of helping developing countries set up regulations to promote sustainable production and use of renewable energy.

Olofsson reinforced this claim and also highlighted the importance of the initiative with regard to the end user of bio-ethanol:

This will pave the way for even better and more intense collaboration between Swedish and Brazilian companies and researchers; Verified Sustainable Ethanol Initiative is an effort to physically guarantee Swedish consumers that they are filling up with good ethanol and to increase the offering of verified sustainable ethanol in close collaboration with the Brazilian sugar industry. (Olofsson, 2008)
This initiative for verified sustainable sugarcane ethanol is the first of its kind in the world. Fredriksson underlined the importance of the initiative from the Biofuel Region’s perspective;

The agreement safeguards supplies of additional volumes of ethanol, verified in its entire production chain for environmental and social sustainability. We hope verified ethanol will help curb the criticism of the sugarcane industry and the unpleasant campaigning against the Brazilian ethanol, thereby dispelling doubts about its climate, environmental and social consequences. (Fredriksson, 2011)

![Picture 4 - A promotional emblem for "verified sustainable ethanol" (taken with kind permission from SEKAB's homepage)](image)

### 5.5.3 Financial Crisis

During the summer of 2007 a subprime mortgage crisis in the United States promoted a liquidity shortfall in the country’s banking system, which morphed rapidly into a Global Financial Crisis (Reinhart and Rogoff, 2008) the first one the 21st century. This Global Financial Crisis resulted in the collapse of large financial institutions, and the necessity for the bailout of banks by national governments, as well as significant downturns in stock markets around the world (Crotty, 2009).

For the purpose of this thesis the cause of the crisis is not the focus, but the effect upon the Biofuel Region and the organisations within it is, therefore the following section shall examine the impacts.
5.5.4 The Effect on the Biofuel Region

The Biofuel Region, as discussed, is seeking to develop biofuel alternatives to traditional fossil fuel based fuels. As a consequence of the economies of scale involved with the traditional fuels and the well-established infrastructures and customer bases, biofuels rely heavily upon government tax relief. In addition the cost of oil affects them heavily (largely owing to the manner with which they are transported, and because at least in the case of E85 they are made up partly of fossil fuels).

As a direct consequence of these issues the Biofuel Region was affected and changed. Bengt Aldén, who was the Managing Director of the now liquidated organisation Framtidsbränslen, was quite adamant that the financial crisis had affected his organisation in particular:

Unfortunately sustainable development is put on a backburner when financial crises emerge. (Aldén)

Bengt claimed that the financial crisis had created a series of problems. Unfortunately, for Framtidsbränslen, they relied upon the tax reduction on their imported synthetic diesel fuel imposed by the government for a period of approximately 26 months (from the end of 2006, expiring on the 1st January 2009).

The key issue was that in order to be able to offer a competitive price on the synthetic diesel that the firm was importing, it had to be offered at an affordable price to the end consumer, otherwise it would exceed the cost of standard diesel and would therefore be uncompetitive. The tax reduction had been in place to facilitate this competitive price and therefore in order to assist the organisation and allow it to establish itself, facilitating the development of a sound customer base from which it could grow; ultimately the intention was to return the rate of tax to the normal level after the product had attained a foothold in the market.

The tax reduction on imported synthetic diesel was brought to an end however at an unexpected time, according to Aldén, or rather it was not extended as the organisation had expected that it would be. And this, he believed, was as a consequence of the financial crisis, and the necessity for governmental cuts that it imposed. The government’s argument was that the synthetic diesel that Framtidsbränslen imported and distributed was still based on fossil fuels and was not therefore strictly a sustainable option. In
addition they apparently claimed that whilst they had offered a total of 26 months of tax reduction, it could not last indefinitely. Aldén claimed:

The government assistance ended at the worst time because that’s when the financial crisis hit, but the main cause of our bankruptcy was the ending of the tax reduction period. – (Aldén, 2011)

According to Aldén there was a debate in the Riksdag at the beginning of 2009 as to whether a permanent tax reduction might be levied upon synthetic fuels. This was not because they reduce carbon dioxide emissions (because they don’t –given that they are based upon fossil fuels) but because these fuels emit less toxic substances on combustion and provide a better work environment for those who work with diesel-powered machinery, construction workers tunnelling underground for example and ferries near to beauty spots. The aim being not just to provide a practical and useable alternative to the traditional diesel fuel with added benefits to the end consumer, but to “pave the way” for a new and sustainable alternative to fossil fuels. The plan was to achieve this through the establishment of distribution channels and customer networks/portfolios for synthetic diesel, a 2nd generation biofuel that would one day be produced in Sweden from biomass. In so doing they aimed to develop the biofuel industry.

As a consequence of the ending of the tax reductions on synthetic diesel (driven by austerity measures imposed by the Swedish government, as well as perhaps a changed perspective towards the fuel itself) coupled with the reduced demand for the fuel, Framtidsbränslen went bankrupt in 2009.

Framtidsbränslen’s liquidation demonstrated that the Financial Crisis had a profound impact upon the Biofuel Region because essentially it led to the demise of one of the fuels that it sought to establish on the market. The reduced demand for synthetic diesel was echoed across the board of fuels. Indeed, perhaps the most significant driver for change was a consequence of the Financial Crisis, namely the massively reduced demand for oil in general, the “Oil Shock”.

5.5.5 Oil Shock
The “Oil Shock” was essentially a culmination of events that lead to a significant decrease in the cost of crude oil as a direct consequence of the fiscal crisis. Hamilton (2009: 224) claims that, “By any measure, this episode qualifies as one of biggest shocks to oil prices on record”. In July 2008 oil cost $147 per barrel, then it collapsed suddenly and by December 2008 it cost $32. This significant price reduction was driven by a massively reduced
demand. This reduction in the cost of crude oil eventually meant that there was a reduced price at the filling station for regular petroleum. As was emphasised by Carstedt, whilst there was undoubtedly a keen interest in biofuels and their potential benefits, the tax reduction on the fuel had driven sales. The reason that that was so is that these reductions meant that E85 generally cost the same as petrol. However, as the cost of petrol decreased the cost of ethanol did not because of the manner with which it was purchased and traded, at that time, by SEKAB.

Nordgren (senior BAFF/SEKAB executive) explained how in the business of ethanol purchasing and trading the ethanol is bought in bulk for the forthcoming six months. At the beginning of 2008 there was an undersupply of ethanol by SEKAB. That is to say that such was the demand for ethanol that SEKAB could not fulfil it. Ethanol is bought at a certain price, dictated by harvest times and oil prices. Owing to the increase in volumes of E85 that were being sold, the plan was to purchase a greater amount than usual, in order that they (SEKAB) could be certain that they would have sufficient volumes in the autumn. Moreover, this purchase was made during a particularly good harvest, and therefore the ethanol was sold to SEKAB at a favourable rate.

SEKAB, consequently, made an order for the amount of ethanol that they thought that they would be able to sell. The purchase was made 6 months ahead at a locked price. Problems arise however when the international demand for oil decreased, which drove down the cost of oil, suddenly and significantly. Nordgren highlighted how the drop in the cost of oil inevitably hit the pump, decreasing the cost of petrol and diesel. Simple economics of supply and demand dictate that when the price of something decreases the demand increases, and so it was with fossil fuels at filling stations all over Sweden. Because SEKAB had a locked price on their ethanol and had made a commitment to purchase such a high volume, they were now faced with the problem of not being able to sell the ethanol that they had purchased. Nordgren explained the process:

The price is fixed because we sell the ethanol to the oil companies who sell it at the pump and they set the final price of it. But the thing is that we had a huge storage of ethanol that we couldn’t sell, and this locks quite a lot of money because we had this volume that we had purchased. (Nordgren, 2010)

Fredriksson elaborated on the subject, discussing how in late 2008 the organisation had made large investments in Africa as well as having invested
significant sums of money in the bulk purchase of ethanol. Then, in a very
short time, the consumption of E85 dropped extremely quickly owing to the
drop in the oil price and the fact that consumers often prefer to fill their
vehicles with the cheapest option, regardless if they drive a FFV or not. An
important issue here is the ethanol supply chain; Fredriksson explained how
the transportation of ethanol from Brazil to Europe takes three weeks, in
addition to the week that it takes to produce the E85. The E85 is then sold
over a four week period and distributed to petrol stations throughout
Sweden. It takes up to another 30 days for SEKAB to receive payment for the
fuel. In total this is ten weeks, within which large sums of money are tied up
in the fuel.

This is not the end of the story however, as Fredriksson elaborated,
because SEKAB must have a safety stock also. In total it takes two and a half
months before any money is recovered from the purchase of ethanol. Two
and a half months of stock must therefore be ordered ahead of time.
Considering that the approximate monthly demand at the beginning of 2008
was circa 20’000m3 per month, that means that upwards of 50’000m3 of
ethanol was “on the water” finding its way to SEKAB when the oil shock
occurred. 50’000m3 that had to be paid for in advance and for which it
would take upwards of 10 weeks to obtain any money in return for.

Given that the rate of demand was 20’000m3 per month that product
should have sold in two and a half months. However, when the demand
dropped drastically to around 5’000m3 per month then this amount of
ethanol would subsequently take ten months to sell. Therefore a lot of money
was tied up in ethanol and the impact upon the balance sheet led to severe
financial difficulties. Fredriksson summarized:

That is basically what happened we built a lot of stock in a very
short time, the boats were on the water already, and those
[customers] that had not purchased yet could have the contracts
renegotiated which increased our losses. (Fredriksson, 2011)

The next problem then, was the contracts that SEKAB had entered into
with the oil companies, who purchase and distribute E85 at their filling
stations to their customers. These contracts did not take into account that
the volume of ethanol that would be sold on a monthly basis would decrease
by circa 75%. Fredriksson discussed the manner with which they dealt with
this crisis.
So of course we tried to change them (the contracts) as much as possible, but we were basically in a very difficult position. We did not have very much room to manoeuvre so what we had to do was to close as many contracts as we could. We had on the water I mean 50 thousand m3 x 600USD per m4 that is about 30’000’000 USD, in increased inventory, over three weeks, a lot of money, especially for a small company. Basically that was the acute fiscal crisis that we had at the end of 2008. The other capital injection that we had before that was mainly because of foreign investment but this was something different. So really if someone had come to us and said that they could lend us 250’000’000 Euros for six months then we wouldn’t have had a problem because the business was profitable, the problem was that it caused a liquidity crisis. (Fredriksson, 2011)

The contracts that were agreed upon with the oil companies stipulated that they would purchase all of their required ethanol from SEKAB. Fredriksson admitted that with hind-sight these contracts might seem erroneous on the part of SEKAB, but was very keen to explain the environment within which these decisions had been made:

Basically what they [the oil companies] said was that they will buy 100% of their need [for ethanol] from us. And of course in retrospect you could say that was very stupid, but if you go back to a month before this happened our problem for the last 4 years was just to keep up with demand. We had crisis meetings where we asked where we were going to get all of the ethanol. We had difficulties supplying petrol stations because the sales of ethanol were growing so fast. New car sales and the sale of FFVs were growing by 30%+ every month. So the fleet was growing very fast and the ethanol was much much cheaper, and people were filling up with E85 in gasoline cars so our only perspective back then was how are we going to keep up with demand? (Fredriksson, 2011)

As a consequence of the oil shock SEKAB began to get into significant financial trouble. Speaking from the perspective of OKQ8 the Managing Director Ulf Tjernström commented in 2010:

I think for us the reason that we don’t sell so much ethanol today is the price. (Tjernström, 2011)
In September 2008, Jonas Fröberg reported in Svenska Dagbladet Näringsliv (translated from Swedish):

SEKAB in Örnsköldsvik is often emphasized in the debate when it comes to Sweden’s leadership in biofuels. But the company has now entered a new acute financial crisis.

5.5.6 The Effect on the Biofuel Region

Given the cost of the “Pilot Plant”, the “Africa Project”, and the problems with the stockpile SEKAB’s troubles became worse and worse. The press began to observe the financial issues incurred by a firm, within whom vast amounts of public capital had been invested.

Within the organisation (SEKAB) several employees had to be made redundant. This was of great concern to Nordgren. She highlighted the impact that it had upon the employees of SEKAB, and how the pride that they had once had in the perceived “visionary work”, with which SEKAB was involved, had eroded somewhat:

People were really proud of working for SEKAB (...) It was a tough year last year, people were worried were they able to keep their jobs or not? Will they have to move from here with families and so on? Because they might have to find another job, and then finally when all the negotitations were made and it was clear who would have to leave their positions it was a process after that when these people were still working for the company but hadn’t left yet. That period is hard for those that have to leave, and it is also difficult for those who are staying. They feel good because they still have their job, but also quite guilty and awkward because other people have to go. So last year was quite tough for the company. (Nordgren, 2010)

As a final note on the effect of the redundancies and the adverse media attention Nordgren said:

Last year was terrible, all the media attention (…) when it was announced that we had to let people go, that was a huge trauma for the company and a trauma for the personnel of course. Added to that all of the regional media’s attention to it and criticism on how it has been handled over the years and different parts and roles in this and how it has been made, it doesn’t make it easier. I know
colleagues who said that, we had a certain type of vest with SEKAB written on the back, and some colleagues said that they didn’t want to wear that publically, because people are going up to them and criticising the company. (Nordgren, 2010)

In a press release dated 28th February 2009 SEKAB announced that

Swedish bio-technology company SEKAB is negotiating a transfer of import and distribution of ethanol and E85 to oil companies. SEKAB will concentrate its operation on production of green chemicals based on ethanol, and ethanol as a replacement for diesel (ED95), as well as the development of technology and production processes for biofuels from cellulose including the pilot plant in operation since 2004. (SEKAB, 2009)

In the press release SEKAB discuss their role in the development of the market for ethanol and its import from Brazil. They claim in addition that the market was ready for larger volumes of ethanol in light of the E.U decision that 10% of all fuel for transportation should be renewable by 2020 and that it is for this reason that they transferred the import and distribution of ethanol to oil companies. Fredriksson claimed that this move was essential given the risk that had demonstrated itself previously of importing large quantities of ethanol into the country with no guarantee of sales, especially for such a relatively small and now vulnerable organisation such as SEKAB.

5.5.7 Swedish Ethanol Efforts in Africa: The Cost to the Tax Payer and Land Grabbing

Another reason cited by Nordgren, Fredriksson and Lindstedt for the downsizing of SEKAB and of the Biofuel Region’s activities was related to the African Development project, which SEKAB had embarked upon. This was a plan to buy up land in Tanzania, Ghana and Mozambique and farm raw materials that could be used to produce ethanol in purpose built facilities. There were an increasing number of academics and journalists voicing their concerns about this venture. Some were related to the criticisms that had already been aired on the subject of the sustainability of ethanol itself, and on the “Food versus Fuel” debate. In essence there were two other areas of concern. The first was linked to the financial problems that SEKAB were having because of the stockpile of ethanol and its reduced demand. There was apparently a good deal of criticism by local media, ostensibly deciding that it was wrong for SEKAB to be investing tax payer's money, and money
borrowed using the local Municipality as guarantor, abroad. The second was linked to the concern of journalists and academics for what they referred to as a program of “Modern Day Colonialisation”, or “Land Grabbing”.

Speaking about the project Bengt Kriström voiced his suspicions about the manner with which the project was financed:

The Africa Project that, was very curious to me, an adventure. It seemed very risky because Swedish Municipalities are not usually involved in investments in Africa, it is not part of their business to do that and that seemed to be a very risky thing (...) It doesn’t make any sense, we should spend that money in the schools or something else, even if it had been successful it would have been a very strange way to spend tax money, it seems very odd. But the exact details are very hard to find, it is true about SEKAB in general, it is not very easy to find out what they are up to. (Kriström, 2011)

Kriström talked in addition about the financing of the project:

If they [SEKAB] go out of business, then the Municipalities (as guarantors of their loans) would have to pay up; I don’t know how many hundreds of millions..... But it looks more and more likely that they [SEKAB] are not going to make it and that would be very bad for these small Kommuns. Skellefteå and Umeå are going to be ok, they have significant shares in hydropower plants, I mean they can deal with it. But Örnsköldsvik, they are at a bigger risk there. Örnsköldsvik energy does not have such large investments. So I think that they might get into trouble, but I am basically guessing because it is hard to find out. (Kriström, 2011)

In 2009, in Entreprenör magazine, criticism was made of the venture, and specific reference was made to the money spent on the project (translated from Swedish):

Now things started happening in many parts of the world. In Tanzania millions were invested in land purchase, preparation for cultivation and construction of an ethanol plant. In Mozambique SEKAB spent large sums on consultant’s fees to prepare for ethanol production. The same thing in Ghana and Togo, large sums were paid out to investigate the possibility of starting production.
Overall, this has amounted to well over 100 million SEK in Swedish taxpayer’s money.

They (SEKAB) also decided to invest heavily in Hungary. There, four factories were started aiming at large-scale ethanol production. SEKAB buy land and arrange the necessary permits but suddenly everything runs out of steam. So far, the Hungarian adventure has cost 85 million SEK in tax money without any results.

The reference to “running out of steam” came as a consequence of the financial problems that SEKAB began to have as a result of the stockpile of ethanol that ties up so much of their capital, and the Oil Crisis which slowed down their income because of the reduced demand for ethanol at the filling stations. Following the criticisms, particularly in the local press, local municipalities became increasingly reticent to invest further money into the project.

An article in the Aftonbladet Bil (motoring) section (February 2009) was written, again by Robert Collin who asked, “Vem tar ansvar för Etanol-Jesus lögner?” (“Who will take responsibility for Ethanol-Jesus’ Lies?”) Referring to Per Carstedt about whom he claimed:

Now revealed the false prophet, he’s called Ethanol-Jesus.

He fooled an entire nation.

He coned politicians in Ö-vik, Umeå and Skellefteå to invest billions in his liquor factories [Africa Project]

He tricked his childhood friend, Maud Olofsson, and had the support of the entire peasant movement [referring to the development of BFR AB and the “false promises” of local bio-ethanol refineries].

He tricked Persson into believing that the ethanol would create thousands of new jobs and increase the value of the Swedish forest.

He coned Swedish governments and municipalities to subsidise ethanol cars.

He tricked journalists. Motoring journalists, Environmental journalists, News reporters and "Investigative" journalists.
He used the Green Party to force the “Pump Act,” which lead to gas station strikes. Since small stations could not afford to build ethanol pumps for around half a million [SEK].

And he persuaded the world’s car manufacturers to produce special ethanol cars exclusively for the Swedish market.

I’ve heard him speak several times.

He speaks like a preacher.

As a talented American preacher.

One of those who preach on American television on Sunday mornings so that the whole congregation screams and shouts, hallelujah!

A Messiah, but now he is disrobed.

This article demonstrates the discontent that was being felt for the actions of Carstedt as well as both the development of the Biofuel Region in general and the Africa Project.

“The ethanol gang in Örnsköldsvik”, to quote Engström verbatim, were extremely effective for a long time. When fiscal problems arose however, a number of people were happy and sought to take advantage of the situation, encouraging the bad press when they had the chance. This, according to Engström, created a torrent of criticism. It was Engström’s further supposition that perhaps Per Carstedt was too efficient and that his ethanol project got too big, which led to him stumbling. When he did there were a number of individuals waiting to highlight the flaws in the bio-ethanol system and in 2nd generation ethanol. Particularly those individuals who had invested in other biofuel projects such as DME\(^{23}\) or methanol. On this subject, referring specifically to Per Carstedt, Engström even claimed that:

In a sense my feeling is that it is a little personal. (Engström, 2010)

Moving on to the second area of criticism, the question about land grabbing, writing in “Act:onaid” (2009) SEKAB Sofia Hultqvist asked, - “SEKAB - Etanol till varje pris?” (SEKAB - Ethanol at any price?) (Translated from Swedish).

\(^{23}\) Dimethyl ether (DME), also known as methoxymethane, is an alternative fuel that began development in 2005 at Chemrec, Piteå.
Municipality-owned company SEKAB has initiated efforts to grow sugarcane on the Tanzanian coast which will then be converted into ethanol, and sold as automotive fuel in Sweden.

The project has been described as one which will rescue both the climate and poor farmers in Tanzania. Foreign capital, it is said, will boost agriculture and unused land will be developed to provide lots of new jobs.

The reality looks different. Biofuel plantations out-compete food production, raising food prices, and the land described as “unused” is actually very important for supplying the local population. Hardest hit are poor women who account for the bulk of food producers in Tanzania.

Writing in an article for Nordiska Afikaninstitutet (The North Africa Institute) in 2010 Kjell Havnevik highlighted how, increasing doubts about the sustainability of biofuel production in terms of bio-diversity and ecological systems, ground water and social health issues have led the European Environment Agency to ask the EU to suspend its 2012 target. From the point of view of SEKAB, their projected plantation area was situated between two major rivers, the Wami and Ruvu. The plan was to extract water from the Wami. However, the amount of water that would be required to irrigate the 22'000 ha of sugarcane farm would, according to the Nordic Africa Institute, mean drying up and polluting the river. Additionally, there are myriad species and fishery resources that would suffer serious water shortages and pollution from sugarcane farming and ethanol processing.

Havnevik argues furthermore that most of the land that is suitable for biofuel production belongs to circa 11’000 villages, within which smallholder production is a mainstay of rural livelihood. This development is seen by some therefore as an infringement into rural life that is interfering with the traditions of local people and inhibiting local practices. Various governments in East African countries are welcoming investments from foreign organisations to develop facilities for growing food and biofuel crops, but these developments, many argue, are being developed at the expense of the peasant population.

24 Which dictate that 10% of all vehicular fuels should be biofuels by 2020.
Nyman vocalised succinctly what happened from his point of view:

When they came down there they might have thought that it was going to be easy to buy land to grow and to produce ethanol, but there were a lot of people that thought “don’t come here and use our land to do this and take your profit. (Nyman, 2010)

On the other hand, Lindstedt argued against the drought concerns claiming that:

There is land enough and if you do a project like this then you have a lot of spin off, you build a de-watering system so that you can collect water during rainy periods. This could provide irrigation for other farms as well with the building of an irrigation system. (Lindstedt, 2011)

Writing in the Guardian of Tanzania in 2009 Anders Arvidson made the bold opening claim that, “Biofuels initiatives deserve more serious consideration”. Referring to other publications by Tanzanian, Norwegian and Swedish journalists who had accused the companies involved in the initial steps in the development of a biofuels industry in Tanzania of being “neo-colonialists” and out to steal from Tanzania her natural resources and make some of the country’s poorest people even poorer, Arvidson sought to defend their efforts claiming that these statements had been:

(…) poorly founded, unconstructive, and often remarkably one-sided (…) furthermore they seriously threaten to kill the current bourgeoning initiatives in their infancy – initiatives that we believe deserve more serious consideration. The potential positive benefits of a responsibly developed modern biofuels industry in Tanzania – for Tanzania, and for the world – are too important to dismiss based on premature conclusions. (Arvidson, 2009)

In March 2008 SEKAB’s CEO (at that time Per Carstedt) explained at the Swedish national Energy Convention (Energitinget) in Stockholm on the subject of ethanol efforts in Africa that;

We are working to help Tanzania and Mozambique within 20 years become free of their dependence on oil, significantly increase their production of electric power and at the same time export several
billion litres of ethanol from the factories we are planning.
(Carstedt, 2008)

SEKAB sought to produce ethanol in Tanzania and Mozambique. Given the tropical climate that exists there and SEKAB’s claim that there were unused areas with good access to water. SEKAB asserted in a 2008 Press release that, “Africa has excellent national conditions for growing biomass for electricity and biofuels.” On the subject Carstedt stated in a press release:

This is practically a revolution and is contributing to strengthening some of the world’s weakest economies. At the same time it is showing the way for the rest of Africa, and reducing fossil fuel emissions globally while improving the supply of secure energy for everyone involved. (Carstedt, 2008)

The original SEKAB plan was that the factories would be producing in 2011, to be followed by a series of new projects in the proceeding 30 years. It was their ambition to support and lead national efforts for biofuels through the long-term development of in excess of 400,000 hectares of land for bioenergy production. It was their further assertion, at that time, that the volume of export ethanol would eventually be enough to replace all petrol and diesel for private cars in Sweden and Norway - if the vehicles also used plug-in technology.

