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Enacting Business Models: An Ethnographic Study of an Emerging Business Model Innovation within the Frame of a Manufacturing Company

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ENACTING BUSINESS MODELS
AN ETHNOGRAPHIC STUDY OF AN EMERGING BUSINESS MODEL INNOVATION WITHIN THE FRAME OF A MANUFACTURING COMPANY

PhD Series 49-2016

Adela Michea

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**AN ETHNOGRAPHIC STUDY OF AN
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Doctoral School of Business and Management

PhD Series 49-2016

CBS  **COPENHAGEN BUSINESS SCHOOL**
HANDELSHØJSKOLEN

Enacting Business Models

An Ethnographic Study of an Emerging Business Model Innovation within the Frame of a Manufacturing Company

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For Anastasia,

The truth is, most of us discover where we are heading when we arrive.

(Bill Watterson)

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It has been an amazing and rich experience and, without a doubt, it has felt like being on a roller coaster. Going from hesitations and dilemmas to Eureka moments, and dilemmas again, until one day, when the puzzle came together (at least for that moment, as things can always be discussed and improved). I was very lucky to have people around me who gave me all their support along this intense journey and I would like to show my deep appreciation to all of them.

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Abstract

This is an ethnographic study of business model innovation in an established manufacturing company. The motivation of the thesis is to propose a sensemaking (Weick, 1995), with focus on enactment (Weick, 1979), analysis of a business model innovation process, stepping outside the usual perspectives employed in analysing such a phenomenon, namely activity system, dynamic capability and transaction costs, discovery driven or cognitive perspective.

The research question guiding the thesis is:

How do established companies enact new business models?

The innovation of business models in established companies is an intricate process, and a mountain to climb in the eyes of top management. Often, in the choice between innovation and control the latter wins. Studies have shown that technologies and processes, which have the potential to challenge the exiting model, are being filtered out. In here, the dominant logic, and so-called managerial inertia, is defining the selection criteria. However, in face of perceived serious exogenous factors, such as financial crisis or losing significant market shares, companies are left with nothing else than the choice of innovating their business model.

The question then arises: why do managers leave such an important decision to the last minute? While Clayton Christensen (2003) offers a resource-based answer, arguing that new models are “unattractive” since they would require a significant effort on building up new resources for an unpredictable profit, Chesbrough and Rosebloom (2002) explain that it is a sensemaking matter. Managers act on contextual rationality and they often struggle in overcoming obstruction and confusion.

The research conducted under a discovery driven and cognitive perspective is in consensus with Chesbrough and Rosebloom (2002) argument, and state the need of sensemaking studies for unfolding the innovation processes of a business model. Formulating one possible answer to this need is the aim of my thesis.

By drawing on enactment theory (Weick, 1979), which is the core of sensemaking, it gives the opportunity to study the processes of emergence of a new business model when this is not triggered by exogenous factors, but by internal sensemaking. Enactment assumes organizations to be intrusive and active, to enact their own environment, away from being reactive with the sole purpose of responding to exogenous stimuli. Furthermore, whilst the business model is an outcome, it is not a fixed one; it is only “*a moment in the process*” (Weick, 1995: 33), as sensemaking is an on-going process.

My findings show that the difficulty of innovating business models comes from the need of overcoming an heterogeneity of interruptions scattered unevenly across the elements of the model; while dominant logic is only one of them. Underestimation of the product’s potential on the market, quality versus cost dilemma, divergences between paradigms, a lack of knowledge, and a lack of trust between co-development partners, are further interruptions emerged in this study.

These interruptions are being dealt by a team of people, external partners and internal from different departments, who are drawing on different vocabularies and believes. Thus, there is a need of reaching an intersubjectivity level, where compromise is possible, in order to allow innovation to happen. Still, in the urge of reaching moments of stability and creating control too fast, more interruptions emerge.

In these conditions, my study illustrates that the enactment of a business model is not a liner process, as shown by the activity system perspective, nor it is strictly dependent on the internal resources, but rather an emerging one, a collective effort of reaching temporary intersubjectivity that would allow innovation to continue, against ideology, need of control, and divergences between paradigms. It is based on continuous action that allows organization to move further, and never stand still. Thus, trial and error, experimentation, benchmarking for formulating reference points, labelling, co-creation and co-development, permitted the organization I studied

to enact. Positive market feedback, possibility of reducing costs productions, and a visionary leadership, were the cues that advised against the ideology, allowing the emergence of a new business model.

Therefore, business models are subjective interpretative manners of how managers choose which interruptions to focus on and their processes of restoration, influenced by the vocabularies they operate with.

Abstract in Danish

Resume

Formålet med denne afhandling er at forstå, hvordan en etableret virksomhed udvikler en ny forretningsmodel. Afhandlingen bygger på et etnografisk studie af, hvordan processerne foregår ved at fokusere på enactment (Weick, 1979). Derved adskiller analysen sig fra de traditionelle perspektiver på dette fænomen, der normalt analyserer aktivitet system, dynamiske kapabiliteter, transaktionsomkostninger, discovery driven og kognitive perspektiver.

Afhandlingen forfølger dette spørgsmål:

Hvordan enacter etablerede virksomheder nye forretningsmodeller?

Innovationen af forretningsmodeller i etablerede virksomheder er en enactment proces og topledelsen anser det for at være et bjerg, der skal besejres. Når valget står mellem innovation og kontrol, er det ofte kontrollen, der vinder. Studier har vist at teknologier og processer, der har potentiale til at udfordre den eksisterende forretningsmodel, ofte blive filtreret væk. Det bliver hermed den dominerende logik og den såkaldte ledelsesmæssige inertie der får lov til at definere selektionskriterierne. I lyset af eksterne faktorer som finanskrisen og store tab af markedsandele, er virksomheder dog tvunget til at udvikle nye forretningsmodeller.

Man kan undre sig over, hvorfor ledere udskyder en så vigtig beslutning som udvikling af nye forretningsmodeller indtil sidste øjeblik. Clayton Christensen (2003) argumenterer ud fra et ressourcebaseret perspektiv og forklarer at de nye modeller ikke er attraktive, fordi de kræver store investeringer i nye ressourcer, samtidig med at udbyttet af de nye modeller er usikre. Chesbrough og Rosebloom (2002) forklarer at det handler om meningsskabelse. Ledere reagerer ud fra en kontekstafhængig rationalitet og kæmper ofte mod forhindringer og forvirring.

Resultaterne fra discovery driven og kognitive studier er i overensstemmelse med Chesbrough og Rosebloom, når de argumenterer for behovet for studier af meningsskabelsesprocesser for at forstå, hvordan innovationen af nye forretningsmodeller foregår.

Ved at anvende enactment teori (Weick, 1979), der er kernen i meningsskabelse, giver det mulighed for at studere, hvordan nye forretningsmodeller emergerer, når de ikke skabes af eksterne faktorer, men af intern meningsskabelse. Enactment antager at organisationer er aktive i at skabe deres egne omgivelser gennem handlinger, hvilket adskiller sig fra ideen om at organisationer er inaktive og kun reagerer på ydre stimuli. En forretningsmodel anses for at være et resultat, men er ikke en stabil størrelse. Det er kun "Et øjeblik i en proces" (Weick, 1995; 33), fordi meningsskabelse er en kontinuerlig proces.

Mit studie illustrerer at enactment af en forretningsmodel hverken er en lineær proces, som aktivitet system perspektivet foreslår eller kun er afhængig af interne ressourcer. Det er derimod en emergerende proces, der er afhængig af en kollektiv indsats for at opnå midlertidig intersubjektivitet, der gør det muligt for innovationen at forsætte på trods af modstand fra ideologi, behovet for kontrol og uenighed mellem paradigmer. Det er baseret på kontinuerlig handling, der tillader organisationen at udvikle sig. I den organisation, jeg studerede, var det trial and error, benchmarking for formuleringen af referencepunkter, kategorier og samskabelse, der satte organisationen i stand til at enacte.

Studiets resultater viser at det er svært at udvikle nye forretningsmodeller fordi det kræver at man kan overvinde modellens forskelligartede forhindringer, hvor dominerende logik kun er en ud af flere. Studiet viser at undervurdering af produktets markedspotentiale, dilemmaet om pris versus kvalitet, paradigmers forskelligheder, mangel på viden og mangel på tillid mellem udviklerne også er forhindringer for at udvikle en ny forretningsmodel.

Disse forhindringer bliver håndteret af en gruppe af mennesker, eksterne partere og forskellige individer fra forskellige afdelinger. De anvender forskellige ordforråd og trossystemer. Derfor er der behov for at opnå intersubjektiv enighed, fordi det gør det muligt at indgå et kompromis, der muliggør forsat innovation, men denne trang til at hurtigt skabe stabilitet og kontrol får flere forhindringer til at emergere.

Positiv markedsrespons, mulighed for at reducere produktionsomkostningerne og et visionært lederskab var de ledetråde, der advarede mod ideologien og muliggjorde emergensen af en ny forretningsmodel.

Det kan derfor konkluderes at forretningsmodeller fortolkes subjektivt i forhold til, hvilke forhindringer lederne fokuserer på, deres processer for opretholdelse og det ordforråd de anvender.

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Chapter I: Introduction

“The failure of incumbent firms to manage effectively in the face of technological change can be understood as the difficulty these firms have in perceiving and then enacting new business models, when technological change requires it” (Chesbrough and Rosenbloom, 2002:532).

The aim of my thesis is to analyse the enactment process of a business model within an established company through a new theoretical lens, namely sensemaking (Weick, 1995), where the focus is on enactment (Weick, 1979). By conducting an ethnographic study, I want to contribute to the literature of business model innovation (Spieth, Schneckenberg, and Ricard, 2014).

Business models, and business model innovation, are considered “a hot topic in various management fields” (Demil and Lecocq, 2015) but are still underdeveloped and in search of a theoretical foundation (Foss and Saebi, 2015; Wirtz et al., 2015) that would facilitate a greater understanding of the concept. This field is often studied using perspectives such as the activity system perspective (Amit and Zott, 2001, 2012; Zott and Amit, 2008, 2010; Zott, Amit and Massa, 2011), the discovery driven perspective (Mcgrath, 2010), the resource-based and transaction costs view (Da Silva and Trkman, 2014), and the cognitive approach (Martins et al., 2015). As their premises are different, the business model and its innovation process gets defined differently under each perspective. Hence, business models are analysed as being tightly coupled systems, compact units and “real” objects which have a structured innovation process of “concrete choices” (Amit and Zott, 2001; Zott and Amit 2010; Osterwalder et al., 2010, Casadesus –Masanel and Ricard, 2010), but they are also defined as subjects in a continuous development. This latter point of view, founded through the discovery-driven and the cognitive

approach, argues that experimentation is central and managerial cognitive schemata drive the innovation of business models (Martins et al., 2015).

Yet, studies under these perspectives do not reveal the enactment processes hidden in the emergence of a new business model insight an established company and the processes that allow this new model to arise, despite the so-called managerial inertia (Chesbrough and Rosenbloom, 2002).

In 2002, Chesbrough and Rosenboom defined the term ‘business model’ as being a mediation device between technology and economic output, arguing that established companies struggle to develop new business models that challenge their inertia, identifying Xerox as an example. The authors explain that business models are “complex tasks” and one needs to approach them through “sensemaking” (Weick, 1995) since managers act on contextual rationality (Chesbrough and Rosenbloom, 2002). Chesbrough (2010) underlines the importance of leadership, experimentation and effectuation to overcome obstruction and confusion, given a certain “cognitive blindness” (Baden-Fullar and Mangematin, 2013: 423) that impedes business model innovation.

Chesbrough and Rosenbloom (2002)’s argument that business models should be analysed through a sensemaking perspective becomes the point of departure in my study. Moreover, I have chosen to use their business model framework, having focus on value proposition, market, value chain, value network, cost and pricing model, and competitive strategy, for structuring and analysing my empirical data.

Originating in the field of organizational studies, sensemaking describes how people create meaning when an unexpected event interrupts the anticipated flow of ongoing situations. “Sense” refers to *meaning* and “making” refers to the *activity of creating* something (Weick, 1995: 7) and it is guided by two questions, namely: *what is going on here?* / *what is the story?* and *what am I going to do next?* (Weick, 1995; Weick, Sutcliffe and Obstfeld, 2005). Thus, sensemaking aims to understand how people “construct what they construct, why, and with what effects” (Weick, 1995: 4), and it consists of three elements: a frame, a cue and a connection. The connection between frame and cue requires enactment. The core of sensemaking is enactment

(Weick, 1995), and it is the “making” part of the sensemaking. Since we are not passive inhabitants of our environment, we enact, we *real-ize* (Weick, 2001: 187) our environment, which afterwards influences our choices. Thus, enactment “involves acting on a more complete sense made of the interrupted situation, in order to see to what extent it restores the interrupted activity” (Sandberg et al., 2015: 14). Facing uncertainty and unanalysable markets, managers act not only on normative market analyses, forecasting and planning, but regardless of the internal resources or dynamic capabilities existent, they “may leap before they look, perform trial and error to learn what an error is, and discover what is feasible” (Daft and Weick, 1984: 288).

I have analysed the emergence process of a new business model in an incumbent company with enactment theory, having focused on the interruptions as triggers for sensemaking, the actions to restore the interruptions, and the enacted environment (Weick, 1979); model elaborated in chapter three.

Furthermore, Weick (1995: 4) argues that things cannot be understood outside their context, and that a frame of reference will provide a direct interpretation according to a context that determines which cues would be noticed, and which actions taken. The context of this thesis is an incumbent company which has, over the years, developed certain types of “beliefs about cause-effect, preferences for certain outcomes, and expectations of appropriate behaviours” (Weick, 1995: 111) which are localized in the vocabularies of society, namely ideology (Weick, 1995: 111). Apart from ideology, different vocabularies of work, namely paradigms, are often met in companies. Paradigms - which are “set[s] of assumptions, usually implicit, about what sorts of things make up the world, how they act, how they hang together, and how they may be known” (Brown, 1978: 373, in Weick, 1995: 118) are found in companies, where each department has its own paradigm. Weick, (1995: 118) explains that encounters between different paradigms result in conflicts, being a trigger for a sensemaking process.

When analysing sensemaking in organizations, Weick (1995) underlines the process of going from “I”, an individual sensemaking, to “We”, an intersubjective level of reinforcing believes and values, to a generic subjectivity, where systems take place of individuals and focus is on control. Innovation happens at an intersubjective level (Weick, 1995), while managers often opt

for reaching a generic subjective level very fast, hindering innovation. This interplay between innovation and control is present in my study.

The frame of my study is an 80-year-old, well-established Danish company in the insulation industry. It is cost-focused, engineering oriented company, which has developed a new technology with even higher insulation proprieties. The decision to embed this new technology into a solution for the windows industry, a market that they had never served before, was the cue for initiating a sensemaking process. The aim was to offer a solution to the EU2020 demands imposed on the windows industry to create windows with high insulation proprieties. This idea was received with enthusiasm by the group's management and the Woodstock project was born, without any notion of the disruptive effect it would have on the company. It would challenge its production process, usual manner of interacting with customers, mechanisms of entering new markets, pricing practices, and manner of creating value networks.

As different from other studies of business model innovation in incumbent companies, where the objective is to analyse the innovation of the existent business model triggered by external factors, such as financial crisis, e.g. Aspara et al.'s (2013) case study of Nokia, or stagnation over time (Sosna et al, 2010), my study analyses the enactment processes of an innovation which has not been caused by external factors (Martins et al, 2015:100).

For both confidentiality and ethical reasons, as my analysis includes direct quotes from interviews and meetings, the company will be addressed as Pinta Inc., and the name of the project as Woodstock. The name "Pinta" was inspired by Christopher Columbus' fastest ship used in his transatlantic exploration. I find this name a good metaphor for depicting the exploration processes Woodstock's team has undergone. "Woodstock" was the actual name the project had internally, during development.

1.1 Contribution

Demil and Lecocq (2015:32) argue that empirical research which focuses on “the micro-processes leading to a business model’s emergence” is necessary, suggesting that the processes involved in business model creation in established firms are underexplored. Therefore, rather than addressing how companies should or could innovate a business model in a normative way, my study presents insights into the actual sensemaking processes and those interruptions which lead towards the enactment of a new business model.

Following a sensemaking/enactment perspective, a business model can be defined as an outcome of a temporary moment of intersubjective stability that emerges from the interactions between environment (different external actors), ideology and paradigms. Business models are subjective interpretative manners of how managers choose which interruptions to focus on and their processes of restoration, influenced by the vocabularies they operate with.

My study illustrates that the enactment of a business model is not a linear process, as argued by the activity system perspective, but rather an emerging one. Not all the elements of the business models, nor the linkages between them, are planned, or can be planned, by managers, as argued by the activity system perspective (Zott and Amit, 2010). They are enacted progressively as response to heterogeneity of interruptions, mediated at two levels, intersubjectivity or general subjectivity, thus by innovation and the need of “mutually reinforcing interpretations, and beliefs, values, and assumptions” (Weick, 1995:73)” or need of control. The linkages, being either enacted or inherited, were the enablers of the enactment processes, allowing the model to be mediated, to be shaped, and reshaped as time passed and more learning was gathered.

When enacting new business models, managers are drawing on more vocabularies, meaning that the innovation process is not hindered only by inertia and dominant logic (Chesbrough and Rosenbloom, 2002; Chesbrough, 2010). There is a heterogeneity of interruptions triggered by an underestimation of the product’s potential on the market, quality versus cost dilemma; challenges to ideology (by installing new routines); divergences between paradigms; a lack of knowledge, and a lack of trust between co-development partners. These interruptions have triggered different enactment processes that have facilitated Woodstock’s business model to

emerge, namely trial and error, experimentation, benchmarking for formulating reference points, labelling, co-creation and co-development. Interestingly, the lack of retrospective was the main source and driver for enactment.

Furthermore, three factors, positive market feedback, possibility of reducing production costs, and a visionary leader, have mediated the connection between the “frame and the cue” (Weick, 1995:110), and advised against the ideology (Chesbrough and Rosenblom, 2002) allowing Woodstock to be developed.

Therefore, the enactment of a new business model becomes a search for answers to the questions: *“how does action become coordinated in the world of multiple realities?”* (Weick, 1995:75), *How do we discover things to enact? Who needs to collaborate with whom about what? How do we enact linkages? How do we reach and maintain intersubjectivity? How do we enact an interplay intersubjectivity – generic subjectivity - intersubjectivity?*

My contribution to the business model innovation literature is summarised in figure 8.1 and table 8.1. In here, I take the identified theoretical perspectives on business model innovation from chapter II, and analysed them through Daft and Weick (1984)'s model, to show how they are positioned in relation to enactment. The model suggests, as well, the comparability between the perspectives and opportunities to be mixed for further studies. At the opposite pole to enactment, in terms of assumptions about environment and passive organizational intrusiveness, it is the activity system perspective. Furthermore, there is a strong connection between discovery driven and cognitive approach, as they assume managers to act, regardless if the environment is analysable or not. Yet, studies under dynamic capabilities assume that organizations act only when input is available in the environment. Lastly, ANT has a special position, as it takes into consideration both human and non-human actors.

Table 8.1 offers a comparison between all the five perspectives, and the sixth one guiding this study, which I called co-enactment. In here, I show the position each perspective takes in terms of definition of business model, company-environment relation, role of managers in innovating business models, triggers for BMI and processes, linkages between the elements, performativity role played by business model innovation, and lastly, strategy- business model relation.

1.2 Problem statement and research questions

The problem statement that has guided this research is:

How do established companies enact new business models?

I have worked with supportive questions for building up the theoretical framework:

What is business model and business model Innovation (BMI hereafter)? And which theoretical perspectives can be identified in the literature when analysing business model innovation. This is answered in chapter II.

How can sensemaking and enactment theory enlarge our understanding of business model innovation? This is answered in chapter III.

The following supportive questions have guided my analysis:

What context did managers draw on when developing Woodstock and why was Woodstock perceived as a sensemaking trigger? This is answered in chapter V.

What are the enactment processes that enabled the creation of the elements of Woodstock's business model and how do managers of Pinta Inc. made sense of the creation of a new business model? This is answered in chapter VI.

What enables the emergence process of a new business model? This is answered in chapter VII.

1.3 Structure of the thesis

My thesis is structured in the following way:

Chapter 1

The present chapter has the aim of bringing forward the positioning of the study in the field and the relevance for the field, the theoretical foundation employed, and contributions.

Chapter 2

The aim of this chapter is to analyse the present research on business model innovation and to discuss the existing theoretical perspectives. The theoretical perspectives on business model innovation have been grouped into five streams, namely activity systems, dynamic capabilities, discovery-driven perspective, the cognitive perspective, and actor network theories. My analysis shows that there is a consensus between these perspectives regarding the vital roles of managers in directing the process of business model innovation; however, these perspectives assume different levels of rationality. Furthermore, all the perspectives put forward acknowledge the contingency effect from business model innovation on companies' survival, although they differ in accepting the same triggers and manners of acting. The discovery-driven and the cognitive perspective affirm the need to understand the enactment processes involved in the emergence of a new business model, while ANT argue for ethnographic studies.

Chapter 3

In this chapter I introduce Weick (1995)'s sensemaking concept as an emerging perspective for analysing business model innovation, with particular focus on enactment (Weick, 1979). Sensemaking theory has provided a vocabulary for analysing the interruptions that managers encountered in their innovation endeavours, the selections they made and the enacted environment. Thus, the analytical framework used in chapter six emerges here.

Chapter 4

Chapter four presents considerations regarding the method and the manner as to how the study was conducted. Here I argue why my study becomes ethnographic, and I detail my encounters in the field and how the data were collected and analysed.

Chapter 5

This chapter provides an analysis of the empirical case study. It details the situation that has activated the sensemaking processes, which led to the emergence of a new business model within an established company. I analyse the context that Woodstock was born within, both in terms of ideology (namely Pinta Inc.), and the paradigms involved, since both became resources in the sensemaking process. Chapter 5 analyses, as well, Woodstock's first business model together with the intentions integrated in that model, and why it was perceived as being different and consequently a trigger for managers to make sense of it. Lastly, this chapter analyses the present usage of the business model concept, identifying that this term is never actively employed, but rather exists in the idea of "how do we reach the market?"

Chapter 6

Chapter six examines the interruptions encountered by managers in building each of the elements of the business model framework, as identified by Chesbrough and Rosenbloom (2002). Each of the elements is being analysed separately by using the enactment model discussed in chapter three, where the focus is on interruptions, enactment processes and the retention/outcome of enactment (Weick, 1979). As explained in chapter three, interruptions are "perceived" and identified as such in the actors' own words. Examples of this include reactions such as "shock," "surprise," "showstopper," "crisis," "conflict," "problem", and "major risk." 197 interruptions, dispersed across all six elements, were identified and then grouped into 30 interruptions identified as being the most important by the actors involved. Thus, chapter six gives a detailed account from practice as to how business models emerge, showing the heterogeneity of interruptions which need to be overcome. This shows that the emergence of

business models needs to overcome more barriers than simply inertia and resistance to change, as demonstrated by the business model literature.

Chapter 7

The final chapter of my analysis of the emergent process of the business model looks at how the linkages between the elements are enacted. While activity system perspective and dynamic capability argue for the existence of continue, tightly coupled linkages between the elements of the business model, parts of a purposeful design (Zott at Amit, 2010:2918), my findings show that the manner elements co-influenced each other cannot be planned. Linkages were enacted by the approach managers took in their sensemaking process when facing certain interruptions, enabling the ongoing innovation flow. When elements happened to be linked one to another, it was a result of either active enactment by development team, or emerged from unexpected events, or inherited from the ideology.

Taking into consideration the analysis of Woodstock throughout chapters five, six, and seven, chapter seven ends with an objective (Weick, 1995:34) illustration of the differences between the intended and the "real-ized" (Weick, 2001:187) business model of Woodstock. The "real-ized" version is according to the time I left the field. Yet, the model was already reshaping itself as a new business director had entered the company, showing the ongoing nature of the sensemaking process.

Chapter 8

The purpose of the discussion chapter is to formulate an answer to each of the research questions that have guided the analyses, to show the findings. Furthermore, a dialog between the existing theoretical perspectives and sensemaking is shown, in order to unfold where and how sensemaking and enactment adds to the theory of business model innovation. These dialogs show the main contribution of my study. Additionally, this discussion also provides suggestions for further research that have emerged from my study, and the concomitant managerial implications.

CHAPTER II: Business Model Innovation: Present and Emerging Perspectives

2.1 Introduction

As in a good novel, the particulars of every business model will be unique, but, in one way or another, every business model is a story about the basic human activities of making and selling (Magretta, 2002:49).

The concept of the *business model* has been the subject of academic review for over fifty years, reaching “near-inflationary use” over the last twenty years (Wirtz et al., 2015). A search on Google.com for the simple term “business model” resulted in an impressive 528,000,000 hits, a search on Google scholar returned 2,840,000 results, while a search in Business Source Complete yielded 27,931 academic hits, of which 7,527 were peer reviewed papers (as per 12.10.2015). This number has grown exponentially since 2002, when Henry Chesbrough, who reported conducting the same search on the World Wide Web, found 107,000 references (Chesbrough and Rosenbloom, 2002:532). Interestingly, Da Silva and Trkman (2014) have shown a direct correlation between NASDAQ trends following the Internet boom and papers published on business models. Per their research, the number of papers having business models in the title or content has increased remarkably from fewer than 300 papers in 1992 to 4000 papers in 2010 (Da Silva and Trkman, 2014:380). Indeed, Internet has prompted companies to rethink their manner of creating and delivering value for customers.

However, organizations focused on profit making have always applied models when conducting their business, and models for attracting and absorbing value existed long before the Internet began changing our purchasing habits (Gambardella and McGahan, 2010; Wirtz et al.,

2015). Historically, value creation models existed long before the capitalist free market; examples of this can be found in records from medieval times,¹ and as the industrial revolution transformed small-scale production to factory systems. Interestingly, the life span of a model often correlated with technological development, as such models flourished until the point when a certain technology became obsolete and a new one was introduced questioning their relevance (Witzel, 2004; Baden-Fuller and Morgen, 2010). A notorious example dates to 1880, when the meat packing industry was forced to completely revise its practices following the invention of refrigerators (Teece, 2010).

Despite this “near-inflationary use” of the concept, there is still a lack of consensus in research with regards to defining business models, what business model innovation is and what are the processes behind such an innovation, what theoretical foundations should be employed for understanding the concept (Schneider and Spieth, 2014; Wirtz et al., 2015; Foss and Saebi, 2015).

In this context, this chapter aims to answer the questions *What is business model and business model Innovation (BMI hereafter)? And which theoretical perspectives can be identified in the literature when analysing business model innovation?*

The first question: *What is business model and BMI?* has been formulated with the intention of setting the scene of this study and understand the field. This question is addressed in the first section of the chapter, where the focus is on defining what is and what is not a BM and how do researchers define business model innovation. The next section presents the existing theoretical perspectives when analysing business model innovation; these perspectives are not priori predefined, but they have been identified in this study. This prompts discussion about the implications of employing enactment for business model innovation theory. The final section formulates and offers conclusions to the questions of this section.

This literature review was conducted systematically, following the three-stage model of Tranfield et al., (2003: 214). In stage one I have formulated a protocol that was guided by the research question of my thesis. Thus, the inclusion criteria were articles that have been

¹ For example, in medieval times, monasteries were competing against each other to attract members and donors with the purpose of establishing themselves as powerful monastic orders. By either installing a pyramidal model to attract members, or by allowing their members the independence to colonize other territories, monasteries were utilizing different competitive models, out of a need to sustain themselves, grow, and respond to the external environment (Witzel, 2004).

published in special issues regarding business models, and research published in innovation journals that were selected using the ABS ranking list between 1990 and 2015. Key words used for generating results were “*business model*”, “*business model innovation*,” and “*development of business model*.” Since the focus of my thesis is incumbent companies and their endeavours to create a new business model, exclusion criteria were related to research covering business model development in newly formed organizations, and business models for entrepreneurial purposes. The exception of this criterion was Doganova and Eyquem-Renault (2009), which was added to the study because of the utilization of a new perspective for analysing business models, namely actor network theory.

Stage two - the actual search of articles - was generated in the first phase (Tranfield et al., 2003:215). The result was 120 articles covering different aspects of business models, of which 70 focused specifically on business model development and innovation. Since I am conducting a qualitative study, the research phase has been a process of continual reiteration (Tranfield et al., 2003: 215). Thus, further articles and books have been added as a result of both “going backward for reviewing the citations of for the articles identified in step 1” (Webster and Watson, 2002: 16), re-running the search at later points in time, based on the same criteria, and seeing how the field has changed.

Given that the purpose of my study is to analyse business model innovation through a new theoretical lens, namely sensemaking (Weick, 1995), identifying and analysing other existing perspectives was also important. Webster and Watson (2002) describe these types of reviews as showing the gap between “what we know and what we need to know”, explaining that “showing how competing theories or philosophical assumptions explain an important phenomenon can be very influential” (Webster and Watson, 2002: 19). Therefore, each of the articles matching the inclusion criteria was placed within a theoretical perspective, based on the authors positioning of their work. Thus, five perspectives have been identified, namely: activity systems, dynamic capabilities, discovery-driven, cognitive and actor network theory.

The next section introduces the business model field by addressing two conceptual definitions: business models and business model innovation.

2.2 Business Models and Business Models Innovation

2.2.1 What is a business model?

In recent years, the need to create strategies to address the change from conventional routes to market, such as brick-and-mortar distribution outlets (Magretta, 2002; Osterwalder et al., 2010), has led both practitioners and academics to begin debating the term *business model*. There is an acknowledged lack of consensus among scholars regarding the definition, the manner of representing, and the number of components a business model has. Moreover, the thin line between strategy and business model is under debate, as well as what does it mean to innovate a business model. Numerous articles have tried to deal with these challenges, especially the special issue published by Long Range Planning 2010, attempting to:

- a. Define the term, and offer different proposals for how a business model framework should appear and how many elements it should contain (Afuah, 2004; Amit & Zott, 2001; Magretta, 2002; Linder & Cantrell, 2002; Chesbrough & Rosenbloom, 2002; Demil and Lecocq, 2010; Teece, 2010; Casadesus-Masanell and Ricard, 2010).
- b. Encompass the ongoing debate about the demarcation between business model and strategy (Shafer et al., 2005; Markides, 2006; Casadesus-Masanell and Ricard, 2010; Casadesus-Masanell and Tarziján, 2012), as well as discussing the differences and fit needed between a business model and a product's market strategy (Bond and Houston, 2003; Zott and Amit, 2008; Baden-Fuller and Haefliger, 2013).

The term “business model” was first employed by Bellman et al. (1957) (see Osterwalder et al., 2005 and Da Silva and Trkman, 2014) when the authors were proposing the development of a business game for managers, to enable them to simulate different scenarios before taking decisions: “we construct actual models and proceed to determine the behaviour of systems by direct experimentation” (Bellman et al., 1957:474). Interestingly, in endeavouring to construct a model, the authors admitted that the decision-making processes for managers “in the business world” was far more complex than that of engineers, as “human beings” were involved. They concluded that:

“We must first construct a mathematical model, then construct a simulation process based on it. And many more problems arise to plague us in the construction of these business models than ever confronted an engineer.” (Bellman et al., 1957:474)

Therefore, the usage of the term was largely understood in relation to the process of “business modelling,” which had existed formerly, until the work of Paul Timmers (1998), who was the first author to write specifically about business models. In his work, he defined the term from an inside-out position, describing business models as structures that enable a product or a service to bring revenue to a company, while concentrating on the actors involved and benefits to stakeholders:

“A business model is an architecture for the product, service and information flows, including a description of the various business actors and their roles; and a description of the potential benefits for the various business actors; and a description of the sources of revenues.” (Timmers, 1998:32)

In 2001, Amit and Zott shifted their focus towards understanding value creation relative to business opportunities for customers, suppliers and partners, when defining business models as transactional.

Nevertheless, there is significant consensus among researchers when defining business models as means to *create value for customers* while informing *mechanisms for value appropriation* for the company (Amit and Zott, 2001; Chesbrough and Rosenbloom, 2002; Magretta, 2002; Bond and Houston, 2003; Casadesus-Masanell and Ricart, 2010; Doganova and Eyquem-Renault, 2009); Osterwalder et al., 2010; Teece, 2010; Zott and Amit, 2010; Baden-Fuller and Morgan, 2010). Depending on the domain they are representing, whether strategic (Casadesus-Masanell and Ricart, 2010), innovative (Chesbrough and Rosenbloom, 2002), entrepreneurial (Osterwalder et al., 2010; George and Bock, 2011), interdisciplinary (Teece, 2010), independent (Baden-Fuller and Mangematin, 2013), or the theoretical perspective taken (whether focused on an activity system perspective, dynamic capacities, resource-based and transaction costs, an evolutionary/discovery driven approach, a process-based perspective, or a cognitive approach), researchers have added new dimensions to their definitions, and created business model frameworks comprising different components to support their perspectives.

Definitions of the concept centre around different foci, from narratives and assumptions about a firm's performance (Magretta, 2002), to financial outcomes (Bond and Houston, 2003); also considering the dynamics between value chain members and their role in the chain (O'Connor and Rice, 2013), the firm's logic (Teece, 2010), a reflection of strategy (Casadesus-Masanell and Ricart, 2010), cognitive devices (Baden-Fuller and Haefliger, 2013), and specific combinations of resources (Da Silva and Trkman, 2014).

The word "model" in relation to the concept of a "business model" is very important. For Chesbrough and Rosenbloom (2002:532) a model is a "focusing device that mediates between technology development and economic value creation." They stress the mediation power of a model, as a tool to connect technical input (feasibility, performance) with economic output (value, price, profit), while seeking to apply the following six functions:

- "To articulate the value proposition- the value created for users by the offering based on technology;
- To identify the market segment - the users to whom the technology is useful and for what purpose;
- To define the structure of the value chain within the firm required to create and distribute the offering, and determine the complementary assets needed to support the firm's position in this chain, and how to maintain one's position in this chain;
- To estimate cost structure and profit potential of producing the offering, given the value proposition and the value chain structure chosen;
- To describe the position of the firm within a value network, linking suppliers and customers, including identification of potential complementors and competitors;
- To formulate a competitive strategy by which the innovating firm will gain and hold an advantage over its rivals" (Chesbrough and Rosenbloom, 2002:533) (See Figure 2.1).

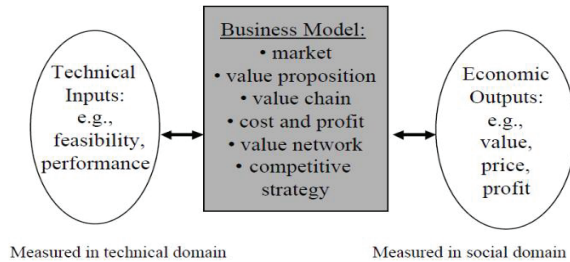


Figure 2. 1 Business Model Framework. Source: Chesbrough and Rosenbloom (2002:536).

Their definition echoes Morrison and Morgan's (1999:11) study, which argues that models mediate between theory and data, while functioning autonomously. A model is independent in terms of both variables, but at the same time has the power to connect them. Morgan (2005:317) makes a distinction between experiments and models; explaining: "experiments are versions of the real world captured within an artificial laboratory environment, models are artificial worlds built to represent the real world." Similarly, Maki (2005:305) argues, "models involve a semantic aspect: notion of representation and resemblance, and an epistemic aspect: characterized by the aim of indirectly acquiring information about the system they represent". Elsewhere, Baden-Fuller and Morgan (2010:157) argue that: business models "provide a set of generic level descriptors of how a firm organizes itself to create and distribute value in a profitable manner." They also argue that analysing business models creates an understanding about a firm's behaviour, and that these behaviours can then be labelled, such as, for example MacDonald's model, and the Ryan Air model, when they become iconic and successful practices. Baden-Fuller and Morgan (2010:165) suggest that these models become "models in the ideal sense, in depicting how they want to be in the future, a model to strive for, an ideal outcome." Furthermore, they explain that a model can also take on the role of a recipe; whereby companies imitate what previous firms have already successfully attempted. However, "there is no one way by which a business can make money, but many generic types, and many possible variations within each" (Baden-Fuller and Morgan, 2010:166). These models are for managers "more like the biological model or organisms- an incredibly complicated set of arrangements where every slight change in one bit is likely to alter all the other relationships" (Baden-Fuller

and Morgan, 2010:165), and due to these “complicated set of arrangements” managers need to experiment to gain an understanding of how the model works.

In explaining the advantages of the word “model”, Baden-Fuller and Haeffliger (2013:420) affirm:

“We note that this approach of seeing the business model as a model is similar to the logic of reasoning and understanding that exists in economics, biology and physics. In each of these fields, as explained by philosophers of science, models are ‘manipulable instruments with which to reason and into which to enquire’ and tools that ‘allow the user of the model to explore ideas’”.

Interestingly, the vast majority of authors engaged in business model theory not only try to formulate new definitions, but also to present new frameworks to describe their models. Godin (2015) explains that models can be seen as conceptualizations, narratives, figures, tools, and perspectives, which have entered scientific vocabulary, to describe the “sequence and stages of a process” (Godin, 2015:572). The author refers to Roger et al.’s (1977) study, in which models are defined as follows:

“Models are sets of symbols, of concepts abstracted from the real world, which are organized together to represent a problem. Any interaction of concepts can be represented as a model ... Models are never true or false – rather they are simply more or less useful.”
(Rogers et al., 1977: 61-62; in Godin, 2015: 573)

Certainly, when analysing business model theory, there is a tendency to look at the model as a manipulative device (Chesbrough and Rosenbloom, 2002), a communication device (Magretta, 2000), and a linking device (Zott et al., 2011).

Lastly, when defining business models, researchers have attempted to draw a line, or show relation, between strategy and product/technology innovation. When comparing business models with strategies, it is generally articulated that strategy focuses principally on competitive positioning reflecting choices about the conceptualization of a business (Shafer et al., 2005) and “how all the elements of what a company does fit together” (Porter, 2001:71). Chesbrough and Rosenbloom (2002) articulate two features that distinguish business models from strategies.

Firstly, business models have an outside-in approach, focusing on methods for creating and delivering value to customers, while the sustainability of how value is delivered is understood to be strategy. Secondly, the financial side of the business and the creation of value for stakeholders is not part of the business model discussion. They also refer to corporate venturing and diversification as the antecedents of the business model concept, indicating that the focus on the notion of growth and how managers deal with additional businesses in their corporations refers to “how managers could leverage the resources of the organizations beyond the organization’s current business” (Chesbrough and Rosenbloom, 2002:531). They ground their arguments in the work of Penrose (1959), Teece (1982), and Prahalad and Bettis (1986). Regardless of the thin line between these two concepts, Teece (2010) argues the benefits of a strong fit between them to maintain competitive advantage.

An additional manner by which researchers attempt to create understanding about business models, is by defining the relationship between product/technology and business models. Chesbrough and Rosenbloom (2002) explain that business models bring technology to life. Conversely, Baden-Fuller and Haefliger (2013) argue that the relationship between business models and technology is reciprocal, because they interact: not only do technologies dictate the needs associated with new business models, but the choice of which technology to develop is defined by the business model. Companies find themselves involved in either shaping new business models to keep pace with technology, or reshaping existing business models to capture the value inherent in an emergent technology.

Almost fifteen years ago, Porter argued: “the definition of the business model is murky at best. Most often, it seems to refer to a loose conception on how a company does business and generates revenues. Yet simply having a business model is an exceedingly low bar to set for building a company.” Despite the large body of research conducted, there are still conceptual dilemmas surrounding the term (Wirtz et al., 2015). Foss and Saebi (2015:2) argue:

“In spite of such massive resonance, in academic as well as practitioner community, much, and perhaps most, of the extended literature on business models and the innovation thereof suffers from deep-seated conceptual problems, little cumulative theorizing, and a lack of sustained data collection and analysis. (...) However, these are typical characteristics of an emerging field.”

Literature reviews concerning both *business models* and *BMI* (Zott et al., 2011; Schneider and Spieth, 2013; Wirtz et al., 2015) confirm this statement, and further emphasize the need for a procedural and cognitive perspective when understanding business models, as a complement to existing theoretical approaches. The following section analyse what business model innovation is, and it is followed by a discussion of the differences between the main theoretical perspectives employed in business model literature.

2.2.1 What is business model innovation?

Behind every successful organization is a business model that in its time was revolutionary. (...) Creating a new business model is not unlike writing a new story. At some levels, all new stories are variations on old ones, reworkings of the universal themes that underlines human experience. Similarly, new business models are all variations on the universal value chain that underlines all businesses (Magretta, 2002:48-49).

The idea of “business model innovation” is an important area that academics are exploring to generate understanding (Amit and Zott, 2001; Chesbrough and Rosenbloom, 2002; Magretta, 2002; Christensen and Raynor, 2003; Markides, 2006; Björkdahl, 2007; 2009a; Zott et al., 2011; Chesbrough, 2011; Markides, 2015; Martins et al., 2015; Foss and Saebi, 2015). Researchers are analysing business models as drivers for innovation, that can “shape innovations in product, process and position” (Francis and Bessant, 2005:178), and as “subject to innovation” (Schneider and Spieth, 2013:2), expressing a general belief that BMI is “key to firm performance” (Zott et al., 2011:1033). Magretta (2002) explained that the Internet boom has highlighted the “temporality” of business models, meaning they are at first “revolutionary,” and then stable for a time, until unavoidable exogenous factors disrupt them. Wirtz (2011:191) referred to this as the idea of the life cycle of a business model. As with product development, a business model would identify an introductory period during which it illustrates its feasibility, before moving towards growth, which is when expectations concentrate on profit generation,

maturity, where stagnation happens, and finally decline. In the latter stage, managers should either reshape the existing model, or innovate it. Research to date reveals reluctance from members of management to admit that business models have a life cycle; this is especially true in established companies (Chesbrough, 2010). Therefore, there is a need to explicate the processes and value of BMI in order to overcome this fear.

Numerous studies have offered definitions of BMI, including:

- *“The discovery of a fundamentally different business model in an existing business. To qualify as an innovation, the new business model must enlarge the existing economic pie, either by attracting new customers into the market or by encouraging existing customers to consume more”* (Markides, 2006:20).
- *“Process of designing a new, or modifying the firm’s extant activity system”* (Amit and Zott, 2010:2).
- *“BMI occurs when firm adopts a novel approach to commercializing its underlying assets”* (Gambardella and McGahan, 2010:263).
- *“BMI is a type of organizational innovation in which firms identify and adopt novel opportunities portfolios”* (Bock et al., 2012:281).
- *“CEOs perceive a BMI as a fundamental rethinking of a firm’s value proposition in the context of new opportunities”* (Bock et al., 2012:290).
- *“A new integrated logic of how the firm creates value for its customers (and users) and how it captures value. In this view, a BMI is not a ‘mere’ product or service innovation, nor is it a process innovation”* (Bjork and Holmen, 2013: 215).

These definitions reveal that business model innovation depends principally on a firm’s ability to reassign existing resources by being inventive and taking risks to access new opportunities. This is a process, involving the discovery of new methods of trading and building new relationships with customers.

An important debate within the literature surrounds the factors that trigger the innovation of a business model. Researchers have emphasized how different types of innovation strategies affect a company’s business model, and the time required to innovate it. Strategies such as servitization (Vandermerwe and Rada, 1988; Oliva and Kallenberg, 2003; Kindstrom 2010;

Chesbrough, 2011; Maglio & Spohrer, 2013; Visnjic et al., 2014), open innovation (Chesbrough, 2006), sustainability and green production (Birkin et al, 2009, Esty and Winston, 2009; Lubin and Esty, 2010; Stubbs and Cocklin, 2010; Sommer, 2010), and social businesses (Yunus et al., 2010) are those most frequently encountered in the literature.

Expressing a view that confirms my own observations, Zott et al. (2011) has observed that BMI literature is developed in “isolated silos”. In this respect, the literature attempts to answer questions such as, how is BMI different and similar to product innovation (Habtay, 2012; Bucherer et al., 2012;), why is there a need for BMI (Chesbrough and Rosembloom, 2002; Amit and Zott, 2010; Gassmann et al., 2014); what are the barriers to BMI (Christensen and Raynor, 2003; Chesbrough, 2010); what are the enablers of BMI (McGrath, 2010; Smith et al., 2010; Demil and Lecocq, 2010; Sosna et al, 2010; Aspara et al., 2013); what capabilities are needed for BMI (Bjorkdahl and Holmen, 2013); what is the role of artefacts in BMI (Eppler et al, 2011), how does it relate to the auditing of business models (Björkdahl and Holmen, 2015). To understand how to innovate a business model, researchers have considered emulating existing product innovation processes. Yet, as Chesbrough (2010:356) also states: “companies have many more processes, and a much stronger shared sense of how to innovate technology, than they do about how to innovate business models”.

The “isolated silos” (Zott et al, 2011) have been explained in the literature by the presence of difference theoretical perspectives taken by researchers when analysing business models (Teece, 2010; Bock et al, 2011, Schneider and Spieth, 2013). The next section is analysing these perspectives, to show their different positions on BMI.

2.3 Business Models Innovation: Existing theoretical perspectives

In 2001, Amit and Zott have defined business models as transactional and they have grounded their concept in transaction cost theory, a resource based-view, value chain, Schumpeterian innovation, and strategic network theory (Amit and Zott, 2001:511), pursuing an integrative theoretical approach to value creation. Therefore, business models rely on Schumpeterian notion of innovation as it implies the creation of new exchange mechanisms with potential to disturb

industries. They therefore also draw on Porter's value chain framework, as the idea of processes is central to business models, and build on resource based-view as explaining the value of a business model according to the unique resources and capabilities embedded in it. In addition, strategic network theory assisted in integrating the network as the "locus of value creation," expressing the multitude of collaborations a company can instigate with suppliers, customers, and other providers, offering a customer-centric business model. Alternatively, a business model can draw on transaction cost theory emphasizing that "value can be created through any combination of transactions within a firm and through the market" (Amit and Zott, 2001:511-513). Therefore, "a business model depicts the content, structure, and governance of transactions designed to create value through the exploitation of business opportunities" (Amit and Zott, 2001:511), and it is specific to a particular firm.

Ten years later, Zott et al. (2011) defines the existing theoretical foundation of business models as divided into silos, predetermined by the researcher's field and interest. By using "silos", authors have tried to stabilize the meaning of the concept, however, frequently they do not build on previous definitions, but introduce new definitions and methods for theorizing business model innovation (Da Silva and Trkman, 2014; Martins, 2015). Casprini et al. (2014:173) agree with Zott et al. (2011), acknowledging that the concept has been linked to several theories such as the following: configuration theories, transaction cost economics, resource-based perspective, relational view. Furthermore, they argue that "academics have also considered related topics, such as dynamic capabilities, absorptive capacity, value (co-) creation mechanisms, complementary assets, and knowledge sharing" Casprini et al. (2014:173), while taking a dynamic/ evolutionary perspective.

In their attempt to cluster the existing theoretical foundations of business models, Doganova-Eyquem Renault (2009) divided the literature into three perspectives, essentialist, functionalist and pragmatic. The essentialist view depicts business models as "*representations of a reality that exist beyond it: the firm*" (Doganova-Eyquem Renault, 2009:1560), implying that the model gives a precise description of how value is created and captured. Critics of this perspective point out "the issue of truthfulness of the description made by the model," (Doganova-Eyquem Renault, 2009:1560), and the lack of applicability of a definition like this in entrepreneurship, where models are prospective. The next perspective is functionalist, where the focus shifts from

describing a firm, towards modelling means of value creation. This raises questions of “the usefulness of the model for planning the future and the profitability” (Doganova-Eyquem Renault, 2009:1561). The pragmatic approach defined business models as “market and calculative devices” (Callon et al., 2007), mediating the relationship between the agents involved. Business models are also seen as boundary objects with different materiality, and unconfined by time.

More recently, Schneider and Spieth (2013) provided an alternative classification. They identified three perspectives, namely resources-based view, dynamic capability, and strategic entrepreneurship, by taking into consideration “the individual firm perspective” only (Schneider and Spieth, 2013:15). The resource-based view focuses on unique resources that assure a company’s competitive advantage (Ketchen et al, 2007). It specifically highlights that business models have the propriety “to mobilize and coordinate firm’s resources” and to answer the question of “*How to employ extant resources and competences*” (Schneider and Spieth, 2013:14). A dynamic capability proposes the combination and recombination of resources as a response to the environment, and this was initially proposed in conjunction with a resource-based view. The last view proposed was strategic entrepreneurship, which pivots around opportunity seeking, addressing the question of “*How to explore and exploit opportunities*” (Schneider and Spieth, 2013:19). Interestingly, the article emphasizes that the strategic entrepreneurship approach concerns business model innovation, as “BMI demands a firm to consider the uncertainty within its environment as potential source of opportunities that need to be explore and exploited” (Schneider and Spieth, 2013:21), whereas the alternative perspective provides a theoretical foundation for business model development.

Martins (2015), inspired by the core theoretical foundations of strategy, identified three perspectives, namely the rational positioning school, the evolutionary learning school, and the cognitive school. The rational school examines the “concrete choices” made by “rational managers,” whereas business models optimize activity systems (Martins, 2015:101). Furthermore, the evolutionary view acknowledges the role of experimentation, and incremental steps in both generating and transforming business models, while the cognitive school underlines the role of managerial cognition and sensemaking in BMI. The article argues that, in

comparison with the cognitive view, both the rational and evolutionary perspective “give primacy to the external context as the driver of business model innovation” (Martins, 2015:102).

When conducting the literature review, five perspectives were distinguished, based on the authors positioning of their work. These perspectives were: activity systems, dynamic capabilities, discovery-driven, cognitive and actor network theory. Given that dynamic capability is rooted in resource-based view (Katkalo et al., 2010), it can be seen to have merged into a single perspective. These perspectives vary from a rational/instrumental approach to analysing business models as objects, to an interpretative one in which models are subjects (Bakir and Todorovic, 2010).

The most employed approaches are the discovery driven approach, as coined by McGrath (2010), and dynamic capabilities (Teece, 2010), while the newest perspectives to emerge are the cognitive one and studies using actor network theory. Research under discovery driven and cognitive perspective as the ones pointing towards the need of sensemaking theory, to understand the enactment of business models.

The following sections analyse how business model innovation is conceptualized in each of the five perspectives.

2.3.1 Activity System Perspective

Zott and Amit (2001, 2007, 2008, 2010) have conceptualized business models as an activity system, underlying the *boundary spanning nature* of the concept, where a manager’s role is to connect the internal with the external activities of the focal firm.

“We conceptualize a firm’s business model as a system of interdependent activities that transcends the focal firm and spans its boundaries” (Zott and Amit, 2010:2016).

“Business model innovation can occur in a number of ways: by adding novel activities (through forward or backward integration), by linking activities in novel ways, by changes one or more parties that perform any of the activities” (Amit and Zott, 2012:44).

Zott and Amit (2010:220) call the business model “a template of how firms conduct businesses” where the focus is the manner the activities are linked to each other, and, even more, in what sequence. The authors explain that business model design is about managers answering the questions: “*What activities should be performed? How should they be linked and sequenced? Who should perform them, and Where?*” (Zott and Amit, 2010:222). Furthermore, they argue for the idea of a “purposeful design” (Zott and Amit, 2010:218) conducted by managers who need to create the interdependencies between activities. It is a deliberate choice, where managers take decisions on all parameters, “often simultaneously.”

As part of a system, companies should rely on third- party resources and activities to fulfil their promised value propositions (Zott and Amit, 2010:2019). This implies that an examination of the internal resources and capabilities of a firm does not explain its business model (Makrides and Sosa, 2013:2). Wirtz et al. (2010:274) explained that models “reflect the operational and output system of a company, and as such captures the way the firm functions and creates value.” Therefore, managers would be advised to consider the company as part of a network of suppliers, competitors, and customers, all of which are strongly interconnected. The concept of open business model (Chesbrugh, 2003, 2006, 2007), lead users on innovation processes having the ability to enlarge the network, thus adding new types of complementaries (Hienerth et al., 2011), co-creation for BM (Pynnonen et al., 2012) mirrors this type of thinking. Being part of a network, the environment becomes an important external trigger for innovating a business model, as changes in the environment would generate internal changes.

Interestingly, Wirtz (2011) observed the tendency of reducing business models to either a functional or a teleological aspect, arguing instead for a synthesized approach, whereby the business model represents the main activities conducted by the firm. Depending on the activities in focus, business models can target different levels, such as the industry level, the company, business unit, or product level (see Figure 2.2), and multiple utilities. For example, it can include market strategy, give a sense of identity to a single business unit within a corporation, or ensure a company’s position at industry level taking into consideration the corporate environment. These levels “build upon one another and consequently explain the structure of industries and companies as a whole” (Wirtz, 2011:66).

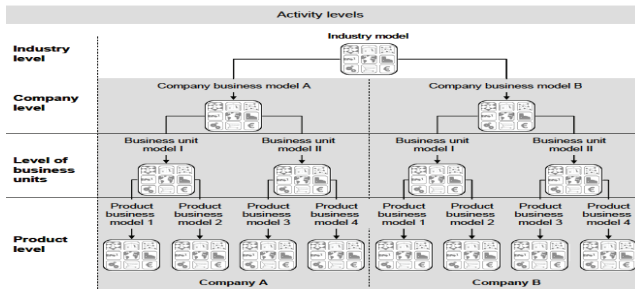


Figure 2. 2 Business model levels. Source: Wirtz (2011:67)

Managers play a role in designing and thereby determining these interdependencies, and “such purposeful design- within and across firm boundaries- is the essence of the business model” (Zott and Amit, 2010:218). Thus, chosen value propositions would determine the type of revenue model and pricing strategies, as well as the level of complexity for the entire value chain. The business model has the role to secure the positioning taken by the company inside a certain value chain, and the decision to move up or down the value chain would raise BMI and redesign reflections. Considering this information, managers can take decisions about the type of activities they would need to perform, how those activities might be linked and the governance of those activities (Zott and Amit, 2010:220). Furthermore, the authors have observed the most common procedures when designing new business models, such as: *novelty*, when new activities or new manners to link activities are found, *lock-in*, developing mechanisms to keep third parties active in the business model, *complementaries*, building activities within a system, and *efficiency*, reducing transaction costs. Interestingly, when debating the process of BMI, the language for discussing business model “innovation” has been borrowed from established concepts of product innovation theory (Bucherer et al., 2012). Thus, the literature discusses incremental and radical business models (Chesbrough, 2010), and while some researchers find BMI radical (Markides, 2006) others classify it into semi-radical or semi-incremental (Davila et al., 2006); business model portfolios (Sabatier et al., 2010), and front-end and back-end innovative processes in BMI (Gunzel and Holm, 2013). In addition, differences have been identified in the origins, processes and degree of innovation, as well as the level of organizational implementation and responsibility (Bucherer et al., 2012:194), as shown in Table 2.1.

	Similarities	Differences
Origins of innovations	<ul style="list-style-type: none"> – Distinction between internal and external triggers 	<ul style="list-style-type: none"> – Distinction between opportunities and threats for business model innovations
Innovation process	<ul style="list-style-type: none"> – Logical sequence of process steps – Rather chaotic process at least in early phases – Normative process models can be used for guidance 	<ul style="list-style-type: none"> – Detailed process steps
Organizational implementation	<ul style="list-style-type: none"> – Difficulties for existing organizations to serve the old and the new concurrently – Independent organizational units can resolve this conflict 	<ul style="list-style-type: none"> – New business models are affecting organizations usually in a broader manner and enforce organizational restructuring more often
Organizational anchoring	<ul style="list-style-type: none"> – Dedicated organizational units and responsibilities are required – Often internal and external resistance – Concept of sponsors or ‘power promoters’ and champions or ‘specialist promoters’ can be helpful 	<ul style="list-style-type: none"> – Top management involvement more essential for business model innovations
Degree of innovativeness	<ul style="list-style-type: none"> – Distinction between incremental and radical innovations – Market breakthrough 	<ul style="list-style-type: none"> – Technology (product innovations) vs. Industry (business model innovation) breakthrough

Table 2. 1 Similarities and differences between product and business model innovation. Source: Bucherer et al., (2012:194)

Taking into considerations these variables shown in table 2.1, BMI can be triggered in the same manner as product innovation, via both internal (technology push or inside-out) and external (market pull or outside-in) opportunities and threats (Bucherer et al., 2012:190). On the other hand, innovation processes are more formal and structured in cases of product innovation, for example using Cooper’s (1990) stage-gate model, were studies are proposing analysis, design, implementation and control (Bucherer et al., 2012:190). As a business model’s formation comprises several elements, some phases of innovation are expected to last longer than others, or may never be mobilized. These deviations are difficult to manage, mainly in cases of radical innovation. Furthermore, one of the main differences between products and BMI is the managerial perception associated with them. Thus, there are special departments, for example R&D allocated to product development, which is not the case of BMI. In some cases, the task of BMI falls within the remit of a market manager or business development department, but it is never a stand-alone function; the rationality is that “BMI rarely occurs” (Bucherer et al., 2012:193). The tendency in this case is to have a CEO, or top manager taking responsibility for BMI decisions. The reluctance of top managers concerning BMI is a consequence of this, as they must usually become involved in changes to target customers, the value chain position,

revenue models and pricing strategies. Furthermore, the new business model is not necessarily better than the existing one in the case of incumbent companies, meaning a detailed cost-benefit analysis should be conducted (Markides, 2006). BMI would then only be adopted in certain situations, such as when entering a new market, and there is a need to break existing rules when facing a crisis, or if a radical product innovation demands a new business model (Markides, 2006:22).

Another aspect borrowed from product development literature is the need to try to structure and map the innovation process of a business model. In this regard, Gunzel and Holm (2013), inspired by the product development literature, took the business model canvas developed by Osterwald et al. (2010) and divided it in two parts, namely front –end and back –end. By examining the Danish newspaper industry’s business model, they discovered that innovating the front-end side of a business model is more of a chaotic trial-and-error process, while approaching the back-end, where key resources and activities are situated, tends to result in a linear innovation process. Gunzel and Holm (2013) explain that there are two different patterns clarifying how BMI is seen in the literature: organic flexibility - “a messy process,” and structured rigidity – a controlled process focused on implementing a new business model systematically. Another manner to bring structure to the process of BMI was suggested to be the road mapping. DeReuver et al. (2013:2) explain "business model road mapping makes the link from the strategic level (...) to the more operational and tactical level."

The activity system perspective assumes rational choices made by managers would result in an “optimal design for value creation or capture within a given context” (Martins et al., 2015:101). The notion of a “rational choice” or the “right choice” for optimizing to innovate “the right business model” (Chesbrough, 2010:358), has been addressed by Afuah and Tucci (2003), Hedman and Kalling (2003), Markides (2008), Osterwalder et al. (2010), Massa and Tucci (2013), Velu, (2015). Casadesus-Masanel and Ricard (2010: 198) have also emphasized that business models refer to “concrete choices made by managers about how the organization must operate and the consequences of these choices”, defining them as an “objective (real) entity.”

Considering the performativity of models implies an understanding of them as objects, as “something real” that can predict the competitive advantage of a technology, coupled with a certain model (Baden-Fuller and Mangematin, 2013:419). This includes the option of seeing

business models as objects that open doors with the aim of equating BMI with the idea of progress and the possibility of measuring that progress (Baden-Fuller and Mangematin, 2013). The value of a business model is reflected in the firm's financial performance and the return for stakeholders (Hedman & Kalling, 2003:52), and in "the right choice of interdependent activities" (Markides and Sosa, 2013:2). Furthermore, BMI has a contingent role in terms of a company's existence (Zott and Amit, 2008:19) and Velu's (2015) study has shown a correlation between the degree of BMI and a company's survival. A high degree of BMI is favourable, and a medium degree of innovation usually results in poorer performance. As a variable, over collaborating has a negative effect on a company's survival rate as the degree of business innovation increases. To support this argument, Velu (2015:1) offers a definition of what a business model entails, comparative to product and process innovation:

"BMI involves a more systemic change than product or process innovation because it involves changes to the customer value proposition, value creation and value capture. Hence, the degree of BMI could have a different effect on firm survival compared to product or process innovation."

In relation to the strategy employed, business models are understood to be a means of implementation (Zott and Amit, 2008, 2010; Velu, 2015), "the reflection of the firm's realized strategy" (2010:195).

In conclusion, Zott and Amit (2010:223) argue that an activity system perspective is beneficial to researchers and practitioners concerned with business models, because they "encourage firms in systemic and holistic thinking when designing its business model, instead of concentrating on isolated, individual choices."

2.3.2 Dynamic Capability Perspective

In comparison with an activity system perspective, dynamic capability focuses on creating internal capabilities, which allow companies to maintain their position in the industry for longer, while making imitation challenging for competitors. To achieve this, companies must prove their flexibility to answer environmental challenges quickly (Teece and Pissno, 1994, Teece,

2007). Thus, top management plays a crucial role, as its decision-making shapes a company’s values and routines, and permits creation of dynamic capabilities. Dynamic capabilities combine quantifiable meta-routines, such as operational and strategic decisions, and qualitative factors, e.g. human action (Katkalo et al., 2010:1179).

The specificity of dynamic capabilities is the fact that they need to be created, “*they must be built*” (Katkalo et al., 2010:1178), and cannot be bought. Therefore, this perspective emphasizes the importance of managers as able to foresee possible market opportunities based on three types of managerial activity: sensing, seizing and transforming. All three components are significant for creating and capturing value, as the focus is on identifying opportunities and being able to recognize the need for continual renewal within a company. As underlined by Leih et al. (cited in Foss and Saebi, 2015), all three features directly relate to business model innovation, development and implementation. Sensing focuses on identifying new needs, seizing recognizes the needs and type of capabilities companies needs to build, and finally, transforming involves “reinventing the business in response to the new opportunities” (Leih et al. cited in Foss and Saebi, 2015:33).

	Sensing	Seizing	Transforming
Creating value	Spotting opportunities;identifying opportunities for research and develop-ment;conceptualizing new customer needs and new business models	Investment discipline; commitment to research and development; building competencies; achieving new combinations	Achieving recombinations
Capturing value	Positioning for first mover and other advantages; determining desirable entry timing	Intellectual property qualification and enforcement; implementing business models;leveraging complementary assets;Investment or co-investment in “production” facilities	Managing threats; honing the business model;developing new complements

Table 2. 2 Activities conducted to create and capture value, organized by clusters of dynamic capabilities.
Source: Katkalo et al., (2010:1180)

Smith et al. (2010:450) define business models as:

“The design by which the organization converts a given set of strategic choices – about markets, customers, value propositions- into value, and uses a particular organizational architecture- of people, competencies, process, culture and measurement systems - in order to create and capture this value.”

In consensus, Teece (2010) affirms that the essence of a business model is to deliver value to the customer, while seizing value for the company. By analysing the concept from the perspective of dynamic capability, Teece draws attention to two important limitations:

- a. Business models are easily emulated (Teece, 2010:173); therefore, developing capabilities to create value propositions and revenue models for each segment, as suggested by Osterwalder et al. (2010), and coupling business models with strategy, as noted by Magretta (2002) and Makrides (2006), is important. Further studies tackling this issue, Gambardella and McGahan (2010), Desyllas and Sako (2013) who argues about possibilities, to a certain extent, on IP protection on business models, but also argue for imitation of business models as being the basic strategy for entering new markets (Casadesus-Masanell and Feng, 2013).
- b. They are provisional (Teece, 2010:187), McGrath (2010) and Chesbrough (2010) confirm this, asserting that business models need to adapt and respond to market requirements.

Moreover, Teece (2010) explains that the key role of a business model is to capture value from innovation. By offering the example of Thomas Edison, he claims that technology in the absence of a business model would yield no value.

The fear of creating capabilities, which are easy to be copied, has been in focus of several studies (Enkel and Mezle, 2013, Abdelkafi et al., 2013, Desyllas and Sako, 2013). Enkel and Mezle (2013) have observed a trend in the cross-industry imitation practiced by companies. Their study shows how imitation can serve as a method to identify new business models in the early stages of BMI. Companies might never adopt full business models, but would rather transfer specific components to generate a leap in their value proposition, using a process of abstraction, analogy identification and adaptation. The authors propose using analogical

imitations on a systematic basis to innovate business models. Pursuing the same line of thought, Abdelkafi et al. (2013) show in their case study of electric mobility, that transferability of business models from other industries can be a rich source for BMI. Transferability is possible given the difficulty to have IP protection on business models (Desyllas and Sako, 2013:101). However, their study shows that there are possibilities to protect parts of the model, as different kinds of IP protection complement each other and cover different aspects of a business model, such as, for example, licensing agreements, which enable active collaboration between partners, and therefore transfer of tacit knowledge. In their study, Gambardella and McGahan (2010) have shown that business model based on applications of Information and Communication Technology is accredited for IP protection. In the same line of thoughts, Bucherer et al. (2012) argue that product and service innovation are easier to copy than a business model:

“New business models are difficult for competitors to follow, not only because they require considerable time and effort to simultaneously change various elements, but also because the business model has to fit a company’s long- term strategy, corporate culture and core competencies.” (Bucherer et al., 2012:183)

In consensus with Teece (2010), Demil and Lecocq (2010:227) distinguish between the static representation of business models, as “blueprint for the coherence between the core business model components” and transformational ones, where the business model is “a tool to address change”, which is rarely discovered immediately, requiring “progressive refinement to create internal consistency and /or to adapt to its environment” (Demil and Lecocq, 2010:228). Based on Penrose’s notion of growth, which articulates the interaction between the resources in an organization, the authors have built a business model framework comprised of resources/capabilities, an organizational structure and a value proposition. According to their view, the resources accumulated by a company over time continuously react to each other to create uniqueness, thus managers need to consider how to combine the current resources to generate new value propositions. They argue that it is an “ongoing interaction *between* and *within* the core components of a business model” (Demil and Lecocq, 2010:234), and these interactions are influencing the choice of what type of value proposition can be offered. For example, changes in the value network would generate changes in the resources available, thus in what can be put forward to the market. Furthermore, the changes *within* the components are

referring to the cause-effect relation between the sub-elements of the same component. In building their argument that a business model is continuously evolving, whether deliberately altered or reframed by the environment, Demil and Lecocq (2010:235) discuss the signs of this evolution that managers should be able to observe. These include a change in revenue and cost structures, adapting different organizational processes and externalizing parts of the value chain. Therefore, given these properties, business models are in a “*permanent state of transitory disequilibrium*” (p.240), fixed by managerial decisions for a short period only.