Tanzania and Mozambique combined have an area that is circa four times that of Sweden. They are apparently completely dependent on imported petroleum products, which SEKAB claim uses up 100% of the country’s export income. SEKAB’s further assertion was that sugarcane and durra were the most cost-effective and simple raw materials which, they claimed, could potentially be used to produce ethanol that was cost competitive with petrol and diesel. There are unused areas of many million hectares available in both Tanzania and Mozambique, Lindstedt claimed, which, if cultivated for biofuel, would not compete with food production or threaten biological diversity. The climate, land and water conditions are similar to Brazil, which is currently the leading producer of sustainable ethanol.

The ethanol efforts sought too to develop trade, according to Nordgren the Tanzanian government had support from SIDA (Swedish International Development Cooperation Agency) and the Swedish Energy Agency created a special organisation - the National Biofuels Task Force (NBTF) which deals specifically with all issues and decisions related to the development of the biofuel industry. In official SEKAB literature Carstedt argued:
It is important that Sweden is a part of this, and that it works for social and ecological sustainable development. These countries need access to our markets through trade, initial support with the technology, capital for industrial development and resources aimed at such areas as infrastructure, education and health. (Carstedt, 2008)

SEKAB claimed that when the technology for the production of cellulose ethanol (being developed at the pilot plant in Örnsköldsvik) reaches commercial levels then it would also be linked to operations in Tanzania and Mozambique to extract residual products from the sugarcane in the form of bagasse. This new technology can increase production by 50% per hectare.

In addition to the growing of sugarcane and production of ethanol, these projects also involve the expansion of infrastructure and improved living conditions for very many people who today are employed. At the same time, society is gaining access to energy for other small-scale industrial development, cooking, refrigeration and freezing capacity and lightening. (Carstedt, 2008)

Clas Engström argued that in fact the criticism of ethanol is linked closely to the regional debate about the large share that Örnsköldsvik, Umeå and Skellefteå Municipalities own in SEKAB. In his interview he underlined that:

Here in Örnsköldsvik, in Umeå and in Skellefteå, where the municipalities have come in with money to SEKAB, it is a lot of politics and a lot of things that have nothing to do with ethanol by itself; it is to do with SEKAB. At that point they have been criticised more than ethanol should, I think that when you want to do things that are not the same as the big companies do then some kind of lobby will intervene (…) (Engström, 2010)

The issue of regional politics was raised by the CEO of SEKAB (at the time of writing) Fredriksson who asserted;

I think in 80% of the articles in the local press the main drive is from a political side, because of the investments. But there was also big turbulence in the National press about ethanol being a “good” fuel. Which is something I can talk for hours about, because it all boils down to something simple; if you are going to produce energy, which, we have to then it will have an impact on the
environment, the question is how big is that impact allowed to be? The second thing is when you go into it; you can produce biofuels in a good way and in a bad way. The trick is to do it as good as possible and not as bad as possible. (Fredriksson, 2011)

5.5.8 The Effect on the Biofuel Region

A number of organisational and organisational field changes resulted from the pressure of adverse press attention and fiscal crises. Beginning with SEKAB for example, Per Carstedt stood down as Managing Director, Nordgren commented:

I think that for the company Per needed to step aside. Even though he got a lot of blame, I don’t think it was fair but I think for the trustworthiness of the company towards the municipalities it was essential he left the position. He continued working for Africa, with that project last year also. But his employment ended last year. (Nordgren, 2010)

Anders Fredriksson, who was recruited by SEKAB in 2005, during a recruitment drive led by, the then CEO, Per Carstedt, was appointed CEO of SEKAB himself in 2009. It was his claim that following the political, legal and press battle surrounding the Projects in Africa it became politically impossible for the present owners to inject more money into SEKAB, which was money that SEKAB needed if it were to continue. Fredriksson purposed that SEKAB had to act, given the crisis that they found themselves in. Fredriksson explains:

So they had to act and what you do when you act is that you basically “kick”, you disengage your Management and hire new Management, and a new Board of Directors. That is what SEKAB did in 2009. At that point I was asked by the owners if I wanted to take over, first as the President of Biofuels and Chemicals (which was basically the only company in the group with a turnover and positive cash-flow). Following that, we also recruited a new chairman, Göran Gezelius, and after the first year of course there was a restructuring of the entire group. So we hired an external consultant as group precedence to disengage all of our international commitments, and my focus was to do a cost-cut basically on the commercial company. After that year was over, I
was appointed president of what was left of SEKAB. (Fredriksson, 2011)

Fredriksson proceeded to explain how the structure of SEKAB was streamlined and restructured. Clarifying that before the restructuring SEKAB was made up of four sister companies (illustrated in Figure 1). SEKAB Biofuel Industries was the parent company of the SEKAB group. Then there was SEKAB Biofuels and Chemicals, concerned with the business of 1st generation ethanol and chemical production as well as its import, sale and distribution. SEKAB International was in charge of the coordination of international projects such as those in Mozambique, Tanzania, Hungary and Poland, whilst SEKAB E-technology was accountable for the development of cellulose-based (2nd generation) ethanol technology. Finally SEKAB Industrial Development was established to take responsibility for the development of production plants and the commercialisation of the 2nd generation ethanol production.

![Figure 1 - The organisational design of SEKAB (before the change)](image_url)

Legally, Fredriksson claimed, SEKAB is still “Biofuel Industries” owning - SEKAB E-technology (ethanol pilot), and SEKAB Biofuels and chemicals (the commercial company) they also own a 49% share in a polish plant called Bioagra. Bioagra is a 1st generation ethanol plant that is one of international projects that SEKAB were involved. Bioagra is the only one of those projects that resulted in a factory, which came into operation in July 2009. Furthermore, Fredriksson explained how SEKAB International is currently dormant, though it does currently own some land in Hungary (Bioagra) which is in the process of being sold.

So SEKAB E-technology and Industrial Development have merged, being referred to now as just E-technology. Originally the idea behind this constellation, Fredriksson explained, was that SEKAB E-technology was
focussed on research and SEKAB Industrial Development sought to commercialise the research, dividing these two sets of activities into different companies however seemed unnecessary to Fredriksson, so they were merged.

I didn’t see a reason to have separate companies for that so I merged them into one. Today E-technology has the Research and Development, but also a very strong focus on commercialisation which is what we missed here. There was too much money going into research, especially the last year I would say. Of course you have to do that early on to develop the technology, but this work should have been more focussed and started much earlier to develop a professional organisation and also to start commercialisation because these guys [E-tech] don’t know that and they should not know that either, they are scientists. (Fredriksson, 2011)

The following figure illustrates the current organisational design of SEKAB

![Organisational Design of SEKAB](image)

**Figure 2 - The organisational design of SEKAB (after the change)**

According to a press release25 EcoDevelopment took over 100% of shares in SEKAB’s two subsidiaries “SEKAB Bioenergy Tanzania Ltd” and “Ecoenergia Mozambique” (both part of SEKAB International). The transfer of ownership cost a token SEK 400. The benefit to SEKAB is that they faced the choice of either shutting down the project at the cost of 16 million SEK,

---

or transferring the ownership, at no cost, to EcoDevelopment. The two companies apparently have net assets of approximately 14 million SEK which SEKAB relinquishes claims to, however it does avoid the closing down costs previously highlighted. Additionally, if EcoDevelopment are able to find financial backing for the project (Nordgren claims that Lindstedt was (at the time of the interview) working full-time to find it) then the contract includes a pledge for an off-take contract and a repayment clause. With this SEKAB can regain the entire amount that it invested in Africa between 2005 and 2008, which is approximately 170 million SEK.

Meanwhile BFR AB established to play a central role in the development of the biofuel industry in Sweden were forced to impose changes in order to maintain their presence, and be able to continue with their objectives. Commenting upon this period and the difficulties faced by BFR AB seeking to retain their members, the Managing Director of BFR AB (at the time of writing) Mikael Brändström claimed;

I think that one problem with the BFR AB is that BFR AB started off with the same person that started SEKAB (Carstedt) so there has been a lot of mixed up between what is SEKAB and what is BFR AB? It is difficult to separate when they were run by the same people. What we have been doing is trying to separate them over the last 2 years, saying that SEKAB is an industrial member of BFR AB and that BRF AB has many members, Municipalities, companies and other parties as well. But it has been a mix up and we have been trying to explain that to say, this is SEKAB and BFR AB has not been involved in the Tanzania project at all. We were aware of it through media and so on, but we haven’t been involved with that in any practical way at all and I think that that has influenced BFR AB a lot. Especially during 2007/8/9, maybe not so much anymore because we have been quite clear with that. We have explained it to all the members. (Brändström, 2010)

Later Brändström referred back to the “promises” that had been made to some of the Municipalities regarding the development of bio-refineries in their municipalities and how these issues coupled with the economic crisis meant that the development of the plants never happened. Consequently some of the municipalities were disappointed. Carstedt and Fridman attempted to explain to them that the process would take a longer time and that the focus of the production would be elsewhere where the photosynthesis would be faster, now the priority would be the development
of technology for the development of the bio-refineries, namely the pilot plant. This, according to Brändström, is the current plan for the region where the old industrial infrastructure will be facilitated and developed because it is easier and more affordable to build around an existing infrastructure than to build a new plant. The idea being that BFR AB will promote the development of the technology necessary for 2nd generation ethanol. This technological know-how can then be sold on to organisations in countries such as Brazil, where 2nd generation plants can be developed alongside existing 1st generation ones. It was the further assertion of Brändström that this focus on the bio-refineries is a process that must be taken "step by step".

The following tables document the members of BFR AB in 2011 (BFR AB, 2011):

<table>
<thead>
<tr>
<th>MUNICIPALITIES</th>
<th>STATE ACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bjurholm</td>
<td>Västerbottens County Administration Board</td>
</tr>
<tr>
<td>Häreesdor</td>
<td>Västerbotten County Administration Board</td>
</tr>
<tr>
<td>Nösö</td>
<td>Vägverket</td>
</tr>
<tr>
<td>Skellefteå (Through Skellefteå Kraft AB)</td>
<td>Nutek</td>
</tr>
<tr>
<td>Storuman</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REGIONAL ACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sundsvall (Through Fokusera Utveckling in Sundsvall AB)</td>
</tr>
<tr>
<td>Umeå</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNIVERSITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Umeå University</td>
</tr>
<tr>
<td>Mid Sweden University</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FIRMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enum AB</td>
</tr>
<tr>
<td>Härnösands Stift Egedomsamnanden</td>
</tr>
<tr>
<td>Norrköping Ekonomisk förening</td>
</tr>
<tr>
<td>Norra SkogsmarkEkonomisk förening</td>
</tr>
<tr>
<td>SEKAB</td>
</tr>
<tr>
<td>TRB Sverige AB</td>
</tr>
</tbody>
</table>

*Table 7 - Members of BFR AB (2011)*
By way of comparison in 2007 the Municipality members numbered 16. Since then Dorotea, Lycksele, Nordmaling, Norsjö, Robertsfors, Storuman, Vilhelmina, Vindeln have left.

Another important change that has occurred has been the shifting perspective of the forestry industry. For example when BFR AB was first established the forest industry, generally speaking, perceived the idea of biofuels as a threat to their industry, Fridman commented that:

> From the initial vision (of BRF AB) we got a reaction from the Forest Industry that we were a threat. They said that they would require the wood. In that way the target was good because it raised the debate with the industry early and the question was being addressed. (Fridman, 2007)

Later however the forest industry, observing decreased sales and increased competition in quickly developing markets such as Russia, China and Brazil, have, according to Fridman, begun to change their minds and their interest is developing. One such example of this is the development of DME at Chemrec; in 2005 a pressurised development plant was built in Piteå. Then by 2010 the DME pilot plant started up.

The establishment of this Pilot plant came at a time when to some extent “different biofuels fighting each other” began to end. Engström claims this is in decline because of the things that have happened in the Biofuel Region. He claims that the circumstances have changed, that is to say that where biofuel production is expected to occur is not as clear as once it was, and the regional conflict that was once an issue, is lessening. One example of this is the big black liquor gasification project in Piteå (Chemrec), which will likely move to Örnsköldsvik and be further developed in cooperation with Domsjö Fabriker. Inevitably therefore the people in Piteå are now working alongside the people in Örnsköldsvik.

What has happened essentially is that we have realised that we should be glad if we get to commercialise even one technology in the north of Sweden (…) So there has been a sort of sobering up with regard to what is actually possible and that we should support each other, rather than debating which is the most efficient one, or can run the most kilometres and so on. That is a pretty interesting debate I think, because every solution has to be tried and tested if we would like to get out of this very difficult situation which we are in. (Engström, 2010)
There are a variety of organisations steering the industry according to Engström. The Swedish Energy Agency for example have support schemes to get new projects running, they have helped SEKAB and are involved with the DME plant for example. So there are possibilities to get financing for new biofuels. On the other hand, Engström claims there is no funding at all for green chemistry. As a consequence there is little incentive for the development of green chemistry. All of the schemes are directed towards making biofuel.

This has led other organisations such as Domsjö Fabriker, former owners of SEKAB (until 2005) to also look towards biofuel production; they are currently raising funds to develop bio-DME and bio-methanol. (The latter being driven somewhat by the European regulation of 10% of all fuel sales being biofuel by 2020).

The problems encountered by the Biofuel Region have then led it to a place where cooperation is perhaps more important than competition. This is what Sten Hägström of Domsjö Fabriker had to say on the matter:

What you are saying is that it need not be competition but cooperation; it could be that there is a need for every different option simply because there are so many cars and therefore you need to have different options for fuel too. (Hägström, 2010)

Overall only the future will tell as to what will occur in the Biofuel Region, we shall end with words from Engström:

I think that the big problem is to get risk capital to these types of big projects independently of which type of project it is. (Engström, 2010)
Figure 3 - The history of ethanol in Sweden
6 Analysis I – Identifying the Structuration Processes and Triggers for Change

6.1 Introduction

Having undertaken research into the case of the Biofuel Region in Sweden and documented the change and development that ensued from 1986 through 2009 in a narrative, the object of this chapter is to attempt to fulfil purpose one namely: to examine and explore the process of organisational field change by investigating the manner with which an organisational field is formed, and how it changes as a consequence of this formation, taking into account change driven by any triggers that it incurs along the way.

The purpose of the first section is to examine the narrative for triggers and salient processes of structuration in order to map the field’s formation and development. The following table outlines the triggers for change and the
structuration processes (identified in the theoretical chapter) for the purpose of reference.

<table>
<thead>
<tr>
<th>Triggers</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jolts</td>
<td>A sudden or unprecedented event, never having happened or existed in the past. (Meyer, 1982)</td>
</tr>
<tr>
<td>Technical Discontinuity</td>
<td>New, radically advanced technology which displaces old, inferior ones (Lorange et al. 1986).</td>
</tr>
<tr>
<td>Landmarks</td>
<td>An important event in the development or history of something. In this case a Landmark represents an important event in the development of the Biofuel Region (Hannigan, 1995).</td>
</tr>
<tr>
<td>Shocks</td>
<td>Trigger for change which create a reconstruction of current rules, or models of organisational strategies that undermine those rules, created by the state or the organisational field. (Fligstein, 1991)</td>
</tr>
<tr>
<td>Disruptive Events</td>
<td>A trigger which can end sharply certain elements of organisations that have become locked in by institutional inertia. Disruptive events emanate from external sources and throw the field into confusion or disorder by interrupting or impeding its progress (Hoffman, 1999).</td>
</tr>
<tr>
<td>Field Configuring Event</td>
<td>Temporary social organisations that summarise and shape the development of organisational field (Lampel and Meyer, 2008).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
</tbody>
</table>

*Table 8 – A summary of the concepts that will be used in Analysis I*
6.2 Period ONE (1986-1994) – The Emergence of a New Field

A new field begins to emerge as a consequence of a pilot-test of ethanol (which facilitates the development of a new trigger for change in this thesis – a “Legitimising event”). The organisations involved interact increasingly and establish certain coalitions. Then the field restructures as new organisations enter it, coalitions and pecking orders are re-established in the field, official philosophies are established alongside elite individuals and elite organisations, and certain elite organisations become infused with value.

In turn this drives an extension of the field in the form of another Legitimising event, and consequently the field restructures again and establishes new coalitions and pecking orders.

6.2.1 The Pilot Test of Ethanol Powered Buses (1986) – “Legitimising Event”

In 1986, BAFF\textsuperscript{26} and SEKAB\textsuperscript{27} wanted to promote the use of biofuel for transportation, and began with a pilot test of ethanol buses in Örnsköldsvik. One can argue that the processes involved in the pilot test observed an increase in the amount of interaction, and communication between those organisations involved because as the organisations sought to establish the infrastructure they each played different key roles, and had to coordinate their efforts towards the final goal.

In addition there was considerable diversity in terms of the organisations’ approach and form. Consequently one could argue that at this point in time the organisations were collectively demonstrating features of the process 1, increased interaction because there was an increased amount of communication and cooperation between them, and they were previously involved in particularly diverse arenas, i.e. that were not the establishment of a biofuel for public transportation infrastructure.

Empirically speaking SEKAB and BAFF took the initiative of approaching the local bus operating company at Örnsköldsvik Kommun, as well as the Swedish bus manufacturer Scania, with the idea of establishing a biofuel for public transportation infrastructure. In order for the endeavour to be successful, the four organisations had to cooperate, because for the plan to work each of them would be dependent upon one another. Initially Scania recalibrated 2 new vehicles for Örnsköldsvik’s Kommun in order that they

---

\textsuperscript{26} Established in 1983, and focussed upon the development of ethanol based chemistry.

\textsuperscript{27} Established in 1985 for the purpose of researching the development of cellulose based ethanol.
could run on ethanol. Next SEKAB were required to develop the fuel (ED95) as well as distribute it from their facility to the bus depot. The endeavour was driven from within the organisation by the objective of developing the market for ethanol, and increasing the customer base, in turn this would allow the business to grow and potentially bring forth employment opportunities.

BAFF were tasked with the lobbying at local and national governmental levels to obtain necessary tax exemptions and permission to sell the new fuel. This was important because without the tax break on ethanol, it would not have been an affordable alternative to fossil based fuels. The final steps were for the vehicles to be run by Örnsköldsvik Kommun on their bus networks, within their municipality on the fuel supplied by SEKAB to their depot.

As the idea got under way Scania and SEKAB had to communicate with regard to the requirements for the re-calibrated buses, how the technical process should be undertaken and what ingredients the fuel needed. Ethanol itself is much more corrosive than diesel and consequently Scania had been required to develop more robust fuel lines. In addition SEKAB devised the ED95. Both organisations were required as a result to devise new organisational routines to accomplish this. At the same time SEKAB had to communicate with Örnsköldsvik Kommun, to make arrangements for the distribution of ED95. The Kommun organised the purchase of buses from Scania, and made provisions for the ED95 distribution in their bus depots. This involved communicating the idea within the organisation, i.e. making employees aware of the venture, how it would work and what changes to their roles it would imply, as well as the purchase of tanks and pumps.

This kind of communication and interaction between these organisations was new in some senses. Previously Örnsköldsvik Kommun had interacted with SEKAB and BAFF, in so far as they were shareholders in the organisation, and they had also a long history of purchasing buses from Scania. However, this venture implied a new focus. Örnsköldsvik Kommun was not directly involved with SEKAB’s activities but they did make arrangements now for the purchase, on a regular basis, of ED95 fuel from them. Increased cooperation and communication was required too with Scania as they developed a new kind of bus, requiring constant feedback and monitoring to ensure that they were running well, and that they could be attended to if required.

At this point it seems that the emerging field was demonstrating characteristics of process 2, establishment of coalitions and pecking orders because certain patterns of coalition and even domination were developing. As has been emphasised Örnsköldsvik Kommun came to rely on SEKAB for
their ED95, and on Scania for the provision of buses and their refinement (given that the vehicles were so new, technologically speaking). Without the cooperation between these organisations then the field could not have functioned.

On-going communication and cooperation were required between all four of the organisations as the biofuel for public transportation infrastructure became operational. As discussed, Scania required feedback on the performance of their vehicles, which meant that continuous communication and cooperation was required between Örnsköldsvik Kommun and Scania. Likewise SEKAB required constant feedback upon the performance of their fuel, from Scania and Örnsköldsvik Kommun. SEKAB were in addition responsible for continuously providing ED95 to Örnsköldsvik Kommun to fuel the new vehicles that they had purchased.

An interesting element here concerns the pecking order issue. One could argue here that the field was dominated by SEKAB and BAFF, because it was them who were the overarching orchestrators of the field’s activities, and it was them who were responsible for the legislative changes necessary to facilitate the development, namely: the law that permitted the sale of ethanol as a fuel, and the law that made ethanol fuel exempt from energy tax, making it comparable to the well-established diesel fuel in terms of its cost and therefore affordability. Moreover, it was SEKAB who produced and distributed the ED95 fuel for the buses.

On the other hand, however, perhaps Örnsköldsvik Kommun were in a stronger position, after all it was them who purchased the recalibrated buses from Scania, it was them who were willing to test the technology and buy the necessary fuel from SEKAB. Process 2 can thus be argued to be salient here, because patterns of coalition certainly seem to have developed. For example SEKAB had established a cooperative working practice with Örnsköldsvik Kommun, given that they were producing ED95 for them and distributing it on a regular basis to their bus depot. Likewise Scania were cooperating with SEKAB and Örnsköldsvik Kommun in the continuous monitoring of the performance of both the fuels and the buses. The patterns of pecking orders on the other hand are less clear at this stage.

An important issue raised by a number of respondents with regard to this first trigger in the development process, was that it was necessary to demonstrate that the idea of biofuel for transportation in general was a legitimate one. That is to say that they sought to show that ethanol could be used as a transport fuel. According to institutional theory, as has been outlined, legitimacy is a generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially
constructed systems of norms, values, beliefs, and definitions. Scott (1995) breaks down the concept into two, namely, cognitive legitimacy (which refers to the spread of knowledge about a venture) and socio-political legitimacy (which refers to the acceptance of the venture as an appropriate one according to laws and norms.

Interestingly this quest for legitimacy began before the field started to emerge, this was necessary however in order that the rules and regulations surrounding transport fuels could be changed to accommodate the move. Plus ultimately the Biofuel Region could not grow any further if other municipalities did not accept the idea as a legitimate one and embrace it themselves. This first trigger in the development of the Biofuel Region was therefore a very important one, and the attainment of socio-political legitimacy in particular, that it promoted, facilitated the further development, and the 2nd trigger (which shall be addressed next). It could therefore be argued that this first landmark represents a legitimising event, i.e. an event, purposely created by field members, which promotes the attainment of legitimacy and is consequently an essential facet of the development process. This is a new categorisation of trigger and will be used from here on in to identify any other such events.

6.2.2 Stockholm City Council Purchase 30 Ethanol Buses (1989) “Landmark”

As the field grew further, new members entered the field and consequently the field was restructured, therefore certain characteristics of process 1, (increased interaction) became again salient.

In elaborative terms, when Stockholm City Council became involved in the biofuel for public transportation infrastructure (by 1989 they were operating 30 ethanol buses marking a new landmark in the development of the Biofuel Region) then inevitably it (Stockholm City Council) increased its interaction with the other members of the field, namely SEKAB, who were to provide the ED95 fuel and Scania, who were to provide the recalibrated buses for the job.

During the late 1980s and early 1990s the field was maturing still further, passenger surveys, driver training schemes, and careful monitoring of vehicular performance, as well as constant growth orchestrated by SEKAB and BAFF, led to a field which was again saliently demonstrating characteristics of process 2, establishment of coalitions and pecking orders. SEKAB and BAFF are at this stage conceptualised as superior and dominating because they were not only the driving force behind the development of the infrastructure, but they were the ones driving legislative change, developing, producing and distributing the essential ED95 fuel and.
orchestrating the growth and development of the infrastructure throughout the country.

Examining the field at this stage, one can observe as per Selznik (1957) that certain organisations within the organisational field had developed administrative ideologies as conscious and perhaps unconscious devices of communication and self-defence. In elaboration, it seems that Örnsköldsvik Kommun took part in the infrastructural development, adopting official procedures and programs that illustrated the manner with which employees should undertake their jobs, namely in a sustainable fashion. This was demonstrated in the interview with Nyman at Örnsköldsvik Kommun, when he highlighted that right from the start Örnsköldsvik Kommun were committed to supporting local organisations as well as promoting sustainable development, in this case through the purchase and running of ethanol buses. These, in line with Selznik, seemingly became elaborated into official philosophies, therefore demonstrating characteristics of process 5. The interesting thing here is that these official philosophies were manifested initially at the micro (organisational) level by Örnsköldsvik Kommun, but they are also visible to some extent at the meso (organisational field) level because they can be identified as forces which promoted the endeavour initially.

From the point of view of BAFF and SEKAB one could argue, however, that this concept of official philosophy had actually existed since the organisations were established. The reason is that, as has been discussed, the purpose of the establishment of each of the organisations was to promote the use and development of ethanol and the industry. At this stage there is very little to imply that either were faced with the necessity to defend themselves against criticism, especially given the enthusiasm with which, it would seem, the biofuel for public transportation was received. One could argue, however, that the ideology of the organisations changed in their focus as a result of the maturing field. BAFF was, after all, established to promote the use of green chemistry, and SEKAB the development of 2nd generation ethanol. Following their initial success, their focus seems to have shifted very much away from ethanol based chemicals at least. One could argue that whilst their philosophy remained the same, the means through which they sought to change it, namely the technology (biofuel buses in this case) and the tools (the biofuel for public transportation infrastructure) changed.

An important motivating factor behind the venture was the development of the local region. It is possible to overlook this issue at times, especially when one looks retrospectively at the case, because so much attention is focused upon the benefits of biofuels as eco-efficient fuels. Both BAFF and
SEKAB sought to bring job opportunities and increased prosperity to the area.

As has been underscored Örnsköldsvik Kommun were also interested in the economic development of the city and were motivated, not least, because they saw the development of the ethanol industry as a promising way of relieving some of the economic strife that had befallen it. One could argue that development of their city and surrounding area was already an official philosophy. However, it seems in addition that the issue of sustainable development also became an important motivator behind their (Örnsköldsvik Kommun’s) interest. From the point of view of this first stage (biofuel for public transportation infrastructure) one could infer that Örnsköldsvik Kommun were beginning to develop an official philosophy that sustainable development, and in particular supporting the biofuel industry, was something that they should be involved in.

It seems here that the official philosophies of the organisations were somewhat similar, but at the same time slightly nuanced. SEKAB and BAFF had been created to develop the ethanol industry, initially via 2nd generation ethanol and green chemicals respectively, and then by developing a biofuel for public transportation infrastructure. Örnsköldsvik Kommun on the other hand were initially focussed on what is their raison d’être, namely the development of the locale, and later becoming involved in the biofuel for public transportation and focussing upon sustainable development. Therefore there were different priorities in the official philosophies of the organisations involved, which one could argue overlapped.

As has been emphasised Selznick’s (1957) focus was upon organisations, that is to say he looked inside the organisations and sought to better understand how change occurred as a result of their presence within an organisational field, or rather since the term organisational field had not yet been coined, as the organisations became institutionalised. It is assertion of the current author however that these processes can be facilitated on both the micro (organisational) level as well as on the meso (organisational field) level, by examining the field with these concepts in mind (as previously highlighted).

For example Selznick (1957) talks about the establishment of elites (process 6), at this point in time in the development of the Biofuel Region it is clear, from the interviewees and press reports, that 2 elite individuals in particular were beginning to emerge as significant drivers for the development of the Biofuel Region, namely Jan Lindstedt (then CEO of BAFF) and Per Carstedt (then CEO of SEKAB and Carstedt’s Ford). These two men were regularly talked about during the research process by the
interviewees as the 2 men at the epicentre of the endeavour, both as drivers of change and development within their own organisations, and as visionaries of the shape and form that the Biofuel Region would ultimately take. It was these two individuals who were responsible for the idea of the biofuel for public transportation endeavour in the first place, and it was also them who orchestrated its development, encouraging municipalities to join in, and driving legislative change in the country via lobbying. An important point here is that it is not a hard fact that Carstedt and Lindstedt were elite individuals; it was merely inferred by several sources. Although at the time the two were certainly recognised as the orchestrators of the endeavour within the press, perhaps owing to the high profile that they held in relation to the development process.

An important point here is that the two men were elite individuals within their own organisations (micro-level) from the start of the endeavour, and since they were each the CEO then this is perhaps not surprising. When it comes to the actual development of the Biofuel Region, they were also elite individuals at the organisational field (meso) level as well, because, as has been discussed, they were very much the driving force behind the establishment of the Biofuel Region. On the subject of process 6, establishment of elites, one could argue in addition that another type of elite began to emerge at this point, that of an elite organisation, again a concept which extends the work of Selznick (1957) beyond the realm of merely a single institutionalised organisation towards the organisational field level.

Earlier on in the discussion, before the involvement of Stockholm Municipality, process 2, establishment of coalitions and pecking orders was discussed and the issue highlighted that at that point whilst there were a number of coalitions made, the pecking orders were less clear. Here however I would argue that the pecking orders are much clearer, because certain elite organisations had by now emerged. This is a new perspective and an adaptation of Selznick’s (1957) work, but, considering the narrative of occurrences, one can infer in fact that SEKAB and BAFF were by this stage established as elite organisations because of the fact that they were the two organisations who played the most important roles in the initial creation, and subsequent expansion, promotion and development of the Biofuel Region.

The final concept of relevance at this point in time is process 8, infusion with value. This issue will be raised later on, but by this particular point in time it seems that, already, certain elite individuals had infused their organisations with value, and, reflecting upon the attitudes of many of the respondents in 2007, one can infer that by this stage many people were very
enthused and motivated by the work that, in particular, BAFF, SEKAB and Örnsköldsvik Kommun were undertaking. As a direct consequence of this infusion with value it comes as no surprise that significant change was to follow in the form of the extension of the Biofuel Region to incorporate personal transport in 1994. Building on the previous discussion upon levels, this infusion with value seems to have occurred not merely by individuals within organisations, but with organisations within organisational field. That is to say that the field itself, it could be argued, and the objectives that it stood for, became infused with value because they represented not merely the opportunity to develop the profit margins of the organisations within them, or the region, but they potentially offered an oil-free and more eco-efficient future.

6.2.3 The Pilot Test of Ethanol Powered Cars (1994) - “Legitimising Event”

Later on in 1994, the extension of the Biofuel Region was envisioned and 3 Flexi-fuel vehicles (FFVs) were imported to Sweden from the United States. The extension of the Biofuel Region, incorporating the joining of new members, consequently meant that again elements of process 1, increased interaction, emerged as the new organisations interacted more frequently and the field re-configured. The change involved an increase in the interaction between the members as SEKAB, BAFF, Örnsköldsvik Kommun and Carstedt’s Ford partook in the enlargement of the Biofuel Region, by testing out the concept of biofuel powered cars.

Apparently it was initially the inspiration of Jan Lindstedt, it is the assertion of the current writer that Lindstedt’s idea to extend the Biofuel Region came from both his desire to develop SEKAB and BAFF, to grow their business, and once again to promote the development of 2nd generation biofuels from biomass (by increasing the interest in 1st generation ethanol and therefore the demand for ethanol, increasing SEKABs turnover such that they could invest more money in the 2nd generation ethanol, and by attracting investors to their research into 2nd generation ethanol). In addition he sought to further the cause of the use of biofuels for transportation. Noteworthy here is the fact that there was very little interaction between the people involved in the biofuel transportation system in California and in Sweden at this stage, save for the import of the vehicles from Ford USA.

There was a change here from the previous process 1 in the sense that the focus was different, and a new organisation was involved. For example, Örnsköldsvik Kommun leased all three of the FFVs from Carstedt’s Ford (who were motivated by the chance to develop their business and promote
sustainable transport) and was required to encourage their employees to fill out logs documenting the experiences that they were having with the vehicles. Carstedt’s Ford were responsible initially for their recalibration to run on E85 instead of methanol (which they had been built to run on in the United States) and also for the service and maintenance of the cars themselves. SEKAB cooperated with Örnsköldsvik in providing refuelling facilities for the drivers of the FFVs on their premises (which could only be used within their hours of work). SEKAB were also responsible for developing, producing and providing the E85 fuel that was required. There were changes then, in the sense that Carstedt’s became an important member of the field, and, whilst SEKAB and Örnsköldsvik Kommun were already collaborating with the biofuel for public transportation infrastructure, this new interaction required quite different activities and considerations and therefore content.

Anyway, the use of biofuel for transportation had only limited potential to solve environmental problems, were it to focus solely on buses (public transportation) because of the fact that there are only a limited number of buses on Sweden’s roads. Lindstedt realised that for it to have any real impact it must also focus on private cars. This third trigger is identified here as a legitimising event, because again it represents a trigger that promoted the attainment of legitimacy and was consequently an essential part of the development process. Once again the Biofuel Region sought to expand its reaches, but in order to do so they had to again demonstrate that the concept worked. In other words, they had to attain socio-political legitimacy in order to drive legislative change, and to convince people that bio-ethanol could be used as a fuel for private transportation, without problems. This trigger was consequently an essential part of the continued development process. Ultimately they were also concerned with the spread of knowledge about the venture and thus, the attainment of cognitive legitimacy in order that the infrastructure could grow, but this legitimising event is one which, as we shall, see drove significant change within the field.

At this stage one could argue that process 2; establishment of coalitions and pecking orders was again becoming salient at the same time, or at least very shortly after the expansion had begun. The reason for this, I would argue, is because (as has been asserted) coalition between SEKAB, BAFF and Örnsköldsvik Kommun already existed at this time and therefore whilst there were distinct differences in the activities that they were subsequently involved in, following the import of the Ford Taurus FFVs from the United States, the elite organisations, and therefore the pecking orders had been established, to some extent, already. The “to some extent” is the interesting issue here however, that is because Carstedt’s were a new organisation in the
field, who had not been previously involved at all, but who were now a central organisation in the field, because it was them who imported the cars, them who made the cars ready for the road, them who leased them to Örnsköldsvik Kommun, and them who were responsible for their upkeep. Therefore process 2, establishment of coalitions and pecking orders was different here because the field had changed, and the domination one might argue had changed from SEKAB and BAFF to Carstedt’s.


The field grows as a consequence of a landmark – the import of 3 Ford Taurus FFVs, driving a restructuring of the field as new members join it. This means increased interaction, re-establishment of coalitions and pecking orders and official philosophies, as well as a new elite organisation.

Later, a field configuring event aims to develop awareness of the venture, and another landmark – the import of 50 more FFVs drives a restructuration again. This time there is increased interaction, re-establishment of coalitions and pecking orders, and establishment of elites, but importantly the field reaches maturity when it demonstrates process 4, and organisations realise that they are in a common adventure.

The field is adversely affected by a disruptive event, but attempts to resolve the potential loss of legitimacy with a legitimising event. Following which the field again reaches a common adventure, re-establishes elites and is infused with value.

6.3.1 The import of a Further 50 Ford Taurus FFVs (1995) - “Landmark”

The Biofuel Region began to change after the 3 Ford Taurus FFVs had been used by Örnsköldsvik Kommun and proven to run satisfactorily. After a degree of legitimacy had been attained from this satisfactory demonstration, in 1995, another 50 cars were imported from the United States.

One could argue that after the second batch of cars was imported and leased on service contracts, then the organisational field itself must show signs of change. That is to say that it demonstrates process 1: increased interaction.

Importantly, this extension of the Biofuel Region required the assistance of another type of organisation. As has been discussed the first three FFVs...
were refuelled at SEKAB's own facility. As a direct consequence the drivers of these cars were required to fill up at one location within SEKAB's working hours. This was an issue because whilst SEKAB are located very close to Örnsköldsvik - it was not perfectly suited to large numbers of customers and in particular, not those customers who were living and working outside of the town or in other municipalities. Therefore, filling stations for E85 had to be established. At this early stage a variety of companies were approached but only one, OK, agreed following SEKAB's promise that at least 10 customers would fill up at their first facility.

Compared to the previous time that process 1 emerged there was now an oil company, namely OK, involved within the organisational field. OK were interacting with SEKAB in the sense that they were purchasing E85 from them (initially to be vended at only their Härnösandvägen filling station). This distribution infrastructure involved the production of the fuel by SEKAB, and its distribution (to OK's station) by SEKAB. Later other Municipalities began to lease FFVs from Carstedt's, and as a result negotiations were made with OK to begin to vend ethanol at other filling stations around the north of Sweden. These municipalities were also interacting with organisations in the field, in the sense that they were arranging the lease of Ford Taurus FFVs from Carstedt's. Furthermore, during the leasing period the cars were serviced and maintained by Carstedt's Ford. Therefore the change involved the entry of numerous new members into the field and a growth of the field to incorporate not merely new members but new activities, namely the distribution and vending of E85 from real filling stations. In addition, this second stage of development of the biofuel for private transportation infrastructure was less experimental than the first, in the sense that now the technology had been proven to function satisfactorily i.e. a degree of socio-political legitimacy had been attained, and the object was now to promote it.

As a direct consequence of the manner with which the field began to be restructured it seems that process 2, establishment coalition and pecking orders could be argued to have appeared soon after the cars had been leased. The reason for this is that the Municipalities were relying on Carstedt's to provide the cars, and to service them in due time, and they also relied upon SEKAB to provide OK with the fuel, and for OK to vend it for them to purchase. The change from the last time that this process was salient is that by now there were more coalitions. This increase in coalitions was in part because of the increased number of field members, but also because of the increase in the complexity of the field. Previously the fuel had been produced by SEKAB and moved from Domsjö Fabriker to the distribution facility on the joint premises. Now it had to be produced and distributed, by road, to
the filling stations, where it was purchased by an enlarged number of customers (increased from 3 to 53). The same kind of coalition existed between Carstedt’s Ford and SEKAB as it had before in terms of the way that SEKAB developed and provided the E85 and Carstedt’s purchased, leased and serviced the FFVs. The endeavour was changing by now, however, in that there were now more cars to be sold/leased and serviced, and more fuel to be sold, and to more organisations, and in slightly different ways.

Building again upon the work of Selznick (1957) one could argue that yet another organisation, this time Carstedt’s Ford, was showing signs of process 5, official philosophies which helped to establish institutional continuity. In other words, their purchase and leasing of FFV vehicles, and the organisational commitment, made to Ford USA, that they would be responsible for the import, leasing, maintenance and repair of the cars (a series of technical procedures and programs) had been elaborated into an official philosophy, which was an interest in sustainable development. Given that without this commitment and focus the field could not have developed in the fashion that it did, one could argue that this official philosophy benefitted Carstedt’s at an organisational level (in terms of increased business opportunities), and that it was of paramount importance at an organisational field level, because it facilitated the growth and development of the field.

To further elaborate, having become a key player during the import of the first three Ford Taurus, Carstedt’s secured the import of further cars from the United States by agreeing to purchase the vehicles and leasing them to organisations on service contracts. Presumably a key reason for their involvement was the fact that Carstedt was also the Managing Director of SEKAB, but the point remains that Carstedt Ford’s role in the change process in the field, incorporating private transportation, was an important one. One could argue that at this stage Carstedt’s became one of the “elite” organisations (process 6, establishment of elites) involved in driving the change and thus joining SEKAB and BAFF. On the other hand, one could argue that Carstedt had already established himself as an elite person who was present in the field representing many organisations simultaneously.

In any case the process of establishing an official philosophy was not only instrumental in driving change within the field, in the form of its development and growth, but within the organisation (Carstedt’s) as they strove to become more and more involved, importing a further 50 FFVs from the USA and later developing a sustainable dealership.
6.3.2 The conference at Arken (1995) – “Field Configuring Event”

Shortly after they arrived in Sweden these 50 Ford Taurus FFVs were put on display outside the main building of Örnsköldsvik Kommun, during a conference arranged to promote the industry throughout Sweden. The conference was attended by a number of representatives from several municipalities and organisations around Sweden, as well as members of the public. This can be defined as a “Field Configuring Event” as per Meyer, (2005) because it represents a temporary social organisation aiming to bring together interested parties, such as organisations and local municipalities, as well as other members of the field, in order to shape the development of the field. Certainly it was a gathering of diverse organisations and individuals, whose objectives were diverse; some sought to promote the Biofuel Region and the biofuel for private transportation infrastructure, others sought to lease vehicles, whilst some were probably curious.

One could argue that this was an attempt to attain cognitive legitimacy, (Scott, 1995) the chief objective of the exercise was to publicise the Biofuel Region and drum up support by advertising the idea, and hopefully attaining interest in the form of service contracts for the newly imported cars.

6.3.3 The Import of a Further 300 Ford Tauruses (1997-1998) - “Landmark”

Between 1997 and 1998 another 300 cars were imported, piecemeal, from the United States, and the same procedure of leasing them on service contracts was repeated. By this stage there was a good deal of interest, not only from organisations, but from consumers. They were able to lease the new cars, and later in some cases second hand ones, which had previously been used by local Municipalities and other organisations.

From the perspective of the structuration of the field, the empirical material indicates that as new members entered the field then some kind of restructuring must have occurred. In this case one could argue that the growth of the field, which incorporated more filling stations and Carstedt’s Umeå dealership, (as well as Örnsköldsvik) and new municipalities, inevitably incorporated process 1, increased interaction. The type of interaction that they had was essentially the same as had occurred previously, however, the change from the last time that this process was salient incorporated new field members, essentially the whole endeavour was now happening on a larger scale. That is to say that new organisation were leasing FFVs from Carstedt’s, and hence interacting with them in the signing of leasing and service contracts.
It is the assertion of the current writer that, once again, process 1 was accompanied very closely by process 2, establishment of coalitions and pecking orders. The reason is that the new members of the field were interacting in the same way as existing members at this particular stage, and process 2 had already been demonstrated before, because the field was maturing and had already demonstrated that it also possessed characteristics of process 6, establishment of elite. As a direct and inevitable consequence therefore, the new members of the field must have, I would argue, slotted into a position in the field, because many of the routines and procedures had been established already. The overarching point here is that change in the field involved an increase in the number of actors, but these actors mainly followed suit, and therefore the number of coalitions increased but the pecking orders and elite individuals and organisations remained essentially the same.

By the time that the 300 Ford Taurus had been leased on service contracts by Carstedt’s, and the number of filling stations vending E85 had grown to accommodate them, one could argue that the field had begun to demonstrate salient features of process 4, a common endeavour. The reasons being that the demand for the vehicles continued to grow, and the public awareness about the endeavour went even further, as an increased number of individuals and organisations became aware of the Biofuel Region and the availability of FFVs, increasingly accepting the endeavour as one of which they approved. Such was the extent of the mutual awareness of the organisations in the field that they were in a common endeavour, that a significant development was soon in the minds of key individuals within certain organisations in the field, which later manifested itself in the second trigger for change (which will be discussed shortly).

A significant factor promoting change within this maturing field, I would argue, is process 8, infusion with value. On the organisational level people began, increasingly, to value the idea of working with, or using FFVs to such an extent that the further development of the field was driven by demand for more vehicles, but this time cars that were more appropriate for the market. This value had been infused into employees of organisations within the field, such as SEKAB, BAFF and Carstedt’s Ford, who were interested in the further development of the field to such an extent that they worked hard to discover ways in which it might develop beyond the 353 (3+50+300) Ford Taurus cars that had been imported from the United States, to include more mainstream models that could be purchased instead of leased by more organisations and individuals. Previously the Ford Taurus cars were available for lease only by organisations.
In elaborative terms the value that had been infused was concerned with the development of an eco-efficient private transportation infrastructure, one which was increasingly considered to be an endeavour that was beneficial for society. An important issue here, in addition, is that process 8, infusion with value, occurred also at an organisational field level and drove change. My argument is that certain organisations themselves became infused with value and that they in turn drove future change as a consequence. The value itself was similar to that infused into individuals at an organisational level, namely an ambition to drive forward the Biofuel Region, to stimulate its growth, and to make a significant and long-lasting impact upon the automotive industry, by establishing bio-ethanol as a serious competitor for petroleum.

6.3.4 Adverse Media Attention 1 – How Green is the Ford Taurus FFV? (1998) - “Disruptive Event”

This Trigger can be defined as a disruptive event as per Hoffman (1999). The reason is that it interrupted the progress of the Biofuel Region by calling into question the core values that the Ford Taurus FFV embodied, and fundamentally the legitimacy of the Biofuel Region.

As public awareness of the biofuel for private transportation grew, the local and national press began to increasingly highlight the weakness of the Ford Taurus cars. Their gripe was that whilst the Ford Taurus was an FFV, it was a large American car and used a lot of fuel by European standards, contradicting, to a certain extent, the “Miljöbil stickers” that drivers frequently proudly bore on its green paint work. Consequently, whilst the drivers of the cars believed themselves to be doing the right thing, environmentally speaking, by using an FFV fuelled by ethanol, they were accused of actually wasting resources, rather than conserving them, of being squanderous, rather than frugal.

To a certain extent this critique was a fundamental one. What is certain though is that it drove change within the field, demanding a response from the members of the field if they were to maintain the legitimacy of the Biofuel Region.

6.3.5 Public Purchase Order (1998) – “Legitimising Event”

The public purchase order is classified as a legitimising event here because it sought to re-legitimise the Biofuel Region, or at least to minimise the (de-legitimising) effect of the adverse media attention that it had incurred. It was also, one could argue, an essential part of the continued development
process of the Biofuel Region, because without the replacement of the existing FFVs with something that was more appropriate, then the process of growth and development could not have continued. That is to say that the current solution for private transportation was not satisfactory, and the Public Purchase Order was drawn up in an attempt to remedy the problem.

In their attempt to deal head on with the problem of adverse media attention, and to develop the market further, a challenge was set by BAFF, Stockholm Municipality and their Environmental department, as well as by a number of other Municipalities in Sweden. They placed an order for 3'000 FFVs (Flexi fuel vehicles) to any car manufacturer who was willing to produce them. The reason was that the biofuel for private transport infrastructure had proven to work well, and they wanted to extend it with the availability of cars that were desirable to Swedish customers, and that were more economical than the Ford Taurus.

This was potentially a threat to Ford, because it might have been that someone else had seized the opportunity and taken their position as the sole provider of FFVs to Sweden. Of all of the car manufacturers who were approached, however, only Ford was interested. In part, the reason that they were interested, one could infer, was that they had already been involved from the start with the Ford Taurus, and had experience with FFVs in the United States. It was also the good contacts that Carstedt had at Ford Köln which aided the cause. Carstedt was a well-established main dealer of Ford vehicles, which is in itself indicative of a trusted relationship, because generally speaking large car manufacturers are very choosy with whom they entrust with main dealer status. Therefore Carstedt had good contacts with certain managerial level employees within Ford. Add this to the relationships that had been established during the initial phases of the Biofuel Region, and the import of the Ford Taurus FFVs from the United States, and one could argue that Carstedt had personally, and on behalf of his company Carstedt’s Ford, established an excellent working relationship with the Ford Corporation.