From a dynamic capability perspective, organizational design holds a central position, as managers need to make choices about how to organize their capabilities to effectively create and capture value. Katkalo et al. (2010) explain that sensing and seizing are highly related to exploitation and exploration as posited by O'Reilly and Tushman (2004). In ambidextrous organizations, managers need to create space for both exploitation and exploration to allow new business models to emerge alongside the corporate model, in the case of complex organizations multiple models (Smith et al., 2010; Dunford et al., 2010). Managers need to have the ability to make decisions dynamically and implement different matrixes of success to explicate the explorative and exploitative side of the business model; achieving learning at multiple levels, encouraging conflicts and managing contradictions, and allowing a leader centric or team centric structure that is committed to a goal (Smith et al., 2010). Along the same line of thoughts, when taking a resource and capability perspective, McNamara et al. (2013) argue that multiple, even competing business models can co-exist in competitive markets generating different value creations and value appropriation outcomes. Interestingly, the authors demonstrate through a cross-sectional analysis of the English Premier League that it is possible to shift from one business model to another, although it involves “an uncertain transitional state business model”, a “valley of death” (McNamara et al., 2013:476), with high probability of leading to a decline in profits. If a firm succeeds in managing risks, then it can move towards another stable business model to increase value creation for its customers, but not necessarily yielding profits for the firm (McNamara et al., 2013:476). Therefore, there is no connection between a changing business model and increased profitability.

In relation with strategy, Da Silva and Trkman (2014:383) explain “strategy shapes the development of capabilities that can alter current business models in the future.” Business

models, when seen from present or short-term perspectives, are bound by the dynamic capabilities created by a strategy, which is defined as a long-term perspective. In offering Amazon as an example for moving towards cloud computing and building dynamic capabilities for a shift, DaSilva and Trkman (2014:383) affirm: “the development of excessive dynamic capabilities represented a strategic decision to move away from its initial business model.” For example, when the strategy has decided to shift towards servitization new types of capabilities need to be built (Willemstein et al., 2007; Wooder, and Baker, 2012; Velamuri et al., 2013; Maglio and Spohrer, 2013; Visnjic et al., 2014). However, not only strategy influences the innovation of a business model, but the acceptance of a new technology as well (Bond and Houston, 2003; O’Connor and Rice, 2013). Therefore, researchers have studied “how the characteristics of technology affect the selection of business models” (Pries and Guild, 2011:151); and the dynamics between technology and business models, especially in cases where radical technological innovation prompts incumbents to face business model dilemmas (Tongur and Engwall, 2014). Furthermore, Cavalcante’s (2011, 2013) studies demonstrate that companies use technology to extend their business model, however they never use a business model perspective to analyse the types of change needed to be adopted when a new product or service is sold to customers. The author indicates that well-known strategy tools, such as PESTEL or SWOT, tend to be used for analysing the commercial potential of a technology, but never a business model.

In the literature, there was also a tendency to combine theories. For example, Achtenhagen et al. (2013:429) aim to illustrate types of “capabilities and activities that are critical to support value creation over time”, aiming to drive BMI by combining dynamic capability perspective with strategy as practice. Dynamic capability has helped authors to theorize business models by explaining sources which drive firm success over time and “difficult to replicate capabilities,” while strategy as practice has provided an opportunity to observe micro-processes that construct strategies. The authors believed that a dynamic capability perspective does not explain the micro-foundations of activities that shape capabilities. Their research concludes that strategizing action and critical capabilities are complementary, and so managers need to reinforce this complementarity to sustain consistent business model change. Furthermore, leadership, employment commitment, and organizational culture are crucial to business model change. Another interesting coupling of theories was put forward by Da Silva and Trkman (2014), who

affirmed that business models are rooted in a resource-based view and transaction-cost economics. They explained, “resources per se do not bring value to customers, but the manner that they are transacted,” and formulated a new definition for a business model: “ BM is a specific combination of resources which through transactions generate value for both customers and the organization” (Da Silva and Trkman, 2014:382). The authors define an organization as a bundle of resources and capabilities (Barney, 1991), and articulate that strategy involves dealing with building dynamic capabilities, while business models are about resource configurations.

2.3.3 Discovery Driven Perspective

“In reality new business models rarely work the first time around, since decision makers face difficulties at both exploratory and implementation stages. (...) An emerging dynamic perspective sees business model development as an initial experiment followed by constant revision, adaptation and fine-tuning based on trial-and-error learning” (Sosna et al., 2010:384).

From this stance, BMI is seen as a key driver for success (Sosna et al., 2010, Chesbrough, 2010), as demonstrated by companies applying BMI, such as Apple, Nestle. Even though examples have proven successful, BMI requires openness to experimentation and a trial and error mind-set, as “new business models rarely work the first time around” (Sosna et al., 2010:384). A discovery-driven perspective focuses on the significance of trial and error in the context of business models, suggesting an experimental approach (Magretta, 2002; McGrath, 2010; Chesbrough, 2010; Yunus et al., 2010; Doz and Kosonen, 2010; Sosna et al., 2010; Bock et al., 2012, Andries and Debackere, 2013, Gudiksen, 2015). From this perspective, scholars agree “strategies engage in local search, in response to specific problems or opportunities” (Martins et al., 2015: 101); thus, strategies are more discovery driven, than plan driven (McGrath, 2010), and business model development is characterized “as an initial experiment followed by constant fine-tuning based on trial-and- error learning” (Sosna et al., 2010: 384).

From a similar viewpoint, Magretta (2002:46) defines business models as “a set of assumptions

about how an organization will perform,” and a “story of how an enterprise works.” She positions the term within the discipline of management, explaining that the need to use a term such as “business model” emerged from the need to model scenarios to test how change to certain elements of a system might influence the rest of it. McGrath (2010:248) states that “model” implies “experimentation, prototyping (...) gives a sense of firm in action,” which is essential to understanding BMI. Therefore, when concentrating on experimentation, McGrath (2010:248) explains that neither an industry positioning view (resource –based view), relating to finding a place in an industry and defending it; nor a dynamic capability view, which emphasizes creating difficult to copy resources, can explain business model development. The author argues that the need for a dynamic perspective is determined by the characteristics of certain business models, which force managers to have an outside in, rather than an inside out approach to their businesses. This implies that customers, and not core competence thinking, combined with experimentation, are central to innovating business models. Furthermore, the design of a business model cannot be “fully anticipated in advance” McGrath (2010:248) and neither can the success of the model. Therefore, Chesbrough (2010) confirms McGrath’s (2010) perspective, stating that companies need to develop capabilities for BMI, because “it is not a matter of superior foresight ex ante- rather, it requires significant trial and error, and quite a bit of adaptation ex post” (Chesbrough, 2010: 356). When these capabilities are missing, conflicts emerge between existing technologies and new ones, which often results in a need for a new business model. In these scenarios, confusion and obstruction (Chesbrough, 2010:359) emerge and halt innovation.

Scholars working under this perspective consider leadership (Chesbrough, 2010; McGrath, 2010; Doz and Kosonen, 2010; Sosna et al., 2010) as the main driver of innovation. There is a fear and high tendency to resist BMI, especially among established companies. McGrath (2010: 257) quotes Clayton Christensen to explaining this: “new models are often designed for customer that an incumbent doesn’t serve, at price points they would consider unattractive, and builds on resources that they don’t have: from the perspective of an established firm, new models can look positively unattractive.” McGrath (2010:256) proposes a solution based on small investments, in opposition to one “black hole” and a onetime significant investment with “unlimited downside risk.” Doz and Kosonen (2010) argue that lack of leadership can be one of the most important barriers to innovation, given the fact that managers become trapped in their

own “rigidity”. Furthermore, the authors affirm that “business models tend also to be naturally stable, and hard to change,” and this stability is given by managers’ engagement in a continuous search for efficiency and predictability (Doz and Kosonen, 2010:370). Therefore, commitment and a high level of resilience is critical for conducting experiments with business models, as changes in this area demand both the internal validation of stakeholders, and the external validation of customers (Sosna et al., 2010:385). The process is acknowledged as more complex in established companies, where fear of failure is high:

“Changing business models is seen as an iterative, trial-and-error process, which is especially challenging for established firms that cannot afford to make mistakes when redesigning business model because of the potential negative effects on their existing business.” (Hiernerth et al., 2011:345)

In these conditions, the role of leadership in creating sufficient strategic flexibility to allow BMI is essential. Studies have shown that creative cultures and loosely coupled organizations reduce resistance to change and allow modular thinking (Bock et al., 2012). Furthermore, the organizational design in large firms, which were previously considered to be result from rigorous planning, are now understood to be dynamic and emergent. CEOs are urged to maintain high flexibility, to account for uncertainty in markets, products, macroeconomics, and technological change. Managers must also optimize extant operations, while preparing the same functions for rapid and discontinuous change (Bock et al., 2012:301).

2.3.4 Cognitive Perspective

Doz and Kosonen (2010) argue that business models can be defined as either objects or subjects. As an object, a business model is a set of interdependent operations, embedded in tacit routines; whereas, as a subject, a business model represents cognitive structure and beliefs about a firm’s boundary and value creation activities:

“Business models can be defined both objectively and subjectively. Objectively, they are sets of structured and interdependent operational relationships between a firm and its customers, supplier, complementors, partners and other stakeholders, and among its

internal units and departments (functions, stuff, operating units, etc.). But for the firm's management, business models also function as a subjective representation of these mechanisms, delineating how it believes the firm relates to its environment. So business models stand as cognitive structures providing a theory of how to set boundaries to the firm, of how to create value, and how to organize its internal structure and governance.” (Doz and Kosonen, 2010:370-371)

The objective view defines business models as stable constructs, and hard to change, while the subjective manner of defining a business model sculpts the novel cognitive perspective of analysing a concept putting managerial mental models in focus (Furnari, 2015; Martins et al., 2015, Mikhalkina, and Cabantous, 2015). The mirage of a stable business model is created by the need for efficiency and predictability (Doz and Kosonen, 2010:371), but this only locks companies in rigid and inflexible routines.

Considered the most challenging and interesting agenda when studying business models, Baden-Fuller and Haefliger (2013:418) argue, “This perspective sees them not just as ‘real phenomena’ but as cognitive instruments that embody important understanding of causal links between traditional elements in the firm and those outside.” Managers’ visions shape organizations and influence the type of technology developed or accepted, based on cause and effect beliefs about whom the customer should be and how value is created for them. Agreeing with this statement, Aversa et al. (2015:153) argue that these models should be employed as “manipulable instruments (instruments that can be voluntarily shaped and changed to gather insight).” When envisioning models as “manipulable,” the action of “modelling” becomes possible, and thus, the authors introduce modularization as a method to innovate business models.

This “cognitive bias” (Chesbrough and Rosenbloom, 2002; Chesbrough, 2010) is more obvious in established companies, where managers use existing models to filter innovative practices. Chesbrough and Rosenbloom (2002:531) explain there is a trend toward abandoning innovations that require change in business models. They link their argument with Prahalad and Bettis’ (1986) notion of a dominant logic, which is a “set of heuristic rules, norms and beliefs that managers create to guide their actions.” Chesbrough and Rosenbloom (2002:531) explain that technology managers need to “make sense” (Weick, 1993) of both new technology and new markets dedicated to that technology, as both elements are defined by uncertainty. Meaning

needs to be created, to allow adaptation to the new information and possibilities that challenge existing business logic. Therefore, Chesbrough and Rosenbloom (2002) define business models as differing from strategy, as they convey a set of hypotheses on how to deliver value to customers, and how to adapt continuously to market changes. A business model is a “proto strategy,” because it is based on information “cognitively limited and biased by the earlier success of the firm,” whereas a strategy is assumed to rely on more “reliable information available” (Chesbrough and Rosenbloom, 2002: 535).

Martins et al. (2015:102) explain that in comparison with other perspectives, in which the focus is on creating optimal business models in response to various exogenous sources of distress, and where managers are taking rational decisions to link the components of business models with optimal result, the cognitive perspective aims to explain business model creation, development and innovation according to managerial cognition and schemas. The existing schemas at a certain point in time inform the organizational knowledge of the company. Business models schemas are defined as “cognitive structures that consist of concepts and relations among them that organize managerial understandings about the design of activities and exchanges that reflect the critical interdependencies and value- creation relations in their firms’ exchange networks” (Martins et al., 2015:105). This results in business models being viewed as cognitive constructs, not environmental ones, meaning: “business models schemas can be understood as vehicles for enactment of environments” (Martins et al., 2015:105). Moreover, the authors articulate that business model schemas function as design logics “that guide how managers structure relations among attributes, even when they change specific attributes or links” (Martins et al., 2015:105), while strategy schemas are frames for decision making.

From this perspective, for business models innovation to occur, managers need to develop strategic agilities (Doz and Kosonen, 2010:371). These include three ‘meta-capabilities:’ strategic sensitivity, which allows the firm to observe when it is time to transform the existing model; leadership unity, which denotes collective commitment for difficult decisions and adaptive leadership; and resource fluidity, whereby resources are made available for redeployment to fulfil new opportunities. Seeking to contribute to the cognitive perspective, Martins et al. (2015) propose two cognitive processes, namely analogical reasoning and conceptual combination, to change schemas actively.

Several scholars have adopted a cognitive perspective from which to analyse business models. Tikkanen et al. (2005) consider Magretta's (2002) statement that a business model is composed of aspects drawn from both cognitive and material facets of the firm, and focus their research on understanding how the material aspect of the business model, here they include the "company's business strategy, business network, operations, and finance and accounting" (Tikkanen et al., 2005:790), merges with managerial cognition, meaning the company's belief system. To highlight this, the business model is conceptualized as "the sum of material, objectively existing structures and processes as well as intangible, cognitive meaning structures at the level of a business organization" (Tikkanen et al., 2005:790). The belief system is formed by industry recipes (rules of the game in a certain industry); reputational ranking (evaluation of the firm's performance in comparison with its competitors), boundary beliefs (beliefs that inform identity), and product ontology (cognitive representations of the relationship between offering and market need) (Tikkanen et al., 2005:792). The authors affirm that "managerial actions shape business models in time" and indicate the evolutionary perspective, as BMI is a "process of imitation and mutation," influenced by social context, competitors and potential customers (Tikkanen et al., 2005:802). Therefore, the authors have emphasized that the business model in practice relates to the management of human resources and perceptions; as business model deal with "pragmatic sensemaking" issues (Tikkanen et al., 2005:805). Aspara et al. (2013) have analysed how executive cognitive processes sustain a company's development of its business model. More specifically, they studied business model transformation over time, using Nokia's development as case study. They define a corporate business model as something that,

"Resides primarily in the mind-sets of the corporation's top management or top management team members-essentially, it is the corporate top managers' perceived logic of how value is created by the corporations, especially regarding value- creating links between the corporation's portfolio of businesses." (Aspara et al., 2013:460)

The corporate business model is typically characterized as a conceptual tool connecting the business logic with business units. Here, business unit is affected by: "the business unit manager's perceived logic of how the unit in question functions and creates value, in connection with both its market environment and within the corporation" (Aspara et al., 2013:460). The study revealed that a business model works as the manager intends, meaning that the core

elements of the business and the link between them correspond with top management perception about both elements. Therefore, the authors propose studying *perceived* managerial logic at two moments in time, for witnessing the transformation of business models over time. Their results show certain elements, those considered successful, were recycled in the new models, and that total transformation of a business model was very rare. Therefore, the prime limitation on the cognitive perspective is the bounded rationality of the manager (Porac and Tschang, 2013).

Scholars adopting a cognitive perspective to understand business models affirm that managerial sensemaking require empirical review. Chesbrough and Rosenbloom (2002:536) explain that constructing business models in highly complex environments shares much with Weick's (1993: 636) notion of sensemaking: "Sensemaking is about contextual rationality. It is built out of vague questions, muddy answers, and negotiated agreements that attempt to reduce confusion." Thus, sensemaking processes can be defined and shaped by dominant logic: "the filtering process within a successful established firm is likely to preclude identification of models that differ substantially from the firm's current business model." Furthermore, Chesbrough (2010:359) shows that the main barriers to innovating a business model are obstruction and confusion. He explains, managers need to understand the cognitive role of business models, and move away from the belief that the right business model for a certain technology is known from the outset. He underlines the importance of leadership, experimentation and effectuation as tools to overcome "cognitive blindness" (Baden-Fullar and Mangematin, 2013: 423) as managers act on contextual rationality and meaning follows action (Weick, 1995).

2.3.5 Actor Network Theory

A newly emerging perspective for studying business models and their innovation process is actor network theory. Doganova and Eyquem-Renault (2009) explores the evolutions of business models from the beginning until full development by looking at their materiality, power point presentations, business plans etc. In an entrepreneurial environment, business models become boundary objects that travel in time and space. Thus, in the study of Doganova and Eyquem-Renault (2009), the business model evolves as the network that allows the

technology to reach the market increases. In this way, a business model becomes both a “narrative and a calculative device.”

In an historical study of the business model development conducted using ANT, Mason and Spring (2011:1038) affirm “business models can be understood as a framing device for influencing and shaping collective and individual action.” Furthermore, the study agrees with Doganova and Eyquem-Renault (2009) in affirming that business models act as framing devices when embedded in artefacts such as business plans, power points slides, reports, and they have a certain “performative power to shape and influence the action of others” (Mason and Spring, 2011:1038).

Using the same perspective, Demil and Lecocq (2015:32) study the “micro-processes leading to a business model emergence” and define business models “an artefact that creates commensurability” and “a network of multiple artefacts” (Demil and Lecocq, 2015:35). ANT assumes that everything is and emerges from a web of relationships and the question is how to make that network stable.

When studying business models through ANT, it facilitates an understanding of “how things are agglomerated and assembled to create new realities” (Demil and Lecocq, 2015:37). Furthermore, the study affirms that a pure cognitive reasoning of business model is not expressing the complexity of creating a model, and “the advantages and benefits of a given business model are generally only identified and become obvious after its implementation” (Demil and Lecocq, 2015:53). Interestingly, the same study shows that the artefacts used for the creation of each business model element were different, and they were used as sensemaking devices to managers.

2.3.6 Conclusions

Analysing the five perspectives, an attempt can be observed to answer the same type of questions: what a business model is and what the processes of business model innovation are, how does the company interact with the environment and how is this interaction influencing the internal innovation processes, what can be noticed as triggering innovation of business models,

what is the relation between business model and strategy, and what is the role of the manager in this process. These themes are summarized in table 2.3:

Perspectives / Variables	Activity System	Dynamic Capabilities (including RBV)	Discovery Driven	Cognitive	Actor Network Theory
Definition and focus in BMI	<p>“BM as a system of interdependent activities that transcends the focal firm and spans its boundaries” (Zott and Amit, 2010:2016).</p> <p>A BM is the result of a set of “choices of activities, how they are linked and who performs them” and has the role of securing a value chain positioning.</p> <p>Business models are objects, “something real.”</p>	<p>Create resources and capabilities that are not easily initiated, while finding a space in the industry and defending it.</p> <p>Business models are stable for a certain period; they are easy to emulate and are provisional, in a “permanent state of transitory disequilibrium”</p> <p>BMI is considered more important than technological innovation.</p> <p>BMI is considered a radical innovation, with the potential to change entire industries.</p>	<p>Focus on trial and error, experimentation and modelling scenarios for generation, business model change and development.</p> <p>A BM is a set of assumptions about how an organization would perform.</p>	<p>“Cognitive devices, held in the minds of actors who influence technological outcome” (Baden-Fuller and Haefliger, 2013:423).</p> <p>A business model is a subject, not an object. A business model schema can enact environments.</p>	<p>Boundary objects</p> <p>Calculative device, mediating the relationship between the agents involved.</p> <p>“An artefact that creates commensurability.”</p> <p>“A network of artefacts.”</p>
Company-environment relations	<p><i>Boundary spanning nature:</i> rely on third party resources and activities.</p> <p>Firm is seen as part of an analysable network.</p>	<p>Dynamic capabilities must be built inside the company. They cannot be bought or rely on externalities/ nor on the network.</p> <p>Permanent internal refinements to create consistency with the</p>	<p>The outside-in approach makes the environment an important source for BMI.</p>	<p>Business model schemas can enact environments; they are not enacted by environments.</p>	<p>Environment is a non-human actor, part of the business model network.</p>

		environment, as the firm is a bundle of resources.			
Role of managers in BMI	<p>To take rational decisions for creating an optimal business model design.</p> <p>Designing relationships between activities and determining the links between these ones. Thus, linkages are planned.</p> <p>To react to exogenous factors when redesigning a business model.</p> <p>BMI is responsibility of top management.</p>	<p>The crucial role of top management in shaping values and routines to make it difficult to be copied.</p> <p>Focus on the characteristics of senior managers.</p> <p>Organizational design -as managers need to make choices about how to organize their capabilities to effectively create and capture value.</p> <p>Manage multiple business models.</p>	<p>Assumptions-based decision making: business model cannot be foreseen.</p> <p>Fear of change lessens as BM experimentation is pursued.</p> <p>Have an outside-in rather than an inside-out approach.</p> <p>Focus on creating loosely coupled organizations, reducing design complexity to increase strategic flexibility.</p>	<p>Managers are sensemakers.</p> <p>Managers' visions determine the choice of technology.</p> <p>Managers manipulate and enact within the limitations of their own bounded rationality.</p> <p>Inter-organizational cognition.</p>	<p>Actors in the network</p> <p>They have a role in producing the materiality, the physical representation of a business model.</p>

Triggers for BMI	<ul style="list-style-type: none"> Internal causes: radical products, crisis, entering a new market, change in strategy; External environment: push from the environment to move up or down a value chain. 	Structural changes in revenue model and cost are the first symptoms of BMI. BMI is a result of both exogenous factors and intentional managerial decisions, change in strategy and technology.	Leaders are the main drivers of innovation.	Dependent on the "cognitive blindness" of leaders. Trial and error culture.	Failure of the network.
Process of BMI	<i>Novely, lock-in, complementarities, and efficiency.</i> Adapting product innovation tools for a structured BMI approach (for example stage-gate, road mapping, front-end and back-end innovative processes).	Sensing, seizing and transforming. Initiation of different capabilities: from same industry or cross-industry. Abstraction, analogy identification and adaptation. Central position of organizational design, as exploration and exploitation should be built in, e.g. ambidextrous organizations.	BMI demands consistent small investments. Customers are central to innovating business models.	BMI is dependent on leadership, creating commitment, and effectuation. Trial and error and experimentation. Modularization. Reputational ranking for which elements to copy and which to dismiss.	Creating a network that allows the technological innovation to reach the market.
Linkages between	Strong interdependencies between activities, links are designed and planned by managers.	The elements result at the intersection between resources.	Linkages emerge as a result of experimentation.	Influenced by individuals and company's belief	No research available?

2 As the result of my research

elements		Ongoing interaction <i>between</i> and <i>within</i> the core components of a business model. “Virtuous cycles” - each choice has a consequence.		system.	
Performance of the BMI	There is a direct correlation between the degree of business model innovation and long-term survival of a firm. A business model is geared towards value creation to all involved parties, thus it needs to yield financial performance and return to the stakeholders.	Poor performance is expected at the beginning for start-ups or new business units. Good performance is given by the “creation and management of interactions between core components.” Profit is the indicator of BMI consistency.	The success of a business model design cannot be anticipated in advance.	Challenges established, strong, system of beliefs.	“The advantages and benefits of a given BM are generally only identified and become obvious after its implementation” (Demil and Lecocq, 2015:53). “Performative power to shape and influence the action of others” (Mason and Spring, 2011:1038).
Relation with strategy	Strategy chooses the business model.	Strategy decides which dynamic capabilities to be developed (e.g. servitization), and which business model type to be employed.	Business model thinking helps managers to understand that strategies are discovery driven, rather than planning-oriented.	Strategy and business models are managers’ mental representations.	Strategy is part of the network.

Table 2. 3 Comparison of theoretical perspectives. Source: Own creation

2.5 Conclusions and an emerging perspective: Enactment

The five perspectives put forward, as seen in table 2.3, range from objective, rational decision making, to subjective perceptions of business model innovation influenced by managerial cognition. The five schools agree that managers need to direct the process of BMI; however, they admit that different levels of rationality might shape the company, the environment and even the model itself. Furthermore, all the perspectives put forward acknowledge the contingency effect from business model innovation on companies' survival, although they differ in accepting the same triggers and manners of acting. An activity system considers the connections between internal/external activities of the focal business, while dynamic capabilities reflect on the way imitation is avoided when preparing to adopt a competitive position in an industry. In an activity system perspective, the design of linkages between the elements of the business models are vital, while in a dynamic capability the linkages are influenced by the resources available and they are both between and within components.

There are strong similarities between discovery-driven and cognitive perspectives, as both emphasize the need for a trial and error approach, admitting that business models are not generated from the first try-out, but that a number of factors intervene, ranging from inertia and fear of failure to fear of the considerable investments potentially required. However, the cognitive perspective argues for BMI as managerially motivated, rather than illustrating external sources or internal financial crises, discussing how the model enacts the features of the surrounding environment and not the reverse. Beyond this, managers are sensemakers and enactors. The streams of research involved in assessing business model innovation focus on either internal resources or rational plans made by top management about how those resources are to be used, or on experimentation and prototyping to use resources differently. These perspectives neglect the enactment steps taken by employees involved in the creation of the new model. BMI is regarded as being mainly a senior management task, and the implementation of it is typically a top-down initiative, driven by ideas about optimizing existing resources and capabilities.

More than ten years ago, Chesbrough and Rosembloom (2002) defined business model as a mediation construct between technological input and economic output. In their paper, the authors argued that the development of a business model was a greater challenge for mature companies than start-ups, because established routines generate reluctance among managers to adopt new technology and practices that do not fit the existing business model. They referenced sensemaking and Weick (1995) to explain that the construction of business models not only concerned resources and how they are linked, but also the cognitive characteristics of the actors involved in the decision-making process. Furthermore, Chesbrough (2010) identified two explanations for the barriers to business model development: obstruction and confusion. Researchers that accept the obstruction perspective, such as Amit and Zott (2001) work as cited by Chesbrough (2010), believe that managers are convinced from the outset about the right business model for a certain technology. By contrast, the confusion, as proposed by Chesbrough (2010), suggests that managers do not control this information, as humans act on context rationality (Weick 1995), in which meaning follows action. Pursuing the same argument, Demil and Lecocq (2010) explain that common methods of studying business models, which involve developing normative frameworks that reduce businesses to their value creation and value capture mechanisms, fail to reveal the “*how*” behind the process of the creation of a business model. George and Bock (2011:89) emphasize the need for discovering the mechanisms and processes of business model innovation, and explain that narrative sensemaking is a possible theoretical lens through which to examine this. Magretta (2002) argues that business models comprise both material/economic and narrative facets, while Tikkanen et al. (2005) claim that managerial cognition and sensemaking activities are additional and important sides of any business model. These studies reveal a need for a new conceptualization of the term business model, which extends beyond the resource-driven view, to allow us to understand the creation of a business model through enactment processes possible in mature organizations.

Therefore, the next chapter introduce sensemaking, with focus on enactment theory (Weick, 1979) as the theoretical lens I employ in this thesis for understanding the processes behind the emergence of new business model inside an established company.

Chapter III: Sensemaking and enactment theory

3.1 Introduction

This chapter introduces Weick's (1995) sensemaking theory, with focus on enactment (Weick, 1979) as a perspective for understanding the processes involved in the creation of business models in incumbent companies. In the first section of the chapter, the traditional sensemaking framework, focusing on the seven sensemaking proprieties is introduced, followed by triggers that prompt actors to enter a sensemaking process. The next section analyses the centrality of enactment to sensemaking, and introduces the analytical framework derived from the theory, which is to be use in this research.

3.2 What is Sensemaking?

Originating in the field of organizational studies, sensemaking describes how people create meaning when an unexpected event interrupts the anticipated flow of ongoing situations. Sensemaking aims to understand how people “construct what they construct, why, and with what effects” (Weick, 1995: 4), beginning with the question “is the situation the same or different?” If it is found to be different, people begin to retrospectively notice cues, interpret those cues and respond by trying to enact new plausible meanings (Weick et al., 2005).

The term was coined by Karl Weick in 1995, and it is defined as:

[Literally [...] the making of sense [...] it is the sensemaking mechanism that organizational members use to attribute meaning to events, mechanisms that includes the

standards and rules for perceiving, interpreting, believing, and acting that are typically used in a given cultural setting (Weick, 1995:4-5).

Sensemaking is a response to failed expectations, when surprises appear, “sensemaking enables people to integrate what is known with what is conjectured, to connect what is observed with what is inferred. Sensemaking is a deliberated effort to understand efforts” (Klein et al, in Holmen, 2007:114)

“Sense” refers to *meaning* and “making” refers to the *activity of creating* something (Weick, 1995:7). Therefore, sensemaking exposes how constructions are enacted through the everyday actions of actors, underlining that actions precede meanings. In simple terms, sensemaking takes place to answer two questions: *what is going on here? / what is the story? and what am I going to do next?* (Weick, 1995; Weick, Sutcliffe and Obstfeld, 2005), and consists of three elements: a frame, a cue, and a connection. Sensemaking involves placing stimuli into a framework, and a meaning arises when a link is made between the frame and a cue. Weick (1995:110) explains that the frame represents “the past moments of socialization”, while cues are “present moments of experience”. When these two moments are connected, meaning is created. Therefore, it is central to sensemaking to understand what people “draw on” (Weick, 1995:109) when interpreting objects. People function within certain frames that serve to determine which cues they notice and extract. This process of connecting and, therefore, creating order, i.e., “structuring the unknown”, is at the core of sensemaking.

Sensemaking is also about communication, interactive talk, and language. Talk materializes and brings a situation into existence through articulation, thus it is “the social process by which the tacit knowledge is made more explicit and usable” (Weick et al., 2005:413). When it is noticed that something does not fit and somebody articulates this, a new object is created. In this way, speech brackets actions and gives them meaning. However, there is also a “fallacy” (Weick, 1995:4), which arises when an event is not articulated despite being observed for its unfamiliarity. Unfamiliarity can only be explained within the boundaries of known vocabulary, which is influenced by a certain context. Understanding the context, especially in an organization, is important because “it binds people to action that they then must justify, it affects the saliency of information, and it provides norms and expectations that constrain explanations. (...) People in organizations are in different locations and are familiar with different domains,

which means they have different interpretations of common events” (Weick, 1995:53). Thus, people drawn on context, on “perceptual frameworks” (p.109), on *frame* which “enable people to locate, perceive, identify, and label occurrences in their lives and worlds” (Weick, 1995:109), and “frames can organize relationships that are special, causal, temporal, functional scripts” (Klein et al, in Holmen, 2007:119). Therefore, the identification of cue and how meaning is created depends both on background experience and the frame one is a part of. For arguing this sensemaking feature, Klein et al, in Holmen (2007) gives the example of an experience climber in comparison with a novice one. While the experienced one would look for different places for holds and have more frames to rely on provided by experience, the “beginner would look for what can and cannot be achieved and what can be used as a hold” Klein et al, in Holmen (2007: pp. 129-130). Thus, context, and especially social context is very important for sensemaking. It has the power of both determining the type of cues one would extract, and how this cue is going to be interpreted (Weick, 1995:51). Social context “binds people to action that they then must justify, it affects the saliency of information, and it provides norms and expectations that constrains explanations” (Weick, 1995:53). This is especially important in organizations, as people are working in different departments, which implies that they interpret events differently, which might determine conflicts and power struggles. Based on this argument, Weick (1995) refers to the different kinds of vocabularies actors draw on when trying to make sense, meaning to connect a cue with the frame, emphasizing the idea that people use different vocabularies. Weick (1995:111) explains that frames tend to be “past moments of socializations”, while cues are the experiences of the present. When looking at frames, they make take the form of vocabularies of ideologies, third-order control, paradigms, theories of actions, traditions, and stories.

Ideologies, which are defined by Trice and Beyer (1993) as “shared, relatively coherently interrelated set of emotionally charged beliefs, values, and norms that bind some people together and help them to make sense of their worlds” (in Weick, 1995:111). Ideologies point towards certain expectations in terms of outcomes, behaviour, cause-effect relations, and it is an “alternate source of organizational structure” (Weick, 1995:113). Ideologies are “translated into action” (Weick, 1995:117), especially when managers are facing non-routine technologies, through third –order controls, which are “assumptions and definitions that are taken as given, and are called ‘premises control’ because they influence the premises people use when they

diagnose situations and make decisions” (Weick, 1995:117). Weick (1995:118) defines paradigms, in comparison with ideologies and third-order control, stating that they “are more self-contained systems, capable of serving as alternate realities, and/or a subjective point of view that determines what a person perceives, conceives, and enacts” (Martin and Meyerson, 1988:93, in Weick, 1995:188). Furthermore, paradigms have been defined as “set of assumptions, usually implicit, about what sorts of things make up the world, how they act, how they hang together, and how they may be known” (Brown, 1978:373, in Weick, 1995:118). Theories of actions are built on stimulus-response and trial and error sequencing, while traditions are “patterns that have been transmitted at least twice over generations” (Weick, 1995:124). Lastly, stories, which are vocabularies of sequence and experience, add value to sensemaking by building on lived experiences that serve to guide future actions.