A good deal of cooperation was required at the field level in order for this trigger for change to be undertaken. It is therefore my assertion that process 4, a common adventure, was salient at this point, demonstrating that the field was working together. In addition I would argue that, because of the importance of the key individuals driving the change at this stage one could aver that process 6, establishment of elites, was also salient. Finally process 8, infusion with value could be said to be salient, because of the commitment and dedication shown by elite organisations and individuals, who were convinced of the field’s fundamental purpose.

The field grows rapidly as a landmark; the availability of Ford Focus FFVs, promotes it. This drives a restructuration as new organisations enter the field in the form of increased interaction and the re-establishment of coalitions and pecking orders. Once again however the field returns to its common adventure.

Later a new elite organisation is established to drive development in 2nd generation ethanol and soon becomes an elite organisation in the field, which drives a restructuration again in the form of increased interaction and re-establishment of coalitions and pecking orders. Finally a shock, in the form of a reconstruction of rules on biofuel sales in Sweden, promotes the field’s interests even further and re-affirms the common adventure.

6.4.1 The Availability of Ford Focus FFVs (2001) – “Landmark”

Ford delivered the first version of its Focus FFV model in November 2001, selling more than 15,000 Focus FFV by 2005 (BAFF, 2009). The entry of the Ford Focus onto the market initially implied significant change within the field because for the first time people, and organisations alike, were able to buy FFVs as a no compromise alternative to their regular choice of car. Once again then the field began to demonstrate features of process 1, increased interaction, as new members entered the field and began to interact with existing members. At this time the field was growing, and an increasing number of organisations and individuals alike were purchasing FFVs from different Ford Dealerships throughout the country. This meant that more filling stations opened, who had to interact with SEKAB to arrange the distribution of E85.

The introduction of this one product meant that there was now, in theory, no limit to the amount of FFVs that could be sold in Sweden, and consequently the amount of ethanol that could be sold. The sales of Ford Focus FFVs, as well as the interest in them, led to a growth in confidence of the elite individuals involved within the Biofuel Region.

The amount of FFVs that were sold infers that a good number of new members joined the field at that stage. Many more Ford Dealerships throughout the country began to sell the cars, meaning that Carstedt’s Ford was no longer the key supplier. Carstedt also continued his work as an elite individual within the field, promoting the new cars alongside his continued promotion of ethanol.
As has been discussed a significant change here was that Carstedt's were no longer the only supplier of FFVs in Sweden, increasingly Ford dealerships throughout the country were providing FFVs. Carstedts did however offer some advice and expertise on such issues as servicing, should it be required, once again demonstrating their elite characteristics, as well as the interactions between an old member and the new members. At this stage one could argue that Carstedt's Ford were however losing their elite status, because they were no longer central to the field. In elaborative terms, given that Ford FFVs could now be purchased from various Ford Main Dealerships throughout the country, and could be serviced and maintained there, Carstedt’s were no longer the elite provider, servicer and repairer of FFVs.

At the same time as there were changes in the structures of domination and coalition, some remained the same. BAFF for example were still in charge of the necessary lobbying and promotion, although at this point municipalities became even more involved, facilitating such things as free parking for FFV owners. SEKAB too were still responsible for providing the fuel, by now importing significant amounts from Brazil (and later the USA) in order to keep up with demand. This indicates that the field was demonstrating characteristics of process 2, establishment of coalitions and pecking orders once again. In elaboration one could argue that the role of the municipalities in the development of the Biofuel Region remained very important, but that it had changed from their being important leasers of FFVs in the earlier days, to their roles as facilitators and promoters of the endeavour in their offering of benefits for FFV drivers. As the field restructured around the Ford Focus FFV at this stage they began to re-establish themselves, in some sense, as an important field member, establishing new coalitions with the elite organisations after their previous ones had diminished in value, now that FFVs were available to everyone.

SEKAB too were responsible for dealing with the increased demand for E85, establishing coalitions with an increased number of ethanol producers, and filling stations, and together with BAFF again demonstrating themselves as elite organisations and top of the pecking order.

By 2005, after so many new members had entered the market, and the sales of biofuels had reached 17,232 m3 litres compared to 2004’s 1,074 M3 litres; one could argue that the field was demonstrating characteristics of process 4, a common endeavour. By this time the sale of FFVs in various guises and of E85 had reached previously uncharted high levels, changes in legislation meant that there were a plethora of benefits to owning an FFV, cheaper car insurance, free parking in major towns and cities, reduced road tax, and government grants for FFV purchase. All of these factors, combined
with the spread of filling stations offering E85, and perceived eco-efficient benefits, lead to the assertion here that the members of the field had by now come to the realisation that they were indeed within a common endeavour. In other words their hard work was paying off and they were involved within a common adventure.

6.4.2 The Establishment of BFR AB (2003) - “Landmark”

One might argue that a manifestation of this process 4, a common endeavour was the establishment of a new elite organisation in the form of Biofuel Region AB (BRF AB). One could therefore infer that process 6 is salient here.

Established by the elite individuals Carstedt and Lindstedt, its object was to develop the vision of being a “world leading region” in the quest for the development of a Biofuel Region focussed on clean cars and dealerships. The principle behind the organisation was that it would be funded by member’s annual fees, and that the individuals working there would work on behalf of the Biofuel Region and the member Municipalities, promoting the use of bio-ethanol, towards the final goal of 2nd generation ethanol.

SEKAB and BAFF have been previously identified as organisations that to a certain extent demonstrated process 6, establishment of elites, on an organisational field level. So too was Carstedt’s Ford, although this elite status was no longer applicable at this point, as has been emphasised earlier, with the development of the European FFV. The reason for SEKAB and BAFF’s elite status is that all through the narrative so far they have been responsible for driving the change and development in the field. At this stage however they were usurped, to a certain extent, by the development of a purposive leader of the organisational field, BFR AB had been established and was promoting the use of biofuels of different types, not merely bio-ethanol. SEKAB were still very much involved as the chief importer and distributor, and BAFF as the lobbying and promoting force. An interesting element of this concept of elites made by Selznick (1957) is that counter pressures exist that can break down the insulation of these elites and shake their confidence, this kind of occurrence is yet to be seen but following the period of explosive growth and significant change it will be.

As a consequence of the entry into the field of a new elite organisation one could argue that the field experienced process 1, increased interaction, once again. BFR AB inevitably had to interact with the existing members of the field, communicating their role, and in turn, establishing their role and purpose. The first CEO of BFR AB was Carstedt, who has already been identified as an elite individual, first of all as the CEO of SEKAB, later as the
CEO of Carstedt’s Ford. This represented a change in the field towards more of a focus upon 2nd generation ethanol (which had been the initial object of SEKAB). SEKAB and BAFF were now free to focus on the import of ethanol fuel from Brazil, and the technical development of the 2nd generation fuel (in the form of the Pilot Programme at their facility), while BFR AB could raise funds and public awareness.

Process 2, establishment of pecking coalitions and pecking orders, followed closely, one could argue, as the new organisation slotted into the field and established itself. The pecking orders changed slightly, given that public relations were now dealt with by BFR AB; however the everyday process of ethanol importation, production, the mixing of E85 and its distribution to, and vending at filling stations remained the same.

6.4.3 Governmental Legislation for Biofuel Sales (2006) - “Shock”

It can be argued that this event was a trigger for change because it represents a shock. It is the assertion of the current writer that the state sought to promote the Biofuel Region, in form of development and growth, by arguing that there was a problem of there being too few locations in which to purchase biofuels, and by providing the solution to that problem by coercing more filling stations to sell biofuels. Essentially then the state sought to develop the Biofuel Region and did so by changing the law.

In April 2006 the Swedish government passed legislation in the Riksdag which required filling stations that sold in excess of one million litres of fuel per year to begin to sell some kind of biofuel. The regulation has become incrementally stricter since its introduction. This has meant that more filling stations in Sweden had to begin to sell biofuels, and it promoted change within the Biofuel Region because it increased the availability of biofuels, meaning that more people around the country had access to them and could consequently consider buying an FFV.

As a direct result of this the number of filling stations selling biofuels grew rapidly, as did the number of FFVs sold. One could argue that the increased FFV sales was also down to the increased range of vehicles available on the Swedish market, although the availability of the fuel was identified by a number of respondents as a key factor for the growth of the field because without the possibility to purchase the fuel there was very little point in purchasing an FFV, from the perspective of many organisations and individuals.
At this stage, given that a number of new filling stations and oil companies were involved in the process, SEKAB were developing their customer base and consequently producing an increased amount of E85, and extending their distribution network. SEKAB had a monopoly of ethanol sales in Sweden and one could argue that the change that occurred here, as a consequence of the government legislation, was very little more than a growth in the field, an increase in the sale of FFVs and E85.

An important issue though is the critique that was made of the plan, and the fact that significant investments were required by filling stations in order to vend biofuels (although grants were available for up to 30% of the investment). Necessary by law because of the flashpoint of ethanol and its corrosive nature, this investment was not appreciated by everybody, especially smaller filling stations in rural areas and certainly not amongst the Biofuel Region’s growing group of critics in the press and academia. The reason for this was that at this point the use of ethanol as a fuel for transportation was being criticised increasingly, questions being posed about the extent to which it was environmentally sustainable. And from the point of view of some smaller filling stations, that sold enough fuel to be included in the mandatory sale of biofuels, they perceived the enforced sale as an encroachment upon their organisations and an unnecessary expense.

It is the averment of the current writer that despite these concerns, and given that these new filling stations were not part of the organisational field as such at this point process 4, common endeavour became salient again because quite simply the majority of organisations within the field had been part of the endeavour for some time, as has been argued, and elite individuals (namely Carstedt and Lindstedt) had been established, as well as the elite organisations, SEKAB and BAFF. Therefore these organisations remained, I would argue, within the common adventure and consequently the salient existence of the common adventure was not lost by the scepticism of some filling stations, on the contrary this extended distribution network only strengthened the field at this stage.
6.5 Period FOUR – (2007 – 2009)

The field is shaken as a disruptive event - adverse media attention, brings into question its core values. This drives competition in the field, and an information overload occurs.

Acting to re-legitimise, the field comes together and cooperates to create “verified sustainable ethanol”, reaffirming the common adventure, infusing the field with value and reaffirming the elite organisation and individuals.

A jolt – the oil shock creates chaos for the field, driving a restructuration and re-establishment of coalitions and pecking orders, ultimately leading back to a common adventure.

Finally another disruptive event – more adverse media attention, again questions the field's legitimacy. Again, this proves to bring the field closer together, reaffirming the common adventure, re-establishing the elite organisation and individuals and infusing the field with value.

6.5.1 Adverse Media Attention 2 - Sustainable Criteria (2007) – “Disruptive Event”

As has been emphasised, there were a plethora of newspaper articles damning the process of ethanol production in Brazil, complaining that it was unsustainable both environmentally and socially. This adverse media can be described as a disruptive event in the sense that it altered public perception of the fuel. That is, it threw the field into a disorder. Previously ethanol had been a “darling industry”, one which people had been proud to be involved with, either through employment or through the ownership of FFVs, or even at a local municipality or national level. This is similar to the perspective of disruptive events in previous research undertaken by Hoffman (1999) who talks about disruptive events from external sources, and the manner with which they can impede upon a field.

One could argue that the field was saliently exhibiting process 7, competition here. Certain respondents argued that the adverse press attention was, in part, the result of ethanol’s success, since as the strength of the industry grew the oil industry became increasingly aware of their existence and were lobbying against them. In that sense ethanol and biofuels, in general, had begun at this stage to face the consequences of competing head on with petrol. In other words, when the sale of ethanol reached a certain level and began to encroach upon the sales of petrol, then the oil companies were awakened to the threat and began to lobby at a
governmental level against its development. Consequently, competition from inside the field (the oil companies vending E85) and outside the field (the oil companies who were not vending the fuel, and their mouth pieces in the form of newspapers, or academics began to increase.

One could argue, accordingly, that at this time the field was encountering an increase in the amount of information with which they had to contend, in the form of the press releases that were openly criticising their undertakings. Therefore process 3; information overload became salient at this stage. The reputation of biofuel, or at least ethanol in this case, was affected badly by this disruptive event. In other words, whilst, as has been described, the Biofuel Region had previously attained public approval, and the approval of stakeholders, key opinion leaders, and governmental officials, because of the critique that it received by the press and academics, this level of approval regressed. This disruptive event therefore threatened to delegitimise the field.

6.5.2 The Development of Verified Sustainable Ethanol (2008) – “Legitimising Event”

The media attention in turn prompted action, in the sense that when the organisations concerned became aware of the loss of legitimacy, they acted to re-establish it. This event marks a trigger that sought to re-legitimise the field and is therefore an essential part of the continued development process.

Bilateral agreements between the Swedish and Brazilian Governments with the objectives of promoting bioenergy and the creation of a global market for biofuels paved the way for the “verified sustainable ethanol initiative”, which could offer an assurance to Swedish purchasers that the E85 fuel that they purchased was produced in a socially and environmentally sustainable manner.

In order to establish this verification process SEKAB spent 18 months developing a framework which included criteria that spanned the entire lifecycle of ethanol, from its production and transportation to its final use. It was their hope, apparently, that such a verification process would help to dispel doubts about ethanol’s impact upon the climate, environment and the individuals involved in its production.

A good deal of cooperation was required at the field level in order for this trigger for change to be undertaken. It is therefore my assertion that process 4, a common adventure was salient at this point, demonstrating that the field was working together. In addition, I would argue that because of the
importance of the key individuals driving the change at this stage one could aver that process 6, establishment of elites, was also salient. Finally, process 8, infusion with value could be said to be salient, because of the commitment and dedication shown by elite organisations and individuals, who were convinced of the field’s fundamental purpose.

6.5.3 Oil Shock (2008) – “Jolt”

The Oil shock is categorised as a trigger for change because it represents a jolt to the field. A jolt is an unprecedented or sudden event, never having happened in the past (Meyer, 1982), in this case the past refers to the lifetime of the Biofuel Region and not human history.

The Oil shock emanated from the financial crisis which began in the summer of 2007. The devastating implications for businesses and societies around the world are well documented. From the point of view of the Biofuel Region the effects have been no less dramatic; however, they are not at all clear cut. The thing is that whilst the Financial Crisis could indeed be argued to be a trigger for change, the manner with which the events unfolded were quite complicated, and there were, in addition, a number of other elements to take into consideration. Firstly, the financial crisis led to a perceived ending of tax breaks for synthetic diesel, meaning that Framtidsbränslen went bankrupt, although this was only a small organisation and it seems not to have made much impact at the field level.

Specifically the “oil shock” of 2008 was when the prices of oil dropped dramatically in December 2008, and had a huge impact upon the Biofuel Region. The chief reason for this is that despite the amount of FFV vehicles on the road, a significant number of FFV drivers are price sensitive when it comes to refuelling their vehicles. These individuals chose the fuel which was most affordable, rather than that which was most eco-efficient.

As a direct consequence of this ethanol sales were particularly sensitive to fluctuations in the oil price. When the price of oil, and therefore petrol was high, it was more affordable for motorists to refuel using E85, and when it decreased there came a point when it became cheaper to refuel with petrol. Adding to this the hardships that some individuals were feeling with the cumulative effects of the financial crisis increasing their requirement for fiscal prudence, the main effect of this disruptive event was the downturn in sales of ethanol.

The oil shock had the most profound effect upon one company in particular, namely SEKAB. In late 2008 the demand for ethanol was reduced by circa 75% as a consequence of the oil shock. This had a significant affect
upon SEKAB because of the manner with which the ethanol supply chain, through which they purchased ethanol, functioned. In succinct terms, there was a long lead time to the delivery after orders were placed, and before payments from filling stations could be received. As a result, when the demand decreased quickly, SEKAB developed a significant cash flow issue because they had lots of money tied up in stock that was selling very slowly.

There was also an issue that arose from the contractual agreements which SEKAB held with the oil companies who they supplied, each of which were contractually obliged to purchase a certain percentage of their ethanol from SEKAB. This contract did not stipulate how much, in physical terms, they would purchase and therefore it depended absolutely upon the demand at the pump from the consumer. Therefore, when the demand decreased the amount that they required reduced and SEKAB were stuck with a vast quantity of ethanol that they could not sell, and moreover they had circa $30M tied up in it.

In addition to these organisational changes there were changes at the field level also. One could argue that the field demonstrated features of process 1, increased interaction once again, as it reconfigured around the new procedures that had to be put into place. For example SEKAB was re-organised in 2009 when they transferred the import and distribution of E85 to oil companies, because of the investments involved and the potential danger of such investments. BAFF and SEKAB focus currently (2013) upon the production of green chemicals (based on ethanol), the development of 2nd generation ethanol, as well as ethanol as a replacement of diesel (ED95). The irony here is that by this stage they had essentially returned to the original organisational objectives that they laid down in 1986, before the Biofuel Region was developed.

 Appropriately, as the field began to operate in its new configuration inevitably process 2: establishment of coalitions and pecking order became salient as the field began to establish new pecking orders. The field had changed a great deal in the sense that SEKAB had, to a certain degree, lost their elite status as sole providers of E85, now focussing upon their development of 2nd generation ethanol and the Africa Project, where they sought to develop 1st and 2nd generation bioethanol production facilities in Tanzania and Mozambique. In addition, given that the fuel was well established in the market by now, the role of BAFF as a lobbyist and promoter of the endeavour was now less important, and therefore their elite role had also been lost.

 The sole elite organisation, one might argue, at this stage was BFR AB, whose role it still was to attain funding for 2nd generation fuel, and, in
essence, to promote and develop the concept of biofuel, through its members and on an international level. By this point a number of other biofuel concepts were being realised in addition. DME was in the later stages of development in Piteå and bio-gas and diesel were commercially available. These coalitions consequently stretched further than merely the ethanol industry as the different biofuel producers began to cooperate increasingly. This signified a distinct change in that, before SEKAB had their adverse financial problems they essentially viewed these alternative biofuels as competitors, as the opposition towards biofuels grew however; the companies involved in each of the different endeavours increasingly began to cooperate. The idea behind which was that each of the industrial leaders increasingly understood that it was better that one kind of biofuel was successful on the Swedish market than none at all.

One could argue therefore that the effect of the adverse media attention and the oil shock combined, promoted a great deal of change within the field at both an organisational and an organisational field level. Incorporating not merely the structural change in SEKAB, but a change in the very way that the field functioned and a change in the manner with which members of the field perceived other developments in the area. Therefore I would infer that the field was displaying more saliently than ever process 4, common endeavour because despite the problems and debates, the elite individuals (Lindstedt and Carstedt) and the elite organisation (BFR AB) all remained determined, and led the development process from the front.

6.5.4 Adverse Media Attention 3 – The Cost to the Taxpayer and Land Grabbing (2009) – “Disruptive Event”

One could infer that this adverse media attention is a trigger for change because it represents another disruptive event. The reason is that it interrupted the progress of the Biofuel Region; by calling into question both the core values that the further development of the Biofuel Region, in the form of the Africa Project, actually embodied and fundamentally the legitimacy of the Biofuel Region.

As has been emphasised in the narrative, a plethora of different mediums have aimed critique at the Biofuel Region over the years. However, for the purpose of the analysis, significant periods and publications are highlighted to emphasise certain issues which arose at certain times, and whose impact drove certain changes within the field.

One such issue was the criticism of SEKAB’s investment and development work in Tanzania and Mozambique. Here the object was to construct and
develop facilities that would produce both 1st and 2nd generation ethanol, from locally produced raw materials. The object was to develop the locale by providing decent employment opportunities for people and improving the local infrastructure (irrigation, transportation and so forth). Additionally the facilities would also provide a source of ethanol for Sweden's motorists.

The debate about whether this was an appropriate idea was aired by academics and newspaper journalists; they accused SEKAB of land grabbing and neo-colonialisation. In addition local journalists questioned the morality of SEKAB spending Örnsköldsvik and other municipality's money on developments abroad. This debate went on for some time, SEKAB released their own statements counter acting such claims, arguing that the land they intended to use was currently wasteland that was not irrigated at all; therefore the growth of crops upon it was not going to leave locals hungry.

Disillusionment was commonplace following the economic crises that SEKAB in particular suffered very badly from and ultimately, because of public opinion and lack of funds, the “Africa Project” was handed over to another organisation EcoDevelopment. The plan was that they would fund future developments (attaining funding from private investors) and the money that had been paid into the endeavour by Örnsköldsvik Kommun would ultimately be paid back if/when the project ultimately yielded a profit.

EcoDevelopment is independent from SEKAB, despite the fact that it is owned by the two elite individuals within the Biofuel Region, namely Carstedt and Lindstedt. As a direct consequence then, this would infer that the change that occurred as a result of this particular bout of adverse media attention occurred at an organisational level, in the sense that SEKAB ended their involvement. The consequences did not necessarily stretch any further. One could argue therefore that the field continued to demonstrate characteristics of process 4, a common endeavour.

At the organisational level SEKAB was re-organised, in 2009 a new Managing Director was appointed, Anders Fredriksson, replacing the much criticised Per Carstedt. Politically it became impossible for SEKAB’s parent companies to invest more money in the organisation, which was much needed. Fredriksson’s role was therefore to act swiftly to save the organisation. New board members were elected, new senior management appointed, and SEKAB was streamlined and restructured. This streamlining merged certain departments, and put the international facet of SEKAB’s work on ice.

Regardless of the challenges faced by the field over the years, and of the significant change that has occurred within it, it is my averment that the field
has to a certain extent maintained its core values and that the organisations within it still cherish the values that it encapsulates. Therefore I would argue that process 8, infusion with value was salient at this point. Demonstrated by the manner with which many of the organisations involved are still striving to achieve their objectives, regardless of the external criticisms and difficulties that they face.

One could however argue that the field was delegitimised by the adverse media attention and it remains to be seen as to how they will act to re-legitimise it.

### 6.6 Discussion

After having identified the triggers for change within the field, incorporating landmarks (Hannigan, 1995), disruptive Events (Hoffman, 1999), jolts (Meyer, 1982), shocks (Fligstein, 1991) and legitimising events, as well as the salient structuration processes, the object of this discussion is to compare the occurrence of these concepts with the theory that they were devised via, and to compare and contrast their occurrences here, with those of previous authors. “Triggers” and “Structuration Processes” will be taken separately for this purpose.

#### 6.6.1 Triggers

The first kind of trigger to drive change in the field was; “The Pilot Test of Ethanol Powered Buses”, this has been categorised as a legitimising event because it was an event purposely created by field members that promoted the attainment of legitimacy and was, one could argue, consequently an essential facet of the development process. As has been emphasised this trigger was also responsible for kick-starting the structuration of the field. This particular trigger also drove the initial legitimising process of the field.

Three subsequent “Legitimising Events” were identified, the first of which “The Pilot Test of FFVs” (trigger 3) was purposely implemented by the field in their attempt to promote growth and development by extending the field to incorporate private cars. This was also a pilot-test (like trigger 1), the purpose of which was to demonstrate that the technology could work, and to establish socio-political legitimacy.

The next Legitimising Event, “The Public Purchase Order” (trigger 7) was quite different from the previous 2. This was created purposely by the elite members of the field in order to respond to the adverse media attention (trigger 6, disruptive event). Here, as has been emphasised, criticisms were made of the Ford Taurus FFVs and in order to prevent the erosion of
legitimacy in the field, and for it to grow further, the elite organisations promoted the drawing up of a public purchase order of several thousand cars to be given to any manufacturer who was willing to provide the FFVs.

The fourth and final Legitimising Event, “The Development of Verified Sustainable Ethanol” (trigger 12) came in response to another disruptive event (trigger 11) which was again adverse media attention. This time the media attention was focussed upon the life-cycle of ethanol fuel and the perceived lack of social sustainability in its production. Once more, in an attempt to prevent the erosion of the legitimacy of the field, the elite organisations purposely orchestrated the Verified Sustainable Ethanol programme, which was able to guarantee that imports of ethanol fuel into Sweden were created in a socially sustainable and eco-efficient manner.