Weick (1995) emphasizes that sensemaking is about the creation of order and the achievement of plausible stability when encountering the unexpected and the unfamiliar, such as when surprise disrupts organizational routines. The gap between the new situation and the former expectation, i.e., between the prediction about the future and the new reality, triggers novel questions, struggles, and negotiations, to create meaning to comprehend the new situation. The new discrepancy prompts a need for an explanation, and frequently the result is that several meanings are given to the same event (Mills and Mills, 2010). Thus, sensemaking occurs when the flow of actions becomes unintelligible, because a disruption of expectations has occurred (Weick et al., 2005:409). To understand what has happened “people look first for reasons that will enable them to resume the interrupted activity and stay in action; these reasons are taken from frameworks such as institutional constraints, organizational premises, plans, expectations, acceptable justifications, and traditions inherited from predecessors” (Weick et al., 2005:409). Once the “surprise” (Weick, 1995, 2005) has been reframed as “normal,” the sense making process is stabilized. For example, this arises when a new technology is no longer perceived as new because the adaptation process is complete, thereby signifying that the process of creating meaning around the technology has been stabilized (Seligman, 2006).

Sensemaking transpires at both the individual and the collective level. Like individuals, organizations seek to define their identity and create collective meaning, to assure resilience, as

“it doesn’t take much to stop being an organization” (Weick, 1993). Weick (1993) explains that resilient organizations can lose momentum if they fail to understand that sensemaking is about contextual and not strategic rationality. Hence, sensemaking is not about pragmatic questions that point towards solutions, rather it is built on “vague questions, muddy answers, and negotiated agreements that attempt to reduce confusion” (Weick, 1993:9). During the Mann Gulch disaster, the firemen, facing a situation they had never encountered before, were not seeking a strategy, but an understanding of who they were in that situation, given the lack of past experiences with which to bracket, label, and determine ongoing action. Organizations can collapse because the identity question remains unanswered where there is an absence of “someone able to create order with whatever at hand” (Weick, 1993:9). Leadership is needed in the form of a sensegiver (Gioia and Chittipeddi, 1991), essentially a map provider. Weick stated that any map is better than no map, as it can create a space for generic subjectivity, in which “roles and rules exist, and that enables individuals to be interchanged” (Weick, 1993:5), thus it functions as a frame for ongoing action and social interaction.

Weick refers to Wiley’s (1988) argument that there are three macro levels when discussing sensemaking, which are “above” (Weick, 1995:70) the level of the individual. These are intersubjective, the generic subjective, and the extrasubjective. Intersubjective is attained when, through communication, the “I” becomes “we” (Weick, 1995:71). Intersubjectivity is a reference to “interaction, mutually reinforcing interpretations and beliefs, values, and assumptions” (Weick, 1995:73), where “face-to-face social interaction in real time” (Weick, 1995:72) allows innovation to emerge from an “intimate contact.” This state is relevant until structures, artefacts, and management technology are in place and recognized by everyone. At this point, the need for a person to occupy a certain role is no longer important, although their function endures; “concrete human beings, subjects, are no longer presents; selves are left behind at the interactive levels” (Weick, 1995:71), so generic subjectivity arises. Nevertheless, in times of change, for example when adopting a new technology, Weick (1995) argues that generic subjectivity dissolves, as people step back to formulate understanding and intersubjectivity in response to the new situation of uncertainty. Generic subjectivity represents control, and management needs to negotiate the transition from innovation (intersubjectivity) to control (generic subjectivity). Bridging these two is at the core of sensemaking: “organizations are adaptive social forms; as intersubjective forms, they create, preserve, and implement the

innovations that arise from intimate contact. As forms of generic subjectivity, they focus and control the energies of that intimacy” (Weick, 1995:72-73). Weick (1995) argues that in this context, where organizations are defined as “a set of interactions and entities that are moving continuously between INTER and GENERIC” (Weick, 1995:73), the focus should be on answering the question: “*how does action become coordinated in the world of multiple realities?*” as information is lost in the transition from one condition to another. Furthermore, the goal of organizations, when viewed as sensemaking systems, “is to create and identify events that recur to stabilize their environment and make them more predictable” (Weick, 1995:170), in response to the ongoing pressure to develop generic subjectivity to assure control.

Sandberg et al. (2015:11) offers a comprehensive literature review of how researchers have utilized sensemaking perspective. In their work, the authors identified that sensemaking has five components: (i) it is made of specific episodes; (ii) it is triggered by ambiguous events; (iii) it happens through specific processes, (iv) it generates an outcome, and (v) it is influenced by “specific situational factors”.

- i) *Made of specific episodes*: Sandberg et al. (2015:11) affirm: “perhaps the most distinctive constituent of sensemaking, in its fully developed form, is the conceptualization of ‘sensemaking’ as something confined to the specific episodes that occur from the moment some ongoing organizational activities are interrupted until they are satisfactorily restored (or in some cases permanently interrupted).” For example, sensemaking typically focuses on specific events, such as crises, disasters, and restructuration.
- ii) *Triggered by ambiguous events*: These episodes are triggered by specific events, by “an equivocal event that interrupts actors’ ongoing activities” Sandberg et al. (2015:12). The authors identified a tendency in the literature to study major planned events and unplanned ones, such as disasters, that have suffered interruptions, to determine the initiation of the sensemaking process. Furthermore, minimal attention has been paid to the minor planned or unplanned events that interrupt the everyday activity of organizations. Major planned events, in the form of meetings, are still more commonly the subject of sensemaking studies, with minor unplanned events, such as “small misunderstandings between actors” (which might result in a detour from the daily

routine or even grow into a major unplanned event) being largely neglected.

- iii) *Happens through specific processes*: “making of sense” or the restoration of the interrupted ongoing flow is constituted by three interconnected processes: *creation*, *interpretation* and *enactment*. These three elements are defined as follows:
- *Creation* is a “process which involves bracketing, noticing, and extracting cues from our lived experience of the interrupted situation – creating an initial sense of the interrupted situation, which people then start interpreting” (Weick, 1995: 35);
 - *Interpretation* “involves fleshing out the initial sense generated in the creation process and developing it into a more complete and narratively organized sense of the interrupted situation” (Sandberg et al., 2015:14); and
 - *Enactment* “involves acting on a more complete sense made of the interrupted situation, in order to see to what extent it restores the interrupted activity” (Sandberg et al., 2015:14).
- iv) *Generates an outcome*: there is always an outcome from a process, whether actors manage to make sense of an interruption or not.
- v) *Influenced by specific situational factors*: sensemaking does not happen in insolation, and it is represented by situational factors, such as context, language identity, cognitive frameworks, emotion, politics and technology (Sandberg et al., 2015:16).

To conclude and summarize this information, the authors produced figure 3.1.

Major constituents of the sensemaking perspective

The overarching constituent of the sensemaking perspective				
Sensemaking is delimited to the <i>episodes</i> that take place from the moment some aspects of the ongoing process of organizing are interrupted until they are satisfactorily restored (or in some cases) permanently interrupted.				
Major specific constituents of the sensemaking perspective				
<i>Events that trigger sensemaking</i>	<i>Processes of sensemaking efforts</i>	<i>Outcomes of sensemaking</i>	<i>Factors influencing sensemaking</i>	
- Major planned events	- Creation	- Restored sense	- Contexts	
- Major unplanned events	- Interpretation	- Restored action	- Language	
- Minor planned events	- Enactment	- Non-sense	- Identity	
- Minor unplanned events		- No restored action	- Cognitive frames	
- Hybrids of events			- Emotion	
			- Politics	
			- Technology	

Figure 3. 1 Major constituents of the sensemaking perspective. Source: Sandberg et al., (2015:12)

Apart from these components, Weick (1995) talks about seven proprieties of sensemaking that distinguish it from other processes such as interpretations, for example. In the following section, the seven properties, according to Weick (1995), are analysed.

3.3 Seven Properties of Sensemaking

Weick (1995:18) discusses the seven characteristics of sensemaking with the aim of showing “what it is, how it works and where it can fail.” These are all interrelated and as following: grounded in identity construction, retrospective, enactment of sensible environments, social, ongoing (ongoing events), focused on extracted cues, driven by plausibility.

Grounded in Identity Construction

“Depending on who I am, my definition of what is out there will change [...] Once I know who I am, then I know what is out there” (Weick, 1995: 20). The sensemaking process is self-referential and begins with the sensemaker and the sensemaker’s need to understand her/his identity and role in the organization. Without an understanding of their own identity, an actor, individual or collective, would not know how to act, and would then not be able to create sense.

This is explained by Weick et al. (2005) thus, “From the perspective of sensemaking, who we think we are (identity) as organizational actors shape what we enact and how we interpret, which affects what outsiders think we are (image) and how they treat us, which stabilizes or destabilizes our identity” (416).

Retrospective

“How can I know what I think until I see what I say?” (Weick, 1995: 18). The sensemaking perspective accepts that each of us interprets the world per our own cognitive map, and our own framework, that is created by past patterns of actions and proofs of success or failure: “Sensemaking is the process of constructing a link between future actions and past experiences, providing the decision maker with guidelines of when not to act, and how and when to act” (Conrad and Poole, 1998). Making sense of a new situation pushes sensemakers to reach out retrospectively for patterns to facilitate the interpretation of a new situation to deliver clarity, by bracketing. The problem that arises, according to Weick (1995:24), is “confusion, not ignorance,” as there are too many meanings present at the time reflection takes place. Furthermore, sensemaking is about how people generate what they interpret, as actions precede meanings and our actions are unknown to us until they have been completed: “man has discovered that his perceived world is in reality a past world” (Weick, 1995:24).

Enactment of Sensible Environments

“People create, shape, and change the environment they are part of: we are neither master or slave of our environments. We cannot command and the environment obey, but also we cannot, if we would speak with greatest accuracy, say that the organism adjust itself to environments” (Weick, 1995:32). If we accept Weick’s view, people enact the reality they are a part of, and this process becomes a source of stimuli for action. A response to environmental stimuli would result in either opportunities or constraints being placed on future enactment processes.

Social

An “organization is a network of intersubjectively shared meanings that are sustained through the development and use of a common language and everyday social interactions” (Weick, 1995:40). Intersubjectivity creates a collective cognition, demonstrating that sensemaking is a collective act. Hence, sensemaking requires attention to language, talks, discussions and

conversation, to understand how social contracts are mediated in specific environments. Directing greater attention toward prototypes, stereotypes and roles would enable the understanding of sensemaking, “especially because of the organization’s tendency to drift towards an architecture of simplicity” (Weick, 1995:20).

Ongoing

“To understand sensemaking is to be sensitive to the way in which people chop moments of continuous flows and extract cue from those moments” (Weick, 1995:43). Sensemaking never stops, and is continuously made and remade. The interruptions of flow are important for sensemaking, as the shock that occurs when people encounter ambiguity and uncertainty, prompt them to reflect on what has happened and what should be the next step. Organizations are continuously becoming, and managers need to create meanings that allow this becoming to happen.

Focus on Extracted Cues

Weick (1995:50) explains “extracted cues are simple, familiar structures that are seeds from which people develop a larger sense of what may be occurring (...) therefore the control over which cue will serve as a point of reference is an important source of power in organizations.” Furthermore, Weick (1995: 55) argues that cue exaction is about noticing and classification, as it involves comparison of what is noticed to what is understood: “once people begin to act (enactment), they generate tangible outcomes (cues) in some context (social), and this helps them discover (retrospect) what is occurring (ongoing), what needs to be explained (plausibility), and what should be done next (identity enhancement).” Guided by our cognitive map, we choose what to see in any given situation, and this then determines what sense we make. The belief that we can see everything is naïve, as is the suggestion that different people looking at the same situation will extract same cues. Furthermore, when people have chosen what to believe in, they “see” only factors that reinforce their beliefs, creating almost negative tones on the believes that were left outside.

Driven by Plausibility rather than Accuracy

Weick (1995) quotes Fiske’s (1992: 879) statement that sensemaking “takes a relative approach to truth, predicting that people will believe what can account for sensory experience but what is

also interesting, attractive, emotionally appealing, and goal relevant". The preference for plausibility demonstrates that sense is created by understanding what could have happened, i.e., a plausible belief. Sensemaking it is about "redrafting an emerging story, so that it becomes more comprehensive, incorporates more of the observed data, and is more resilient in the face of criticism" (Weick et al, 2005:415), and not about the truth. The result is that things remain in motion, and action is core to sensemaking: "action-taking generates new data and creates opportunities for dialogue, bargaining, negotiation, and persuasion that enriches the sense of what is going on" (Sutcliffe, 2000:197). Accuracy could become a sensemaking issue, but only in situations with large time constraints. Managers in organizations, under conditions of time pressure, would choose the most plausible/justifiable explanation to speed the decision-making. "I need to know enough about what I think to get on with my projects, but no more, which means sufficiency and plausibility take precedence over accuracy" (Weick, 1995:57). Furthermore, due to our interpretations and manners of extracting cues, we can only understand what is plausible, and sensemaking is about paying attention to the filters used when determining plausibility, why certain aspects are chosen and what is being filtered out (Weick, 1995:57).

3.4 What Triggers Sensemaking?

There are several conditions under which sensemaking is initiated, all of which begin with certain "*shocks* that stimulate people's action thresholds to pay attention and initiate novel action" (Weick, 1995:86), causing an interruption to the ongoing flow. The interruption of routine provokes breakdowns in the system, regardless if these are significant disasters, such as Mann Gulch (Weick, 1993), or small interruptions. In such conditions, actors question their identity, struggling to comprehend why their usual approach to solving problems no longer delivers results. These *shocks*, differ from inherent breaks, and are characterized by information overload, complexity, and turbulence (Weick, 1995:86). In situations where there is information overload, tolerance to error rises, as people punctuate the flow in predictable way. Complexity generates a different reaction, as it provokes uncertainty, leading people to see only the routine they are accustomed to: "seeing what one believes and not seeing that for which one has no

beliefs are central to sensemaking- this means that the variety in a firm repertory of beliefs should affect the amount of time it spends consciously struggling to make sense” (Weick, 1995: 87). To exemplify complexity, Weick refers to when a new technology is brought into an environment in which there is limited experience, resulting in incomprehensibility and associated events.

Continuing, Weick (1995) relates the effects of turbulence. Turbulence is presented as a combination of instability and randomness, which determines whether organizations rely more on heuristics and imitation. However, for a shock to be perceived as a shock, it must be labelled accordingly, thus, Weick explains that when something is labelled a problem, it becomes one. Perceived as an occasion for sensemaking, the term *problem* arises when there is gap between how things are and what they should be, as goals evolve during actions. Nevertheless, this gap can be seen as a cue if there are two conditions fulfilled:

The gap must be difficult to close, and secondly, the gap must matter: If novelty is open to a variety of labels, then one could also say things like that is an issue, manage it, that is a dilemma, reframe it, that is a paradox, accept it; a conflict, synthesize it, an opportunity, take it. To label a novelty a problem is a consequential act! Once something is labelled a problem, that is when the problem starts”(Weick, 1995: 88).

Organizations are facing two types of shocks: ambiguity, which is the shock of confusion, and uncertainty, the shock of ignorance (Idem, p.92). *Ambiguity* arises when “the assumptions necessary for rational decision making are not met” and actors are confused due to abundant information that gives way to multiple interpretations. On the other hand, *uncertainty* is caused by lack of knowledge, which can be resolved by inputting new information into an organization. To reduce ambiguity, which creates confusion, Weick (1995) proposes face-to-face interactions as means to construct information and determine multiple cues. Interactions allow mobilizing a certain kind of language intended to create a common meaning.

According to Weick “managers organize cues and messages to create meaning through their discussion and joint interpretations (...) To resolve confusion, people need mechanisms that enable debate, clarification, and enactment more than simply provide large amounts of data” (1995: 99). Weick (1995:92) also refers to uncertainty, created by the shock of ignorance.

Uncertainty is caused by lack of knowledge, which can be resolved by imparting new information to the organization. The shock of uncertainty arises from “imprecisions in estimates of future consequences conditional on present actions” (March, 1994:174, in Weick, 1995:95), and results from the limited availability of interpretations and the “individual’s perceived inability to predict something accurately” (Milliken, 1990; in Weick, 1995:95); individuals often lack information regarding the outcomes of their actions. In response to uncertainty, organizations become “concerned with news that gives some cues about how things might turn out (...) and it implies that uncertainty is reduced by the earliest available information that will show what direction the actor ought to be going” (Stinchcombe, 1990, in Weick, 1995:96). The author argues that once uncertainty reduces, “the residual uncertainty is transformed into risk and people make their bets.” Thus, in organizations that suffer from large amounts of residual uncertainty, the risks taken are greater; therefore, there is a greater probability of failure (Weick, 1995:97).

To manage uncertainty, actors bracket activities, as the first step in their search to create meaning (Weick et al., 2005:411). Weick et al. (2005) offered the example of a nurse, who, based on her experience, has noticed and could bracket signs indicating a sick baby. Bracketing cues allowed an initial understanding of the interruption to the norm, it thus “simplified the world” and permitted her to label the situation. Labelling and categorizing situations based on previous events, permits the sensemaker to make “shock” manageable and easier to control, while creating a “common ground of understanding for everyone, reducing the ignorance differences between actors” (Weick et al., 2005). By being created retrospectively, all categories have plasticity, meaning that they can be shaped and reshaped readily according to their social context.

Therefore, to understand sensemaking it is necessary to understand how people cope with interruptions and how they react. This could either refer to when a new event that does not fit into the environment happens, or when an expected event, such as a prophecy, does not occur. In both cases, ongoing cognitive activity is interrupted and “coping, problem solving and learning activities take place” (Weick, 1995:100).

Weick (1995) speaks about beliefs and actions as drivers for sensemaking underlining the belief that sensemaking is always initiated by action (Weick, 1995). Therefore, belief-driven

sensemaking begins with argument and expectation, while action-driven sensemaking is a consequence of conscious manipulation. Sensemaking processes are shaped by self-fulfilling prophecies, which can become so strong, that “believing is seeing”. These prophecies are tools for talking about the future, and relate to the creation of certain expectations. Furthermore, different beliefs would determine arguments, as people would try to minimize the number of beliefs surrounding an issue, to reach a common understanding. On the other hand, action-driven sensemaking allows “focus on explaining behaviours for which people are responsible” and manipulation “stabilizing an otherwise unstable set of events so that it is easier to explain them, it is an oversimplification of the world” (Weick, 1995: 135). With the aim of creating meaning, people use four approaches to frame ongoing flows, and Weick (1995:135) explains that relating the two elements of belief and action, is central to the sensemaking process.

Lastly, Weick (1995, 2005) explains that sensemaking processes frequently fail, especially in cases when frameworks are strong enough to influence the ability of people to shift representations. Strong beliefs give rise to blind selection criteria, which overlook data that is incompatible with the existing frame. Sensemakers are “seeing” only information that match and confirm their frameworks. The so-called *inertia*, can “give people a false sense of security, while they hold on to out-dated frameworks” (Sharma, 2010), meaning that they fail to acknowledge the unpredictability of the environment. Weick (1995) suggests that improving people-to-people interaction, by creating space for arguing, negotiating and updating, will positively affect the sensemaking process. In the context of an organization, loosely coupled systems are considered more appropriate as means to keep the core of the organization intact by responding to environmental stimuli.

3.5 Enactment Theory

Once triggers have initiated the sensemaking process, the next factor comes into play, namely the “actual making of sense occurs through specific processes that actors are engaged in when trying to restore their interrupted activities” (Sandberg et al., 2015:14). We are not passive inhabitants of our environment; we enact it. People act out and *real-ize* their environment

(Weick, 2001:187) and afterwards, it influences our choices (Weick, 1979, 1988, 1995, 2001, 2009). In the venture of making sense of equivocality, actors bracket, punctuate and negotiate among themselves regarding which “nouns and verbs should be imposed on the flow” and how they might be connected (Weick, 2001). In doing so, they enact the “raw data” involved in sensemaking (Weick, 1979: 130).

In 1979, in his book *The Social Psychology of Organizing*, Weick introduces enactment as part of the organizing process, whereby ecological change, enactment, selection and retention are four elements interconnected to form a cyclical loop, as in figure 3.2.

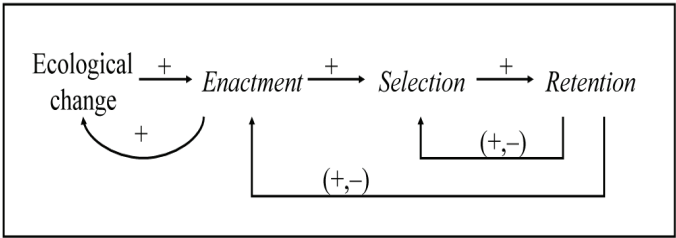


Figure 3. 2 The organizing process. Source: Weick (1979:134)

In figure 3.2, Weick (1979: 134) illustrates the causal link between enactment and selection and that between selection and retention, which affects both selection and enactment either directly or inversely, “depending if the person decides to trust the past experience (+) or disbelieve it (-).”

The important thing to realize is that there are numerous ESR sequences going on in the organization, they occur in several places, they are loosely coupled, and it is the total pattern of crediting and discrediting among these several simultaneous sequences that has a strong influence over whether the organization survives or disappears (Weick, 1979:236).

Furthermore, Weick (1979) explains that in the statement: “*How can I know what I think until I see what I say/do*”, “say/do”, see fig.3.3, represents the enactment. In the model, *selection* denotes the process by which actors attach meaning to actions in order to discover the one that reduces equivocality. In doing so, causal maps that have proven to be operational on similar occasions are mobilized to assist in sensemaking in the new situation.

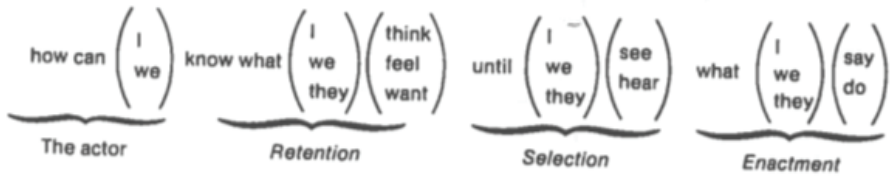


Figure 3. 3 Enactment. Source Weick (1979:134)

In a later work, Weick (2001:189) clarifies that individual cognitive maps of this type represent the “knowledge of what one thinks,” the criteria that influence what is noticed versus what is ignored, and how one would act in response to the environment. The overlapping areas of the cognitive maps of individuals at the same organization mark the beginning of organizing and building collective sensemaking. The final component of the model, *retention*, involves “the straightforward storage of the products of successful sensemaking” (Weick, 1979: 131); it is the enacted environment. Here, things are retained permanently, or for a given period of time with the purpose of permitting things to move forwards, and not stop the ongoing flow. Retention is the “liability to recall” (Weick, 1979:207), meaning that if an experience is not remember and it is not available for further sensemaking processes, the experience was not retained: “the only way the sensemaking recipe works is if you can remember the things you have said, so that they are available for reflections” (Weick, 1979:207).

Weick (1979) elaborated on the term and explained that while enactment is a form of bracketing, it also encompasses deviation amplification and self-fulfilling prophecies, and is thereby socially constructed. *Enactment as bracketing* refers to the fact that one extracts specific parts of the whole, when investigating and understanding that particular part. When discussing

bracketing, Weick (1979) refers to Neisser's (1976) discourse on schemata. The cognitive schemata direct the exploration of objects, meaning that bracketing is influenced by the system of belief within which the actor operates.

In addition to bracketing, *enactment* functions as a *deviation amplification*, meaning that "minor disturbances, when they are embedded in a deviance amplification loop, can grow into major happenings with major consequences" (Weick, 1979:157). Moreover, *enactment* is a *self-fulfilling prophecy*, and here Weick (1979:160) argues that when confronting equivocality, managers operate on the presumption of logic, given their belief that they have a valid view of the world and the expectation that others would share it. Finally, *enactment* is a *social construction of reality*, and here Weick (1979) makes an interesting differentiation between an enacted and a "perceived" environment. A perceived environment is the "current personal definition of the situation" Weick (1979:166), while in an enacted environment emphasis is on the output, not the input, when organizing activities. This argument was elucidated further in his 1995 work, when Weick added that *enactment* has "a touch of realism" in its emphasis on bracketing and punctuating. Through these processes, actors split the "duration" into tangible objects, categorizing them into manageable structures. The making of subjects into objects, collectively accepted objects is the process of enactment. What are considered "plausible events in sensemaking" (Weick, 1995:35), i.e., noticing, interpretations, manipulation and framing, are considered to produce an ontological shift, as they swing from subject to object and back. In developing this argument, Weick (1995:37) draws attention to the fact that acting is not only about producing meaning, as "there is no pre-given features to the word, but groundlessness is the very condition that shapes human experiences."

Given the importance of enactment to organizing processes, Weick (1979:168) refers to R.H. Hall's (1977:61) study of power, which notes that the person and the position from which he executes enactment influence the shape of the enacted environment. People in different positions have different access to power, "which means that they have differential success in imposing their enactments on other people both inside and outside the organization" Weick (1979:168). Nonetheless, this is not only a hierarchical argument, as lower level participants can also exert influence, and studies in middle management sensemaking processes are evidence of that. Interestingly, Weick (1979:217) said of enactment as a choice: "if a person repeatedly

enacts and selects only those things that have been enacted and selected in the past, then this is a case where stability drives out flexibility. Adaptation becomes endangered.”

In 1984, Daft and Weick spoke about organizations in which they observed enactment behaviour. They had proposed a model of organizational interpretation, and they analysed organizations taking into consideration two dimensions: “management’s belief about the analysability of the external environment, and the extent to which organizations intrude into the environment until they understand it” (Daft and Weick, 1984:287). Assumptions about the environment were found to range from perceiving it as “concrete” and “measurable,” whereby managers could gather information through formal and rational means, towards an unanalysable environment shaped by managerial interpretations and intentions. In the latter case, the decision-making was based on more ad-hoc, non-linear manners of gathering information. Moreover, the perception of facing an “analysable environment” arose as a consequence of previous experiences. Organizational intrusiveness was defined as the extent to which organizations actively intervene in the search for information; in some cases, organizations allocate resources for research, forecasting, and planning; while others “may leap before they look, perform trial and error to learn what an error is, and discover what is feasible” (p. 288). Daft and Weick’s (1984) model split organizations into four categories, as shown in the following figure:

ASSUMPTIONS ABOUT ENVIRONMENT	Unanalyzable	UNDIRECTED VIEWING Scanning Characteristics: 1. Data sources: external, personal. 2. Acquisition: no scanning department, irregular contacts and reports, casual information. Interpretation Process: 1. Much equivocality reduction 2. Few rules, many cycles Strategy and Decision Making: 1. Strategy: reactor. 2. Decision process: coalition building.	ENACTING Scanning Characteristics: 1. Data sources: external, personal. 2. Acquisition: no department, irregular reports and feedback from environment, selective information. Interpretation Process: 1. Some equivocality reduction 2. Moderate rules and cycles Strategy and Decision Making 1. Strategy: prospector. 2. Decision process: incremental trial and error.
	Analyzeable	CONDITIONED VIEWING Scanning Characteristics: 1. Data sources: internal, impersonal. 2. Acquisition: no department, although regular record keeping and information systems, routine information. Interpretation Process: 1. Little equivocality reduction 2. Many rules, few cycles Strategy and Decision Making: 1. Strategy: defender. 2. Decision process: programmed, problemistic search.	DISCOVERING Scanning Characteristics: 1. Data sources: internal, impersonal. 2. Acquisition: Separate departments, special studies and reports, extensive information. Interpretation Process: 1. Little equivocality reduction 2. Many rules, moderate cycles Strategy and Decision Making 1. Strategy: analyzer. 2. Decision process: systems analysis, computation.
		Passive	Active
ORGANIZATIONAL INTRUSIVENESS			

Figure 3. 4 Relations between the Interpretation Modes and Organizational Processes. Source: Daft and Weick (1984:291)

In this figure, enactment behaviour was generated by organizations that were characteristically highly intrusive, active, and which assumed the environment was not analysable; thus, they constructed the markets. Furthermore, in comparison with alternative types, managers in enacting organizations were manipulating the environment, as their shareholders were attempting, through a prospector strategy, to always develop something new (Daft and Weick, 1984).

The term was explained once again in 1988, when Weick (1988:306) argued that *enactment* involved the synthesis of four lines of thought: self-fulfilment prophecies, retrospective sensemaking, commitment, and social information processes. The concept explained that people act events and structures into existence and “set them in motion” (Weick, 1988:306). Actors’ actions result in the creation of either constraints or opportunities that were not there before, therefore *enactment* involves both a process: *enactment* and a product: *an enacted environment*. Weick (1988:307) formulates a definition of enactment, stating that it is “the social process by which a ‘material and a symbolic record of actions’ is laid down”, and that the process encompasses two steps: firstly, parts of the field are brought to attention through bracketing, based on preconceptions; and secondly, actions tend to confirm preconceptions.

When defining an *enacted environment*, Weick used the phrase: “the residuum of changes produced by enactment” (1988:307) to mean that enactment has significant results, which cannot be overlooked. The author revisits the idea presented in 1979, which states that every action has a consequence, producing a causal map, an “if-then” manner of thinking. Therefore, organizations and their environments are formulated in the minds of actors who make sense of new experiences through previous encounters, which influence the causal map. Interestingly, Weick (1988:307) explained that an enacted environment has two facades: a public one, visible to everyone, and a private one, in which actions are related to outcomes, “expectations about what will happen in the future”. Furthermore, he explains that commitment (actions made public are harder to undo), capacity (“people see those events they feel they have the capacity to do something about”), and expectations (self-fulfilling prophecy), are crucial to enactment.

Triggering events (Weick, 1988:308) determine the actions and “spontaneous reactions” of different stakeholders. People enact the environment they face, and were they to act differently,

or not act at all; a different environment would confront them. Therefore, enactment is a reference to the “making” element of sensemaking (Weick, 1995:31). Explaining triggering events, enactment means, “to stumble” into something that is not familiar, and so requires the creation of meaning to understand it. The enactment process begins by bracketing portions of what is seen and then punctuating and connecting this in “an effort to transform the raw data into information” (Weick, 2001:186). Weick continues that one might require additional attempts at punctuation before a causal connection/consequence is found, and different punctuation can result in different conclusions: “enactment processes generate and bracket the raw data, punctuation and connection processes transform the raw data into information and the result was the enacted environment” (Weick, 2001:187).

To demonstrate the process of enactment, Weick (1979; 2001:199), offers the example of an experiment conducted with two orchestral organizations, each receiving the same composition, but each was then told it was written by a different composer, one more famous than the other. As a result of this twist, the environments created were very different; the orchestra believing that they were rehearsing a piece by a famous composer put more effort into learning it, developing a very low tolerance for failure, while the other orchestra put in only sufficient effort to learn it adequately. The musicians did not react to the environment; they enacted the environment, “once they have enacted the environment, they are punctuating or breaking that environment into discrete events that are available for relating” (Weick, 2001: 199).

In 2009, Weick added the notion of consequence, positing that enactment extends beyond action, as implied when looking at both agency and consequences: “we do something and the situation forever changes, and those changes affect us” (Weick, 2009:190). Furthermore, the author cites Westwood and Clegg (2003:184, in Weick, 2009:190), affirming, “enactment theory appears to provide a more complete explanation of the internal worlds and cognitive understanding of the intra-organizational members of the inter-organizational systems.” Weick (2009:195) also elucidates that enactment was first mentioned in 1960, and situated in the “Zeitgeist”- spirit of time- as a part the social-psychological research, where a common theme was of the action defining cognition, existence precedes essence, and rationality has a “demonstrable retrospective core.” People create their own fate, as organizations produce their own environment, with the result that we are responsible for our own problems. As enactment

was first debated in the 1960s and the 1970s, Weick (2009) more recently asked if the term still applies. He answered that it does, commenting that learning by trial and error is still part of an organization’s reality, although, “the content is different. But the forms through which the content flows remain pretty much the same” (Weick, 2009:196).

To conclude, Weick (1979, 1984, 1988, 1995, 2009) iterates that a sensemaking process needs to be triggered by an event that interrupts perceived normalcy and flow. In the moment of interruption, the urge to “make” sense of the new situation emerges. Actors begin to look retrospectively to see if they can bracket previous experiences, label the new situation, enact on plausible rationality, and the result is a new enacted environment. If the latter is not perceived as being collectively accepted, reaching a level of intersubjectivity, it can be perceived as an interruption per se, thus generating a new enactment process. Furthermore, as Weick (1995) argues, what would be perceived as an interruption is dependent on the frame and the vocabularies employed in the frame, as seen in figure 3.5.

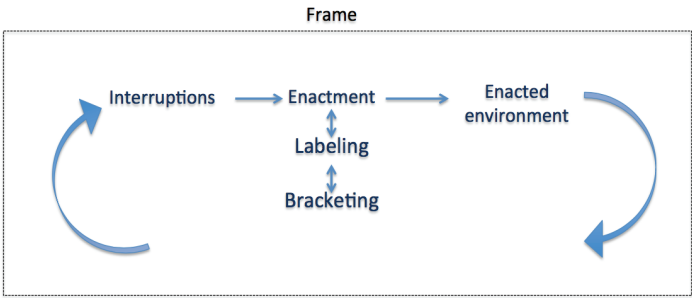


Figure 3. 5 Enactment process. Own creation

Figure 3.5 depicts a synthesis of the way enactment has been theorized, by bracketing the most significant points in the theory, namely: trigger of sensemaking – interruptions, acting to creating meaning of the interruption based on bracketing and labelling, and enacting a new environment. These steps correspond with Weick (1979:134) model, where ‘interruption’ is the ecological change, ‘enactment’ includes the selection process, and the ‘enacted environment’ refers to retention.