Previous research on legitimisation has highlighted how both cognitive and socio-economic legitimacy (Scott, 1995) are required by organisations (Deephouse and Suchman, 2008) if they are to be successful. DiMaggio and Powell (1983) argued that the attainment of legitimacy can drive homogenisation within the field as field members strive to attain it owing to three kinds of drivers: coercive, mimetic and normative. Previous research has not, however addressed the manner with which field members can collectively attempt to attain, maintain or re-establish legitimacy in this way for the field and the values and purpose that it embodies. Especially relevant here is that the legitimacy was being attained at a field level, because whilst the field was made up of a variety of different organisations, they were collectively aiming their efforts at one particular object, that of the development and growth of the Biofuel Region.

Another important issue with these legitimising events is that they were created by more than one organisation in the field and implemented by several. In addition, the organisations which created them were either; to later become elite organisations (Selznick, 1957) process 6), as in Trigger 1, or had already become elite organisations. This particular process will be examined in greater detail later.

The next type of trigger for change was Stockholm City’s purchase of Ethanol Powered Buses (trigger 3). This has been categorised as a landmark in the development of the field because it represents a significant event in the development of the Biofuel Region.

Four subsequent landmarks were identified in the narrative. Firstly; “The Import of a Further 50 FFVS” (trigger 5), which was significant because it observed a growth in the field and it demonstrated that the field had begun
to attain some legitimacy. Next, “The Import of a Further 300 FFVs” (trigger 5) which was significant for the same reasons; further growth and development, and more legitimacy (both cognitive and socio-political). Trigger 8; “The Availability of The Ford Focus FFV was significant for the growth that it stimulated, as well as the fact that it helped to re-legitimise the field, demonstrating that trigger 7, “The Public Purchase Order” had proved itself as a legitimising event.

The final landmark, “The Establishment of BFR AB” (trigger 9) was different from the rest in the sense that it sought to establish a new elite organisation (process 6) which would drive forward the values and objectives that the field stood for.

The concept of a landmark is used here, as has been described earlier, in a more normative fashion, to illustrate important events in the history of the Biofuel Region. None the less one could argue that these important events are noteworthy because of the fact that they drive change in one form or another within the organisational field.

The next type of trigger for change that I shall address is the disruptive event. Three of these were identified within the narrative. All of the disruptive events that were identified in the narrative took the form of adverse media attention (triggers 6, 11 & 14) which threatened to end certain elements of organisations, in this case by de-legitimising the field. This concept was originally used by Hoffman (1999) to examine the effect of environmental regulations upon the United States Chemical industry.

The first 2 disruptive events (triggers 6 & 11) identified within the narrative were very similar to the definition of Hoffman (1999), in the sense that they were a series of adverse media concerned with the environmental implications of the field’s adventure, which created significant change within the field as a consequence. The 3rd one however (trigger 14) was slightly different, it still drove significant change, but the media were concerned with issues that were related to questions more based upon morality and economics, than environmental concerns. However, whilst the content was different the effects were the same.

The next category of trigger to appear in the narrative was a Shock (trigger 10); “Government Legislation for Biofuel Sales”. This occurred as a consequence of the government’s desire to promote the growth of the Biofuel Region by drawing up legislation which forced filling stations who sold a particular amount of fuel to sell biofuels. This is exactly in line with Fligstein (1991) who defined the shock as a trigger for change, created by the state or
the field, in the form of a reconstruction of current rules, or models of organisational strategies as a consequence of their perceived requirement for change.

The final category of trigger that was identified was that of a jolt. Trigger 13, “Oil Shock” was identified as a jolt because it was a sudden and unprecedented event in the field, which caused a lot of problems for the field and which consequently, drove change. There are 2 significant things that are different with the use of the concept of jolt in this thesis than in the work of previous author Meyer (1982).

First of all the event (“Oil Shock”, trigger 13) whilst certainly sudden, was not unprecedented, oil shocks have occurred many times in history, this one was however very significant in terms of the level to which the cost of oil fell in December 2008. In addition, one could argue that the jolt was unprecedented from the perspective of the existence of the organisational field. The second important point is an empirical one. Meyer (1982) looked at the manner with which a doctor's strike affected hospitals in the San Francisco locale, and it transpired that the jolt actually promoted efficiency and progress. Within this thesis the jolt (trigger 13) did not have the same result, in fact the change that it promoted was generally derogatory for the field, ultimately attracting more adverse media attention and a decline in the field’s ethanol sales.

6.6.2 Structuration Processes

The structuration processes themselves can be broken down into two groups. Firstly the field formation, developed by DiMaggio and Powell (1983) who sought to explain the manner with which an organisational field develops. And secondly, the concepts of adaptive change and infusion with value which were developed by Selznick (1957) to examine organisational character during the process of institutionalisation. These two groups will each be discussed separately to clarify the differences here, and to validate the new facilitation, analytically speaking.

Firstly the field formation, (DiMaggio and Powell, 1983) who define an organisational field as, “those organisations that in aggregate constitute a recognised area of institutional life...” (P148) claimed that an organisational field formed in a process of four stages, which have been discussed. They also go on to say that the field formation is not a static process and that in the wake of triggering events, which cause a reconfiguration of membership and or interaction in the field. The processes that have been identified within this thesis are according to the definition of DiMaggio and Powell (1983)
however this work offers further insight into the manner with which the field restructures as a consequence of the triggering events which the authors discuss. Given that it is historical, covering some 23 years, it also offers an insight into the manner with which the field can restructure, and how the structuration processes can appear in a seemingly ad-hoc fashion. Moreover, it also demonstrates that they need not come in chronological order.

The second group of processes, adaptive change and infusion with value, were originally developed by Selznick (1957) as a sociological interpretation of organisational character, competence, values and leadership. In other words, how to understand organisational behaviour within an organisational field (although the concept of an organisational field had not yet been established). The concepts were developed to understand the behaviour of an organisation. In this analysis, however, these concepts have been applied at an organisational level instead. They have been used quite differently here, as tools to understand the manner with which change has been driven between organisations, as well as within them. It is my assertion that they have proven their worth in this sense as useful additions to those field formation stages developed by DiMaggio and Powell (1983). The reason for this is that they offer a richer insight into the manner with which the field has developed by providing clarification and an insight into the manner that leading organisations (elites) can drive change and development, linked to values and official philosophies, in addition they bring in the concept of competition.

Tables 9 and 10 on the following pages offer an overview of the events that occurred in the narrative. Importantly they also document the types of triggers for change that happened and when they occurred. In addition they also document the salient structuration process that occurred. The tables are for reference and clarification.

The following chapter will attempt to make sense of this information, as well as specifically attempting to fulfil purpose two.
<table>
<thead>
<tr>
<th>PERIOD</th>
<th>TRIGGERS</th>
<th>SALIENT PROCESSS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Landmarks</td>
<td>Jolts</td>
</tr>
<tr>
<td>ONE</td>
<td>1986-1994</td>
<td>2. Stockholm City Council purchase buses - (1989)</td>
</tr>
<tr>
<td>TWO</td>
<td>1995-2000</td>
<td>4. Import of a further 50 FFVs - (1995)</td>
</tr>
</tbody>
</table>

Table 9 - Triggers and Structuration Processes (Periods One and Two)
<table>
<thead>
<tr>
<th>PERIOD</th>
<th>TRIGGERS</th>
<th>SALIENT PROCESSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>THREE</td>
<td>2001-2006</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. Availability of Ford Focus FFV - (2001)</td>
<td>1,2,4</td>
</tr>
<tr>
<td></td>
<td>10. Est. of BFR AB - (2003)</td>
<td>6,1,2</td>
</tr>
<tr>
<td>FOUR</td>
<td>2007-2009</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12. Adverse Media Attention 2 (2007-)</td>
<td>7,3</td>
</tr>
<tr>
<td></td>
<td>13. The Development of Verified Sustainable Ethanol (2008)</td>
<td>4,8,6</td>
</tr>
<tr>
<td></td>
<td>14. Oil Shock (2008)</td>
<td>1,2,4</td>
</tr>
<tr>
<td></td>
<td>15. Adverse Media Attention 3 (2009-)</td>
<td>4,6,8</td>
</tr>
</tbody>
</table>

Table 10 - Triggers and Structuration Processes (Periods Three and Four)
7 Analysis II – Making Sense of the Structuration Processes and Triggers for Change

7.1 Period ONE (1986-1994)

A new field emerges attempting to attain some socio-cognitive legitimacy in its very first step, in the form of a legitimising event, early development and progress are observed following which the elite individuals embark on a second legitimising event.

Trigger number 1, “Pilot Test of Ethanol Powered Buses” was that which drove the initial development of the field. In this case a legitimising event, categorised as such because it was a purposive trigger, created by field members (or in this case soon-to-be field members) to attain some socio-political legitimacy and to drive development. This trigger in fact prompted the start of the structuration of the field. From the perspective of legitimacy this is interesting in the sense that, as has been described, organisations are
expected to strive for legitimacy as they become institutionalised. It is a classical concept, one might argue, within new institutionalism that provides an explanation of isomorphism. Here it is such an integral issue that the field formation process actually begins with a drive for it. This is not a drive for organisational legitimacy either; it aims to attain legitimacy for the venture of a biofuel infrastructure or for the very existence of the field itself.

It is my averment that the overarching object of the individuals and organisations who created the Biofuel Region sought to do so ultimately to create what Lorange et al., (1986) refer to as a technical discontinuity. These are described as new, radically advanced technologies which displace old, inferior ones. In this case a new fuel (2nd generation ethanol) was planned to replace petrol. The 2nd generation ethanol could be considered as radically advanced because it was eco-efficient, and could be produced locally, which would promote energy independence for Sweden, and the local economy of Örnsköldsvik.

Trigger 1, a legitimising event, is an example, one could argue, of institutional entrepreneurship. DiMaggio and Powell asserted that, “New institutions arise when organised actors with sufficient resources see in them an opportunity to realise interests that they value highly” (1988: 14). Institutional entrepreneurs can be organisations or groups of individuals (Garud et al., 2002). It is my personal assertion that one could argue that the institutional entrepreneurs involved in this first step of developing the field were a group of two individuals, namely Carstedt and Lindstedt.

According to DiMaggio (1988) and Battilana (2006) there are two key elements of institutional entrepreneurship. The first is the willingness to act. Considering this issue it is interesting to refer back to the situation that Örnsköldsvik, as a city and region, was facing back in 1986. As was highlighted in the empirical narrative there had been demise in industrial output in the region for a number of years. This had been part of the reason for the establishment of SEKAB and BAFF in the first place, with the overarching object of bringing jobs and development to the region, via the development of bio-ethanol. Therefore, as Managing Directors of the two organisations, and as citizens of Örnsköldsvik, one could argue that the role of the two men was in fact to develop their organisations, in line with the original object.

The second key element of institutional entrepreneurship is that of “sufficient resources” (DiMaggio, 1988). Carstedt and Lindstedt were the Managing Directors of SEKAB and BAFF respectively. These organisations possessed certain resources, such as a source of ethanol fuel and the
expertise surrounding its handling and use in green chemistry. So resources were available to the two individuals. In addition, Carstedt was an entrepreneur who owned two Ford main dealers, and who had experience of business. Moreover, both of the individuals had experience of leading sizeable organisations, and had suitable contacts. One example of these contacts was Örnsköldsvik Kommun, whose resources were also necessary for the successful implementation of trigger 1, namely the bus infrastructure. Given that Örnsköldsvik Kommun were also interested, as the Municipality of the region, in the region’s development then these resources were not hard to come by, because they were apparently very interested to help.

This concept of institutional entrepreneur is an interesting one at this stage of the development of an organisational field because previously individual agency has been examined within established fields. Battilana (2006) posed the question in his work for example, “How can organisations or individuals innovate if their beliefs and actions are all determined by the very institutional environment they wish to change?” (P.654) In this (thesis’) empirical example the agents acted to create a new field and were not therefore subject to any institutional environment at that time, or at least not one that restricted their activity.

Reflecting on this issue, I would argue that in addition to the two key elements of institutional entrepreneurship namely; willingness to act and sufficient resources, in this particular case there is a third. The third element that had to be present was legitimacy. First of all, given that the overarching endeavour of the field was a technical discontinuity, the entrepreneurs had to acquire legitimacy before the field could begin to develop in earnest, because of the fact that it was such a new idea and would compete, on a small scale, with a much larger and well established institution, namely, that of the oil industry. Therefore, given the competition that existed and the relatively novel nature of the idea, before the field could grow it required socio-cognitive legitimacy. After having acquired this socio-cognitive legitimacy it was able to acquire resources and develop, by attracting additional members into the field.

Following trigger 1, the organisations began to interact, communicate and cooperate more frequently, and as time progressed coalitions and pecking orders were established (thus structuration processes 1 and 2 were saliently displayed) as the purpose of the field began to be fulfilled, to some extent. These pecking orders involved BAFF and SEKAB who were the two organisations involved in the lobbying and production and distribution respectively, although not Örnsköldsvik, whose resources had been used to
help kick start the development of the field. They were now merely “customers” of SEKAB.

One could argue that trigger 1 demonstrated its own value when trigger 2, a landmark in the development of the field occurred, because this illustrated that the field had begun to attain some socio-political legitimacy, so much so that another municipality (Stockholm), having observed what had gone on, were interested in joining the field. In other words, having undertaken a pilot-test and successfully demonstrated the “value” of the biofuel for public transportation system, Stockholm City council accepted the venture as an appropriate one for them to try.

The entry into the field of new and significant members inevitably drove a restructuration of the field as new interaction, communication and cooperation channels developed between existing and new members. Quite soon afterwards the field saliently exhibited process 2, the establishment of coalitions and pecking orders, as the central organisations demonstrated their superior and central nature within the field once again.

As the field grew and further demonstrated itself as being based upon a legitimate idea, certain organisations, as well as the field itself, began to demonstrate process 5, official philosophies. This essentially reflected an increased organisational field level continuity as individuals began to develop certain philosophical ideas about the venture that they collectively pursued. One could argue that this represented isomorphism in the field as the new members mimicked the two central organisations, unsure of where the entity was heading, but assured that what they were involved in was legitimate. This is a very interesting concept which, one could argue, drove further change in the form of trigger 3, another legitimising event, which shall be discussed momentarily following the events that preceded it.

Following on from process 5 came process 6, establishment of elites. SEKAB and BAFF were key players in the field, and had been at the top of the pecking order (process 2) both times that it became salient. Consequently, I have attempted to extent Selznick (1957) to incorporate field level elites, as well as individuals. Process 6 can also clarify process 2, aiding one’s comprehension of why such pecking orders and coalitions are established. It also seems to be a driver for change because elite individuals in this field promoted an infusion with value into their organisations, developing a passion for the principles of the field that led them to want to expand and develop.
From the point of view of the elite individuals, two individuals in particular Carstedt and Lindstedt, the original institutional entrepreneurs had been involved in every area of the arrangements in one form or another. As the field grew and the level of legitimacy was raised (as a consequence of the success of the field) it became increasingly obvious that those two individuals were the driving force behind the enterprise. Here, one could argue that the concept of elite individuals is very similar to that of institutional entrepreneurs. Selznick (1957) asserts that elite individuals play an important role in creating and protecting values, whilst institutional entrepreneurs are those who drive development and create change. In this case they seem very similar because the development in the field creates values linked to the overarching object of the endeavour, namely the technical discontinuity, and the eco-efficient fuel and regional development that go along with it. Furthermore, because of the role that elites acquire as value creators and protectors they are further empowered to act as institutional entrepreneurs and their will is perhaps enhanced additionally.

Moreover, the work of the institutional entrepreneurs could be argued to have driven structuration process 8 (infusion with value). This structuration process seems to have been important to the change and expansion in this field. Such was the interest in the fundamental idea that the field was based upon, and the capacity of the institutional entrepreneurs to drive change, that quite soon it (the field) was extended again, but this time into a new area.

In order to expand into the new area another legitimising event was purposely triggered by the field, trigger 3 (Pilot Test of FFVs). This is an example of voluntarist change from the point of view of the field, because it was the decision of the agents to make it. At this stage the field was relatively young and the process of field formation had not progressed that far, such that one could assume that the institutional forces were not yet impeding upon it that strongly. Given that this trigger involved the entry of a new field member, namely Carstedt’s Ford who was responsible for the cars importation, lease and maintenance, the field again saliently displayed processes 1 & 2, this time concurrently because of the fact that the pecking orders were so firmly established in the field by this point.

The field expands as a consequence of the legitimising event; it strives to attain cognitive legitimacy, matures and faces its first disruptive event, which drives delegitimisation and deinstitutionalisation and prompts the field to act by creating another legitimising event, an attempt to re-legitimise and reinstitutionalise.

Once again a drive for legitimacy was the first step made towards a change by the two institutional entrepreneurs Carstedt and Lindstedt. This time, similar to the previous legitimising event, the object was to demonstrate that the idea worked and through that demonstration attain a level of socio-political legitimacy that would promote the idea which could then facilitate a growth in the field as a consequence.

From the perspective of the institutional entrepreneurs, they had the will to drive the change, which remained the same as it had been previously, i.e. the resolve to drive regional development in the form of the development of the biofuel infrastructure (in preparation for the development of 2nd generation ethanol facilities). Additionally they had the resources, in the form of the existing biofuel for public transportation infrastructure, as well as Carstedt’s other organisation, Carstedt’s Ford, and his business associates in the United States (for the import of the FFVs) once again however the issue of legitimacy was important. Important here, once again, was the cooperation from Örnsköldsvik Kommun, and from Jan Nyman in particular. Thus, the institutional entrepreneurs needed help from other individuals to drive development and change. Again, I would aver that the attainment of socio-political legitimacy was necessary a priori to the field’s further development, as a result of the fact that a strong institution existed in the arena already, that of oil. Given the relatively novel use of an alternative fuel in private transportation and the strength of the existing institution then the attainment of legitimacy by the field was essential to prove that the idea could work and was a credible one.

The legitimising event (trigger 3) proved its potential for driving change within the field when another trigger (4), a second landmark, was reached by the field. Trigger 4, “The Import of a Further 50 FFVs” observed yet another example of voluntarist change and growth in the field, and this time in the new direction, motivated by the socio-political legitimacy attained by trigger 3, and driven by the institutional entrepreneurs, and one could argue the will of the official philosophies. In elaboration, it is my averment that trigger 4 was, in some ways, a demonstration that trigger 3 had created at least socio-political legitimacy, because the very act of expansion required the cooperation of a number of organisations, who would only have acted if they
believed that the actions of the field were the right thing to do. In terms of the drivers for change the institutional entrepreneurs were responsible for the changes themselves, but within the field the official philosophy was one which supported the overarching object of the field’s formation and development, that is, the idea of regional development and the development of an eco-efficient fuel.

The extension to the field meant that again processes 1 and 2 were salient as the field reconfigured around its new members. It would seem that whilst trigger 3, the legitimising event, had succeeded in promoting the attainment of socio-political legitimacy, cognitive legitimacy had yet to be earned by the relatively small field, that is to say the idea had to be advertised and promoted to the public. This will be addressed in turn.

As part of trigger 4, Carstedt’s were responsible, once again, for the purchase, from Ford USA, of the cars and their lease on service contracts. This meant that they now owned 53 cars (3 after the pilot-test and 50 after trigger 4) and were in charge of managing them, from their service requirements to any body work or crash repair, having committed themselves to do so with Ford USA. This was an important commitment because it earned Carstedt’s socio-political legitimacy in the eyes of Ford USA that would facilitate future cooperation, as well as promoting legitimacy within the field, this will come later.

During the process of this extension of the field negotiations were made with a variety of oil companies, to find one willing to vend E85. As was highlighted in the empirical chapter at this stage only one, OK, agreed. They were able to make the decision because of the fact that they were a cooperative and were therefore not owned by an oil company who would have had a vested interest in avoiding the sale of ethanol, in fact they were owned by individual stakeholders in Sweden. Therefore, one might argue that their ability to make decisions was freer as a consequence of them not being as institutionalised by the organisational field of oil companies.

This change in OK was essential for the development of the field, indeed, without their cooperation it seems unlikely that the field could have grown, given the difficulties involved with refuelling at SEKAB’s facility, i.e. the basic nature of the existing infrastructure. In other words, OK provided the field with a basic infrastructure and therefore a significant resource. For that reason the deal with OK can be seen as one that promoted the field’s socio-cognitive legitimacy from the point of view of organisations interested in leasing FFVs.
The vending of ethanol at OKQ8 was facilitated by the institutional entrepreneurs who, one could argue, were driven by normative forces. In other words they were required to get a filling station on board because that was the “professional” way of vending fuel and without it the field could not have developed past the pilot test. SEKAB’s role changed slightly as a consequence of this because now they were not only responsible for the production of E85, they had to distribute it to the filling stations, so that it could be sold to customers at the pump.

Referring back to cognitive legitimacy, this was attained with trigger (6) the field configuring event, “The Conference at Arken”. This change was driven by the agents, who sought the opportunity to promote the field by creating what Meyer et al. (2005) call temporary social organisations such as; tradeshows, technology contests, professional gatherings, and business ceremonies that summarise and shape the development of professions, technologies, markets, and industries. In this case a conference to promote the field, show off the 50 imported FFVs, and to attain interest and orders for service contracts from municipalities and organisations.

One might argue, alternatively, that this trigger was a drive to attain cognitive legitimacy, in other words, the field had to promote itself. What is interesting in this case and the previous one, concerned with Q8, is that when there are strong institutional entrepreneurs, carefully orchestrating the development of an organisational field, it is difficult to ascertain whether changes within the field are driven by the institutional entrepreneurs themselves, or by institutional forces. The thing is that on the one hand one can argue that the changes are a consequence of the inevitable drive for legitimacy within a field, on the other, given that the agents bridge the field and that the development of the field seems to have been carefully planned and arranged by them, one could claim that it is their will and not the institutional forces. In these cases I am inclined to argue that it is both. It is my averment that in fact there are institutionalist forces but that in this case they are managed by the institutional entrepreneurs who were able to handle them.

Following this expansion of the field into the new area, another organisation, Carstedt’s Ford (owned by Carstedt) was beginning to show signs of process 5, official philosophies, in the same fashion as Selznick (1957) averred, namely at an organisational level. This did drive change at the field level however, ultimately establishing that organisation as one of the elite, meaning that the field saliently displayed process 6.
The arrival of a new elite organisation and the field’s display of process 6 were very important for what came next. The commitment of Carstedt’s Ford to the service and maintenance of the imported cars and the legitimacy that was attained in doing so, added a useful resource to the agents’ arsenal and was crucial for the further expansion of the field. In fact over the next 12 months the field would develop as a consequence of an exponential growth in custom, driven in part by the cognitive legitimacy attained at “The Conference at Arken” (trigger 5) as well as the agents Carstedt and Lindstedt who oversaw trigger 6, “Import of a Further 300 FFVs”.

This development in the field incorporated, once more, the entry of new members and thus the inevitable restructuring and essentially reaffirming of the coalitions and pecking orders. This was followed by process 4, the establishment of an understanding of a common adventure, promoted without doubt by the successful growth and legitimacy of the field’s object. Essentially this meant that they had established routines and were operating harmoniously together as a group.

This was followed by the reappearance of process 8, infusion with value, as a consequence of the success of the field and the passion of the individuals and therefore the organisations that were involved, as well as the values that the individuals developed towards the endeavour. The idea of developing the Biofuel Region was, by now, becoming not merely a source of employment for many people but, moreover, a source of satisfaction. I would argue that these values are particularly relevant when it comes to this field because of its core objects, namely the development of a region and the establishment of an eco-efficient transport solution. These are both issues that attract attention and can promote a feeling of commitment within individual’s hearts and minds, and that consequently infuse themselves into the organisations and in this case the field itself.

The 300 Ford Taurus FFVs were imported from the United States once again by Carstedt’s Ford. Representing a relatively small change, from the perspective of Carstedt’s, in the sense that this increase in FFVs only entailed a change in the amount of vehicles that they owned and consequently the size of the fleet that they were required to manage.

As the interest in the vehicles increased, as a consequence of the growth of socio-political and cognitive legitimacy, so too did the demand for the E85 fuel and hence the number of OK filling stations that vended ethanol fuel grew throughout the country. This, it could be argued, happened as a consequence of the market opportunity that was observed by the other filling
stations, and is not a result of any institutional forces because these other organisations were not yet a part of the field.

One could argue that the municipalities were also driven towards their involvement as a consequence of the opportunity that it offered to demonstrate them as being concerned about green issues. Perhaps this was in a bid to support Swedish industry, or to promote eco-efficient fuels, one might argue, in addition, that it was a classic case of isomorphism in the search of legitimacy, that they were emulating the municipalities who were deemed to have undertaken a successful greening path, or at least a path that was commonly regarded as being a green one and therefore a legitimate and responsible one.

Following this expansion came an external trigger (7) for change, a disruptive event, “Adverse Media Attention, how green is the Ford Taurus FFV?” The field was by now mature in the sense that it had saliently displayed structuration process 4 (a common adventure), and this disruptive event threatened to destabilise the whole field and delegitimise it, by bringing into question the eco-efficiency of the FFV, which ultimately brought into question the whole enterprise and one of the key objects of the Biofuel Region, namely the eco-efficient nature of bioethanol (at least as it was currently being used in the Ford Taurus FFV). This event can be explained as an example of deinstitutionalisation, the process by which the legitimacy of an established practice erodes or discontinues (Oliver, 1992). It stemmed from functional pressures, which took the form of questions about the performance levels and perceived usefulness associated with the field’s practices. This case of deinstitutionalisation determined that change had to occur if the field was to continue, and by continue I mean that it would be required to reinstititutionalise.

The reinstitutionalisation that occurred did so in a similar way to the case of Lounsbury (2002) that was discussed earlier in the theoretical chapter. That is, it ultimately offered new opportunities for expansion to the field. In elaborative terms, the change that this deinstitutionalisation promoted took the form of yet another legitimising event (trigger 8) “Public Purchase Order”, the field’s attempt to deal with the loss of legitimacy and to replace an existing logic, the Taurus FFV with a new logic, the Focus FFV and by doing so to re-legitimise. On the other hand, one could argue that once again the institutional entrepreneurs were fulfilling their plan, using their contacts and power to develop the field, and that the disruptive event merely encouraged this. This is once again an example of external pressures impeding themselves upon the field and being managed and handled by the institutional entrepreneurs in a suitable and proficient manner.
Importantly however, I would aver that this relegitimising event could not have taken place if the field had not reached process 4, a common adventure, because it required the cooperative efforts of a number of field members (as well as actors outside the field). One could infer also that the event might not have occurred were it not for the infusion with value in the field and the fact that so many organisations were so devoted to the values of the field and sought to maintain their legitimacy or, indeed, without the institutional entrepreneurs who were in charge of the change process. Processes 4, 8 and 6 are all essential features that drive legitimising change within an organisational field. This is certainly at odds with previous literature, which claims that these stages all infer that a series of impeding forces for change are present. In other words, they claim that change is difficult unless it is that which is driven by institutional forces such as isomorphism and a drive for legitimacy.

Alternatively once could argue, given the maturity of the field by this stage, that change could have been a difficult thing to make, because of the institutional pressures that surrounded the organisations within the field. Greenwood and Suddaby (2005) examined the conditions that prompt elite firms to promote change in an institutional context and concluded that certain elite organisations were able to attain a resistance to normative and coercive processes. That is, their market activities went beyond the jurisdiction of the field and consequently they were powerful enough, in their own right, not to be adversely affected. One could claim that the capacity to drive change within this field was also aided by the elite individuals, because as institutional entrepreneurs who, in the case of Carstedt at least, were involved within other businesses, and whose influence spanned the boundaries of the field, they were powerful enough to be unaffected, and to re-legitimise and reinstitutionalise the field. In other words, once more, the power of institutional entrepreneurship was capable of superseding that of the institution. Or, one could argue, the institutional forces were managed by the institutional entrepreneurs.

### 7.3 Period THREE - (2001-2006)

*The field successfully re-legitimises, establishes a new elite organisation and is helped along with a shock, in the form of a legislative change.*

As with previous legitimising events this one drove significant change within the field. The Public Purchase order that had been drawn up, in the field’s attempt to reinstitutionalise, came to fruition in 2001 when Ford delivered its first Ford Focus FFVs (trigger 9 – “Availability of Ford Focus FFV”).
As a consequence new members entered the field, in the form of organisations purchasing the new cars, as a result of which the field once again restructured (process 1). Given the significant nature of the change, new coalitions and pecking orders were also established; meaning that process 2 became salient again. Quite soon the change within the field led to its expansion and the field saliently demonstrated process 4, reflecting their belief that they were involved in a common adventure and the firm establishment of routines and roles. It is my assertion that this stage demonstrated that indeed the legitimising event (trigger 8) had been successful in its object, in the sense that it was able (for the time being at least) to re-legitimise the field and lead it again to being in a common adventure, demonstrating, additionally, that the field had been reinstitutionalised.

As a consequence of this reinstitutionalisation FFVs were, for the first time, available to consumers who could purchase them from their local dealership, and therefore Carstedt's Ford were no longer the sole provider of FFV's, and the FFVs sold in Sweden could be maintained in an increased number of places. Furthermore, as the amount of FFVs grew, as has been emphasised, so did the number of filling stations vending E85, marking a change in the availability of E85 and promoting the growth in FFV sales.

An interesting self-perpetuating situation arose, the public began to purchase more and more FFVs as the socio-political legitimacy of the organisational field grew. At the same time, as the number of car manufacturers who made FFVs increased, so too did the need for filling stations. In turn the increase of FFVs on the road, and filling stations vending ethanol on the street, promoted the development of socio-political and cognitive legitimacy.

The “elite” organisations now had an increased amount of work, in the sense that SEKAB had to distribute further and wider, and BAFF began to lobby for changes that would promote the venture, such as the free parking, government sponsorships and reduced taxation and insurance costs. These changes were driven by external pressures, from the point of view of the field, because they were imposed at a governmental level, aimed at purposively increasing the interest in the purchase and running of FFVs. Although a good deal of lobbying was undertaken by BAFF to drive them. An important issue here is that they were changes imposed upon organisations within the Biofuel Region, but that nonetheless they had a positive impact because they increased the interest in the venture.
Following the increased success of the field, came trigger 10, “Establishment of BFR AB” a change brought about by the institutional entrepreneurs Carstedt and Lindstedt. This was an organisation funded by its members, aimed at promoting the development of biofuels. This marked a planned change within the organisational field, which was an incremental refining of the direction of the field, to focus specifically upon the original objectives of SEKAB and BAFF before the field had emerged, namely the development of 2\textsuperscript{nd} generation ethanol.

Again this change reflected the resources and will of the institutional entrepreneurs that drove it, in that they were by now riding high on the wave of success that had ensued as a consequence of the popularity of the FFV. SEKAB was selling more ethanol than ever, and cognitive and socio-political legitimacy were at an all-time high. Their will to develop 2\textsuperscript{nd} generation ethanol and promote local industry was still as strong as it had been initially, it would seem.

I would argue that a degree of hypocrisy existed from the start in BFR AB. In order to attain socio-cognitive legitimacy with its members the organisation sought to promote biofuels in general, diplomatically endorsing all of the types of biofuels that were available, or emerging on the Swedish Market. In actual fact, however, it is my assertion that the real reason BFR AB was established was exactly in line with the will of the agents, and the original institutional entrepreneurs, namely the development of 2\textsuperscript{nd} generation ethanol and the regional development and market opportunities that went with it. This might go some way to understand the manner with which “promises” were made to municipalities about refining facilities in their region. To attain legitimacy, promises might have been made to demonstrate the benefits to municipalities.

As a consequence of trigger 10 the field began to saliently display process 6, as the newly founded organisation replaced the former elite organisations, at the field level. The elite individuals remained the same however, and were still in charge of much of what was going on in the field, Carstedt being assigned the role of CEO of the new elite organisation. Again, as a result of the entry into the field of a new organisation the field restructured (demonstrating process 1) and importantly, given the relevance of the new member, new coalitions and pecking orders were established (process 2).

For the next 3 years the field remained stable, growing as interest developed and cognitive and socio-political legitimacy grew further. Until 2006 when the field experienced a new kind of trigger (11) for change, that of a shock, “Legislation for Biofuel Sales” as the government, responding to
lobbyists and their desire to expand the field, and the values for which it stood, passed legislation regarding to sale of biofuels. Given that this event was imposed upon the field at a governmental level one can argue that it was essentially an example of coercive legislation. It is my averment that this change took the field, to a certain extent, by surprise and that it created problems for distribution because suddenly the amount of ethanol that had to be supplied increased very quickly. In addition, as has been illustrated in the narrative and analysis I, this change in legislation created some dissatisfaction amongst a few people affected by it.

On the other hand, in terms of the field’s development, it drove expansion and growth. The expansion of the field, promoted by the shock, proved to further endorse the feeling of being within a common adventure for the organisations within the field. Overall, the legislation ultimately led to an increased demand from filling stations for E85, which meant that SEKAB had to import more ethanol and produce and distribute more E85. It is my overarching averment that the change itself was to a certain extent determinist, but on the other hand BAFF were heavily involved in the lobbying for it.

7.4 Period FOUR - (2007-2009)

The field faces troubling times in the form of disruptive events and a jolt, but remains focussed, pooling its resources to re-legitimise and reinstitutionalise.

In 2007 the field was met, once again, with a disruptive event (trigger 12) “Adverse Media Attention, Sustainable Criteria”. This was an external trigger for change that again provided functional pressures for deinstitutionalisation, this time questioning the institutional logic surrounding the perceived usefulness of ethanol as an environmentally and socially sustainable fuel. This event brought into question the very existence of the field, and in particular the values for which it stood. It also brought forth two structuration processes which were yet to be observed in the field, process 7, competition as well as process 3, information overload. From the point of process 7 one could argue that the response from the field was as per Selznick (1957) namely that they sought to promote themselves by re-legitimising the values of the field, again this is stretching Selznick’s work to incorporate the organisational field level.

As an aftereffect of the disruptive event the field responded in the same way as they had done previously, by attempting to reinstitutionalise the field. This was done by creating a trigger (13 in the form of a relegitimising event, “The Development of Verified Sustainable Ethanol”. Again one could infer
that the event might not have occurred were it not for the infusion with value in the field and the fact that so many organisations were so devoted to the values of the field and sought to re-legitimise it, or without the agents who were again driving the change process, who were able once more to bring about change as a consequence of their power, aided by their activities spanning the boundaries of the field.

It could be argued that this change was necessary for the field to continue, and was therefore driven, not by the organisations involved but by the necessity to react to the forces of delegitimisation and deinstitutionalisation, by changing the existing logics. In fact, rather than changing the logics the institutional entrepreneurs sought to legitimise them, both cognitively and socio-politically, by developing a framework for their management. Things were certainly different within the field at this point than they had been previously in the sense that, before, change had represented development and growth, now it represented a quest to re-attain the legitimacy that it (the field) had once been afforded. SEKAB had never before been involved in such activities; they had never needed to be. Now, however, they were under threat and had to struggle for survival.

Following the legitimising event, in the same year, came a new kind of trigger for change. This was a jolt, an unprecedented and sudden event, which had never happened before in the field’s history. This trigger (number 14, “Oil Shock”) created significant troubles for the field and led to some very significant structural changes.

In turn this jolt led to significant field change. Ultimately there was a change in the field, when for the first time in history the importation of ethanol fuel became the responsibility of the oil companies, who now (at the time of writing) purchase and sell the ethanol that they require on the Swedish Market. This is a radical change, especially taking into consideration that SEKAB were the company that originally were, in part, responsible for persuading them to begin vending the fuel in the first place.

Inevitably these changes meant that the field once more restructured itself (process 1) as well as developing new coalitions and pecking orders in the process (process 2). Quite quickly, however, the streamlining of the field’s activities seemed to have resolved the problem and, my opinion is that at this stage the field demonstrated that they were again within a common adventure, once again having re-established routines.

The following year however the field was confronted, yet again, with another disruptive event, trigger 15, “Adverse Media Attention” which placed
into question a project that the institutional entrepreneurs had involved themselves in. This is another case of deinstitutionalisation emanating from political pressures questioning the logics of the field in terms of the legitimacy of the “Africa Project” brought by the press. Once again this drove change within the field as the project was handed over to a sister organisation and SEKAB was restructured significantly.

Following the adverse press attention and fiscal difficulties of SEKAB, change occurred at a field level concerning the perspective of new emerging biofuel industries such as DME in Piteå. Previously the different fuels had sought to compete with one another, following the financial crises incurred by the field, leading to the bankruptcy of Framtidsbränslen and the struggle for survival at SEKAB, the field began to display an increased unity and the ethanol based organisations began to increasingly see their potential competitors as aids to the field's very survival. This, it could be argued, is another example of external pressures bearing down on the field, which brought about the realisation that in the interests of a more sustainable future the cooperation and support of one another was essential.

The following two tables (11 & 12) offer an overview of the structuration processes and triggers for change, as well as the institutional concepts that have been used in this analysis. They detail the effect that these processes, triggers and concepts have had upon the field, as a summary. The next chapter seeks to draw conclusions from the two analysis chapters.
<table>
<thead>
<tr>
<th><strong>Triggers</strong></th>
<th><strong>Effects</strong></th>
</tr>
</thead>
</table>
| **Landmarks**     | • Demonstrate the attainment of legitimacy following legitimising/relegitimising events  
                     • Drive development and growth  
                     • Promote process 1 and ultimately 2 |
| **Jolts**         | • Drive significant structural changes within the field  
                     • Drive significant organisational re-design |
| **Shocks**        | • Promote development and growth  
                     • Promote process 4 |
| **Disruptive Events** | • Delegitimise the field,  
                     • Promote change in the form of Legitimising Events  
                     • Promote process 4  
                     • Drive significant structural changes within the field and delegitimisation  
                     • Can drive process 3 & 7 |
| **Field Configuring Event** | • Promote cognitive legitimacy |
| **Legitimising Events** | • Drive the birth of a field  
                     • Create legitimacy for a field  
                     • Re-legitimise a field  
                     • Ultimately promotes development if successful |
| **Structuration Processes** | | |
| **1 - Increased interaction** | • Can drive some legitimacy  
                     • Always follow landmarks |
| **2 – Est. of coalitions & pecking orders** | • Follow a restructuration process after new members enter the field  
                     • Promote process 6 |
| **3 – Info. overload** | • Can drive Legitimising Events |
| **4 - Common Endeavour** | • Qualify the success of a Legitimising Event  
                     • Qualify the success of growth  
                     • Qualify the attainment of Legitimacy |
| **5 - Official Philosophies** | • Promote the triggering of Legitimising Events  
                     • Promote growth/development in the field |
| **6 – Est. of Elites** | • Are essential elements of field development and change at both the meso and micro level  
                     • Clarify process 2 |
| **7 - Competition** | • Can drive Legitimising Events |
| **8 - Infusion with Value** | • Important  
                     • Can promote attempts to re-legitimise  
                     • Particularly relevant when dealing with a field that aims to develop a region, or promote eco-efficiency |

*Table 11 – Triggers and Structuration Processes and their effects on the field*
### Table 12 – The appearance of institutional concepts and their effects on the field

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isomorphism</td>
<td>• Can impact organisations outside the field as well as inside, and promote their entry into the field.</td>
</tr>
<tr>
<td>- Mimetic</td>
<td></td>
</tr>
<tr>
<td>- Coercive</td>
<td>• Can impact the field in the form of a shock, which in turn can promote the field’s development</td>
</tr>
<tr>
<td>- Normative</td>
<td></td>
</tr>
<tr>
<td>- Legitimacy</td>
<td>• The attainment of which can mark the first step towards the development of an organisational field</td>
</tr>
<tr>
<td>- Socio- Political</td>
<td>• Promoted by “legitimising Events”</td>
</tr>
<tr>
<td></td>
<td>• Especially necessary when competing with a well-established institution</td>
</tr>
<tr>
<td></td>
<td>• Necessary when implementing a technical discontinuity</td>
</tr>
<tr>
<td></td>
<td>• Proven to have been attained to some degree by a landmark</td>
</tr>
<tr>
<td></td>
<td>• Can promote future cooperation and development of the field</td>
</tr>
<tr>
<td>Legitimacy - Cognitive</td>
<td>• Promoted by “field configuring events”</td>
</tr>
<tr>
<td>Deinstitutionalisation</td>
<td>• Promoted by jolts and occasionally disruptive events</td>
</tr>
<tr>
<td></td>
<td>• Can determine change that re-legitimises the field</td>
</tr>
<tr>
<td>Reinstitutionalisation</td>
<td>• Can occur as a consequence of a re-legitimation of existing logics, as well as by changing them</td>
</tr>
<tr>
<td></td>
<td>• Can be actively driven by processes 4, 8 and 6.</td>
</tr>
<tr>
<td></td>
<td>• Similar to the response to structuration process?</td>
</tr>
<tr>
<td></td>
<td>(competition) in the sense that it involves delegitimisation</td>
</tr>
<tr>
<td>Institutional Entrepreneurship</td>
<td>• Individual agency can drive the creation of the field</td>
</tr>
<tr>
<td></td>
<td>• Can create changes that re-legitimise and reinstitutionalise the field</td>
</tr>
<tr>
<td></td>
<td>• Requires resources and willingness to act as well as legitimacy</td>
</tr>
</tbody>
</table>
In order to consider the ideational aspects of institutions this thesis has used an interpretivist paradigm to pay attention to the subjective way that organisational fields are formed and how they change. In fact, as per the suggestion of Suddaby (2010), it has gone back the case study approach of early institutional theorists like Selznick. The research method employed was that of an in-depth case study, outlined in chapter 4, aimed specifically at the two purposes of the thesis, namely:

**Purpose one** - To examine and explore the process of organisational field change by investigating the manner with which an organisational field is formed, and how it changes as a consequence of this formation, taking into account change driven by any triggers that it incurs along the way.

**Purpose two** - To examine and explore the process of organisational field level change driven by individual contributions, isomorphism, legitimacy and de/reinstitutionalisation.
These two purposes were reached after 4 research questions were posed, following a literature review of the underresearched areas. The layout of this concluding chapter will be dictated by these 4 research questions. Each of the questions will be reposed, followed by a discussion to illustrate the theoretical contributions of the thesis. As is conventional in management research, it was also the object of this work to provide managerial implications, in the form of the provision of a practical relevance. These practical issues will be addressed after the theoretical implications. Following the managerial implications will be, both, a disclaimer of the limitations of the study, and suggestions for future research.

8.1 Theoretical Implications

Research Question 1 - How are organisational fields formed and developed?

Here I shall present six conclusions.

The formation of the field itself began with a purposive, individual agent led trigger. This particular trigger has been categorised as a legitimising event, because there was no existing concept with which to define it in a suitable manner. I have defined a legitimising event as, an event purposely created by field members, which promotes the attainment of socio-political legitimacy and is consequently an essential facet of the field formation and development process. I have argued, already, that such was the importance of the attainment of socio-political legitimacy, for the agenda that the field sought to drive, that the initial legitimising event was necessary for the field to develop past the first pilot test. The first conclusion to be drawn is that the drive for legitimacy can not only promote isomorphism within a field, but can actually be the driving force behind a field’s formation.

Looking at tables 9 and 10 (page 148 & 149) one can observe an overview of the manner with which the structuration processes and triggers occurred during the narrative, i.e. during the formation and development of the field. First of all, one can see that the field did not form in direct accordance with the formation processes of DiMaggio and Powell (1983). That is not to say that the four processes were not present, but that they never occurred in the order that the authors claimed that they would. And, in addition, some of them were much more prevalent than others. The structuration of the field began with process 1, increased interaction, and was followed closely by process 2, establishment of coalitions and pecking orders. Before the field could develop further, however, a landmark occurred and once again required the field to go back to process 1. It does seem, though, that at least
structuration processes 1 and 2 are closely knitted. I shall return to this issue later.

DiMaggio and Powell (1983) claim that ‘‘triggering events’’ can cause a restructuration of the field. They do not discuss these any further however. The second conclusion to be drawn here is that a trigger can certainly cause restructuration, and, moreover, it need not be that a field has got past structuration process 2 at that stage. Even when the field is affected by triggers, which promote its growth and development, it is still forced to restructure in one sense or another.

Furthermore, process 1 is always followed by process 2, and this thesis therefore supports the work of DiMaggio and Powell (1983), in that sense. In other words, the increased interaction between a number of organisations is always followed by the establishment of coalitions and pecking orders. I would aver that the reason for this is that the act of interaction very quickly promotes a working situation which, in turn, requires coalitions and inevitably determines pecking orders as a consequence of the kind of interaction that is occurring. Particularly in this case where there are a few dominant individuals driving forward an agenda, namely the development of a technical discontinuity. Interestingly, it seems that when a landmark or legitimising event comes along which promotes the growth and development of the field, meaning that a few new members enter it, frequently processes 1 and 2 can be salient together, because of the fact that the dominant organisations remain dominant, even after the entry of new members, and therefore the coalitions remain. The third conclusion is, thus, that the formation of the field begins with increased interaction and the establishment of coalitions and pecking orders (i.e. structuration processes 1 & 2) and that when new organisations enter the field and an increased interaction occurs; the establishment of pecking orders always follows.

One could argue that the field first reached maturity, in the DiMaggio and Powell (1983) sense, (i.e. structuration process 4 - common adventure) after trigger 6 (landmark). In empirical terms this happened when 300 Ford Taurus FFVs were imported from the United States, following the attainment of socio-political legitimacy through the second Pilot Test (trigger 3 - legitimising event), the Import of a Further 50 FFVs (trigger 4 - landmark) and the attainment of cognitive legitimacy via the Conference at Arken (trigger 5 - field configuring event). By this stage the organisations had established routines and were operating harmoniously as a group, and the field was found to be in line with DiMaggio and Powell (1983) in that sense. It is my opinion, therefore, that legitimacy is an integral element of field maturity. The fourth conclusion is that the attainment of socio-political and
cognitive legitimacy are essential facets in the formation and development of organisational fields, moreover, they are essential in order for a field to reach an understanding that they are involved within a common adventure.

Structuration process 4 became salient a further four times during the formation and development of the field. When it happened, it did so following an event that was either a landmark in the development of the field, or a trigger (legitimising event, shock or disruptive event) which drove the field together and infused it with value. The effect of these triggers will be examined in more detail in the following section. Particularly noteworthy here, with regard to the order of the structuration processes, is the fact that 4 never followed 3, unless there was a legitimising event between them.

Structuration process 3 (information overload) occurred only once during the formation and development of the field, as a consequence of a disruptive event, which threatened to delegitimise the field. The reason for this is, perhaps, that the field formation and development was managed so carefully, towards its final objective by institutional entrepreneurs.

I shall move on now to consider the other 4 structuration processes, borrowed from the work of Selznick (1957). Earlier on in Analysis I, I argued that process 5, official philosophies, became salient both at an organisational and organisational field level. This structuration process has not yet been employed (in previous research) alongside DiMaggio and Powell’s (1983) field formation steps. It is my assertion that this process became salient early on in the field formation and development process as a consequence of the agenda of the field. Given the fact that many of the organisations involved in the field were based in Örnsköldsvik, they had a certain vested interest in the development of the region. In addition, given that eco-efficiency is an increasingly prevalent issue of concern for organisations, organisations began to be driven by one, or both, of these philosophies. The philosophies themselves also became salient at a field level; consequently the fifth conclusion is that Selznick’s (1957) work can be applied at both an organisational, and an organisational field level. Moreover, when it is, it can offer interesting insights about the formation and development of an organisational field because it introduces new dimensions into the structuration process.