As shown, the process is non-linear, and it underlines the managerial cognition events when a shock needs to be overcome to act out, and “real-ize” (Weick, 2001:187) the environment.

As the framework of the seven characteristics of sensemaking proposed by Weick (1995) does not explain the process, whereas enactment theory elucidates the processes involved when meaning is created, figure 3.5 is compiled with the purpose of being the theoretical framework for conducting the analysis in this thesis.

Chapter IV: Research Design

But, as ever, we are working with trade-offs- of time, of coherence, and of the story which, as researchers want to tell about those we have collected (Sally Mailties, 2012:508).

This chapter explores how the research was conducted and the decisions made at the design stage. As Sally Mailties (2012) argues, the choices we make as researchers open certain doors to some opportunities while simultaneously closing others. Therefore, this chapter is concerned with the appropriacy of conducting an ethnographic study to answer the research questions posed, and explaining my experience in the field, how the data was collected and analysed.

By using Karl Weick's sensemaking theory, explained in Chapter three, as the lens through which to study the enactment processes involved in creating a new business model, this research is situated within the social constructivist paradigm. According to Weick (1995), reality is an ongoing process involving the negotiation and construction of meaning, defining how actors enact their reality, in line with this paradigm. Hernes (2008:115) states that sensemaking belongs to the domain of social constructivism, claiming, "social constructivism places the experience with social actors in the centre, who, through interactions commonly mediated through language, enact their reality." Weick (1995:7), however, is careful to distinguish sensemaking from interpretation, presuming that an external reality exists, awaiting actors to discover it. However, Weick (1995:34) argues for the normality to oscillate between ontologies when studying sensemaking, as people enact their actions, which result most of the time in self-fulfilling prophecies.

“People who study sensemaking oscillate ontologically because that is what helps them understand the actions of people in everyday life who could care less about ontology. Noticing (Starbuck and Milliken, 1988), manipulation (Hedberg, Nystrom and Starbuck, 1976), interpretation (Isabella, 1990), and framing (Goffman, 1974) are all plausible events in sensemaking, even though they represent different combinations of subjective/objective as assumptions about the nature of social science and change/regulation as assumptions about the nature of society” (Weick, 1995:35).

4.1 Ethnographic Method

The aim of my study is to further the understanding about the sensemaking processes involved in the emergence process of a new business model. My intentions were to study how established companies made sense of and develop new business models in contexts where there are pre-existing strongly embedded ideologies and paradigms (Weick, 1995), and in situations where innovations are neither needed nor planned. An ethnographic method is appropriate here because the objective is not to analyse an existing model and its development or stagnation over time (as for example Aspara et al.’s (2013) case study of Nokia), or the evolution of a model and the factors causing change (as for example, Demil and Lecoq’s (2010) case study of Arsenal FC), but rather to investigate the processes that allowed a model to arise from intersubjective interactions (Weick, 1995) within a company.

“Ethnography is first and foremost a social practice concerned with the study and representation of culture (with a distinctly small c these days). It is an interpretive craft, focused more on ‘how’ and ‘why’ than on ‘how much’ or ‘how many’ (Van Maanen, 2011:219). It maintains an “obsessive focus on empirics” (Van Maanen, 2006:18) and requires a researcher to embed herself in the field to observe, hear and experience how processes unfold. An ethnographer “does not study organizations, but they study in organizations” (Van Maanen, 2011:221); therefore, she must be in the field and be accepted by the natives, in order to understand their culture. An ethnographer should not only hear the “native’s” words, but also try to “get inside their heads” (Van Maanen, 2011:227), to follow their actions and their reactions to their own actions. Van Maanen (2011:228) explains that an ethnographer seeks “to penetrate

their (native's) subjectivity," to capture the creation of meaning and formulate an interpretation of that meaning.

Brewet (in Cassell and Symon, 2004:312) explains that ethnography is:

"The study of people in naturally occurring settings or 'fields' by means of methods which capture their social meanings and ordinary activities, involving the researcher participating directly in the setting, if not also the activities, in order to collect data in a systematic manner but without meaning being imposed on them externally."

Furthermore, Brewet (in Cassell and Symon, 2004) explains that ethnography affords the possibility of exploiting a variety of data gathering techniques, ranging from different kinds of interviews, to participant observations, and visual recording methods. Therefore, "ethnography routinely builds in triangulation of method because it involves the use of multiple methods of data collection" (Brewet, in Cassell and Symon, 2004:312).

I began this thesis with the intention of conducting a longitudinal case study (Flyvbjerg, 2006; Yin, 2008). However, through interactions with the field, it became apparent that it was necessary for me to develop a more intimate approach with the 'natives', to fully witness the manifestations of ideologies and paradigms at the company (Weick, 1995). Additionally, I entered the field in the middle of the creation of Woodstock, the subject of my study that is explained further in this chapter, which made possible for me to witness the sensemaking processes allowing this creation for more than one year and a half. Thus, an ethnographic approach enabled me to explore beyond protocols (Eisenhardt, 1989:537) and to follow the actors as they endeavoured to enact a new business model. Therefore, I not only engaged in interviewing the actors involved in the processes of enactment, but also followed their formal and informal meetings, summer and Christmas parties, and the celebrations of small, but important, successes organized in the private households of the team members. I also undertook factory visits to observe both successful and unsuccessful development attempts, lunches, coffee breaks, and Friday morning departmental breakfasts. Whilst at the company, I held occasional discussions with people passing by my desk who stopped to talk about my research. In this way, I made myself available for multiple encounters in various scenarios during my stay in the case company.

Moreover, taking an ethnographic stance allowed me to witness the “ongoing flow of events” (Weick, 1995:2) that characterized the development of Woodstock’s business model. My focus was on the interruptions and the resultant selection and retention choices made to overcome these “shocks” (Weick, 1995:84), as explained in Chapter 3. This was crucial, as my principal aim was to understand processes, not structures (Weick, 1995), specifically how people achieve *collective intersubjectivity* (Weick, 1995) and create meaning when devising a new business model. Thus, I employed an ethnomethodology “to examine management sensemaking and the social construction of organizations” (Gephart, 1993: 1467), which “allows investigations of the practices through which an intersubjective world is produced and maintained” (Gephart, 1993:1469). Gephart quotes Heap (1975:1469), who affirmed, “ethnomethodology is the science of sensemaking” and allows the researcher to comprehend the ongoing process of meaning creation and the “how” behind it. Furthermore, ethnomethodology is concerned with the everyday interactions of actors in their institutional setting, reviewing their actions and the “methods they deploy in their everyday lives” to create sense (Pollner and Emerson, 2001).

Weick (1995) argues that interruptions proceeding from pre-existing norms would compel managers to act, and that their responses would determine the trajectory of the interruption. In the emergence process of Woodstock, i.e., when taking it from an idea to market, several “shocks” had to be overcome to allow the development process. Each of these “shocks” was identified and analysed. For example, the industry Woodstock was designated for required the implementation of high liability measures, which the company had never needed to do before. This was perceived as a “problem” (Interview project manager); however, the approach taken was to learn what offering a warranty implied for both the company, and the product, to then act based on an understanding of this, to be able to emulate current practices within the industry.

On my field trips, I spent time with managers who were encountering situations in which they actively had to devise meanings for a new product with very different production requirements and settings from those they knew about, to service a new market, a new supply chain, and a new revenue model mechanism. Van Maanen (2006:18) underlines this by observing: “surprise, frame breaking, and exceptions to the norm shape the analytic domain of ethnography.”

4.2 Gaining access to the field

“You’re not an engineer, so you can stay!”

Van Maanen (2006, 2011a, 2011b) explains that the most important step when planning an ethnographic study is to ensure the researcher gains entrance to the field. Organizational fieldwork provides the opportunity to understand managers’ struggles and claims, and to see how meanings are created out of inspirational eureka moments, frustrating long meetings, or informal chats at the coffee machine.

After months of reading about companies’ endeavours to understand what a business model is and how it is created, I decided to leave my “ivory tower” and enter the field (Van Maanen, 2011:219). My supervisor and I had frequently discussed the case of Pinta Inc., and their attempt to produce a solution to help window manufacturers fulfil the new EU 2020 requirements regarding thermal insulation. Although the company had never supplied this industry before, the vice-president of innovation believed strongly that the proposed idea would succeed. All he needed to do was create a business plan and convince the group’s management to invest, even though the company’s portfolio was stable and there was no articulated need to embark on a new line of business (VP R&D, 2013). We concluded, that this would be an excellent case study setting in which to answer my research question, as it offered an opportunity to study new model development in an established company, and so we arranged a meeting with the vice-president.

Despite his reservations about the relevance of my project, the vice-president agreed to meet me, as he was very accustomed to students using Pinta Inc. as a case study. Ultimately, as I am not an engineer, and so would not understand the technical issues involved in the product development and would not be in a position to take secrets outside the company’s walls, it was agreed that I could conduct the study. The logistics were then solved very quickly. I received a non-disclosure contract to sign, a secure entry card, a desk close to the vice-president’s desk and access to the intranet and share point, on which all the documents were shared. My access was restricted to group development, material classified as R&D, and Woodstock, the focus of my study, documents only. A couple of days later an announcement was made on the intranet that *“a new Ph.D. student from CBS has started in the company, with focus on the innovation*

processes.” The company did not hire me, but as I had to be registered on the internal system, to access Pinta Inc. mail, it was decided to categorize me as an external consultant.

Once inside the company, I was allowed to network my way in, and I soon came to realize that Woodstock was at the intersection of two cultural paradigms (Weick, 1995) and I needed to gain acceptance from both: the team developing Woodstock (called R&D team in my study; not to be confused with the entire R&D department) and Business Unit (the business unit owner of Woodstock).

Entering R&D in Pinta Inc. was like arriving at a playground where ideas were circulating freely. Proudly, people spoke passionately to me about their inventions, and it was never enough to talk about projects: *“you really need to see this!”* And I saw it: dozen of prototypes on the shelf, each with their own story and waiting to be taken *“above the radar”* (common practice in the innovation strategy of Pinta Inc., where ideas could be developed under the radar, and once it gained enough credibility, would be moved above the radar and considered a project, practice brought it by the company’s new R&D vice-president) and eventually to market. Nobody knew when the *“right moment”* would come, one of the engineers explained to me. The atmosphere was welcoming in R&D, and people were eager to speak to me. I was grateful for the ease with which I was integrated into the group and I soon learnt that I needed to *“look like an engineer.”* In my early days at the company, I had a formal interview with the business director of Business Unit 4. I had chosen formal, business attire for the day. I was at the company at 8.30 and my interview was scheduled at 14.00 in the afternoon. I remember that as a special day, as people looked at me differently and asked me why I had decided to be so formal. One of the young engineers approached me with some advice: *“I just hope you have a pair of jeans in your bag, for after the interview, or at least some other shoes. People are looking weirdly at you.”* I did, I changed my high heels for a pair of converse shoes to conform, and people began smiling at me again.

I was seen as part of the team, and as such, I got invited to all their informal events, including summer parties, Christmas parties, celebration of Woodstock’s success, team-building exercises. At one of the team building sessions, I received a diploma saying: *“For being our fly on the wall,”* see figure 4.1. That diploma is still in my office.

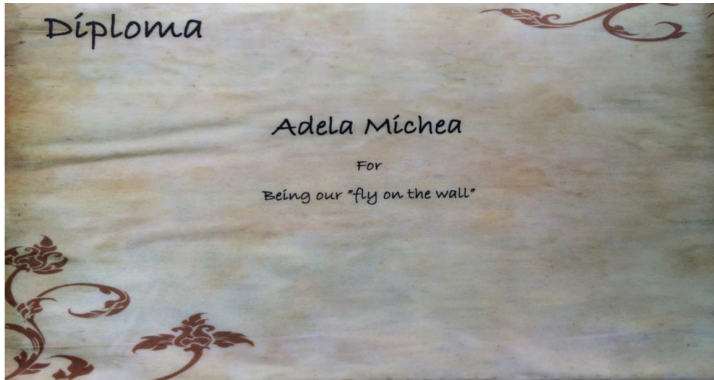


Figure 4. 1 'Fly on the wall.' Field trip document

An important factor informing the atmosphere among the development team at Woodstock was the Business Unit (BU), as represented by the business developer and business director of the unit. Even though not in the same building, as they are situated in The Netherlands, BU was very present and always at the back of people's minds when decisions were being taken. As BU were the owners of Woodstock, the development team sought to create cues that would convince them of the potential of their product. I was told several times, *"They are very different in their mind-set; they are really business people"*. Business Unit played a pivotal role in the emergence process of Woodstock's business model, and, consequently, I needed to understand their meaning as well. I had my first meeting with the business development direct of BU, engineer, being in Pinta Inc. for more than seventeen years. At my first meeting with him, I was welcomed with a very high level of suspicion and not allowed to record our discussion, in spite of repeatedly assuring him of my confidentiality. *"I don't like what you are doing here"* he told me while looking straight into my eyes. I listened to his argument that my research was neither "tangible" nor "needed", and I responded to his comments using the 'business model canvas' (Osterwalder et al., 2010), to explain the logic behind having a business model approach instead of a product innovation approach. I have used mainly the arguments underlined by Bucherer et al. (2012) in their study. He liked my drawing and began to discuss it with me. The canvas helped him to acquire the "tangibility" he had felt that the term "business model" from my

discourse was lacking. I also learnt at the meeting that he had never worked with the term himself. From that time forward, I always had the canvas with me, to use if necessary. His position remained hostile during my entire stay at Pinta Inc., and the information I gathered from Business Unit was all subjected to his review for approval.

I entered the field in April 2013 and I left in January 2015, as shown in table 4.3, when Woodstock was officially declared closed in the R&D department, being moved to BU.

4.3 Data Collection

“Being our fly on the wall”

Ethnography offers the researcher the prospect of witnessing the lives of those being studied closely; furthermore, the longer the time a researcher spends in the field, the deeper the level of knowledge and understanding acquired. Data can be collected via both formal and informal interviews and recordings, all kind of data, documents, and artefacts can be gathered to build an understanding of the studied culture (Hammersley and Atkinson, 2007:7). Van Maanen (2011:229) explains that ethnography helps researchers to see beyond the words and statements made by people, because they are able to see what they actually do. Gradually, the community studied forgets it is being observed, and people remove their masks.

From my first day in Pinta Inc., the inventor of Woodstock showed a particular interest in speaking to me. His eagerness to tell me the story of Woodstock, and how it had begun helped me to draw a map of the actors involved and to become acquainted with the chronology of the events. I understood that I needed to pay special attention to discovering what happened during the first three years of development. Therefore, I accessed all the documents available on share point; including the minutes of project meetings, gate meetings, steering meetings, and conclusions reached over the years, as evidenced in project proposals, and power point presentations. In total, 197 documents were available on share points as per April 2013, when I entered the company. Furthermore, during 2013, 2014 and the first month of 2015 a further 120 files were generated, resulting in a total of 317 internal documents, approximately 1300 pages to be analysed. Table 4.2 presents a breakdown of the number of documents, per type of meeting,

each year. The “*other documents*” section of the table comprises documents for other meetings outside those mentioned, including budgets, excel files, and proposals for organizational structures.

Year/type of meeting	(End) 2009-2010	2011	2012	2013	2014-(beginning) 2015
Project Meetings	9	41	41	43	46
Steering Meetings	0	13	7	22	17
Gate Meetings	1	0	3	0	3
Other documents	16	8	11	7	29
Total internal documents:			317 (ca. 1300 pages)		

Table 4. 1 Total of internal documents analysed

Aside from internal documents, I was a “*fly on the wall*” at eighteen project meetings, eight steering meetings and two strategy meetings. Furthermore, I conducted 31 formal (Van Maneen, 2011), semi-structured interviews, including feedback sessions with the vice-president of innovation, portfolio manager, and project manager, in order to validate my understanding of development steps. The interviews took place with employees at different managerial levels:

- a. Senior managerial level, with the aim of understanding the company’s corporate business model, and context in which Woodstock was developed; Weick (1995) talks about the importance of knowing “what is the story?” first. The purpose of these interviews was to understand the type of vocabularies they were drawing on in their arguments. People were talking both about the company per se, in terms of what was perceived as being “Pinta Inc.’s way of doing things” or “Pinta Inc.’s DNA,” and the difference in mind-sets between business units. I have localized Pinta Inc.’s DNA as

being the ideology, namely the social context of the company (Weick, 1995), while the difference between departments, as paradigms/ vocabularies of work.

- b. Project development team and middle management involved in the creation of Woodstock, with the aim of understanding how the identity of the project came into being. Weick (1995:77) affirms, “*Who am I* and once a tentative answer is formulated, sensemaking has just started, because answers need to be re-accomplished, returned, and sometimes even rebuilt.”

Table 4.3 summarizes the formal interactions I had in the field. The recordings were between 45 minutes and three hours; 58 interactions had been recorded, 1 interaction resulted in notes because recording was not allowed, 50 were transcribed and analysed with Nvivo. The nine files that were not transcribed were project meetings held in Danish. However, I worked with those files as well. The transcriptions totalled approximately 2000 pages.

	2013												2014												2015												Total	
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12		
Interviews Group Management & CEO																		6																			7	
Steering Meetings																																						8
Project Meetings										2	2	2				2								2	3													18
Project Strategy Meetings																																						1
Group Innovation's Strategy Meeting																																						1
Interviews with members of the project team																																						19
Feedback meetings																																						4
Interview Co-Development Partner																																						5
																																						59

Table 4. 2 Formal interactions within the field

The informal meetings (Van Maneen, 2011) I attended played an important role in helping me to understand the frame (Weick, 1995). As outlined above, I integrated very quickly into the development team. People were curious about my role, my research, my background, and I was considered “exotic”, as I am Romanian and speak Danish at an acceptable level. Answering questions about my home country and my relocation to Denmark were often a very good

icebreaker. I was honest in my answers, and in exchange received the same level of honesty back. People shared with me their life stories, pictures of their families, their struggles, and their hopes. Often, even in the setting of a formal interview, after I closed the door to the room, the interviewee would begin sharing a painful point or express his/her frustrations, with no fear of the recorder. I was seen as a neutral listener, and I assured them of confidentiality. I attended organized social gatherings and received private invitations to visit people's homes. I recorded all these interactions, together with my reflections, in a field journal in as much detail as possible after the event, as I did not want to make notes at the time and lose eye contact. I was in the field twice a week, sometimes three times, depending on meetings, with breaks in holidays. In the last four months, before the handover of the project to the business unit, I only been ones a week for the project meetings, and attended the last three steering meetings.

As mentioned above, the inventor of Woodstock frequently looked for opportunities to speak with me, to share his ideas, and show me his inventions. He also asked me about my opinions and my understanding of Pinta Inc., saying: "*you are not an engineer, so tell me what you think?*" We had numerous fruitful conversations, and I introduced him to Abbie Griffin's book, *Serial Innovators*. He later proudly told me "*I could recognize myself in that*", identifying in himself the characteristics of an innovator who sees solutions and opportunities where others do not. At the end of the study, I offered him the book to reflect my gratitude for all the interesting discussions we had had.

An exciting resource for learning about Pinta Inc. history and its developments was the Pinta Inc. museum, located at headquarters. The museum was in a long hallway and a room with walls covered with pictures telling the story of the company, which I visited as a field trip one day. This visit allowed me to add numerous pictures to my data collection process and attain a better understanding of the almost eighty-years old company I was studying.

I had to exit the field in January 2015, when Woodstock was officially closed in R&D and took over by its business unit. I still had access to the intranet, as a remote consultant. I went back to my ivory tower and used the remainder of the time left to write up the study.

4.4 Data Analysis

Saldana (2011) explains that coding can be used to analyse qualitative data, and that it is the first step in a rigorous analysis. Saldana (2011) continues to explain that coding begins in the field, when the researcher applies certain theoretical filters to *see* the answers to her questions. Furthermore, he argues that coding is cyclical, as data usually requires multiple rounds of coding. Miles and Huberman (1994:57) advise researchers to embark on coding from the moment they begin data collection. By doing so, this ensures “chunks” of data can be organized and readily clustered into different themes.

I coded and analysed the data collected at Pinta Inc. with the help of Nvivo software. For the first level of coding I used a filter (Saldana, 2011), devised based on the theory of business models, as “one could not pick up rocks without some sort of theory to guide them” (Van Maanen 2011: 222). I had predefined codes (Miles and Huberman, 1994:58) from Chesbrough and Rosembloom (2002) based on their definition of the functions of a business model. This step has resulted into dividing my data into seven categories: value proposition, customer (market), value chain, cost, profit (pricing related talks), value network, and competitive strategy. The second level of coding involved a longitudinal type of coding (Saldana, 2011: 236) during which the focus was on reviewing the data through the enactment conceptual framework (Weick, 1995), discussed in chapter 3. In this phase I was searching for interruptions (Weick, 1995), which were perceived interruptions by the actors involved in Woodstock project, and identified as such in the actors’ own words. Therefore, events defined as being “shock,” “surprise,” “showstopper,” “crisis,” “conflict,” “problem,” and “major risk,” were classified as an interruption. A total number of 197 interruptions, dispersed across all seven elements were identified. As noticed that several interruptions were related to the same event, most of them could be grouped further, and it resulted in a number of 30 events, perceived as interruptions that required an enactment process. See figure 4.2.

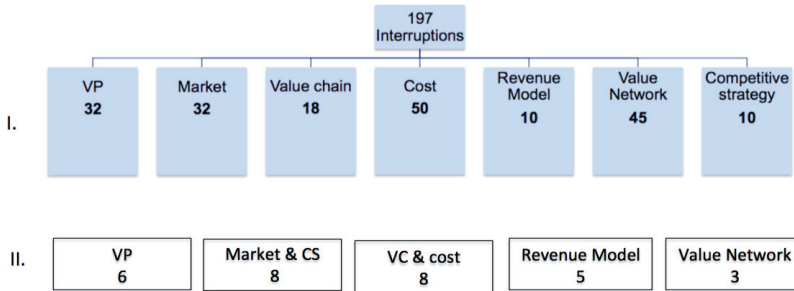


Figure 4. 2 Identified interruptions per business model element. First and second round of coding

Furthermore, market and customer strategy were brought together under the same interruptions, and cost was only related to the production costs as part of the value chain. The interruptions of revenue models were related to the lack of knowledge on how to price a premium product as Woodstock.

After writing chapter six, where the enactment processes of every element of the business model was analysed, a new theme emerged. The elements were links together in different moments of time, into a cause-effect relation. Therefore, the data resulted from the second round of coding was coded again looking after cause-effect relation between elements. These are analysed in chapter VII.

The approach taken when theorizing from the empirical material was an abductive one, as the purpose of my study is to “problematize and re-think the dominating ideas and theories” (Alvesson and Kärreman, 2011:57) of business models. When building the argument for abductive research, Alvesson and Kärreman (2011:57) quote Weick (1989) to explain that abduction assists researchers in uncovering new relationships not previously known. In this way, the researcher can develop theory, instead of simply validating earlier theories.

“The contribution of social science does not lie in validated knowledge, but rather in the suggestions of relationships and connections that had not previously been suspected, relationships that change actions and perspectives” Weick (1989:524).

4.5 Writing up!

“How can I know what I think until I see what I say?” asks Weick (1995: 18), and I have asked myself several times while writing up this monograph *“How can I know what I think until I see what I write?”*

I was in a field where the phenomenon I was studying was unfolding in front of my eyes, even by event. Many of these events had roots in a recent past, and I had to “go back in time to events that might have later given rise to understanding (or confusion)” (Van Maanen, 2011:105).

It was a learning process for me to witness their learning process in enacting Woodstock’ business model. In writing, I had to create meaning out of the thousands of pages of empirical material, in such a way that I would show respect to that learning process, both mine, and especially theirs. Therefore, both an impressionist and realist style (Van Maanen, 2011) has guided my writing.

The impressionist style (Van Maanen, 2011:101) has helped me in “converting the temporal nature of the fieldwork into the spatial organization for the text” (Van Maanen, 2011:106). I used this style for writing about my interaction with the field, about the events and conversations I have witnessed, from mid-2013 until end 2014. Furthermore, it guided me in creating a flow of the events I analysed in chapter six. However, while having focus on bringing forward the most “exceptional (events), as we learn more from them” (Van Maanen, 2011:108), I have also tried to keep as accurate as possible the chronological order of these interruptions.

A realist style (Van Maanen, 2011:45) was employed for describing the beginnings of Woodstock, generation 1 and first years of generation 3, as related in the internal documents. Furthermore, in this style, I have put in my text accurate quotations to show “authentic and representative remarks transcribed straight from the horse’s mouth” (Van Maanen, 2011:49).

This oscillation is in alignment with sensemaking theory, as Weick (1995:35) argues: *“People who study sensemaking oscillate ontologically because that is what helps them understand the actions of people in everyday life”*

Lastly, along the analysis conducted in chapter five, six and seven, I have used the vocabulary brought forward by sensemaking theory, in chapter three.

The next chapters, five, six, and seven represent my analysis.

CHAPTER V: Analysis of Context for Sensemaking

5.1 Introduction

This chapter aims to provide an analysis of the empirical case study, to detail the situation that triggered sensemaking processes, leading to the emergence of a new business model inside an established company. Weick (1995:110) explains that sensemaking consist of three main elements: a frame, a cue and a connection. Sense is made of a new situation when the cue, which is the perceived stimulus, gets connected with the frame, namely the existing context. Therefore, the scope of this chapter is to introduce the cue, which is the discovery of a new technology, and the frame where this has happened, the case company. Additionally, the connection between the cue and the frame is addressed in Chapter six, through Weick's 1979 enactment theory.

This sequence cue, frame, connection, dictates the structure of this chapter. Therefore, the chapter first introduces Woodstock by explaining its peculiarities and why it was perceived of as a stimulus for the sensemaking process. This section is followed by an analysis of the frame, thus the company where the innovation process took place. In this section the focus is on company's history, its business models and manner how the expression 'business model' is employed. Further, the main actors involved in Woodstock's creation and their relation is analysed.

This chapter is closed with conclusions and an answer to the research question that has guided the chapter:

What frame did managers draw on when developing Woodstock and why was Woodstock perceived as a sensemaking trigger?

As presented in Chapter 1, the company will be addressed as Pinta Inc., and the name of the project is Woodstock. Woodstock was created as a high thermal insulating product intended to supply the window industry, an industry never served before by Pinta Inc. The project evolved over time, advancing from generation 1 (G1 hereafter) insulation placed inside the frame of a window, see fig. 5.1 (the thin line inside the wood frame), to a solution applied on the outside of the window frame, named Generation 3 (G3 hereafter), see fig. 5.2 (the entire black cover of the window frame).

Originating within the context of an incumbent company, the development of Woodstock's business model from idea to market passed through different stages, encountering numerous interruptions and critical moments along the way, resulting in interesting approaches to enacting solutions that ultimately allowed Woodstock to survive and reach the marketplace, provides the focus of this study.

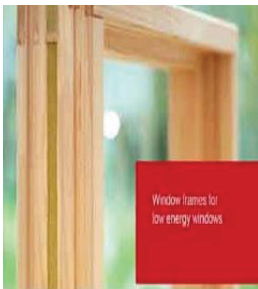


Figure 5. 1 Woodstock Generation 1



Figure 5. 2 Woodstock Generation 3

5.2 Analysis of the cue: Woodstock

When I entered the company, Pinta Inc. A/S had had the same CEO for more than ten years. Serving in the company for more than seventeen years at that time, he had held various managerial positions, on his way up to the top. This type of advancement up the ranks of the company was a practice I witnessed often at Pinta. Proudly speaking about the company, the

CEO (Interview, 2013) explained that Pinta Inc. A/S was known as one of the world's leading producers of stone wool, a product made from both natural stone and recycled slag. He told me, the company operates in more than 35 countries and has circa 11, 000 employees. It was founded in 1909, as a family business, manufacturing tiles and extracting marl, gravel and coal. From 1937 onwards, it began to focus on "*melting stone and creating insulation material that cannot burn*", to attain a competitive advantage (CEO, Interview 2013).

In 2009, the idea of becoming a supplier to the window industry, a market never served before, was born. It would question Pinta's innovation routines, manner of productions, and its approach to constructing "routes to market"- this was the manner CEO (2013) defined a business model. This project was named *Woodstock*, and it was intended as a solution for window manufacturers, faced by regulations formulated as part of the EU 2020 agenda. The latter required the former to increase the insulation proprieties of their products, as 40% of building heat is lost through the frame of a window (Industry report, 2013). These requirements were labelled as "an opportunity" for the company, since its new strategy, developed in the same time frame, would be to make it possible to produce a "*building envelope, being able to insulate an entire façade of a building*" (Vice president, R&D, 2013). Considering this strategy, offering an insulation solution for the window industry was perceived as aligned with the values of the company. Therefore, the first documents released internally describing the project, underline both its fit within the company and the important business potential of expanding into formerly unknown markets:

"There is a need for better insulated windows, including the frames; requirements are increasing and new standards are under way. Windows are an integrated part of the building envelope; our strategic target is energy efficiency. Contributing to energy efficient houses by supplying materials for windows fits our brand and values. The market is significant and thus poses a significant potential turnover and profit. There are today several solutions on the market, but we will bring a competitive product both cost and performance wise." (Internal document, Vice President, R&D, 2009)

“This is the part that shall develop the aerogel composites further, and also explore new business models in markets currently unknown to us; like window frames, doors etc.”

(Internal document, Senior Project Manager, 2009)

This external cues arising from the EU2020 strategy coincided with the research and development department (R&D hereafter) at Pinta Inc.’s development of a new technology that would allow their stone wool fibre to raise thermal capture properties to a very high level (CEO, interview 2013). The management team believed in the new technology and began the process of bringing it to market; initially by investing in it and building a new factory to serve the project. Unfortunately, the technology proved to be too expensive, and the project was halted, resulting in a significant stock of finalized products, as there had been significant investment in a new factory, now empty, and the development of a new technology, now unexploited (CEO, interview 2013). After R&D shelved this project, they began seeking alternative applications. In the meantime, a new Vice President (VP R&D hereafter) for innovation was named. Having a long career in the windows industry, VP R&D was familiar with the struggles faced by it. Therefore, he proposed the new technology to be employed to solve EU2020 demands imposed on the windows industry. This idea was received with enthusiasm by the group’s management and the Woodstock project was born, without any notion of the disruptive effect it would have on the company.

The conflicts that arose during Woodstock’s development were associated with the initial financial and temporal expectations defined internally. In term of temporal expectations, Woodstock was labelled as “fast” (Internal document, 2009) and was expected to move from development to market in less than two years. However, it had gone through numerous changes as it evolved from generations 1 to 3, and it was under development for approximately six years. When comparing it to a spin off project, which was brought to market in less than one year, with registered profits, one of the senior project managers affirmed: *“That is considered a success in Pinta Inc., while Woodstock is struggling and management is wondering why so many investments are needed after so many years”* (Senior Project Manager, Interview 2013). In terms of financial expectations, the project has exceeded the initial plans considerably, as it had a development process of six years, with a major changed of scope, when going to generation 3.

In was a generally expressed opinion that the project represented a challenge to the company, as the product differed from its previous portfolio, especially given the fine manner in which the stone fibres process was conducted for obtaining the final binder. The quality of the binder, which had never been questioned before, was questioned now by Woodstock, as it was a vital feature to the success of the product. Words like *“very different from everything we have done before”* (Engineer, 2013) were employed frequently when describing the product and explaining the slow development process for both the technology and business model. Furthermore, the vice-president of innovation had tried to convey the message that the company had not the skills and competencies for developing such a product:

“Our organization today does not possess the skills/experience (at all levels) in introducing this kind of product, and that there is a significant risk of underestimating the complexity of all the issues outside the pure technical performance. These elements must receive extra attention” (Internal document, 2011).

The project was perceived thus in contrasting manners, as being either *“just a small component”* or a disruptive innovation for the market to serve:

- ✓ *“Woodstock is not a bulk product, as we are used to, and requires special attention”* (Project meeting minutes, March, 2012)
- ✓ *“A project that wants to establish Pinta Inc. in the global market for windows based on a new composite”* (Senior project manager, 2013)
- ✓ *“A small project, that challenges us a bit. I am not sure it is well run, as we have spent too much money on it. I think it would probably end up being somewhere in between mediocre and too expensive to stop”* (CEO, 2013)
- ✓ *“It is going to disturb the window industry! I’m sure some in the windows industry will perceive our product as a highly disruptive technology coming into the industry. Because they do not know what it is and it will make a huge impact! I’m sure we’ll create some confusion in the industry, and that is quite exciting to watch!”* (VP, R&D, 2013)
- ✓ *“We have never used customer co-creation before as in Woodstock and that made a huge difference for the development process”* (Program Director, 2013)

- ✓ *It is a product with features where services are needed, and, in my view, that is a simple business model, route to market. You can choose another route to market and ask why aren't we a total windows frame? We have chosen not to do that based on complexity, the market is pretty complex, it is not such an easy market! Maybe it is too complex for us; maybe we are too stupid for it* (System Division Director, 2014).
- ✓ *"It is a project where we are bound to go back and improve the quality of our binders for the first time. It is not important for our products that go inside walls and you never see them, but it is imperative for Woodstock. Woodstock is visible. That is why it needs a different kind of production process"* (People Process manager, 2014)
- ✓ *"A very small component of a window, so why do we need to produce everything inside?"* (Business Director, 2014)
- ✓ *"Why do we continue spending money on and developing something that's not the core business?"* (Group Management, 2014)

Mapping out the actors involved in the project and the role played by them in developing Woodstock technology and business model, I observed the following:

- ✓ A team was formed from inside R&D, which will be referred to as R&D hereafter (not to be confused with the entire R&D department), conceived the project. The team comprised of a project manager, a portfolio manager, three technical engineers, and a production manager. As Woodstock became more complex, the team expanded with experts in paint, stuff for production, and several interns assisting with tasks. In 2013 a shift in the project management position happened. The initial project manager of Woodstock, which was the inventor of it, was changed with another one based on the argument that *"from now on we need someone more process oriented, capable in finishing things. The discovery period is done"* (VP, R&D, Interview 2013); signalling the evolution of Woodstock.