Structuration process 6 followed 5, in line with Selznick (1957) chronologically, but not in the sense that process 6 (establishment of elites) included both individuals and organisations. The elite individuals were the institutional entrepreneurs, and the elite organisations were always led by these elite individuals. In turn, these elite individuals were responsible for
promoting the formation and development within the field in the form of a series of legitimising events, landmarks and a field configuring event (which will be discussed in more detail in the next section). Important here, however, is that they were also able to infuse values at an organisational field level, i.e. structuration process 8. This infusion with values was very important to the field’s development because, particularly in times of crisis, the field needed to cooperate in order to overcome obstacles, and these values drew them together.

Similar to structuration process 3, structuration process 7 (competition) only occurred once, and just before 3, as a result of a disruptive event. This is probably as a consequence of the growth and success of the field, since it was the oil companies with whom the competition had developed.

The structuration processes are useful for understanding some of what goes on within a field’s formation and development, as has been demonstrated. However, the sixth conclusion to be drawn is that they do not tell the whole story. An integral element of field formation and development, in this case at least, was driven by triggering events, which drove these structuration processes. This leads to the next research question.

**Research Question 2** - How do triggers for change influence the process of field formation and development?

Here I shall present five conclusions.

In the theoretical chapter previous research was examined for triggers for change, which were brought together in a framework. The object was to use this framework to examine the impact of the triggers upon the organisational field and its formation, and development. Six such triggers were identified, and will be presented and discussed here in the order in which they occurred in the narrative. These are; technical discontinuities (Lorange et al., 1986), landmarks (Hannigan, 1995), field configuring events (Lampel and Meyer, 2008), disruptive events (Hoffman), shocks (Fligstein, 1991), and jolts (Meyer, 1982). Each of the triggers will be examined individually, in turn. The concept of legitimising event was also created as a result of this work, and will also be discussed.

The motivation for the formation of the empirical field emanated from an ambition to create what Lorange et al. (1986) refer to as a “technical discontinuity”. That is, a new and radically advanced technology which replaces an old and inferior one. In the case of this field a new fuel, 2nd generation ethanol, considered eco-efficient and potentially bringing
development opportunities to the region, to replace traditional polluting and imported oil. Consequently, the first conclusion to this research question is that a field can be formed and developed as a result of an objective to create a technical discontinuity. Important here is that I am inferring that this trigger was merely an overarching ambition, and not an observable occurrence.

The first (observable) trigger for change within the field’s formation was a legitimising event. I have defined a legitimising event as; an event purposely created by field members, which promotes the attainment of socio-political legitimacy and is consequently an essential facet of the field formation and development process. This is arguably, however, only one of the roles that the legitimising event played in the process of field formation and development. Four such legitimising events occurred within the period that has been studied. The first was the catalyst for the formation of the field, in the form of a pilot test for buses. The second played a similar role; manifested by a pilot test for private cars, it paved the way for future development by legitimising the idea, creating socio-political legitimacy before the idea could be developed in earnest. The final two legitimising events came as a reaction to disruptive events, which threatened to delegitimise the field.

The two final legitimising events were therefore, essentially, measures to reinstitutionalise the field, and could also be called re-legitimising events. Each of these latter two re-legitimising events promoted structuration processes 4, 8 and 6 (a common endeavour, infusion with values and establishment of elites). It is my averment that such structuration processes were promoted because the re-legitimising events overcame the crises that had driven them, and demonstrated that the field was strong; they also required the cooperation of many members of the field and therefore drew them together. Further, given that they were driven by the institutional entrepreneurs and that they were successful in their object (re-legitimisation) then they further demonstrated the elite nature of the two institutional entrepreneurs.

The second conclusion is, thus, that legitimising events can drive the birth of a field through the attainment of socio-political legitimacy; they can also re-legitimise the field in times of crisis, and highlight elite individuals. Further, if successful, legitimising events can promote the development of the field.

The next trigger for change was a landmark, itself very significant in the sense that it was the most prevalent trigger, occurring five times in all.
Landmark was borrowed from Hannigan (1995) who used it merely as a term to describe events in the history of something, namely in a very normative sense. Essentially, a landmark here is a significant event in the history of the field. Previous research into institutional change has identified such concepts as, jolts, shocks, disruptive events and field configuring events. Perhaps given that there is little research attending to the manner with which organisational fields are formed and developed, no one has previously considered the effect of a significant event in a field’s history upon the field’s formation and development. The third conclusion is that such a significant and yet rudimentary step in development can create a distinct impact upon a field’s formation and development. They can for instance demonstrate the attainment of legitimacy following a legitimising or a relegitimising event, for example in the Import of a Further 50 FFVs (trigger 4) following the Pilot Test of FFVs (trigger 3 – legitimising event) or Availability of Ford Focus FFVs (trigger 9) following the Public Purchase Order (trigger 8 – (re)legitimising event). Moreover, they are an indicator of development always promoting a restructuration of the field and salient presence of structuration processes 1 and 2 (increased interaction and establishment of coalitions and pecking orders).

The next type of trigger for change in the field’s development was that of a field configuring event, defined by Lampel and Meyer (2008) as a temporary social organisation that summarises and shapes the development of an organisational field. In this empirical case it was a conference arranged to promote the FFVs that had been imported from the United States. The chief object of this particular field configuring event was to promote cognitive legitimacy, in other words; to drum up interest and to spread information about the venture. This trigger paved the way for further development in the field because it developed interest in its endeavours. The fourth conclusion is, therefore, that field configuring events do indeed summarise and shape organisational fields by promoting them, and in turn setting the scene for further development. Moreover, they (field configuring events) can do so through the attainment of cognitive legitimacy.

Next was a disruptive event, defined by Hoffman (1999) as a trigger which can end, sharply, certain elements of organisations which have become locked in by institutional inertia. In theory, disruptive events emanate from external sources and throw the field into confusion or disorder by interrupting or impeding its progress. Within the narrative of this thesis, three such disruptive events were identified. Interestingly, they all took the form of adverse media attention of some sort. They were consequently similar, in some senses, to the media exposé of Shell in the Brent Spar controversy when they had a dispute with Greenpeace over the disposal of a
Discussion and Conclusions

defunct oil platform. This case was documented by Tsoukas (1999) who highlighted how a local incident quickly escalated as a consequence of the power of the media. This mediated communication, Tsoukas (1999) argues, can spread the availability of symbolic forms athwart time and place, and create a public space in which a linking of actors situated in distant locales is created.

Each of the disruptive events threatened to destroy the field, in some senses, as a consequence of the delegitimising effect that they had. That is, they each brought into question certain institutional logics, with varying degrees of significance, and therefore threatened to deinstitutionalise the field. As a consequence, they each drove change within the field, and, specifically for the first two, promoted legitimising events that drove delegitimisation and reinstitutionalisation. To that end, such disruptive events can lead to a coming together of field members as they attempt to resolve the issues highlighted as weaknesses by the disruptive events, within the field.

The third and final disruptive event brought into question, one could argue, the agenda of the field, in the sense that it highlighted issues concerned with the field’s ambition of developing 2nd generation ethanol in Africa, concerned for both investments of Swedish tax payer money abroad, as well as the moral question of land grabbing. This brought the legitimacy of the field into question once again, as well as the legitimacy of the institutional entrepreneurs. Ultimately, the way that the disruptive event was handled by the institutional entrepreneurs led the field to display structuration processes 4, and then 6 as the new elites were formed as a consequence of the changes that were made in the field, and 8 as they (the elite organisation and the field) were once again infused with value. One could argue, however, that this infusion with value was significantly different to the value that had been infused in the field previously, because it was now focussed upon the development of biofuels in general and not merely 2nd generation ethanol. In addition, perhaps one of the most significant changes that had ensued at this point was that the two institutional entrepreneurs lost their legitimacy within the field, and were no longer in positions of authority to drive future change. Interesting is the fact that, despite the magnitude of the final disruptive event, the field did not die even though a re-legitimising event did not take place. In this case one might argue that the restructuring made up for the loss of legitimacy faced by SEKAB and the agents in particular.

The next concept, identified in the narrative, was that of a shock. Shocks are defined as triggers for change which create a reconstruction of current
rules, or models of organisational strategies that undermine those rules, created by the state or the organisational field (Fligstein, 1991). Trigger 11, Legislation for Biofuel Sales was categorised as a shock because it created a reconstruction of current rules, driven by the state in this case. Applying this concept to the analysis is interesting because this particular trigger for change is exactly in line with the definition of shock by the concept’s creator Fligstein (1991). In this case the trigger was one which proved beneficial for the field in the sense that it drove development quite quickly.

The final concept is that of jolt, categorised as such because it was a sudden and unprecedented event, never having happened in the history of the field, occurring here in line, in some senses, with its definition by Meyer (1982). What is interesting with this particular trigger was the impact that it had. In the research of Meyer (1982) he found that such jolts were beneficial to the field in the long term, because they promoted experiments which drove innovative ideas. Here, on the other hand, the jolt (Oil Shock - trigger 11) created significant problems for the field, which had to change the ways that it functioned significantly, being reduced in size and facing de-legitimisation as a direct consequence. On the other hand, in the long term perhaps the changes that it drove will be beneficial for the field; this remains unclear at this stage however. The fifth conclusion therefore is that such jolts can also have a detrimental effect upon an organisational field and its formation and development in the short term.

**Research Question 3** – What role can individuals play in the formation, development and change of an organisational field?

Here I shall present three conclusions.

The objective behind the development of the field has been described as a technical discontinuity. The need for such a trigger emanated from the economic downturn in Örnsköldsvik, and the acknowledgement that one particular, relatively small, industry could revive the fortunes of the region through the development, ultimately, of 2nd generation ethanol.

As has been emphasised the formation of this organisational field began with a purposive trigger, in the form of a legitimising event. This trigger was driven by two institutional entrepreneurs; Carstedt and Lindstedt. One could argue that at this stage they were behaving in an entrepreneurial manner, pursuing the rational goal of regional development by establishing a market for ethanol. At this stage the organisational field was so small that one could aver no institutional forces were impeding upon it. In addition, they were each the managing directors of BAFF and SEKAB, and had the resources of
the local Kommun at their disposal, and were consequently in a position to act.

After the legitimising event (Pilot Test of Ethanol Powered Buses - trigger 19) had demonstrated its worth (i.e. attained a level of socio-political legitimacy) the field developed beyond Örnsköldsvik to Stockholm. It was at this early stage in the field’s formation that structuration processes 5, 6 and 8 became salient. In other words, these organisations and, I have argued the field itself (young though it was) began to develop official philosophies towards the endeavour. In addition, the two men were established as elite individuals and their organisations as elite organisations. Furthermore, the organisations and the organisational field became infused with value. It is my averment that these structuration processes are particularly significant, and that they promoted the future capacity of the institutional entrepreneurs to drive change and development, in the way that they did. Therefore, one can argue that the establishment of official philosophies and of elite individuals within an organisational field can promote an infusion with value at a field level. The infusion with value can, moreover, promote the objective of the field and further reinforce the elite nature of the elite individuals, promoting their capacity to act as institutional entrepreneurs.

Following the success of the second legitimising event (Pilot Test of FFVs – trigger 3) and the growth of the field to incorporate private cars, Carstedt and Lindstedt were increasingly regarded as missionaries. Touched upon already, in analysis II, was the issue that perhaps these legitimising events were in part necessary because of the power that was held by the oil industry. By the time that the field reached a level of maturity defined by DiMaggio and Powell (1983) (structuration process 4), a significant number of buses and cars were being run on ethanol in Sweden. The perception of many of the public and of the field at large, at that point, was that the two men had begun something of a revolution. That is, an eco-friendly, region developing, oil independence offering entity had been born. Consequently, they commanded the support of field members. This infusion with value in the field, combined with the will and resources of the institutional entrepreneurs meant, I would argue, that they were able to further drive change and development.

As was discussed, with reference to the previous research question, the field was hit three times by disruptive events, which according to Hoffman (1999) can break institutional inertia. In fact, given that the first two disruptive events brought into question key logics within the field, namely the eco-efficiency of the Ford Taurus FFV, and the sustainability of the ethanol fuel produced in Brazil, they did in fact do just that. Such was the
Discussion and Conclusions

will, access to resources, and capacity to bridge the field that the two agents had; they were able to re-legitimise the field. The infusion with value and official philosophies were an essential element of these re-legitimising events (trigger 8 and 13) because they both required the cooperation of a number of field members and organisations outside the field alike. Thus, the individuals were able, via the re-legitimising events, to prevent the deinstitutionalisation process from ending the venture. The second conclusion is therefore that individuals can play a key role in handling crises within an organisational field, providing they have the support of field members.

By the end of the narrative the legitimacy of the entrepreneurs was brought into question by the final disruptive event (Adverse Media Attention – trigger 15). It is my opinion that the legitimacy of the institutional entrepreneur is an integral element of their capacity to act. In order to reinstitutionalise the field, to re-legitimise it, one institutional entrepreneur, Carstedt, stood down from his role as managing director of SEKAB. The third conclusion to this research question is that for an institutional entrepreneur to be effective over a sustained period within an organisational field, then that individual must maintain a level of socio-political legitimacy. If this is lost, then it might be necessary for that person to leave the field if the field is to have a chance to re-legitimise.

Perhaps the most significant (fourth) conclusion to be drawn from this work, with regard to individual contributions to the formation, development and change within a field, is concerned with determinist and voluntarist change. This study has given a nuanced view of such change because it has shed light on the manner with which institutional entrepreneurs can, in the correct circumstances, manage determinism. In elaboration there were a number of examples of changes that were driven to attain legitimacy which one could argue were imposed upon the field. However, as underlined in analysis II, in actual fact the institutional entrepreneurs dealt with the pressures in a tactical and pragmatic fashion. In so doing they were frequently able to not only legitimise or re-legitimise the field, but promote development in the process.

Research Question 4 - How does change occur within an organisational field?

Here I shall present five conclusions.

As has been emphasised so far, change can occur within an organisational field in a plethora of different ways. Looking at research question 1, one can observe change as a consequence of the formation and development of the
field. Indeed, formation and development represent types of change in themselves. That is, as the field develops, saliently displaying one structuration process or another; it does so as a consequence of some kind of change. For example, the third conclusion to research question 1 highlighted how the formation of the field began with increased interaction between organisations and the establishment of coalitions and pecking orders. Here, one can observe change at both an organisational and organisational field level, as a consequence of the initial formation.

Furthermore, the fifth conclusion to research question 1 underscored the effectiveness of the application of Selznick’s (1957) concepts at a field level. This shed light on the manner with which an organisational field can change as a consequence of official philosophies, the establishment of elite organisations, competition and an infusion with value. The first conclusion to research question 4 is, thus, that change within an organisational field can occur as a direct consequence of its formation and development. Moreover, since this process appears to be on-going, this is a constant driver for field level change, in one form or another. An integral element of the story of field formation and development are triggers for change, addressed in research question 2.

Looking at the conclusions to research question 2, one can observe change as a consequence of triggers. These include landmarks, jolts, shocks, disruptive events, field configuring events, and legitimising events. First, triggers themselves generally drive re-structuring within a field, thus driving changes at both an organisational and organisational field level. Second, as has been discussed in detail in the conclusions to research question 2, each of these types of triggers drive change at a field level in one manner or another. The second conclusion to research question 4 is, hence, that change within an organisational field can occur as a consequence of 6 different kinds of triggers.

The discussion and conclusions to research question 3 highlighted the role that individuals can play in the changing of an organisational field. It underscored the role that individuals can play in the initial development of a field and the handling of crises, the manner with which individuals can drive re-legitimising events to overcome external criticisms. It also drew attention to the way that individuals can manage determinist change, that is, change imposed upon it as a result of institutional forces. The third conclusion to this research question is, therefore, that individuals are able, to a degree, to orchestrate change within a field, in the case that they have the support of field members, a level of legitimacy and an elite status.
As was emphasised in the second theoretical chapter and analysis II, institutional forces are important drivers for change within an organisational field. Accordingly, these will now be discussed, in the order that they occurred, with reference to the way that they drive change within an organisational field.

These concepts include isomorphism, legitimacy and de/reinstitutionalism. Firstly, the concept of isomorphism. An example of coercive isomorphism could be argued to have occurred in a novel manner with trigger 11, a shock (legislation for biofuel sales). This is an example, once again, of how an external force, namely a governmental ruling, changed the field (by increasing the amount of filling stations selling ethanol and therefore promoting the field). Interesting, this is also another example of how the institutional forces were manipulated by the institutional entrepreneurs for the benefit of the field. The reason for this is that BAFF, one of the elite organisations, were one of the key organisations responsible for the lobbying of this change in the first place.

The issue of legitimacy is a key concept within the institutional literature. Previously however, as has been underscored, the concept has been largely used to explain the phenomena of isomorphism. It is my fourth conclusion that the concept is far more important than that. For a start, it can be a very useful tool for field formation, since on attainment it can facilitate growth and development, as has been demonstrated. In fact, striving for it can be the first step towards a field’s formation in the form of a legitimising event, as already argued.

Many of the changes that occurred within the field’s formation and development did so, either as a consequence of the attainment of legitimacy, in the form of a landmark, or in a quest for legitimacy, such as in the legitimising and re-legitimising events. In the case of the former, the legitimacy that had been afforded the field was exploited with development and growth. In the case of the latter, changes were made to retain legitimacy following a disruptive event that threatened to de-legitimise and deinstitutionalise the field. Legitimacy was found to be a key concept in the reinstitutionalisation process, and this research therefore supports the work of Oliver (1992) in that sense.

In addition the drive for legitimacy can lead to miscommunication; one could argue deception, between institutional entrepreneurs and other field members. This was alleged to have occurred following the establishment of BFR AB (trigger 10). It is my assertion that whilst progress was being made in the development of the Biofuel Region, the progress had so far only
succeeding in creating a market for 1st generation ethanol, and such was the interest in the agenda for the ultimate development of 2nd generation ethanol, within the Örnsköldsvik area, that attention had to be paid towards this focus as well.

Deinstitutionalisation and reinstitutionalisation were important drivers for change within the field. Deinstitutionalisation in this case was driven by disruptive events in the form of adverse media attention, as well as indirectly, one might argue, by a jolt (trigger 14 – oil shock). The reinstitutionalisation processes took the form of re legitimising events, which were planned and orchestrated by the institutional entrepreneurs. The fifth, and final, conclusion here is that it is possible that reinstitutionalisation can occur as a consequence of a single re legitimising event.

8.2 Managerial Implications

In line with the resonance and significant contribution criteria laid down by Tracy (2010) as criteria for excellent qualitative research, I shall attempt to highlight the managerial implications of my study. This thesis has been principally theoretically focussed. However, there are some managerial implications that can be gleaned from the work.

Looking at the narrative in a chronological order, I would say that the first issue is that of legitimacy. Clearly, the attainment of legitimacy within the field was of paramount importance, because having the acceptance of stakeholders, investors and regulators at this early stage was an essential facet for future growth and development. Establishing it from the very beginning, whilst probably essential in this case, seems to be an excellent way of guaranteeing some kind of future progress.

A significant issue, with regard to legitimacy, is the issue of its impact upon the attitudes of the key individuals within the field. It is my averment that the early success of the field led to a degree of complacency that the legitimacy that had been attained could not be eroded, and that accordingly alternative opinions were not as readily discussed and considered as perhaps they might have been. In addition, sufficient safeguards might have been made to deal with a downturn in the market or in sales. Moreover, in order to win support certain development opportunities were implied, allegedly, that could not be substantiated in the long term. An important managerial implication here is, therefore, that when the field is succeeding and progressing in its objective(s) one should be aware that externalities can easily drive change and the all-important approval (legitimacy) can be compromised. By not listening to alternative opinions, from sceptics and
politically motivated opponents, one avoids availing oneself of important potential sources of this loss of approval. Furthermore, fields are dynamic, that is, they are constantly changing, especially in the case of fields which challenge well established institutions such as the oil industry. Thus, one should not assume that they are stable and, accordingly, one should be wary of becoming complacent as a consequence of popularity and growth.

That said strong and devoted individuals can be a real asset to the development of a field such as this. The fact is that, given the novel nature of the field: its ambition to develop a region, provide an eco-efficient solution for transportation and oil independence, it required someone who could sell the idea. This means that the idea had to be well communicated (through the attainment of approval) to the government, investors, bus companies, car manufacturers, oil companies, different organisations (customers) and the general public. Therefore the fact that the field in question succeeded in the manner that it did is a great credit to those involved.

I would infer that some of the reasons for this achievement involve the diplomatic competencies of those involved, who were able to negotiate and drive development and change via commitments from organisations whose facilities, expertise or resources were required. Further, the whole development process was orchestrated and carefully managed in an industrious manner, being planned meticulously. Also, the issue of access to resources was a crucial one and facilitated many of the important steps in development, as well as the resolution of problems associated with external critique. The managerial implication is therefore that individual involvement in the form of leadership and careful orchestration of the process of development and change are important elements of a successful field.

Perhaps the most remarkable and important reason for the success of the field, in the early days, was what has been termed an infusion with value. The fact is that the field members, very early on, became committed to the idea of either regional development or sustainable development, or both. This meant that their support could be relied upon for the resolution of problems, or for expansion ideas. The managerial implication is that it is important that the endeavour behind the field is communicated to the organisations involved in a manner which encourages them to be involved and can inspire them.

8.3 Limitations

As has been emphasised, within the methodological chapter, one of the limitations of this thesis was the fact that only Lindstedt, one of the two key
individuals involved in the field’s development, was interviewed. This is the case despite research question 3 (what effect can individuals have upon the formation and change within an organisational field?) and the conclusion that two individuals in particular, namely Carstedt and Lindstedt were absolutely crucial to the formation and change within the field. Despite the fact that Lindstedt was interviewed three times, this does not compensate for the fact that Carstedt could not be interviewed, and that the only information that has been attained from his perspective was from written secondary accounts, and attained in interviews from colleagues and other field member employees. Certainly, to be able to have made more conclusive statements about individual agency and its role in the development and change within an organisational field, Carstedt should have been interviewed personally.

Another limitation of the study is an empirical one, based upon the collection of secondary information. The secondary information was collected to highlight certain points made by the respondents during the interviews, and largely supports the statements that they made. Whilst efforts were made to offer other perspectives, the information presented in the thesis was used to exemplify that which was available. In other words, only a small proportion of the press articles written within the areas were used here. A comprehensive review of the material was not made and consequently one could argue that there were many more voices to be heard in the debates.

A final noteworthy limitation in the conclusion was that there was no re-legitimising event following the final disruptive event. This delegitimisation was managed, one could argue, by the restructuring of SEKAB. Additionally it marked the end of the empirical data collection period and therefore one awaits future developments.

### 8.4 Future Research

In line with the limitations of the study, the first avenue for future research is the examination of individual agency within a field, following in-depth interviews with all of the agents involved. Within this thesis there were four research questions; an interesting future research subject would further explore the individual issue, focussing exclusively upon that. An interesting avenue to explore in particular is the manner with which elite individuals are able to manage change, and in particular the change that is partly determinist and partly voluntarist. For example in times of re-legitimation when institutional forces drive change which is at the same time being orchestrated by the individuals. Interesting too would be to include the
concept of power, and the manner with which it can contribute to an individual’s capacity to drive development and change within a field.

Furthermore, in order to get a more accurate overview of field development one might undertake a longitudinal study. Here one could look at a field's development over a period of time, instead of using interviews and archival data. This would allow the researcher to establish a pattern and even project future behaviour.

Another fruitful avenue for future research into field formation and development might be based, empirically, in another context, perhaps in England or the United States. This would be interesting because of the different culture, and accordingly the different setting and norms that exist there. Additionally, and in my opinion more interestingly, one could explore the development of a field that is not linked to an area which inspires such emotion as sustainable development. As was emphasised here, the infusion with values, motivated by the eco-efficiency of the fuel and regional development were important to the formation of the field examined within this thesis. However, it would be interesting to explore a field that did not evoke such a response, to observe what kind of differences it brings with it.