However, increasing the number of people in the team was a slow process, showing a certain resistance to change. *"We have hired a paint specialist in R&D? This is ridiculous! When have we ever needed one?"* asked one of the engineers during an interview.

- ✓ The Business unit (BU hereafter), was the pointed business unit in charge of taking ownership of the business development of the product and its route to market. Thus, BU was the internal customer for Woodstock. In the BU, two actors were involved during in the entire process, the director of the unit and a senior business developer, both of them being at Pinta Inc. for approximately twenty years. In the last six months towards the handover of Woodstock from R&D to BU, the business unit has gotten a new director, as the previous one has retired. The new director has been in Pinta Inc. for seventeen years. Moreover, a key account manager was hired in the last year of development.
- ✓ Customer co-creator (Co-creator hereafter): Woodstock had from the outset a strong partnership with a windows producer. This became a strong partnership, offering a co-creation role for Woodstock, while teaching Pinta Inc. new ways to engage in innovation activities.
- ✓ Vice-president of innovation: the person who became both the convergent point and the mediator in negotiations and conflict instances between BU and R&D team, and the defender of Woodstock in front of group management.
- ✓ Other actors who became involved in the project at important moments were the newly created marketing group, group management, and the CEO. Furthermore, the production factory for Woodstock boards, situated abroad, as well as the suppliers for different components of the product, which were considered development partners, played a significant role. Their impact is analysed in Chapter six.

As evidenced in chapter six, interruptions in Woodstock's development arose from inside the company, and they resulted especially from the interactions between these different actors and their expectations, driven by own retrospective sensemaking.

In terms of sequence of the events³, see fig. 5.3, Woodstock began with Generation 1, as a laminated inside component of a window frame. As this version proved to result in an overly expensive business model, the decision was taken to move to a Generation 2 model. G2, referred to an internal laminated component, but with a visible part, so the Woodstock components would require painting. Again, this was not a financially viable option and was short-lived. Thus, G3 was proposed, and the decision made to change the design completely and move

³ A timeline can be drawn to a certain extent, as many of the activities have overlapped

Woodstock to the front of the window frame. Fig. 5.3 gives a snapshot of the events that have marked Woodstock's development until the moment of handover to its business owner.

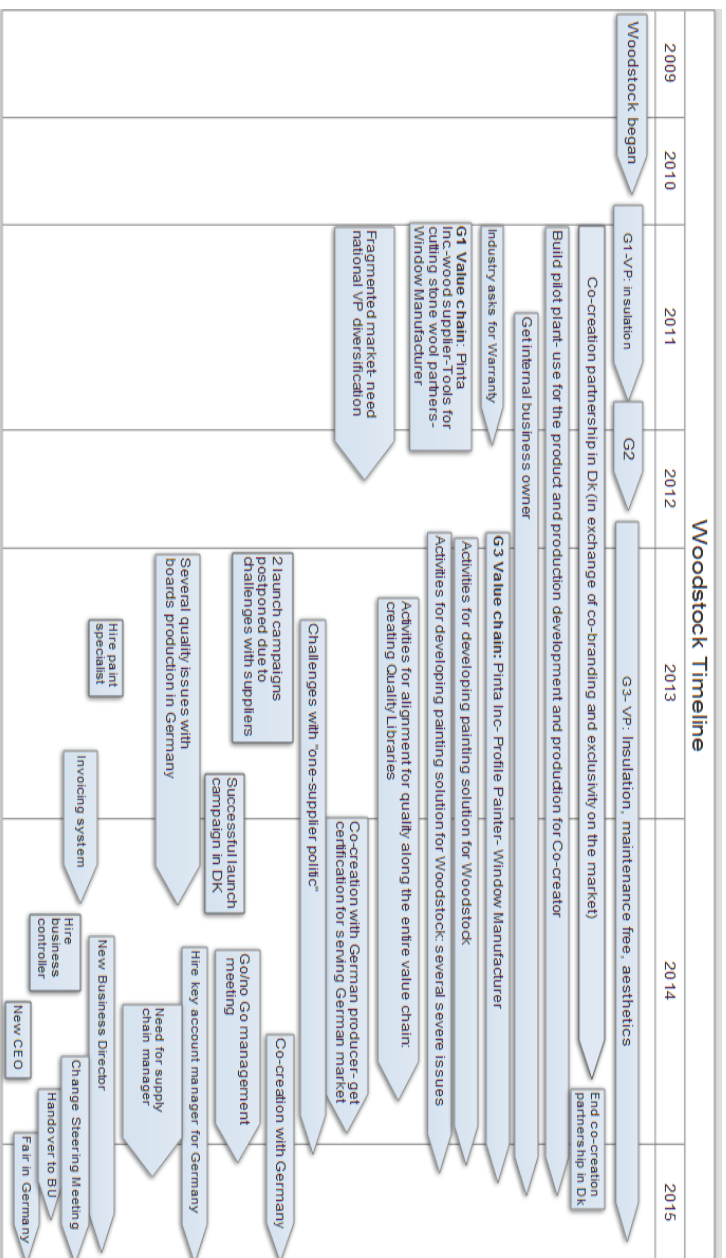


Figure 5. 3 Woodstock Timeline

The identification of these events was done together with both the project managers and portfolio manager, who were asked to pinpoint key moments, positive and negative, in Woodstock development. Fig. 5.3 attempts to order them chronologically, and makes the difference between events that have had an impact and been present during the entire period, such as the co-creation partnership, the building of a pilot plant at Pinta Inc. premises, and one-time events such as missing launching campaigns, or having a very successful one, firing and hiring a new CEO, hiring further skills. All the events are analysed further in Chapter six.

In terms of the organizational chart, Woodstock was established as a project inside R&D and planned to be anchored in BU organization according to the rationale that Woodstock was not an autonomous entity. Therefore, BU was responsible for the business development and sale of the product from the G1 phase, while the plan in the long term was that BU would take over the entire project from R&D (Steering meeting minutes, May, 2011).

To understand why Woodstock was considered the trigger for a long sensemaking process, it is important to understand the frame, the context, as Weick (1995) suggests. Therefore, the next section analyses the parent company, Pinta Inc.

5.3 Analysis of the context: Pinta Inc. A/S

Without a supplied context, objects and events have equivocal or multiple meanings. (Weick, 1995:52)

Chapter three explains that sensemaking involves placing a stimulus into a framework, a “frame of reference” to direct interpretation (Weick, 1995:4) according to a context that determines which cues would be noticed, and which actions taken. The context of this thesis was Pinta Inc., a company being on the market for more than eighty years! During these years, certain types of “beliefs about cause-effect, preferences for certain outcomes, and expectations of appropriate behaviours” (Weick, 1995:111) have been developed inside the company, which I localized it in the vocabularies of society, namely ideology (Weick, 1995:111). The ideology was drawn on every time someone wanted to underline that Woodstock was different, and a challenge, not

only for the R&D team or its business unit, but also for the company per se. In this light, Woodstock was defined as: “*very unusual for us to do that*” (CEO, 2013), “*we have no such reasoning in Pinta Inc., why would we dilute our brand?*” (CEO, 2013); “*it is not in our DNA, and that provokes people*” (VP, R&D, 2014).

As presented above, Pinta Inc., a family business, was a global player in the insulation industry, present in more than 35 countries, having significant success on the market. The fact that Pinta Inc. is characterized as a “*family business*,” was emphasized several times by management, in order to explain that decisions need to go through an extra filter, “the family”: “*Thinking about being the CEO, now it is about the chemistry with the board, and with the shareholders, and in this case that is the family*” (Managing Director Business Unit, 2014). The family, which created Pinta Inc. Foundation owns 23% of the share capital, the remainder being divided among the General Meeting of Shareholders, the Boards of Directors and the Group Management.

Reflecting on history of Pinta Inc., several important milestones can be observed to have shifted the trajectory of the business. Firstly, in 1935 Pinta Inc. bought the rights to produce and sell stone wool to insulate buildings in Scandinavia. Just a couple of years later, the company had changed its name and registered the Pinta Inc. trademark, which is considered “*one of the largest assets in the Pinta Inc. Group, [...] well protected and defended by us throughout the world*” (Pinta Inc., Annual report, 2015). Secondly, over the years, Pinta Inc. underwent several changes in response to exogenous events such as World War II and the oil crisis in the 1970s, which took the company in the direction of diversification of its value proposition to include a larger range of products based on stone wool technology. To expand beyond insulation, Pinta Inc. started to create partitions for floors, ceilings and walls, acoustic products, and soil, substituting water-absorbing mineral wool products. This change in the business model determined the division of Pinta Inc. into two major business divisions: insulation (77%) and systems (23%) (Pinta Inc. Annual Report 2014), bringing a turnover of about €2,000 million in 2014 (Annual report, 2014). Since 2010, Pinta Inc. has registered steady growth, and its forecast for 2016 pinpoints to EBIT above €170 million (see Table 5. 1 for the financial evolution of Pinta Inc. for 2011-2015).

EUR million	2011	2012	2013	2014	2015	2015 DKK million
Income statement items						
Net sales	1,845	1,969	2,003	2,180	2,208	16,468
EBITDA	244	303	313	312	*337	*2,514
Depreciation, amortisation and write-downs	123	149	144	150	187	1,393
EBIT	121	153	169	161	*172	*1,281
Financial items	-6	-7	-6	-6	-4	-28
Profit before tax	121	147	164	157	133	995
Profit for the year	84	104	116	113	91	677

Table 5. 1 Five-year summary for the financial evolution of Pinta Inc. Source: Pinta Inc. Annual Report, 2015

The final exogenous factor that prompted the CEO to affirm that it was time for change in the company was the recent financial crisis. When hit by the crisis in 2008 the CEO proposed a new strategy, asking the company to shift from its traditional manner of doing business, “*pushing everything into our distributing channels*” (CEO, 2013), moving towards “*changing our model into putting system together*” (CEO, 2013). The company was, at that point in time, coming from the very privileged situation of achieving very high returns despite minimal effort on marketing (CEO, 2013). However, the crisis made the Group realized that they needed to be more market oriented.

Unfortunately, at the beginning of 2000, the company was in the situation that they could sell everything they had, which made no sense in having a customer driven strategy. Whatever kilogram of stone wool we could squeeze out of the machine, the customers would be screaming to get it. In 2007, we could sell everything, but the crisis came and the building market was hit. (Managing Director Business Unit, 2014)

The new strategy, which was revisited several times after its inception (VP, R&D), proposed challenging the ideology of Pinta Inc., such as:

- a. Not having any interaction with the market and, therefore, with the customer:
"We need to become customer centric and put customers at the centre of our decision making when innovating" (CEO, 2013)
- b. Customer-driven innovation needs to be coupled with a market strategy. Pinta Inc., because of its strategy, was to get a Group Marketing department for the first time in its history.
- c. Being more focused on system divisions and becoming a system provider.
- d. Having a decentralized structure was no longer the most efficient way of steering a global company like Pinta Inc. CEO began considering centralization with the aim of finding a solution to the issue of *"how to avoid a silos type of thinking"* and questions such as: *"should we try to separate sales and production? Should we try to specialize the factories, so not all factories are doing everything because they are servicing a small market area?"* (Managing Director, Business Unit, 2014). Thus, the divisions in Europe were merged into a single Europe Division.

When explaining the challenges of implementing his new strategy, CEO talked about the disadvantages of being in a big established company, and about a certain type of mind-set that has been reinforced over the many years. He confirmed the most challenging part of his job was to shift managers' mind-sets:

"The challenge is between the ears of the people. We have trained them, brainwashed them, and indoctrinated them in the last forty years, into thinking in one direction. Moving the brains of people to think in another direction, and changing substantial parts of the organization because they do not fit with the new way of thinking, is very challenging" (CEO, 2013).

Nevertheless, the new strategy was criticized on many occasions, and was broadly considered *“not quite a strategy, more of an action plan, very scattered”* (Director Marketing Group, 2014), *“a dream”* (VP, R&D, 2014), *“tried to change way too much, and people can’t cope and they are frustrated”* (Division Managing Director, 2014), *“what came out of this strategy is a bit difficult to conclude, as this business unit has always been like that”* (Business Development Director, 2014).

Interestingly, while different business units and internal departments were disappointed by the poor strategy and even considered that *“there is still no strategy, and that’s confusing if you ask me. We are working on it”* (Group Marketing Vice-president, interview 2013), the innovation department was labelling this as an opportunity, a time where their choices could not be constrained:

“The beauty of not having a well-defined strategy is that we can do whatever we want. We have the freedom and we like this in R&D” (VP R&D, Interview 2013).

End of 2014 brought the news that CEO has been replaced, with *“someone who has a strong business background”* (CFO, 2014).

Going from strategy to business models, Pinta Inc. is perceived by its managers as having two different business models, while there has been a short period when operating with three. Interestingly, when asking about the company’s business model, the expression “business model” has created moments of uncertainty, which is analysed in section 5.3.2.

5.3.1. Pinta Inc.’s Business Models

A combination of secondary data with interviews reveal that Pinta Inc. was operating two types of business models, namely insulation and system division. The insulation area (77% of net revenue), was encompassed of building insulation, industrial and technical insulation, marine

and offshore insulation, sandwich panels, solutions for industrial manufacturers; and the system division (23% of net revenue). The latter encompasses:

- Business unit 1: integrated ceiling solutions that improve acoustic performance, design of buildings, and indoor environment;
- Business unit 2: solutions for cultivation of crops in greenhouses based on hydroponics systems, independent of soil;
- Business unit 3: decorative boards for various applications on the facades of buildings, used for detailing or partial cladding of facades;
- Business unit 4: intelligent fibbers for reinforcement,
- Business unit 5: solutions for controlling vibrations from railway tracks and noise from roads.

The insulation business is defined in Pinta Inc. as having its own production settings and its customers are Builder Merchants. Thus, the company never knows where its products finally end up. On the other side, the systems division is known for its close collaboration with customers, a complex value chain and, also, dependency on the production and R&D settings of the insulation business. The five business areas that comprise the Systems division share a focus on international marketing and sales, and they do not own any production facilities (Internal document), except for Business Unit 2. In other words, unlike the Insulation division, the Systems division outsources production. The reasoning behind this business decision relates to the difference in the value chain, and consequently a different route to market. In many cases addressed to niche markets, Systems' solutions capitalize on specialist expertise, thus there is little focus on production meanings. According to Systems Division Managing Director (Interview, 2013), this influences its relationship to its customers, which is stronger and closer when compared with insulation business. Contrasting the two business models, the following differences has been affirmed by Pinta Inc. managers:

INSULATION	SYSTEM DIVISION
Customers	<p><i>Intermediaries: Do it Yourself stores, Builder's Merchants and Segmentation takes place locally. They know nothing about the product (VP R&D, 2014).</i></p> <p><i>Big distance between the end user and the manufacturer (Portfolio manager, 2013).</i></p> <p><i>Customers are interested in integrated solutions and the focus is on customization based on standard solutions (VP R&D, 2014).</i></p> <p><i>We need to know more about the customer and go out and talk to customers directly and tell him about this technical stuff (Business Development Director, 2014).</i></p>
Value proposition	<p><i>Selling on insulation performance thousands of different standard insulation products, both building and technical (Portfolio manager, 2013).</i></p> <p><i>Commodity asset oriented, traditional manufacturing business model (CEO, 2014).</i></p> <p><i>Keep the factories occupied (Portfolio manager, 2013).</i></p> <p><i>Business scope is defined globally and the focus is on offering systems solutions, the full package. We never sell on insulation proprieties (Business Development Director, 2014).</i></p> <p><i>Based on segmentation, and demand/customer driven business model. And there is a high demand on documentation (VP R&D, 2014).</i></p> <p><i>Here we do technical sales; we don't just sell to Builder Merchants shelves. We need to go out and talk to the end customer directly, to understand how our products fit his needs (Group Marketing Director, 2014).</i></p>
Value chain	<p><i>One product program per country- each country has a sales organization (Portfolio manager, 2013).</i></p> <p><i>Complex Value chain, depending on the business unit. There is no production, logistic or HR. These are bought from Pinta Inc. International and Insulation (Portfolio manager, 2013).</i></p>

	<p><i>Simple value chain: selling directly to intermediaries - production and sales & marketing is not split (VP R&D, 2014).</i></p> <p><i>We push our stuff through distribution (CEO, 2014).</i></p>	<p><i>System division is made of sales and marketing business units only, except business unit 2- have their own R&D (VP R&D, 2014).</i></p> <p><i>Specialized value chains: one value chain per application – unique route to markets; specialized sales force- considered crucial (VP R&D, 2014).</i></p> <p><i>One of the strategies for building systems is making acquisitions of parts that help building systems (Business Development Director, 2014).</i></p>
Revenue model	<p><i>Bulk selling, therefore low contribution margins (VP R&D, 2014).</i></p>	<p><i>Selling solutions and working with big contribution margins (Portfolio manager, 2013).</i></p> <p><i>“Each of the businesses has a price premium strategy” (Group Marketing Director, 2014)</i></p>

Table 5.2 Perceived differences between Pinta Inc. Business Models. Source: Author's own

Group Marketing Director furthermore affirmed, “*we have these two different ways to do business, but I am not sure if it is the right approach. We are discussing now quite a lot if this is really necessary and how could we integrate them, so we would have only systems and the insulation part would be the common production platform? It’s one of the scenarios at least!*” (Interview, 2014). The same opinion was affirmed by the division management director, part of Pinta Inc.’s board.

Interestingly, the company had utilized three business models for a short period, when it tried to offer various consultancy services comprising policy and climate change, in a business unit

called *Build Desk*. The unit was a service provider only, and it was intended not to be associated with Pinta Inc. name:

As a reliable and trustworthy sparring partner to, amongst others, architects and engineers, BuildDesk is there to advance energy efficiency, not to promote the Pinta Inc. brand (CEO, 2005, Pinta Inc. Newsletter 2005).

When I had the idea, I wanted it as a separate business and a different name. Maybe I was wrong. (CEO, Interview, 2013)

The business was not a success; it has been closed quietly, without many being willing to talk about it. At the headquarters, there were still signs of Build Desk, yet, when asked, nobody knew where it was or what happened to it (Field notes, 2013). Interestingly, the Vice-President of R&D affirmed: *“it was the CEO’s project and it didn’t work out, so we just let it go. We don’t like to talk about failures at Pinta Inc.”* (VP R&D, 2013). I came to hear this sentence a couple of times during my field study. CEO explained the closure by being a product that the market was not ready for, plus the link between product and Pinta Inc. was missing:

It just turned out that Build Desk, which was a bit of a holistic view, with a lot of calculation and software. It missed the link to our normal business. So, the link was missing between our products, what kind of systems or solutions does the person in question want, and then, if certain calculation methods are required, then we can supply that. So we were in A, we went to C and we were missing B, which has turned out to be much more important than C (CEO, 2013).

The former business developer of Build Desk believed that the reason for not succeeding was twofold: lacking the skills, being very different from Pinta Inc.,’ main business, and not having clear goals:

“You can have all the ideas in the world, but if you don’t have the people, forget about! And then we didn’t have the goal, so we kept having milestones and we kept just dragging on compromising all over the place, and we didn’t deliver” (Business director, Interview 2014).

As Build Desk failed, the last business that Pinta Inc. has developed was with “*more than twenty-five almost thirty years ago*” (VP R&D, interview 2013). This was an important element in development of Woodstock, as the R&D team and its business unit were drawing on this fact many times when talking about their challenges of creating Woodstock, as they were lacking internal reference points.

“It’s been a long time ago we have built a business, so we don’t remember how to do it. No one knows how to do it, so we need to figure it out by ourselves” (Portfolio manager, 2013).

When asked about the company’s business models, the CEO of Pinta Inc. defined the model as being a very traditional one, focus on low costs and production, keeping factories busy and pushing everything down the distribution channels. He further explained that it was a need for a change, and his new strategy was trying to implement a more customer centred approach:

“I think if you look at the traditional business model of insulation industry, including ourselves, it is very much commodity oriented, very asset oriented. You have the factories built for the next 150 years and you can’t move them, so you better keep them occupied, if you don’t you lose the game! This means that you push your stuff through distribution. We believe that this is not the model of the future; we believe that this industry has reached the end of its technological capabilities, so we do not see anything happening that would change completely the landscape of the company and the environment of the industry. So either we stay where we are and doing what we’ve been doing for the last thirty years or we change our model into putting systems together, and we are not going to push our stuff through the distribution, but we are going to create the demand. And, of course, this is not going from day to night or from night to day, but if we take it on the overall perspective, this is our strategy since 2010 and we are also shown that we are taking it seriously, because we are doing a lot of thinking and we make a lot of acquisitions, which show that we walk the talk” (CEO, interview, 2013)

Interestingly, he would not agree with the distinction between the system and insulation models, and affirmed that Pinta Inc. was operating with only one model, which was the traditional one mentioned. Yet, he admitted the existence of a “*silos type of thinking, which I don’t know how to fight against. Let me know if you have any ideas*” (CEO, interview, 2013).

I did encounter this types of thinking often in the company, as the words “*them and us*” were employed frequently, especially in two internally declared dichotomies: system division and insulation business, as analysed above, and R&D and business development unit, analysed in section 5.3.3. The latter was the element with the highest impact effect on Woodstock development, as resulted from the analysis of Chapter six.

5.3.2 “What do you mean by a business model?”

Finding out how the term “business model” is used in the company was something of a challenge. Managers would try to formulate a hypothesis about it when being asked, but I never encountered the expression used actively in any of the meetings I attended during my entire stay in Pinta Inc. See table 4.3 for further information.

When I asked the CEO and the business directors of different units - including the BU’s director - about the business models the company was operating under, my question was received sceptically, as I was constantly asked, “*What do you mean by business model?*” Since I never jumped into giving an answer, but deliberately waited for their reflection, my question was followed by a suggested definition, including:

“*Do you mean the route to market?*” (Division Managing Director, 2014)

“*It is something about value streams and routes to market.*” (VP R&D, 2013)

“*I would say that is the supply chain positioning*” (Program Director, 2013)

“*We want to make the easiest possible to work with ceiling for our target group, so we have*

chosen a more human-centric communication, or call it a business model, if you want” (Group Marketing and Business Development Director, Business Unit 1, 2013)

“A business model is very much related to how you justify the price premium, that’s the core of it” (Group Marketing Director, 2014)

“I think you are too theoretical. I don’t care if my people know what a business model is and if it is the same with product development.” (CEO, 2013)

“I know what a business model is, but you can also see that nobody uses terms as business models or customer or manners to reach customers. We talk products.” (Senior project manager, 2013)

Looking through internal documents and annual reports, the term was not employed until the 2014 annual report, also the first report given by the new CEO, where it was affirmed that *“The high operational leverage of our business model is linked to the capital intensive nature of our factories – one new plant will often cost more (...) and must operate with sufficiently high capacity to pay back the investment.”* (Annual report, 2014). The term was used again in the 2015 report, in connection with the company’s new strategic goals, wherein there is the stated aim of having a *“solid business model -with a broad market approach operating in 37 countries and the logistical advantage of being close to customers with flexible production units”* (Annual report, 2015).

In this context, when asking about Woodstock’s business model, the answer was that *“it is a simple route to market, we are selling a product with features”* (Business direct, business unit, Interview 2014). However, the word was not used in any of the project or steering meetings I attended, even though the term “business model” was used at the beginning of Woodstock development.

In the first project description document, a picture that depicted the value chain and money flow inside that value chain was identified as Woodstock’s business model (see figure 5.4).

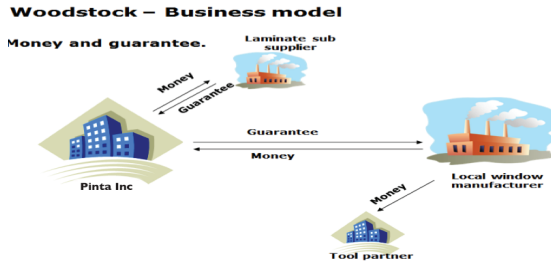


Figure 5. 4 Woodstock business model. Source: Internal document, 2010

According to internal documents, a couple of months after the first project description with the purpose of creating a business plan, the question “*What is the business model for Woodstock?*” was discussed in three internal meetings. In this regard, five scenarios were created, known as “*business models A, B, C, D and E*” (Internal document, 2011), which were each compared against each other based on predetermined specifications. These were:

“An evaluation of the most obvious business models will be made based on the following parameters:

- *Business potential*
- *Product liability and risks*
- *Long-term business potential*
- *Resources and competences*
- *Investments & cost*

The evaluation will focus on the business model already described and the alternative model, where we supply standard composite products.” (Internal document, March 2011)

The scenarios were proposed by the newly formed marketing department, and included ideas about Woodstock such as:

“A: sell the plates only

B: sell the cut and grinded materials

C: sell finish profiles to windows producers

D: sell finished window frames

E: sell windows” (internal document, June, 2011).

The option chosen was C, although the rationale behind the choice does not appear in the meeting minutes. In interviews conducted with the people who attended those meetings (i.e., the vice-president of innovation, the program director and the senior project manager), none could recall the reasons for choosing scenario C. The inventor of Woodstock could only remember that it was very important for him to create something new inside Pinta Inc., something that was very distant from a “bulk type of business”. He also noted that the scenario of building an entire window was not considered realistic:

“I remember that I pushed for C, as A and B were bulk type of models. I didn’t want to make out of Woodstock just another bulk business. Then D and E were too far from our reality, and far too complex for what we could do, doing doors and windows is a completely different business. So C was the good one, as we could offer a system and we were in charge of the system, not our suppliers. But I can’t remember more than that” (Senior project manager, Inventor of Woodstock, Interview, 2013).

Scenario C was integrated in a business plan in 2011, where it was stated *“the business model chosen is direct sales through BU sales organization, selling directly to windows producers”* (Woodstock Business plan, June 2011). In the same plan, the business model chosen was analysed against the above-mentioned predetermined specifications, as seen in table 5.3. The table underlines the considerations concerning the target customers, value proposition, competitors, and resources required to realize scenario C.

Business potential	Product liability and risks	Long-term business potential	Resources and competences	Investments & cost
<ul style="list-style-type: none"> ✓ EU legislation, ✓ Keep window design alive ✓ Keep small windows producer alive ✓ Refurbishment ✓ Wood suppliers ✓ Tough competition with foam ✓ (+) Cobranding 	<ul style="list-style-type: none"> ✓ Product with warranty 10 years (minimum) ✓ Wood suppliers ✓ Lamination quality ✓ Failure risk ✓ Brand protection? ✓ Tough competition with foam etc. – different possibilities 	Pinta Inc. window	<ul style="list-style-type: none"> ✓ Window energy design ✓ Sales force ✓ Optimal coordination wood-composite-lamination ✓ Small batch production ✓ End customer service? 	<ul style="list-style-type: none"> ✓ Investments in production lines ✓ Energy design costs ✓ Extended coordination with window producer ✓ Order system

Table 5. 3 Parameters for evaluating business models. Source: Woodstock business plan, 2011

This was the last time Woodstock’s business model or business plan was evaluated and worked on, despite the R&D team and the VP R&D’s expectations from the BU to develop a new version of the business plan, since the project evolved significantly. Thus, the business unit has only promised but it has not delivered. In the latest project description released by the project manager in mid-2014 there are goals, deliverables and production costs as well as an empty power point slide containing the text: “The Business unit will provide the business case” (Internal document, Project Description for Woodstock G3, 2014). The most active agents in the development of Woodstock were the R&D team and the BU, who used different work vocabularies, namely paradigms (Weick, 1995: 118). This was a source of internal conflict, creating interruptions that impacted on the way Woodstock developed.

5.3.3. R&D versus Business Development

Woodstock was discovered and developed in the R&D department at Pinta Inc. R&D gained a new Vice President of Innovation immediately after the financial crisis, and he took credit for

being the one who reorganized the department into a matrix format. This made resources easier to attain, and people could work across-projects (Portfolio Manager, 2013). The new VP talked proudly that he introduced a new innovation strategy and has created the idea of a budget pool on which employees could experiment freely. The moment an idea received sufficient interest and was considered to have market potential, it was moved “above the radar” (VP R&D, 2013) for further development, with an official budget. Both the vice-president, and the inventor of Woodstock were having the vision of building something new in Pinta Inc.

The Vice President’s background played a significant role in the realization of Woodstock, as he had previously worked in the window industry and was familiar with the needs and struggles within the industry. Therefore, when Woodstock technology was discovered, he favoured using it in the industry, and moving Pinta Inc. towards servicing the window industry, which would be a completely new area. This decision had many unintended consequences, as discussed in more detail in the next Chapter. However, one of the consequences was defined by the need to change core practices in Pinta Inc., such as production manner, business set up, and entering co-creation partnerships with customers. These facts were perceived as offering “*great opportunities for development and learning*” (R&D Portfolio Manager, 2013), still, this was not the case with the appointed business owner of the Woodstock, Business Unit, BU.

BU, as a component of the insulation business, provided stone wool insulation solutions to industrial producers or transformers who then integrated the Pinta Inc. product into their own finished product. As Woodstock first generation was a product that was supposed to be integrated into a window frame, it was decided that BU would be the business owner and responsible for creating the business plan and go to market strategy.

The collaboration between these two “*very different types of working*” (BU Business Director, 2014) was perceived as “*difficult and with many ups and downs*” (Senior Project Manager, 2014). While R&D had the vision to create something “*revolutionary*” (Senior Project Manager, 2014) to serve both the company and the new industry they would enter, BU wanted to frame the project into “*how things have always been done in BU, this is just a small component in a window frame*” (BU Business Director, 2014). There was a clash between the linear way of thinking at BU, and the trial and error approach found in R&D, having different vocabularies of

work (Weick, 1995:118). Therefore, in the interests of taking the product to market, R&D expended great effort into “speaking their language:”

Pinta Inc. is a production organization and in production, many things are linear, and BU is the same. So when we communicate with them we need to speak their language. We know that we need to go back and learn, and we do a schedule, and all that. If we tell them how things really happen, they would get upset. Nothing goes from A to B, but this is how we communicate to them, because this is what they want to hear (Project Manager Woodstock, 2014).

However, their interactions caused multiple internal conflicts, as R&D team was expected much more collaboration from the business unit, and even to take the ownership over Woodstock sooner. Yet, BU was waiting for the right cues to takeover, and those cues were finishing development process and having a product, which can be produced at the “*right cost platform*” (Business Director, BU). The feeling in R&D was that they need to build a product for the market and for their internal client, even though the business director and developer were part of the steering meetings, challenging the development process:

“It was challenging to keep being motivated as many things needed to be proven over and over again and sometimes based on miscommunication” (Evaluation of Woodstock meeting, 2015).

“They don’t understand the project; it feels that we compromise a lot of our ideas and visions. This makes things hard” (Senior Project Manager, 2014).

In explaining the sometimes hostile and sceptic attitude of the business unit, the Portfolio manager affirmed in the last evaluation meeting: “*We must remember that Business Unit were not asked if they wanted a new project, it was just given to them! This is a new business for which we had to find somebody to attach our great idea to. We pushed it down their throat and they couldn’t say no. They were forced to take it.*”

At the end of the development process, Woodstock was received by the market in a very positive manner, being awarded in January 2015, at the European biggest construction fair, with “Global Insulation Product of the Year” award, for an “innovation for affordable sustainable design” (Internal document, January 2015).

After receiving the award, the business director of BU was declared:

“Window frames have been one of the Achilles heels for making sustainable buildings energy efficient in a cost-effective manner. To make this challenge manageable and affordable, our specialists have succeeded in taking our insulation technology one innovative step further. We have developed a weather-resistant profile, which insulates much better than wood or aluminum facing.” (Business Director, BU, January 2015)

5.4 Conclusions

The aim of this chapter was to analyse the context, namely the case company, where Woodstock developed. This helped in formulating an answer to the research question: *What frame did managers draw on when developing Woodstock and why was Woodstock perceived as a sensemaking trigger?*

Woodstock was born as a company whose ideological vocabulary was centred on factories, the engineering of stone wool fibres, costs, and producing the raw material in the cheapest manner possible within the market. In recent times, there have been many changes in Pinta Inc.: a new vice-president of innovation, the financial crisis and the formulation of a new strategy, a new group marketing department, reflections on how many business models they have and should have, and finally a new CEO. They are a product-oriented company predominantly focused on technology, which was visible in their manner of explaining what a business model was. This was defined as being a “route to market”, how the product could be produced in the cheapest way, and the positioning in a value chain. When actively working with the business model, in the case of Woodstock, this became the definition of how money flowed inside the value chain,

that is, “what we sell.” Interestingly, a business model would be chosen based on its perceived business potential, its product liability and risks, its long-term business potential, its resources and competences, and the investments required by the company. Once the model is decided based on these preconditions, the business model becomes the objective to be achieved, as seen in the case of Woodstock.

Woodstock, mainly Generation 3, was challenging the *DNA* (expression used frequently by the VP R&D) of the company. Woodstock’s initial business model was an attempt to connect the cue with the frame, and it was perceived as a fit. Yet, it grew into something that challenged the core of the company, ending up with a model combining elements from both the insulation and system division with new practices. Woodstock also developed at the intersection between two different paradigms / vocabularies of work, namely R&D - where the vision was to create a truly innovative product together with the business unit - and the Business Unit – which was willing to create something that resembled their normal business, being very focused on the first plan created. The difference between the paradigms, and the kind of expectations that each had of each other, became an important source of interruptions in the development of Woodstock’s business model. Interestingly, the ideology was present when the preconditions of making the choice of a model were defined, but the development of the model *per se* was a matter between the paradigms.

Aside from being perceived as “different,” the development of Woodstock was considered a challenge due to a lack of retrospective possibilities. There was no organizational memory as to how to build a new business, given that the last business was built almost thirty years ago. The same situation was encountered in the development of Woodstock’s business model, given that nobody could recall how scenario C was chosen and based on which preconditions - they could only recall the target which needed to be achieved. The focus was on results rather than processes. Therefore, the R&D team and BU had to enact and accept a new business model for G3, which is analysed further in the next chapter. The way Woodstock’s business model was enacted is analysed, element by element, in Chapter six.

Chapter VI: Analysis of the enactment processes in the case company. Enacting business model elements

6.1 Introduction

After setting the context in chapter five and explaining why Woodstock was perceived as a challenge for Pinta Inc. and the actors involved, this chapter unfolds the enactment processes that has contributed to the creation of Woodstock's business model. This study utilized the business model framework provided by Chesbrough and Rosembloom (2002), consisting of six elements: market, value proposition, value chain, cost and profit, value network, competitive strategy. Each of the elements is analysed separately by using the enactment model discussed in chapter three, where the focus is on interruptions, enactment processes and retention/outcome of enactment (Weick, 1979). As explained in chapter three, interruptions are "perceived" and identified as such in the actors' own words. Examples of this cover reactions like: "shock," "surprise", "showstopper", "crisis", "conflict", "problem", and "major risk." 197 interruptions, dispersed across all six elements, were identified and then grouped further into 30 interruptions identified by the actors involved as being the most important. These are analysed further in the chapter and depict in tables 6.1-6.5.

The identification process for interruptions and the coding processes were explained in Chapter four.

Therefore, the aim of this chapter is to answer the research question:

What are the enactment processes that enabled the creation of the elements of Woodstock's business model and how do managers of Pinta Inc. made sense of the emergence of a new business model?

Having this purpose, the chapter is structured as following: first five sections are analysing the elements of the business model, following Chesbrough and Rosenbloom (2002), followed by that last section of conclusions.

6.2 Enacting components of a value proposition

When questioned about Woodstock's value proposition⁴ in generation 3 (G3), the Business Director of the BU (BU hereafter) responsible for the product, answered:

"Insulation, wood aesthetic! For me wood is aesthetic, unlike aluminium. And then maintenance free; for any production changes for windows' producers that want Woodstock there is support for the customer: advice about how to work with stone wool, and to glue profiles on the window. We sponsor their marketing costs. There you have the co-branding story. Industrial costs we don't cover, we never do that. The value proposition is insulation, maintenance free, is that enough? Of course, it is not, but there was one step before this: the whole window industry received new legislation for windows to lose less energy. With our product, windows can easily meet the requirement of this new legislation. On top of that, we offer 10-years low maintenance, free window painting, and thirdly: it still looks like wood. A solution for 2020." (Business Director, internal business owner, 2014)

There were mixed feelings and some pride about having developed a *"product that would disrupt the window industry"* (VP, R&D). The doubt about whether what was being offered was *"enough"*, frequently arose when the actors involved in Woodstock's development spoke about it. Creating value for a new industry proved to be more challenging than expected, especially

⁴ Value proposition: "the value created for users by the offering based on technology" (Chesbrough and Rosenbloom (2002:533)

given the lack of experience with developing new businesses (Portfolio Manager, 2013, interview) and the traditionalist window industry.

In his statement, the Business Director enumerated multiple elements. These related to the product's capacity to offer: insulation, aesthetic (looks like wood), free maintenance, support for customers about how to work with the special material, support with marketing, and a solution to meet new legislation for the windows industry. Interestingly, these ingredients of the proposition were not all present from the outset, they evolved over time with the change from generation 1 to 3, as seen in chapter 5, resulting from many episodes that pushed the team towards this form of product enactment.

The vice president of innovation's decision to take Woodstock above the radar, and by doing so, to initiate a new project inside R&D was received with great enthusiasm by the inventor of the concept. A team was formed and he was named Project Manager of Woodstock, gaining a reputation as "*the visionary, the entrepreneur and the true engine of Woodstock*" (interview, program direct, R&D, 2013), during the project development phase. He affirmed the initial value proposition for Woodstock G1 at the end of 2009, was to deliver a solution for the window industry, to help them comply with the new EU 2020 regulations. The market the product sought to supply was a new category of customer for Pinta Inc. Thus, the company decided to enter into a co-creation type of partnership with a window manufacturer. This kind of partnership was also a new approach for Pinta Inc. Its R&D department helped develop the idea of a window frame with stone wool inside (as seen in fig 5.1) and a window with very high insulation properties.

According to internal documents, which depicted a very specific time line from ideation to implementation, the expectation was that Woodstock would be a "fast" project; meaning it was predicted to reach the market in a maximum of two years. Interestingly, in the documents, the word "fast" is underlined and the time line included focuses on ideation, business plan, and technical development, as illustrated in figure 6.1.

“At Woodstock, we want to enter the window market *fast*, by using the materials as a part of (inlays in) a window frame or sash. The most obvious segment is windows based on wood for “renovation” = replacement of old windows, but other segments may also come into consideration.” (Internal document, project description, 2010)

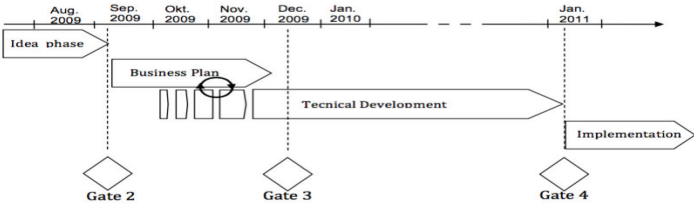


Figure 6. 1 Woodstock G1, timeline. Source: Internal document, 2010

This document was the first in which intentions and expectations for the project were identified, and the first attempt to define Woodstock’s value proposition. Interestingly, it was defined relative to the market it would serve; i.e., the renovation market, where there was a requirement for old wood windows to be replaced. This showed the link between value proposition and segmentation. Despite the stated intentions, Woodstock’s development took over five years, and several events created project delays, which ran counter to expectations. This was perceived as a “crisis” in the life of Woodstock, and interruptions triggered enactment processes throughout the years of development.

At this early stage, R&D began collecting external cues about industry specifications, helping them to identify the properties of a window and label the essential unique selling points. This helped them to devise an internal agreement to focus on creating a window, as required by the EU2020 agenda, incorporating three-layer glass (Internal document, 2010). They also learnt about specific characteristics of the industry that might represent a challenge, not only to Woodstock’s development, but also to Pinta Inc. The first point identified as an interruption to the “fast” development process, was the discovery that the window industry requires provision

of a ten-year warranty on different features of the window. This requirement demanded a significant number of tests to prove resistance. Pinta Inc. had never offered liability for their products; thus, this element challenged the company's ideology.

“Risk and liability is something new for Pinta Inc. And we need to figure it out. For G1, it is important to clarify it in terms of: image; the replacement of windows, complaints, and possible implications.” (Internal document written by R&D Program Director, 2010)

“We have never given a warranty for our products. That was a whole new type of learning you needed to accumulate inside, and it was a big challenge.” (VP, R&D, 2013)

A second point interrupting fast flow intentions, and leading management to question the long term financial success and viability of the product, was the discovery that the window industry is very fragmented; each national market imposes specific requirements and regulations for windows. As an insulation business, Pinta Inc.'s experience was in selling standardized products; thus, making customized products for a highly fragmented industry, led to a significant interruption. This aspect was a challenge for the internal business owner also, as it was perceived as a provocation for the paradigm. Therefore, although the initial aim of the business was to expand into parts of Europe, they came to realize that this step needed to be taken in a calculated manner. Hence, they began with the Danish market, to be followed by German market later. The R&D Program Director knew that presence in the Danish market alone would not equate to a successful business. Expansion was an indispensable aspect of the plan. However, the observation that the German window market was a very fragmented one created a moment of panic. The researchers learned that alternative designs and calculations were needed for foreign markets, so the decision was made to focus first on the home market exclusively. Interestingly, the main fear was that the penetration of a new market would require the same level of investment as penetration of the Danish market, where a long period of co-

development with a window factory partner was needed. The BU was using the same kinds of cues to decipher the new market, but were expecting that the solution to be a standard one:

“And one of the things, a thing that frightened us in the beginning, was that it seemed that there were a lot of very small players in the window industry in Germany. If you go to Germany the windows manufacturers are very small companies, so, there’s a huge number of them. And therefore, you could say this, the effort that we would have to do to get in contact with them and promote the product, seemed to be huge. So we had to consider this: how could we make that work? how could we get a sufficiently large partner, so that we could get the same kind of help, somebody helping us into the market in the same way as the CEO co-developer at home?”
(Program Director, Interview, 2014)

6.2.1 Woodstock generation 1 (G1)

Under the conditions established by the R&D team, the first generation of Woodstock, G1, was to comprise a stone wool profile laminated with wood, creating a window frame. Woodstock was included inside the final product, not visible to the customer, resulting in a more insulating type of window, as shown in fig 5.1. In this case, insulation was the main sales point. The value proposition needed a value chain involving wood factories and special tools solutions for cutting wool. Thus, a wood factory would provide the wood for the laminating process, followed by sending the laminated profile to the window manufacturer. Due to the fact that the new window profile would contain a type of material, stone wool, which a window manufacturer has never worked before, Pinta Inc. would pledge the cutting tools. Furthermore, as the new type of window would need approval from the national institutes, Pinta Inc. and the window manufactures would share the responsibility of working on this task. The value proposition for G1 was incorporated into the value chain, as depicted in figure 6.2.

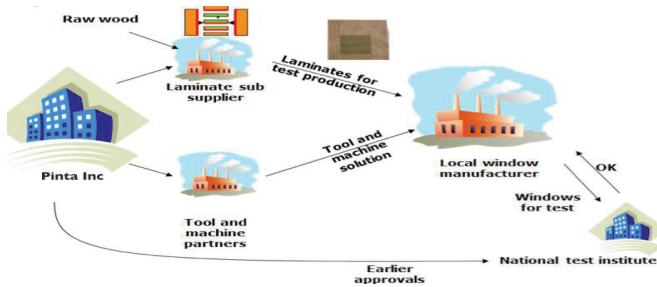


Figure 6. 2 Woodstock's value chain, generation 1. Source: Internal document, 2010

This step rendered the logistics very expensive; therefore, the final cost of the product was much higher than that of the other profiles on the market. Woodstock G1 was not a competitive product, regardless of its strong value proposition.

Despite what was labelled internally as a “significant loss” and a “very expensive product” (Internal document, 2011), Pinta Inc. paid for the deficit of G1, against the backdrop of very positive feedback from the market, as their customers succeeded in selling windows with the new type of frame. In these conditions, VP R&D maintained a strong belief in the potential of the technology, convincing management to accept the enactment of a new design.

“The final product was not very good. You have heard the story; it was a design problem and the value chain was way too complicated and expensive. But the technology and the value we offered... with that technology we had very high business potential, and we did manage to sell those windows! The co-developer loved our product, and they wanted to work with us and develop further.” (VP, R&D, Interview, 2013)

“What allowed the project to continue was the VP R&D. He was a man with a vision and we believed in him, so we let him play.” (Program Director, Interview, 2014)

In the eyes of group management, Woodstock was the project of the innovation vice-president, and the person who defended Woodstock in the most difficult times.

G1 was a breakthrough for the team, and was considered “*a valuable learning*” experience (Senior Project Manager, Interview, 2013). They managed to take a product onto the market and to sell it. When explaining the selection criteria that led to the demise of G1, the Senior Project Manager of Woodstock explained that the connection between the value proposition and the value chain and production costs was too weak when compared with other products on the market, but that, interestingly, was only apparent once the product was on the market:

*“I became more and more aware that this was not the right product (**value proposition**). I could see that we couldn’t make money on it; the costs were too high compared to the value created for the customer (**cost- value proposition- customer**). I could see that we had to charge more for it if we wanted to make money on it (**profit**). Any increased cost would then be higher than the customer was willing to pay, because we didn’t provide enough value. I could see very clearly that the price would not be paid. Windows are a very competitive market (**competitive market**).”* (Senior Project Manager, Interview, 2013)

“Because we could see that G1 worked fine for the customer, and we received no complaints, we pondered what we should do. We could also see that it would not be sustainable for more than 2 years because we lost money selling it and we had to subsidize it; and it was clear that once we started to ask full price, it would be 3 times as expensive, and that would simply not fly.” (Senior Project Manager, Interview, 2013)

G1 was followed by a trial and error phase to create G2, which comprised a frame only partly laminated with a section of Woodstock material visible. This solution was considered non-

sustainable, and made space for G3, a solution in which the Woodstock would be painted and mounted onto the front of the window frame, becoming the visible part (see fig. 5.2). This was a critical decision; it eliminated the wood factory and the cutting tools providers, thereby simplifying the value chain, and ensuring the product could target a new market, the aluminium and wood-aluminium market. Interestingly, the new design advanced the value proposition from offering insulation only, adding maintenance free and aesthetic value.

“We figured out this solution, G1 was too expensive for just a little more insulation. Then we figured out that we could move the wood to the outside, and then we were able to change the wooden window from a window that needs maintenance to a maintenance-free window, and at the same time improve the u value and energy performance of the window. That was the main idea.” (Senior Engineer, Interview, 2013)

“We moved into another segment, because we could make a different surface, so we both made it insulating, and we made a different surface, so we could have made it maintenance free, and create a different look architecturally, we offered aesthetics, as the visual appearance of a window frame is very important to the windows industry.” (Program Director, Interview, 2014)

Interestingly, the new design and the resultant new value proposition, triggered group management to question whether the positioning of the product relative to the building envelope strategy (as described in chapter 5) was still correct, in addition to the products positioning within the particular BU. The CEO considered it no longer part of a strategy, but “*a badly run project*”, and began questioning the resources used on Woodstock, and its aims. However, the feedback from the market, and the voice of the R&D Vice President meant that the project continued, to generation 3.

6.2.2 Woodstock generation 3 (G3)

The value proposition for G3 was comprised of elements drawn from three different sources:

- A. The existing value proposition for Pinta Inc.: Given its origins, Woodstock would be able to offer, by default, the properties unique to any stone wool product: “insulation and thermal efficiency, fire safety, durability” (Senior Project Manager, 2013). These aspects of the value proposition were familiar to the company; they knew how to reflect them in a revenue model.
- B. Result of innovation processes: Woodstock technology was able to refine the stone wool fibre at a very high level, allowing the company to “*offer aesthetics, and a maintenance free product*” (Vice President innovation, 2013). However, this would push the company to seek understanding of the implications of offering “aesthetics.”
- C. Market cues: their only customer and co-development partner, a Danish window producer, asked to sign a co-branding partnership, as they considered the Pinta Inc. brand very powerful. “*We could be as the Gorotex for clothes, we are Pinta Inc. Inside the window, therefore the window is energy efficient,*” explained the VP R&D, one of the supporters of the idea. Furthermore, the new industry they were serving, the window industry, demanded a warranty, a practice never encountered by the company previously. These three sources of uncertainty, which challenged the company and demanded the managers of Woodstock look for cues to reduce the risk of failure, were the elements of co-branding, warranty and aesthetics.

6.2.2.1 Creation of meaning for co-branding

When the idea of co-branding was introduced at the company, one of the Marketing Managers asked for support. As explained in chapter 5, the group-marketing department had just been formed with a new strategy at the time when the Woodstock project began. The practice of co-branding was new to Pinta Inc., but a potential customer had asked them to come with a model leveraging on the company’s brand. In discussions about this, the Project Manager and the

Marketing Manager, aware of the scepticism of group management, realized that in order for the idea to be accepted by group management, they needed to create a very precise definition and rules for this kind of partnership. They had to create a common understanding of the *co-branding* label.

“We haven’t had that practice before. It was completely new and this is why we needed to create a structure around this. We needed to formalize this; we needed to formalize how we co-brand with third party suppliers.” (Marketing Manager, 2013)

“Very unusual for us to do that, because our brand, as we said before, it is very strong, so why dilute it? I think this thing with the small window producer; it is just a small thing. Plus, it was happening somewhere in an isolated part of the country, nobody knows about them. So I say, let them play! The CEO of this company, I visited him myself and he is an entrepreneur. He said: let’s do a kind of an Intel inside thing, also a kind of trial. Again, it is in the north part of the country, let’s see how it works out. But it is not something that we want to do in general, and I doubt we’ll expand the practice.” (CEO Pinta Inc., Interview, 2014)

This idea separated the company into two different camps; the development team and their vice president, together with some from the marketing department, believed in the idea and wondered why this strategy had not been used earlier. Conversely, the BU tasked to take over Woodstock and the CEO perceived it as a “*waste of money and time, we’ll just do that with this company, because they are helping us*” (Business Director, 2013) and as a “play” (CEO, 2014). Interestingly, the Co-creator insisted on the idea very strongly, as he acknowledged the power of the Pinta Inc.’s name among its customers.

“My sales of the Pinta window happened because of their name. They are huge in this country and everybody trusts their products and quality. It really boosted my sales.” (CEO, Co-creator window producer, Interview, 2014)

Weick et al. (2005) explain that labelling is what makes “shock” manageable and easy to control, while also creating a *“common ground of understanding for everyone, reducing the ignorance differences between actors”*. By creating a formalized definition of co-branding, the development team were able to offer the definition as a cue to group management, who were against this new form of partnership:

“The understanding of this is not that good...there has really been a fight to get the management guys to understand how important it is.” (Marketing Manager, 2013)

The idea challenged both the ideology, and the business paradigms present in the company. Therefore, the development team’s efforts to convince top management were only partially successful, as the residual uncertainty surrounding the concept was significant and lacked the most important cue, the value appropriation of co-branding. Management agreed, signing the contract with the development partner as the company sought to capture value through value creation. Their customer would benefit in terms of awareness, while Woodstock would receive valuable input into producing a window. However, what was labelled and enacted as co-branding lacked a pricing strategy, leaving management sceptical over the success and long-term benefits of the decision, not even the business owner lobbied for this.

“We don’t price it. It has not been possible for me to make calculations.” (Marketing Manager, 2013)

“Co-branding is only specific to the Danish window manufacturer; we are not going to take it to other customers. They have helped us with co-development and we have a different agreement with them. It costs money and I don’t think it generates profits.” (Director of BU, 2014)

“But this window producer, our co-developer now, can’t be the example to follow. We supported him a lot, almost gave him the product for free.” (Director of BU, 2014)

Therefore, this element was a part of the value proposition for Woodstock in the Danish market only. It was also intended to be temporary. The BU was willing to compromise and accept this new model during the development phase, as a form of payment to the co-developer. This confirms Weick’s (1979) argument that what survives confrontation with ecological change are elements explained in pre-existing cause maps (Weick, 1979:187). Only the existence of a value capture mechanism would have convinced the BU to accept it, showing that revenue model legitimizes the existence of the value proposition.

6.2.2.2 Creation of meaning for warranty

Another important element comprising part of the value proposition was the warranty. The window industry offers liability to its customers, meaning that Pinta Inc. had to adopt the practice to become a supplier to this industry. For this reason, the warranty was part of the early version of Woodstock’s business plan, offered as a commitment to all the parts involved in the creation of this mandatory element. Compared with co-branding, where managers were able to evaluate necessity of adoption, a warranty was labelled as a “must” as part of the value proposition (internal document, 2010), an entry requirement for this industry. The strategy applied to understanding the concept and its applicability involved benchmarking against the aluminium profile, continuously looking for and defining reference points to attain or outperform them.

“We need to see what is the practice in this industry and what are our competitors doing? I think the main goal is to be as good or better than aluminium.” (Senior Project Manager, 2013)

“What is the reference? We need a reference point. I just said it is important to stick to the agreement that aluminium is the standard, so if it does not pass certain standards, I think we could also accept not passing that standard.” (Vice President of Innovation, Steering meeting, 2013)

The integration and creation of a warranty for a product produced by the company involved different steps of growing complexity when transferring from G1 to G3. In the G1 phase, Pinta Inc. needed to assure its customers that the *“Woodstock product should not crack, delaminate nor disintegrate if it is maintained to our rules”* (Steering meeting, 2012), while for G3 the company had to assure the durability of their product in terms of colour and gloss as well. During the process of formulating the warranty, there were two major interruptions: the first involved an internal misalignment regarding what a warranty should cover, which determined a need to accept redefined targets, and the second, a lack of alignment with suppliers' expectations.

a. Change of targets: compromising

The aim of Woodstock, as declared in Steering meetings was to create a window profile that would perform better than its competitors, namely aluminium windows providers. The development team, together with the BU had defined targets that turned out to be unrealistic, leading to a rise in conflicts. For example, in one of the gate meetings in 2013, the creation of a mandatory warranty was considered an *outstanding issue*, showing that the two sides had not reached agreement, or a common understanding of the implications of being liable.

“There is an outstanding issue regarding the warranty obligation towards our co-developer. He has been promised a warranty scheme ever since the project started, but the BU will not accept this as they think it is going too far. We therefore have a conflict about this that we need to resolve. We will discuss this issue with director of the BU to find out how to get around it. This outstanding issue is carried over into the next step.” (Portfolio Manager, Gate meeting minutes, 2013)

The creation of a warranty involved conducting multiple tests to prove the durability of the window frame under different weather conditions for a certain number of years. Pinta Inc. needed to accept to be liable for different aspects of the product, such as colour and gloss loss over time, the product’s reaction to time ageing, and delamination. The conflict escalated when the initial target number of testing hours, based on those set by the aluminium industry, were not reached. Furthermore, after studying their competitors more closely, they also realized that they had set targets that were too high for Woodstock, in their endeavour to create *“the best window on the market, at least the same or best than aluminium profiles”* (Business Developer, BU, Interview, 2013). In this situation, the retention decision to continue development was based on benchmarking the situation against, not only external practices, but other internal projects as well.

“So I looked through all the homepages and looked at what are they actually promising their customers? I was looking, of course, especially at the aluminium windows, to see what I was up against.” (Senior Project Manager, Steering meeting, 2013)

They discovered that aluminium runs tests on colour loss for 1000 hours to give a five-year warranty, while they had decided to run a test of 2000 hours to offer a ten-year warranty. As the tests failed, they needed to redefine their targets, after acknowledging that they lacked appropriate knowledge of the matter they broadened the focus of their research across the entire window industry, not only aluminium:

“We tested for about 2000 hours, when actually aluminium is tested for 1000 hours. And we failed. (...) that was a target we set out in the absence of better understanding.” (Senior Project Manager, Interview, 2013)

Furthermore, the vice president of innovation, pleaded for this not to be a showstopper, he made the Steering Group aware that they were operating with two different targets: an internal one, that of 2000 hours, and an external one, namely the industry standard, which they needed to gain more knowledgeable about.

“But this is not a showstopper, because it’s an internal standard, and it is the industry standard that is key to the market. So, we have to differentiate between these two different targets. We have two targets here, and we should be aware of this.” (Steering meeting, 2013)

Despite this situation, the decision makers agreed to take the risk of offering the product to their customers without a warranty on the quality of the profiles until the situation was resolved. The decision was considered possible since they were operating with small volumes. In this manner, they could keep the project ongoing.

“We realized that the first profiles to our customer had no ‘official’ warranty but the quantity is rather limited, so it will be on our account.” (Steering meeting, 2013)

Interestingly, the interruption was a misalignment between two internal paradigms, the first of the BU, where accuracy was very important:

“What I hear is that we had a target at the beginning, and now you ask me to change it, and still continue with the project. And I don’t understand, we had some targets to fulfil and we failed, this is what I see. We said from the beginning that we would make a window that performs better than aluminium.” (Business Director, BU)

The second was that of R&D, which was defined by a trial and error culture, where plausibility and equivocality was accepted. R&D tabled arguments to prove that the comparison was not just, due to the technical specifications of the paint system used in aluminium. Furthermore, the vice president of innovation, whom had played the role of the mediator between the two parties, had drawn on his experience in the windows industry to challenge the targets and show that the initial targets could be changed, with no major consequences for Woodstock:

“One of the biggest window manufacturer has a standard of a 1000 hours’ rate globally, with no difference between regions. I had a feeling when you’re talking about the standard; it’s a kind of artificial standard. Nobody relates to it. That’s how I feel. So you really should depend on using aluminium as a real standard I would say.” (VP, R&D, Steering meeting, 2013)

Clearly, the targets needed to be redefined, which required the R&D team examine the industry they were planning to compete with more closely. By collating information from the industry, the team observed that the goals they had formulated at the beginning of the process were above the conditions imposed on other types of windows, not only aluminium. This “news” gave them an explication for the long-term duration of Woodstock’s development period, and types of misunderstandings that had informed the formulated targets.

“As I said, one explanation as to why in the beginning we set this goal at 2000 hours was that we were not aware of all the rules for this business -- and after we discovered that in fact it is too much -- so why try to be more royal than the king?” (Business Director, Interview, 2014)

“Yes, I did a little study on warrantees also. We had the discussion that we were going to offer this ten-year warranty, and in Denmark we can witness a lot of companies offering a warranty for ten years. So I looked through all the homepages and looked at what they were actually promising their customers. I was looking, of course, especially at the aluminium windows to see what I was up against. There was absolutely nobody discussing or mentioning anything about gloss and colour. Aluminium standards did not mention it at all.” (Senior Project Manager, Interview, 2014)

This interruption caused the team to pause to assess whether this attempt to apply the wrong specifications should be a “*showstopper*” – the word used in the Steering meeting by the Business Director. Ultimately, the decision to continue with the project was influenced by a process of internal benchmarking against other Pinta Inc. projects. The company had listed the internal practices and acknowledged that Woodstock was “*different*” (Business Developer, BU), observing that the same conditions that would have stopped another internal project were not applicable here. Labelling the situation as “*different*”, plus accepting a shift from “*best window on the market*” to “*why try to be more royal than the king*” guided the decision to continue with the project.

“One thing was that our other BUs create external facades -- of course we are comparing with them a lot. I think we should keep on doing that. But we also must be clear on the following -- in their business, as such, they have no competition, because they have boards made of stone, and of course there is also, like we have, no industry standard. Therefore, they made their own industry standard. So, this is not for me a showstopper, we should go on.” (Business Director, Steering meeting, 2014)

The final decision was to redefine the targets for the Nordic market, leaving the south open to discussion, as they were starting to realize the complexity of the industry they were aiming to supply.

b. Lack of alignment with suppliers

Woodstock's profile was comprised of three parts: the profile, the paint system and tape. Each of the parties involved and responsible for a component had to provide their own warranty. Only after each party had formulated their warranties, could Woodstock combine them all into a final warranty to the windows' producers. This fact meant the creation of the value proposition was dependent on the value network supporting the product:

"Before we can provide a warranty, we need a warranty from our (sub) suppliers." (Senior Project Manager, 2013)

A challenge arose from the supplier of the paint system (paint system hereafter). The paint system was only a supplier and co-developer of the system, and the decision of to use one supplier was intended to assist the warranty process (VP, R&D, 2014). However, paint system refused to give a warranty to meet the specifications that Pinta Inc. requested, resulting in a lengthy negotiation process, characterized by frustration over the low negotiating power of the Woodstock business team. This supplier needed to run multiple tests for different colours, so the company would be able to access the available profiles, but the process took longer than expected, which delayed the launch date of the product several times:

"I was in contact with paint system for quite a while to come up with a type of warranty and this is what they came up with last week, saying paint system ensures that "the products presented above perform according to paint system test results". This is the only result that we have had until now – I think they warrant nothing. So yeah, it still must be finalized, but it is a very difficult and long way to get a decent warranty about the paint system. We want to warrant ten

years to the market, and paint system has to cover some aspects of that and this is the only thing that they can come up with, just a product warranty based on their own results.” (Business Director, BU, Steering meeting, 2014)

The collaboration with paint system was considered “*slow*” and “*inefficient*”, but their position was strong because they were the only co-developer of the necessary paint system. Interestingly, the reason mentioned for not signing a new supplier was, aside from costs, the lack of time, as developing a relationship with a new supplier would delay the launch of the product by another year.

“Group management has decided not to put resources into finding a new supplier, and continue the collaboration with paint system; the reasoning is time.” (Project Manager, Woodstock)

However, the fact that paint system had been so evasive in their warranty offering, which was wholly unpredicted by managers, had created a conflict. The vice president remembered the argument, at the beginning of project, which had been that having one supplier for the full painting system would “*facilitate*” getting a warranty for the entire system. This was no longer the case, as paint system did not meet expectations. The team realized that their negotiating position was very weak:

“VP R&D: I just want to challenge that we some time ago agreed that it is important that we choose one system supplier to get the warranty. Well, we can’t get the warranty, was that then the right decision?”

BU: no. This was also how they described it.

VP R&D: But I guess as soon as we are in to a situation where there is, I mean more solutions we have a possibility to put pressure on them as well. I guess that is it. So, I think we will get

there in time, but as things are right now we are not in a strong position. Just as with painting the profiles, we have just one supplier!

They can afford a “take it or leave it attitude, which we can’t.” (Steering meeting, 2014)

They also realized that they would probably never achieve what they had planned from the beginning, so they would have to formulate the “*most optimal way given the situation now*” (Steering meeting), which was interesting as initially high expectations became pursuit of a best-case scenario.

“Project Manager: what I think we need is to have a warranty on the performance of the systems. That’s what we need from paint system and they should be able to give us that, they have designed a test for it, so we just need them to put this on paper.

VP R&D: But apparently, they are not there. Do we believe that they will ever get there?

BU: I really don’t know. We will never get where we want. That’s for sure. Now we just need to find the most optimal way in this situation. That’s the only option.” (Steering meeting)

To resolve the situation, Woodstock’s inventor proposed relabelling the part of the warranty stating *maintenance free*, meaning ten years without painting, to “*low-maintenance*” (Senior Project Manager, Steering meeting, 2014). After further research, the team noticed that the notion “*maintenance free*” was not present elsewhere, and so agreed relabelling would reduce their liability on the market. The consensus at that time was to ratify the decision, as pipeline was showing a market launch with the Co-creator, and missing that deadline was unthinkable. Furthermore, at the beginning of 2015, when the project was taken over completely by the BU, they decided to begin searching for another supplier who would be able to offer a warranty for the full system:

“In order to strengthen supply security and improve our position when negotiating prices for coating material (putty and powder) for our profiles, it was agreed to seek an alternative supplier to paint system. We are looking for a supplier for the full system to strengthen the warranty cover.” (Project Manager, project meeting, December 2014)

The process of creation of the warranty component showed the dependency of the value proposition on the value network.

6.2.2.3 Creation of meaning of aesthetics

The visual quality of G3 was one of the most challenging aspects of the product. In the windows industry, the visual aspect of the products is very important to the end-customers. They are interested in aesthetics, the ability to find windows of different colours, and the option to paint the windows at their convenience. Woodstock’s ambition was to put on the market a window with very high insulation properties competing with the aluminium windows, while having a wood-like characteristic: *“wood aesthetic! For me wood is aesthetic, not aluminium”*, the Business Director affirmed. This aim was a challenge to Woodstock in several regards. Specifically, they needed to develop a type of paint that would adhere to Woodstock, as a material, together with a coating procedure. Once they had the paint, they needed to be able to provide the standard colours required by the industry, and develop a painting repair kit for users, as the frames could not be repainted with standard paint found in stores. Meeting these criteria would create alignment along the entire value chain and network, discerning what quality and aesthetic means to the business. Above all, R&D and the BU needed to learn to integrate an extra factor in their decision-making, namely the end-customer’s wishes. This was a major challenge, as the company had always been a business-to-business entity. As we will see, this interruption spread itself across all the elements of the business model, as it became a matter of production, costs, pricing, value network, customers, and market acceptance (as will be analysed further in the chapter, in relation to each element).

Building aesthetics, and pursuing a suitable visual quality for the frame, were key issues on the agendas of each project and Steering meeting, from 2013 until the end of 2014. Every time an issue related to the visual quality of the frame, regardless of whether it was due to production mistakes by Woodstock's board or in the painting system and procedure, considerable costs were added. Yet, very positive feedback was obtained from the market: *"we are selling. Our customer is ordering more and more, and we managed to produce more, so we are in a risk of success"* [said laughing!] (Senior Project Manager, Interview, beginning 2014). This encouraged the company to invest to find the right solution.