As a researcher, having begun this thesis work with an interest in sustainability, I would like to advance the framework that I have developed in order to contribute to literature concerned with sustainable development. Be it social sustainability, or environmental sustainability. This thesis has explored an empirical field that, undoubtedly, had an agenda linked inextricably to eco-efficiency and regional development, but neither of these can be classified as sustainable per se, and I would like to contribute in a fashion beyond merely theoretical and managerial implications to something that involves the welfare of people.
References


Africascan (2008) – “Swe ethanol co sets sights on Africa.”
http://www.africascan.com/node/3057

http://www.aftonbladet.se/bil/collin/article11712451.ab

http://www.aftonbladet.se/bil/collin/article12238088.ab

Aftonbladet (2011) – “Etanolfiaskot skylls på mig” Robert Collin
http://www.aftonbladet.se/bil/collin/article12761908.ab

http://m.aftonbladetcdn.se/bil/collin/article15001981.ab;jsessionid=3A6B3FD41450F35001981.ab;jsessionid=3A6B3FD41450F35001981.ab


BFR AB (2008) – “Vad är Biofuel transport system”? (BioFuel Region)


BEST (2009) – “Incentives” (Bioethanol for Sustainable transport)

BAFF (2009) – “Biofuels initiatives deserve more serious consideration”
from the Guardian of Tanzania (Arvidson, A.)
http://www.baff.info/english/rapporter/Biofuel%20article_the%20Guardian,%20Tuesday%2024%20March_low%2ores.pdf (accessed 12/12/12)

BAFF (2011) – Documents

Qualitative Research: Embracing the Diversity of Qualitative Methods.”

from observations of CT scanners and the social order of radiology

Studying the Links between Action and Institution.” Organisation Studies
vol. 18, no. 1, pp. 93-117.

Battilana, J. (2006) – “Agency and institutions: The enabling role of
individuals’ social position.” Organization, vol. 13, no. 5, pp. 653–676.

Role of Strategic Choice and Institutionalized Practices in Organizations.”


References


References


Regeringskansliet (2010) - “Sverige och Brasilien tecknar idag avtal om bioenergi och biodrivmedel”  
http://www.regeringen.se/sb/d/9435/a/87678


SEKAB (2008) – “The world’s first sustainable ethanol comes to Sweden”  
http://www.sekab.com/media?nd_ukey=c558a509958ac3b6122d3c84480e11ae&nd_view=view_pressrelease&nd_id=721040 (Accessed 12/3/12)


SEKAB (2009) – “Sustainability Award for SEKAB.”  
http://www.sekab.com/media?nd_ukey=c558a509958ac3b6122d3c84480e11ae&nd_view=view_pressrelease&nd_id=721037 (Accessed 12/12/12).
SEKAB (2009) – “SEKAB: Focus on Core Business.”
http://feed.ne.cision.com/wpyfs/00/00/00/00/00/0E/56/44/release.html

SEKAB (2011) – “Verified sustainable ethanol – for sustainability throughout the production process.”

SEKAB (2012) – Om SEKAB i media
http://www.sekab.se/media/om-sekab-i-media/ (accessed 4/3/12)

SEKAB (2012) – “Brazilian Sugarcane Ethanol – Get the facts right and kill the myths.”

SEKAB (2012) – Media
http://www.sekab.com/media?nd_ukey=c558a509958ac3b6122d3c84480e1fae&nd_view=list_pressreleases (Accessed 12/12/12)

SEKAB (2012) – “WORLD LEADING IN THE PRODUCTION OF ETHANOL FROM CELLULOSE.”
http://www.sekab.com/biorefinery/demo-plant (Accessed 12/12/12)


References


Svenska Dagbladet (2007) - “Det smutsiga miljöbränslet” Sara Lomberg
http://www.svd.se/naringsliv/nyheter/sverige/det-smutsiga-miljobranslet_7118777.svd

Svenska Dagbladet (2008) – “Sekab satsar allt på att spån ska ge flis” Jonas Fröberg

http://www.svd.se/naringsliv/etanolbolaget-sekab-i-akut-kris_1709415.svd


Vägverket (2009) – “Om vägverket”


Wichman, H. (1943) – “Örnsköldsviks historia 1842-1942”. Örnsköldsvik; Ågrens Bok-tryckeri AB.


## Appendix 1 - Tables of Interviews (Legs 1 & 2)

<table>
<thead>
<tr>
<th>ORGANISATION</th>
<th>RESPONDENT (DATE OF INTERVIEW)</th>
<th>ROLE</th>
<th>GENERATING TECHNIQUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAFF</td>
<td>Jan Lindstedt (5th April 2007)</td>
<td>Managing Director</td>
<td>Semi-structured interview</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2hrs)</td>
</tr>
<tr>
<td>BFR AB</td>
<td>Eva Fridman (31st August 2007) Potential</td>
<td>Managing Director</td>
<td>Semi-structured interviews</td>
</tr>
<tr>
<td></td>
<td>(8th February 2008)</td>
<td></td>
<td>(1:30hr)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2 hrs)</td>
</tr>
<tr>
<td>Örnsköldsvik Kommun</td>
<td>Jan Nyman (1st October 2007)</td>
<td>Head of Trade and Industry</td>
<td>Semi-structured interview (2hrs)</td>
</tr>
<tr>
<td>SEKAB/BAFF</td>
<td>Annika Carstedt – Parmlid (2nd October 2007)</td>
<td>Head of Communications</td>
<td>Semi-structured interview (1hr)</td>
</tr>
<tr>
<td>Umeå Kommun</td>
<td>Royne Söderstöm (8th October 2007)</td>
<td>Environmental Town Planner</td>
<td>Semi-structured interview (1hr)</td>
</tr>
<tr>
<td>Umeå Energi</td>
<td>Mikael Berglund (15th October 2007)</td>
<td>Managing Director</td>
<td>Semi-structured interview (1hr)</td>
</tr>
<tr>
<td>Framtidsbränslen</td>
<td>Bengt Aldén (23rd October 2007)</td>
<td>Managing Director</td>
<td>Semi-structured interview (1:30 mins)</td>
</tr>
<tr>
<td>Chamber of Commerce/BFR AB</td>
<td>Dick Janson (23rd October 2007)</td>
<td>Managing Director</td>
<td>Semi-structured interview (1hr)</td>
</tr>
<tr>
<td>SEKAB/BAFF/BFR AB</td>
<td>Lena Nordgren (19th November 2007)</td>
<td>Chairwoman of Training and</td>
<td>Semi-structured interview (2hrs)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Education/ Industrial</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development</td>
<td></td>
</tr>
<tr>
<td>OKQ8</td>
<td>Ulf Tjernström (31st January 2008)</td>
<td>Managing Director of local</td>
<td>Semi-structured interview (1hr)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cooperative</td>
<td></td>
</tr>
<tr>
<td>ORGANISATION</td>
<td>RESPONDENT (DATE OF INTERVIEW)</td>
<td>ROLE</td>
<td>GENERATING TECHNIQUES</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------</td>
<td>------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Eco-traffic, (formerly Framtidsbränslen)</td>
<td>Bengt Aldén (8th February 2011)</td>
<td>Consultant (formerly CEO of Framtidsbränslen)</td>
<td>Semi-structured interview (1hr)</td>
</tr>
<tr>
<td>Chamber of Commerce/ BFR AB</td>
<td>Dick Janson (8th February 2011)</td>
<td>Managing Director</td>
<td>Semi-structured interview (1hr)</td>
</tr>
<tr>
<td>Örnsköldsvik Kommun</td>
<td>Jan Nyman (9th March 2010) (22nd November 2010)</td>
<td>Head of Trade and Industry</td>
<td>Semi-structured interview (0:30hr) (1hr)</td>
</tr>
<tr>
<td>BAFF</td>
<td>Lena Nordgren (9th March 2010)</td>
<td>Chairwoman of Industrial Development</td>
<td>Semi-structured interview (1hr)</td>
</tr>
<tr>
<td>BFR AB</td>
<td>Mikael Brändström (22nd March 2010)</td>
<td>Managing Director</td>
<td>Semi-structured interview (1:08hr)</td>
</tr>
<tr>
<td>BFR AB</td>
<td>Eva Fridman (22nd March 2010)</td>
<td>Project Manager</td>
<td>Semi-structured interview (1:20hr)</td>
</tr>
<tr>
<td>Processum</td>
<td>Clas Engström (25th August 2010)</td>
<td>Managing Director</td>
<td>Semi-structured interview (1:20hr)</td>
</tr>
<tr>
<td>METSO</td>
<td>Peter Bjöklund (30th September 2010)</td>
<td>Technology Manager</td>
<td>Semi-structured interview (1:52hr)</td>
</tr>
<tr>
<td>Chemrec AB</td>
<td>Mats Lindblom (27th September 2010) (28th September 2010)</td>
<td>Process Manager</td>
<td>Semi-structured interview (1:25hr) (0:42hr)</td>
</tr>
<tr>
<td>Domsjö Fabriken</td>
<td>Sten Hägström (15th November 2010)</td>
<td>Project Manager</td>
<td>Semi-structured interview (0:55hr)</td>
</tr>
<tr>
<td>SLU</td>
<td>Bengt Kriström (8th December 2010)</td>
<td>Professor</td>
<td>Semi-structured interview (1:20hr)</td>
</tr>
<tr>
<td>OKQ8</td>
<td>Ulf Tjernström (14th January 2011)</td>
<td>Managing Director</td>
<td>Semi-structured interview (0:39hr)</td>
</tr>
<tr>
<td>SEKAB/EcoDevelopment</td>
<td>Jan Lindstedt (25th March 2011) (20th May 2011)</td>
<td>Senior Manager</td>
<td>Semi-structured interview (1:15hr) (1:30hr)</td>
</tr>
<tr>
<td>SEKAB</td>
<td>Anders Fredriksson (4th April 2011)</td>
<td>Managing Director</td>
<td>Semi-structured interview (2:40hrs)</td>
</tr>
</tbody>
</table>
Appendix 2 - Interview Guides (Legs 1 & 2)

Interview guide for the 1st Leg of Interviews

Within my study I am aiming to paint a picture, retrospectively, of the development of the Biofuel Region. I am interested in how the Biofuel Region as a biofuel transport system has developed. Which firms exist within it, how they have worked together, how they have been affected by one another and how governmental legislation and so forth affects the progress and the processes that have occurred towards the development of the region?

Basically I am trying to comprehend which firms have integrated with which other firms and what challenges they have faced and how they have dealt with these challenges. I am also keen to know what has gone on in your organisation and how you have contributed to the development process.

• From your perspective, what are the milestones in the development process?

• Who were the important actors, organisations and institutions within this process?

• What were the key problems along the way and how were they overcome?

• Which organisations have you cooperated with?

• What problems has your organisation encountered along the way? How were these problems overcome?
Interview guide for the 2nd Leg of Interviews

Having documented the development of the Biofuel Region for my licentiate thesis, the object of my PhD thesis is to examine the manner with which the Biofuel Region developed and changed between 1986 and the present day. I am particularly interested in the drivers for change within the Biofuel Region, which are external and internal issues that drove change within the Region as well as the individual contributions to that development and change, in particular over the last four years.

- Please could you tell me about the role that your organisation played in the development of the Biofuel Region, and how it has changed over the years, and the manner with which those changes have been driven, as well as the impact that those changes have had?
- Which organisations are currently driving change?
- What challenges are you currently facing?
- How did you deal with them?
- How did they affect the Biofuel Region?
- Members of biofuel region, changes?
- Leaders of change?
- Political issues?
Appendix 3 - Verification Process (SEKAB, 2011)

The setup will be similar to a quality-management system. Monitoring and verification will be carried out by an independent third party. In case the third party finds non-compliance, procedures are in place to ensure that this non-compliance is corrected and that it never reoccurs.

Three levels of non-compliance:
- Observation
  - Shall be corrected before next audit
- Minor non-compliance
  - Shall be corrected within 3 months
- Major non-compliance
  - A plan for mitigation shall be submitted within 14 days
  - Always followed by an extra audit

- Full traceability of all physical flows

Requirements for sustainable ethanol

What we are doing now has not been done before. It should therefore be regarded as an initial step on which to build. Further criteria can be added later, the scope can be broadened and the requirements of the criteria can be increased.

At least 85 % reduction in fossil carbon dioxide compared with petrol, from a well-to-wheel perspective
- Field-to-wheel perspective
  - Cultivation, production, transportation
  - Total CO2 emissions from Brazil to Sweden
- Calculations according to RTFO principles
- Fossil input: fertilizers, pesticides, fossil energy
- Renewable output: ethanol, energy (steam, electricity)

At least 30 % mechanisation of the harvest now, plus a planned increase in the degree of mechanisation to 100 %
- Benefits of mechanized harvesting:
  - Lower local particle emissions
  - Better work environment
  - Improved reduction of CO2
- Disadvantages:
  - Risk of unemployment
30% mechanized harvest first year

Implementation plan for 100% mechanization

Zero tolerance for felling of rainforest

- No deforestation of rainforest is permitted
- Deforestation of other forests according to national laws
  - Permits required
  - Brazilian law: cut down 1 tree, replant 25 new
  - To preserve biodiversity

To preserve biodiversity

- Land use change

Zero tolerance for child labour

- Child labour below 16 years of age
  - Defined according to Brazilian law
- Apprentice from 14 years of age
- In compliance with article 1 and 2 in ILO convention 138

Rights and safety measures for all employees in accordance with UN guidelines

- Zero tolerance to forced labour ("slave labour")
- Workers right to organize in unions etc.
- All employees must be registered
- Employees must be paid at least minimum wages
- Health & safety policies shall be in place and followed

Ecological consideration in accordance with UNICAs environmental initiative

- Protection of forests close to water areas
- Protection of water resources
- Program for reuse of water in industrial processes and for conservation of water quality
- Implementation plan for soil conservation
- Plan for reduction of environmental impacts from production

Continuous monitoring that the criteria are being met

- Monitoring and verification of the criteria’s shall be done through audits by an independent third party

Non compliance

- Observation
  - Shall be corrected before next audit
- Minor Non Compliance
  - Shall be corrected within 3 months
- Major Non Compliance
  - A plan for mitigation shall be submitted within 14 days
  - Always followed by an extra audit

Full traceability of all physical flows
I skrifserien Studier i företagsekonomi Serie B utges löpande rapporter från den företagsekonomiska forskningsgruppens verksamhet vid Umeå universitet.

Hittills föreligger följande skrifter:

1. Bengt Johannisson och Christian Lindström
   Företagsstorlek och forskningsaktivitet.
   Umeå 1970.

2. Leif Dahlberg och Gustaf Söderström

3. Christian Lindström och Lars Enslöf

4. Bengt-Olov Byström, Bengt Johannisson och Christian Lindström

5. Bengt Johannisson
   Företagens anpassningsprocesser - en systemanalys med tillämpning på mindre företag.
   Umeå 1971.

6. Dezso Horváth och Dick Ramström
   Organisationsuppdeling i samband med lokaliseringssöverväganden.
   En teoretisk föreläsningsram.
   Umeå 1971.

7. Lennart Orkan
   Regionala variationer i företagens personalomsättning.
   Umeå 1972.

8. Per G. Hånell
   Inkörningskostnader i mindre och medelstora företag.
   Umeå 1972.

9. Leif Dahlberg
   Konsumentens val av inköpsställe.
   Umeå 1972.

10. Göran Carstedt och Birgitta Isaksson Peréz
    Företagsbestånd och företagsutveckling.
    Umeå 1972.

11. Carl Fredriksson och Leif Lindmark
    Underleverantörssystem i Skellefteå A-region - En Input-Outputstudie.
    Umeå 1972.

12. Dezso Horváth
    Kriterier och principer för företagsorganisation.
    Umeå 1972.

13. Lars Enslöf
    Kontaktmöjligheter och kontaktbeteende. En studie av kontakternas regionala variationer.

14. Lars-Peter Holmlund
    Hur man tillämpar teorier om planering.

15. Bengt-Olov Byström och Mats Glader
    Industriell service - Rapport från studier om serviceutnyttjande i mindre och medelstora företag.

16. Göran Carstedt och Birgitta Isaksson Peréz
    Företag i strukturomvaldningen, del I-V.
    Umeå 1974.
17. Lennart Orkan
Personalomsättning - orsaker, konsekvenser och regional struktur.
Umeå 1974.

18. Bo Lemar och Jan-Evert Nilsson
Långsiktig planering - En begrepps- och innehållsanaly.

19. Sixten Andersson
Produktutvecklingens möjligheter och begränsningar – En studie med inriktning på mindre och medelstora företag.
Umeå 1974.

20. Dezső Horváth
Situationpassade organisationer - teori och tillämpning.
Umeå 1976.

21. Claes-Göran Larsson
Datorbaserad kassaplanering.
Umeå 1976.

22. Carl Fredriksson och Leif Lindmark
Nationella och lokala produktionssystem. En studie av svenska näringsliv.
Umeå 1976.

23. Carin Holmquist
Styrning av organisationer - ett systemperspektiv tillämpat på statliga företag.
Umeå 1980.

24. Runo Axelsson och Lennart Rosenberg
Applications of organization theory. On problems of the Swedish system of higher education.
Umeå 1976.

25. Elisabeth Sundin
Företag i perifera regioner. Fallstudier av företagartradition, företagsmiljö och företags framväxt i Norrbottens inland.
Umeå 1980.

26. Per Månsson och Kaj Skölöberg
Symboliska organisationsmönster - Sju typer av planeringskultur under osäkerhet och stress i ett metamorfosperspektiv.
Umeå 1983.

27. Christer Strandberg
Glesbygdshäkiga. En studie av tillkomst, köptrohet och socialt samspel.
Umeå 1984.

28. Håkan Bohlman och Håkan Boter
Planering i mindre och medelstora företag. Den strategiska planeringens utmaningar och faktiska villkor.
Umeå 1984.

29. Christer Peterson
Familjeföretag i omvandling. En studie av fusionsförlopp och utvecklingsmönster.
Umeå 1985.

30. Maj-Britt Johansson Lindfors
Organisationers ideologiska ansk recruiter. Om grundläggande föreställningar i mindre företag.
Umeå 1989.

31. Anders Söderholm
Organiseringslogik. En studie av kommunal näringslivspolitik.

32. Kerstin Nilsson och Per Nilsson
32. Maria Bengtsson
Småföretag i flerpartssamverkan. En studie av aktörer, byggestenar och fognmassa vid nätverksbygande.

33. Maria Bengtsson
Konkurrensklimat och dynamik. En studie av interaction mellan konkurrenter.
Umeå 1994.

34. Nils Wåhlin
Näringslivsledares arbete i nätverk.
Identitetsskapandets dynamik.
Umeå 1994.

35. Tomas Müllern och Katarina Östergren
Lärandekulturer. En studie av organisatoriskt lärande under olika institutionella betingelser.
Umeå 1995.

36. Monica Lindgren
Möjligheter till kompetensutveckling. Ett individperspektiv på relationen människan-organisation.
Umeå 1996.

37. Ulrica Nylén
Gott och ont inom affärslivet. Utveckling av ett etiskt perspektiv på företags relationer med aktörer.
Umeå 1996.

38. Jan-Erik Jaensson
Marknadsorientering i tjänsteföretag. En studie av försäkringsbolag.
Umeå 1997.

39. Sven Junghagen
Strategiska förhållningssätt till informationsteknik i små företag.
Umeå 1998.

40. Tomas Blomquist och Johann Packendorff
Ekonominisk styrning för förändring: En studie av ekonomiska styrinitiativ i hälso- och sjukvården.
Umeå 1998.

41. Agneta Marell Molander
Umeå 1998.

42. Karl Bonnedahl
En företagsstrategisk analys av ekonomisk integration. Konsekvenser av Europas inre marknad för svenska mindre tillverkande företag.
Umeå 1999.

43. Jan Bodin
Perpetual Product Development. A study of small technology-driven firms.
Umeå 2000.

44. Henrik Linderoth
Från Vision till Integration. Infusion av telemedicin, en översättningsprocess.
Umeå 2000.

45. Gert-Olof Boström
CAD Adoption in the Swedish Architectural Industry. IT and the Professional Service Sector.

46. Peter Hultén
Managing a Cross-Institutional Setting: A Case Study of a Western Firm’s Subsidiary in the Ukraine.
Umeå 2002.

47. Johan Sandström
Organizational Approaches to Greening: Technocentrism and Beyond. Umeå 2002.
48. Elisabet C. Ljunggren

49. Olof Wahlberg
A Paradigm Questioned. A study of how the cultural relativity of modern management knowledge confines its transferability to non-industrialised Third World countries. Umeå 2002.

50. Henrik Nilsson

51. Lars Lindbergh

52. Jessica Eriksson

53. Simone Wenisch

54. Tommy Jensen

55. Åke Gabrielsson och Margareta Paulsson

56. Rickard Olsson

57. Håkan Andersson

58. Sofia Isberg

59. Anders Isaksson

60. Patrik Nilsson

61. Lars-Anders Byberg

62. Peter Zackariasson
63. Andreas Nilsson
Projektledning i praktiken. Observationer av arbete i korta projekt.
Umeå 2008.

64. Tobias Svanström

65. Kittipong Sophonthummapharn
A Comprehensive Framework for the Adoption of Techno-Relationship Innovations: Empirical Evidence from eCRM in Manufacturing SMEs.
Umeå 2008.

66. Jens Graff
Umeå 2008.

67. Jaana Kurvinen
Imitation och omtolkning – entreprenörens identifieringsprocesser ur ett genusperspektiv.
Umeå 2009.

68. Markus Hälgren
Avvikelsens mekanismer: Observationer av projekt i praktiken.
Umeå 2009.

69. Lars Erik Lauritz
Spirande polisidentiteter, en studie av polisstudenters och nya polisers professionella identitet.
Umeå 2009.

70. Pontus Bergh
Learning Among Entrepreneurs in Formal Networks: Outcomes, Processes and Beyond.
Umeå 2009.

71. Johan Jansson
Car(ing) for our environment? Consumer eco-innovation adoption and curtailment behaviors: The case of the alternative fuel vehicle.
Umeå 2009.

72. Thommie Burström
Organizing boundaries in early phases of product development. The case of an interorganizational vehicle platform project setting.
Umeå 2010.

73. Jonas Nilsson
Umeå 2010.

74. Malin H. Näsholm
Global careerists’ identity construction. A narrative study of repeat expatriates and international itinerants.
Umeå 2011.

75. Erik Lindberg
Umeå 2011.

76. Helena Lindahl
Sociala identiteter i seriösa fritidsaktiviteter - om samspelen mellan seriösa fritidsaktiviteter, platser, sociala världar och konsumtionsföremål i downhillcykling.
Umeå 2011.

77. Mattias Jacobsson
Samordningens dynamik.
Umeå 2011.
78. Vladimir Vanyushyn
Innovative Behavior of Small Firms: Essays on Small Firms’ Internationalization and Use of Online Channels.
Umeå 2011.

79. Erika Knutsson
Bundling for consumers? Understanding complementarity and its effect on consumers’ preferences and satisfaction.
Umeå 2011.

80. Thomas Biedenbach
Capabilities for frequent innovation: Managing the early project phases in the pharmaceutical R&D process
Umeå 2011.

81. Marlene Johansson
The Balancing Act - Cooperating with Competitors.
Umeå 2012.

82. Galina Biedenbach
Umeå 2012.

83. Therese Hedlund
Tourists’ vacation choice structure: Influence of values and implications for green tourism.
Umeå 2013.

84. Christopher Nicol
Change in the Cage – Exploring an Organisational Field: Sweden’s Biofuel Region
Umeå 2013.