Complexity was added by the fact that Woodstock needed to provide customers with multiple profiles in different colours, while each of the colours needed to be developed separately and tested against all the standard tests. The profiles needed to have a "visually acceptable quality" (internal document, 2013) for the industry, when compared with the visuals of an aluminium profile. If the quality was found to be unacceptable to customers, profiles were rejected, resulting in a significant amount of waste and, therefore, costs increased, meaning appearance became a feature labelled in Steering meetings as one of the *"major risks."*

"Our customer rejected 20-60% of the profiles in the latest 3 orders (14-18, 14-19 and 14-20) due to poor visual quality (wool tufts), but we were aware that this specific production of vr00 was not good, and the profiles have been put on hold." (Project meeting, 2014)

"We have two major issues from the perspective of visual quality: loose wool tufts and uneven surfaces. This has put the waste rate up to 40% for our customers, which is far too high! Our customer is very concerned. It is difficult to predict which profiles will not look nice after they have been painted, and our customer is aware of this as they have seen profiles that looked nice before they were painted, but not after" (Project meeting, 2014).

As the development of this type of profile and paint for the Woodstock profile was an innovation, the team was working in a context of very high uncertainty. Their trial and error attitude helped them develop the product systematically, while also learning the problems. “*It is difficult to predict*” became the general statement for 2013 and 2014. This component of the value proposition brought many actors involved in the business together in a very tightly-coupled system, as an error in visual production would have negative effects on waste level and cost suppliers, the customer and Pinta Inc.’s production factories. Managers of Woodstock realized that they needed to create a common understanding and a strong agreement, to guarantee the precedence of the concept of quality and visual quality, among the entire value chain. Therefore, after coordinating with their customer and painting and coating suppliers, Woodstock developed a “quality library” with failed and successful profiles. This library was situated at the production facilities (see more under the value chain section, where the interruptions raised at Pinta’s production facilities are analysed), customer, and suppliers.

“We are now working on a quality library with examples of surface phenomena. Acceptance criteria are to be coordinated between us, our customer and our suppliers” (Steering meeting, 2013).

One of the most important decisions regarding the identity of Woodstock and its visual quality was that suggested by the new Business Director of the BU, and related to the takeover of the project. He witnessed that development team was looking for reference points concerning the visual aspect of the aluminium profiles. When conducting ageing tests, at one point the results were poor for the Woodstock profile, although the visual aspect was the same. Debates about having the right measurement began, and the question “*should we listen to the numbers or to our subjective evaluation of the visual quality?*” (Portfolio Manager, Steering meeting, 2013) emerged. The Vice President of Innovation reminded the team that they were running quality tests to create a solid business case, targeting a low complaining ratio, and the fact that the end-customer would evaluate the profiles, suggesting that the visual look was more relevant than the results of the tests where aluminium profiles performed better. In this situation, the new director

suggested situating the product in the marketplace as a new type of frame, to stop references to wood or aluminium windows, which were both misleading for customers and punitive to Woodstock. He admitted the uniqueness of the Woodstock profile and the fact that the comparison should be relative, not direct and absolute:

“Business Director: is there any way of defining a bit more objectively what is good and what is not good and what's good enough? That's the problem we have. The samples we showed at the beginning were seen as not good enough and now they have started looking at everything with a microscope and say this is not perfect. We should say wait a minute, is that fair judgment? I think it is very subjective!

Project Manager: the normal standard in this industry is that you should look from 3 meters away. This will not be a direct competitor for aluminium, but then you should be ready to emphasize the problems of aluminium, if you were looking at the alum profile close-up, you would see defects as well, impressions and other things.

*Business Director: **we just make it clear to the customers that they shouldn't compare it to wood, that they shouldn't compare it to aluminium, it is just a category in itself and then you can do a relative comparison.** Ok, this is what aluminium looks like, this is what wood looks like, and this is what our stuff looks like. Right now we don't have the right perspective on it.*

***We should go for third look; we should communicate this as a new service; don't try to persuade people this is wood and don't make them believe it is aluminium.”** (Steering meeting, 2014)*

6.2.3 Conclusions

In summary, the interruptions and the enacted environment that resulted in the creation of the value proposition of Woodstock were the following:

Interruptions	The enactment process	Outcome/enacted environment
G1 expected to be a fast and standard solution	Identifying a very fragmented market, a traditional industry Conduct market research before acting	Focused on one national market at that time
G1: complex and expensive value chain	G1 labelled as “valuable learning”	Decided to stop G1, and continue with G3
Fear of the unknown regarding co-branding Disagreement points between R&D and BU	Labelled and formalized the concept internally	Creating a temporary collective agreement (temporary retention)
Need to adopt new practices: warranty - challenging ideology	Labelled as a “big challenge” for Pinta Inc., however a “must” to enter the market Benchmarking competitors’ practice - in a search for reference points	Defining and re-defining targets
Trying to match wrong references and reaching a “ <i>showstopper</i> ” moment Disagreement points between R&D and BU	Highlighting the need for further market research	Re-labelling parts of value proposition
Need to understand aesthetics - challenging the ideology	Benchmarking competitors’ practice Create common quality libraries	Reaching agreement about the value proposition along the value chain and network Label Woodstock as “3 rd look”

Table 6. 1 Enactment processes of the value proposition

Woodstock’s value proposition was the result of a collaborative process, undertaken between different manners of making sense. The company was subject to a strong discourse over identity, informed by the varying positions of the group development team (the engineers who have created Woodstock), the BU taking it over, and the customer who had exclusivity over the

product and had acted as a co-developer partner for more than four years. Given the newness of the product, the creation of the value proposition was born out of a chaos of uncertainty (Weick, 1995), where labelling and re-labelling, benchmarking, creating temporally compromises, while having a strong spoke person, were the tools employed by the development team.

Porac et al. (1989) explained that when seeking to establish itself in an industry, there is an imitative tendency; there is an ongoing input-output cycle with the environment “in which subjective interpretations of externally situated information become themselves objectified via behaviour” (Porac et al., 1989:399). The authors argued that this imitative behaviour would help construct a mental model of competitive behaviour, consisting of beliefs about the identity of the firm, and the causal beliefs about what would be required to be competitive in a new environment. When building Woodstock’s value proposition, there were continual input-output processes considered retrospectively, as well as internal practices and external practices undertaken by the windows industry. The team was challenged to create a new identity and a new meaning, as they needed to “construct actively an interpretation by linking received cues with well-learned and/or developing cognitive structures” (Porac et al., 1989:389). However, in the case of the most important decision, kill/no kill, internal cues, meaning previous practices in the company, weighed far more than external ones.

The value proposition was composed of more features, and each one of the features needed to have its own enactment process. Some of these features were defined at the beginning of the innovation process, and then re-shaped when customers sent specific cues; while other components, as with the aesthetic, were enacted continuously. These enactment processes further enacted linkages between value proposition and different other business model elements, linkages which are going to be analysed in chapter seven.

Furthermore, the team needed to understand the value proposition as an integrative part of the entire value chain, and to recognize the strong connection between the value proposition and revenue model. The lack of a mechanism to appropriate the value created through co-branding created frustration at the managerial level, as determined at the end of that type of partnership.

Thus, pricing mechanisms legitimized the existence of the core of a business model, namely the value proposition.

The process of creating a value proposition involves more than mastery of the properties set out by the technology per se. The customer, in this case the Co-creator, and pre-existing industry standards together mediated the transformation of the technology into a value proposition. Interestingly, this was considered a problem when formulating the value proposition, rather than a solution. Thus, the actors involved needed to create meaning and enact solutions affected by the interruptions analysed above. As seen, these interruptions had a different source: appeared to result from a lack of knowledge, divergent points between paradigms, a clash between new industry standards and ideology, and a failure to create agreement, about the value offered along the entire value chain. As each paradigm had its own approach to rationalizing interruptions, the goal was not only to enact a solution, but also to compromise the terms under which these parts would agree to deliver an agreement.

An interesting observation here is that each of the components of the value proposition challenged specific elements of the business model, and these elements are all coming together under crisis situations only. This aspect is elaborated on further in chapter seven.

6.3 Enacting the market segment⁵

When the decision to use the material R&D had developed as a solution for the window industry was taken, the BU considered segmentation complete. Yet, once Pinta Inc. became better acquainted with the industry, and entered a co-development partnership with a local windows producer, they learned about the complexity of the market. This learning process was not smooth, and the team faced several environmental challenges, which affected both its understanding of the market and how to approach management of a co-development partnership.

⁵ Market segment: the users to whom the technology is useful and for what purpose, and specify the revenue generation mechanism(s) for the firm” (Chesbrough and Rosembloom, 2002: 533).

Therefore, the team had to enact an understanding of a new type of customers and the industry they were a part of. Their approach was to interconnect continuously through identification with the market segment, by formulating competitive strategy considerations, even though these two elements were introduced as different identities associated with the business model according to Chesbrough and Rosenbloom (2002:533). However, the R&D team expressed the shortcomings of having no clearly defined strategy several times; such a strategy would have guided the development of Woodstock in one direction:

“What is the strategy here? That is a question we have never got an answer to. We tried to have a mission and vision to revitalize the project into G3, to show that we wanted to go that way, but every time a key account handler for Germany went to a new customer, they came back with a new set of drawings that didn’t fit. But that’s simply because there was never a strategy! Or maybe they (BU) had a strategy, but it was misaligned.” (Portfolio Manager, Interview, 2013)

“How do you create a strategy for something that does not exist? I think we had the problem of having a BU that did not know how to create a strategy for Woodstock, and we did not know how to position ourselves. This would also impact the business model in terms of how many products you will have, the logistics, everything! And sometimes we felt that we just needed one!” (Project Manager, Interview, 2013).

In these conditions, the strategic positioning of Woodstock and market segmentation influenced each other.

6.3.1 Segmentation criteria and strategy for approaching the market

The first version of Woodstock’s business plan included the decision taken by the R&D team, the Vice President of Innovation, and the R&D Program Director, that Woodstock would only serve small windows’ producers. Group management, who expected to see a high-volume type of business serving large windows’ producers as customers challenged the decision. When explaining the choice to service smaller producers to group management, the Program Director underlined the most important specifications of the Woodstock project:

- A. High level of uncertainty given the novelty of the market for Pinta Inc., thus the importance of creating room for learning and experimenting;
- B. Production capacity challenges if serving large customers; and
- C. Brand value of Pinta Inc. might be more beneficial for small producers (for co-branding scenarios).

These three aspects, as understood by the Program Director acted as the platform for developing Woodstock, and on many occasions as excuses for interruptions.

“Group management: why not big windows manufacturers? Wouldn’t that positioning give us more value?”

Program Director: with small producers, we will be able to use our brand and create value both for window manufacturers and ourselves and we learn quicker by working with a small, entrepreneurial window manufacturer. With major players, it is harder to break through, as we do not have the capacity or experience to work with them.” (Internal document, Woodstock, 2010)

Furthermore, in accordance with the Program Director’s statement, the inventor of Woodstock emphasized the importance of “soft criteria” for segmentation and the importance of establishing a partnership with someone sharing one’s attitude towards accepting uncertainties when working with a *“product that doesn’t not exist yet”*:

“My criteria for this early stage is that I would like a company that is not necessarily the smallest one, fairly big, they are professional and have an organization that is not small. They should be eager to grow and they should have a mind-set about challenging their surroundings. They should of course be serious about handling their products and their products should be considered good in the market. Then they would be willing to embrace these uncertainties, they have to be willing to work with us on a product that does not exist yet, and they have to spend

some time with us, so we'll build success together. These are the soft criteria." (Senior Project Manager, Interview, 2013)

When explaining customer's choice of Woodstock, the vice president of innovation further agreed that they required customers who lacked the power to create innovations by themselves, as the big players had:

"We know that depending on market to market, most the volume in some markets consists of a huge amount of small window producers, who do not have a critical mass to do anything like this. They are the target!" (VP R&D, Interview, 2013)

However, when discussing this matter with the BU, they declared that they were focused on the geographical expansion of the project into different European markets, as their usual business sought to offer component parts to businesses around the world. Geographical expansion was seen as a must, together with selection of the best strategic positioning of the product, as they were uncertain whether Woodstock would compete against the wood or wood-aluminium segment. On every occasion, the market has influenced positioning decisions. They initially moved away from competing with wood, towards wood aluminium, and aluminium windows. Interestingly, regardless of this apparently tangible indecision, the reference points for benchmarking were always formulated and inspired by the aim of being *"as good, or better than aluminium"* (Business Director, Steering meeting, 2013).

"Our initial goal was to be active in the wood / aluminium window segment. There were some preliminary signs that customers see this as a 'too difficult' route to market, as it will not be easy to compete with aluminium. They prefer to market this as a new segment; as an improved wood window." (Steering meeting, September 2013)

The same market cue was received several months later, when the Co-creator and Pinta Inc. organized an important combined marketing campaign at the European handball Championship. Here, the R&D team spoke with the Co-creator's customer, and learned that Woodstock was perceived as a competitor in the wood windows segment, rather than in the aluminium windows segment.

"I was approached many times by people saying that they didn't sell any aluminium windows, but that they strongly believed they could sell this, because it looks like a wood window. They knew their customers liked the low maintenance free thing of aluminium windows but that they would not consider them for older houses because they look wrong. They really felt that this was addressing a need, a niche in the market. They also confirmed the Co-creator's idea that he was attacking the wood windows' sector more than that of aluminium windows." (Senior Project Manager, Steering meeting, January 2014).

Nonetheless, segmentation criteria were not the main concern for the BU, as they believed *"the market gets segmented by itself. We know exactly which segment to talk to. The only question is that maybe the wood segment could also be a segment that we can go for?"* (Business Director, Interview, beginning 2014⁶)

The lack of focus concerning the type of customers suitable for Woodstock became a source of internal divergence, causing interruptions that affected the R&D team and BU. Tension emerged when the BU proposed a new customer whose intentions were to use a Woodstock profile covered with an aluminium foil. While the BU was pleased to receive attention from an important European player, the R&D team members questioned their understanding of Woodstock:

⁶ Here, stating the period of the year is important, as the business unit got a new business director in the second half of 2014, and he had a different approach, as analysed further in the chapter.

“I don’t understand why we received such a proposal in the first place. That really makes me wonder if the BU knows what we are doing here” (Portfolio Manager, 2013).

The strategy for positioning the product in the market was to approach manufacturers to ensure smooth market penetration. In Denmark, the Co-creator had received an exclusivity agreement from Pinta Inc., which meant that no other windows manufacturer would be able to purchase Woodstock until the exclusivity contract had expired. This decision determined that: *“the market positioning in Denmark has been kind of postponed.”* (Portfolio Manager, 2014).

Thus, in the meantime, other markets were analysed and targeted. The BU considered markets where insulation systems were needed, establishing Germany as having the greatest business potential. The strategy chosen was to approach two potential partners in Germany, after devising prototypes to send them as a business proposal. Still, the shock was discovering the German market was split into very small and different types of window producers, operating out of more than 7000 factories (internal documents, 2011). The dilemma then emerged of how to approach such a market:

“The windows manufacturers are very small companies, so, there’s a huge number of them. And therefore, you could say this, the effort that we would have to go to get in contact with them and promote this, seems to be enormous. So, we considered this, questioning how could we make it work, and how we could get access to a sufficiently big partner, so that we could get the same kind of foothold in the market as that provided by our Co-creator here in Denmark.” (Program Director, Interview, 2014).

They approached the German market by participating in specialized fairs with Woodstock; they also hired a special key account manager for the German market. They learnt that Pinta Inc. window was answering passive house requirements, meaning that they could position

themselves in this way in Germany. This was an important finding, and gave the team a target: gaining passive house certification. Additionally, the most important milestone for entry to the German market was to obtain certification to sell windows in Germany. Two types of certificate, namely the CE and RAL, were mandatory. The team worked for two years to gain the certifications, a goal eventually achieved in collaboration with a German window producer and celebrated as an important achievement.

“According to German rules, the window must be a passive house window, but it is simpler than other German passive house windows, which normally consist of three materials: wood, aluminium and foam.” (Project meeting, 2013)

“Then we go to the next agenda point, which is certification in Germany as everybody is aware this is a very important issue as we cannot do any business in Germany without the certification. We started this whole process in June and we are quite far along already in the whole process.” (Steering meeting, 2013).

Development for this market was not without challenges, as it required the Woodstock product to be technically different from that developed for the Danish market, and it was also expected to have a different visual aspect: *“The German market wants a sandy structure instead of the smooth surface we have today”* (Project Manager, Interview, 2014). The team needed to learn how to handle the diversity required by this market and the BU proposed a benchmark based on the practices of the aluminium suppliers. This was considered the fastest solution to match a scenario in which the team could launch the product at the beginning of 2015.

“There is a very large range of products and we have considered what the aluminium suppliers do, and they actually have a standard program, but a very large program. So actually, it seems

like a standard program but it is actually pick and choose stuff.” (Portfolio Manager, Interview, 2014).

Despite all these challenges, the ultimate decision to develop a product for this market was strongly influenced by the fact that German window producers had shown a growing interest in Woodstock profiles. As in the case of the Danish market, very positive feedback from that market and the discovery of potential customers ready and willing to co-develop the product, prompted management to recognize the potential of the business:

“At this point what I have noticed today is the feedback from this German window manufacturer we met in a trade fair. I have rarely seen that level of interest in my 17 years of working with specific products. Really! For me one of the biggest things is that one customer made his production facilities available for us. He offered it to us, totally free of commitment from our side. That is a sign!” (New Business Director, Interview, 2015)

6.3.2 Co-creation process

Working together with the Co-creator allowed the R&D team to detect flaws in the material and discover how to improve it, to understand the market and access end-customer feedback, as well as understanding how the value proposition should be redefined when moving from G1 to G3. The Co-creator was a constant partner in development all the phases: G1, G2, G3. The next sub section analyses the triggers for the partnership, exploring how it added value to the project (as perceived by the managers) and the extent of the challenge posed, as it was labelled as a challenge several times, when referencing both the ideology and the paradigms involved.

6.2.2.1 Triggers for co-creation

Pinta Inc. had to make sense not only of a new technology and discover its potential, but also of a new type of customer as well. In chaos of uncertainty, the team accepted the proposal by a medium sized window factory to enter a co-development style partnership. The R&D team understood very early in the process that a technology like Woodstock could not be brought to market by relying solely on their expertise. In their adventure with Woodstock they had discovered little of their previous experience was applicable. This was the trigger for the acceptance of co-creation. The window manufacturer, introduced as the Co-creator, remained a constant element in the development and transformation phases of Woodstock, from G1 to G3, inspiring and developing both the technology and the business model. This added complexity to the project, as both the R&D team and the BU needed to understand the implications of such a co-development style partnership.

“He said to us: ‘you can use my company as your R&D centre for this’ so actually we used all his knowledge with windows, all his market knowledge within this, and then we started up.”
(VP, R&D, Interview, 2013)

“In the last 3 years we have changed the focus a bit, starting with G1 and continuing to G3. The customer was always to Co-creator, and we had a lot to learn, this was all new to us. It was really new and we needed all the knowledge and expertise that we could access.” (Business Director, BU, interview. 2014)

The Co-creator showed complete confidence in the project from the outset, showing full commitment. The development team referred to them as a *“very important team player”* and the Program Director, looking back, was certain that co-development was the main factor resulting in success bringing the technology to market. She has also underlined that this type of approach to innovation was new to the company:

“So they were first front-runners, in that way we could both experiment and develop, and also see how the market reacted as their learning was speeding up and developing very fast! So, for us, for R&D, it was a very important experience to do it like this, because when we were close to our partners, we were able to experiment and learn: ‘what do the customers actually say about this and that’.” (Program Director, 2014)

Furthermore, the Co-creator was labelled *“a special case – a pilot introduction”, “our ticket to start”, “our back office, a good learning case, technical development partner”, “a good learning opportunity that keeps the current business plan ongoing.”*⁷ These labels were used to convince group management that it was a good decision have a co-developer, as in the third Steering meeting in 2011 the question: *“what are we getting from Co-creator?”* was asked. The question was cost related; as the Co-creator got exclusivity on the Danish market for two years when using the technology, and was leveraging on co-branding. The BU considered this to be *“not a good learning case for future customers. The Co-creator is not a case study that shows the value of our material for other markets”* (Business Developer, Interview, 2013). The BU considered that they were responding to Co-creator’s requirements and expectations too easily, offering them too much. One of the most significant examples being that the Co-creator argued that its business was reliant in its ability to be flexible, able to offer windows in any colour their customers require. For Woodstock, testing profiles with a new colour each time was a very complicated and expensive process. They decided to offer a certain number of colours, and then for the costs for testing additional colours, to be paid by the Co-creator. The team considered the aluminium windows market for solutions, and found they practiced the high standardization of products. The BU was challenged to accept the Co-creator’s conditions, arguing:

⁷ These definitions were taken from both steering meeting minutes, and interviews conducted with the business director in 2014.

“We would have had a different contract signed between Pinta Inc. and Co-creator, but we were not involved in the project at that time, we were really at the beginning.” (Business Director, Interview, 2014)

“My business is about flexibility, when a customer wants a type of window in a certain colour, I provide.” (CEO Co-creator, 2013)

“I think we have been very generous with him, and it is clear that what we have done/offered him we can’t offer to all the customers. Of course, they want flexibility. The more flexibility there is with us, the more stable their processes are. We can’t do it all, we say now too easily ‘yes’ because we are learning, but we really need to say no.” (Business Developer, Interview, 2014)

The development team bracketed several commitments signs from the Co-creator’s side, and shared them with management. Among these was the announcement that the Co-creator planned to enlarge their production facilities to create a hall especially for Woodstock, and had hired three sales personnel to work on this type of window. Additionally, the Co-creator had also proposed that the R&D team apply for an innovation prize for Woodstock, thereby demonstrating the level of confidence they had in the product.

“Project Manager: I don’t know if all of you have heard, but our Co-creator’s CEO told us that they are actually planning to build a full-scale hall for Woodstock - a production hall - so they are very serious about the business and see the potential.” (Steering meeting, November 2013)

Furthermore, the Woodstock team had promised several dates by which it would have a product ready for launch; these were missed several times, both in G1 and G3. The Co-creator accepted

the rescheduled plan on these occasions, sending another indication of commitment to the project:

“Co-creator are fully informed of our progress and remain a loyal partner. They have made it clear that an introduction in September is the latest that they would consider in 2011, as order intake is very limited later in autumn. Thus, if we are not ready to supply at this stage an introduction will most likely be postponed to April 2012. Co-creator intends to assist us with test products whether we end up introducing in 2011 or 2012.” (Steering meeting, 2011)

The same scenario was repeated 3 years later when the launch was postponed twice in 2013, and again at the beginning of 2014. Furthermore, they planned another campaign in mid-2014, which was delayed considerably due to problems encountered with suppliers. In the latter case, the Steering Group discussed the seriousness of the problem and the time needed to run a test with another paint solution. The Co-creator needed to be informed; however, it was decided not to convey the gravity of the problem: *“Let’s inform the Co-creator in a nonchalant way and build trust in the achievability of a good solution.”* (Steering Group, September 2014)

“With Co-creator, we now have a signed letter of intention, where Co-creator supports our development actively. Co-creator has asked Pinta Inc. to confirm our commitment to launch G3 products (in July or later) as soon as possible.” (Steering meeting, 2014)

The second important trigger for initiating a co-development partnership was the lack of a BU at the project’s outset, as that indicated the need for a certain kind of guidance for the development team concerning market requirements and needs. Woodstock was appointed to the BU shortly after the beginning of G1 phase, but their activity was perceived as *“minimalistic during G1, and slightly more active in G3”* (Senior Project Manager, 2013). However, in the evaluation meeting at the end of 2014, the team admitted that had the BU been on board all along, the

project would have taken an entirely different direction and might even have been stopped. The innovation process had blossomed by encouraging the “outside” market to determine the specifications of the product and the value proposition. The team concluded that, even though it was a long and complicated journey with little guidance from the BU, the result was worth the effort. They acknowledged the difference in paradigms, and observed that the many interruptions occurred at the intersection of R&D and the BU.

“If the BU had asked what the specifications were, they would have then filtered what they wanted. If we, after half of year, had contacted the BU to discover if there was a market for this, then nothing would have happened; they would have killed it. So, we needed to go to a customer.” (Portfolio Manager, evaluation meeting, 2014)

Interestingly, the decision to use a co-developer for Woodstock was defined and labelled as a “*coincidence*” by both the Vice President of Innovation, and the Senior Project Manager. Telling the story how Woodstock began, VP R&D explained: “*sometimes it is just coincidence*” (interview, 2013). With a background in the windows industry, he suggested using one of the company’s most recent innovations, a technology with very high insulation properties, to make window frames. The development team built a prototype, which was accepted by group management, and permission was granted to continue researching and developing the idea. At that time, in a press interview, the CEO mentioned the fact that Pinta Inc. was “*looking out of the window for opportunities*” (VP R&D, 2013). The declaration was misunderstood, and a small window producer contacted Pinta Inc. to ask them to acquire the company.

“And then we got a lot of offers to buy companies. And by coincidence, there was one company, x windows. They gave a comprehensive proposition. And so then something about windows sort of ended up at my desk, saying: ‘what are we going to do?’ Then we discussed it and realized that maybe this idea with the window frames would suit them.” (VP R&D, Interview, 2013)

6.3.2.2 Co-creation: adding and subtracting

This collaboration enabled the establishment of a trial and error routine outside R&D and the walls of Pinta Inc. It involved real settings and approaching end-customers. For example, the Co-creator proposed to the R&D team that they install a couple of windows at a school, free of charge, to get “*some valuable experience about how the profiles act in real life*” (project meeting, august 2012). This experience helped them to understand not only the process of mounting the window, but also how the material reacted, and design flaws.

“We are not satisfied with the quality of the profiles; it is probably the box putty that resulted in an uneven layer of paint” (Project meeting, October 2012).

The school was visited two years later, which gave the team a good sense of how far they had managed to improve on the first generation of products by creating a comparatively higher quality profile. VP R&D insisted that the R&D team would seek as much feedback as possible from the field.

“We were a bit embarrassed! On the other hand, it was so clear to see that we got so far today.” (Project meeting, 2014)

These inputs were used as selection mechanisms, and informed development decisions. The team had expectations that the Co-creator would provide as much input as possible, and when those expectations were not met, interruptions emerged. One of the most important inputs obtained from the collaboration was the access Woodstock got to feedback from end-customers. This valuable data was passed along to group management who needed continuous confirmation about the market potential of Woodstock. The first feedback from the market came in January 2012, after the first sales of G1 were completed. They learnt that Pinta Inc.’s brand had a

significant sway in the Danish market among the carpenters, which led the Co-creator to insist on the co-branding partnership mentioned above:

“This is what we were asking in G1: why are we not selling the three-layered window? He (CEO of Co-creator) explained to us that he had sold none of these three-layered windows before, but that now he was selling them because there was awareness that it was a Pinta Inc. Window. The brand was really lifting sales, because the Pinta Inc. brand in Denmark is so strong.” (Portfolio Manager, Interview, 2013)

Moreover, they found that that the window built with the Co-creator, that is, the three-layer window, was too heavy for carpenters, thus they were avoiding installing this type of window. This cue led Woodstock to consider a version of the A class window, but noted that two layers would be *“an optimal solution and best for the Danish market”* (Internal document, 2012).

A very important discovery from feedback was the fact that end-customers were purchasing Woodstock G3, due to its maintenance free characteristics, and not the insulation, as predicted by Pinta Inc. This was an important discovery for the R&D team and the BU, who labelled it a surprise:

“[A]nd the last point which was also, which I have also put on this slide, is that the CEO of the Co-creator underlined that the insulation properties of our product actually don’t add to the USP for big front windows, since both our product and wood-aluminium are three layered glass windows, class A. So, that was also something that was a little bit surprising to us.” (Project Manager, Steering meeting, 2014)

However, from the moment Pinta Inc. has begun discussing pricing strategies and even invoicing their product, the relationship between Pinta Inc. and the Co-creator changed; the latter transitioning from being a co-development partner to a customer.

“But today, the Co-creator is more of a customer; they are more a customer than a co-developer. Co-creator was a co-developer, not a customer. So, you can say that he was 80% co-developer and 20% customer. But in the future, it will be 80% customer and 20% co-developer.” (Project Manager and Portfolio Manager, Feedback Session, 2014)

In relation to his, a distinct episode illustrated that BU and the R&D vice president had a low level of trust in the Co-creator’s CEO. BU noticed the Co-creator was selling Woodstock windows at a considerably higher price than their other windows. The CEO of Co-creator explained that the production process was more expensive, but he was not believed and was asked to show the figures detailing the production of Woodstock windows compared with aluminium windows.

“Business developer: we had a meeting with Co-creator and he confronted us with the fact that he had to position the Woodstock windows as more expensive than the aluminium windows. That was his story, because they required much more work and blah, blah. This is what he tells us, I am not sure whether he is doing this in the marketplace, and I bet he is not doing this in the market. But OK, the good thing about it is that I have challenged them quite a bit on this issue and he promised me that he would show us the costing, what the hours are, in full detail. He did not want to tell us or put it on an email, he preferred only to allow me to see them when I am there. What he tells you today, might be different from tomorrow.” (Steering meeting, 2014)

The meeting was held at the Co-creator’s headquarter and the CEO of the company presented the costs involved in production. According to his budget statements, he was indeed pricing Woodstock windows 40% higher than wood windows and 20% higher than wood-aluminium windows. The reasons for this related directly to production and the high assembly cost of windows using Woodstock profiles. Despite their expectations, BU received from the meeting further positive cues about the success of Woodstock windows on the market. There had been a

low number of complaints and the Co-creator's sales personnel were proud to sell the product, unlike at the start of the collaboration:

“Project Manager: At Co-creator, I spoke to their sales manager, and he says, right now his sales staff are actually really proud to sell this product and at the beginning of the year they were more reluctant, and worried when they were selling the product. They were really proud now so that also has a huge impact on a project.” (Steering meeting, 2014)

Given the strong collaboration, another issue emerged; i.e., that the capacity limit of the pilot production would influence the intake of orders. This issue became apparent early in the process, as Co-creator had received more orders than expected; of course, this was a positive market cue. The solution proposed was to determine a maximum limit for the number of kilometres of profile to be delivered to Co-creator. Furthermore, Co-creator was asked to provide forecasts regarding their orders. This became a key dilemma, and sometimes a source of frustration between Co-creator and BU, as they could not produce the product for any additional customers and the company could not generate profits without customers:

“It is a bit of a chicken and egg story, we are speaking with a limited number of customers, and we can't talk to them because we don't have production, so we can't produce profiles. We learned from this discussion” (Business Director, Interview, 2013)

This was an important interruption, and the R&D team and BU worked to create a controlling mechanism to try to ensure the number of orders could be predicted. Therefore, in G1 the development team realized that they needed to work with a ‘maximum number of orders’ ceiling.

“We agreed provided the technical issues were clarified and we could start supplying to Co-creator. However, this included limiting the costs significantly by limiting volume and timing” (Steering meeting, 2011).

Interestingly, the same interruption was encountered in the Woodstock G3 phase, when BU proposed a different solution; i.e., not setting a maximum volume, but proposing a recalculation of price if orders exceed capacity. The challenge was that production was still being conducted in a pilot production setting; therefore, the business was running at a deficit. The VP of innovation underlined this aspect several times to the business owners, to articulate the need to be selective when saying yes to orders:

“VP R&D: My point is, up to a certain point it would be too expensive to us because we are selling at a loss, so if we could have agreed upfront: ‘this is a pilot production: if you need more you need to pay more.’

Business Director: We have something else in there. We have a timeframe where we can renegotiate prices, and I think that is more important.” (Steering meeting, 2014)

The disadvantage of such close collaboration was that Woodstock was taking the risk of being damaged by the internal hiccups of their customer. When Co-creator went through internal organizational changes, this influenced the projects’ predicted timeline, causing delays:

“Cooperation with Co-creator is better and better. Still they were undergoing changes to the structure of their organization during the last year, so that has been a cost giving rise to some challenges.” (Project Manager, 2014)

The innovativeness of the technology was apparent, as were its properties. Combined with the lack of a BU to define the connection between the technology and the market, there was a need for a co-development element to the partnership. In the last meeting about the Woodstock project, it was acknowledged looking back that “*lessons were learned that could be applied to our future projects*” (evaluating meeting, 2014). On reflection, co-development was labelled as one of the main areas of success:

“One of the positive things about this project was having a customer on board right from the beginning. In this case, it was very important, because we were not capable of producing windows ourselves. However, we gained a lot of help from our Co-creator, so we considered them a very important team player. So, that I think is positive. It might not be the case for every project, but for this one.” (Portfolio Manager, 2014)

6.3.3 Conclusions

The enactment processes were focused towards reaching intersubjectivity between R&D team and BU, especially when defining the market and customer segment for Woodstock. Firstly, they had to consider enacting an internal common understanding and agreement regarding the value of co-creation, and the enactment efforts pursued by the R&D team. Secondly, the enactment processes were mainly targeted towards drawing new knowledge into the company to achieve agreement to align the BU and group management on the issue of market expectations from a window in general, and a window frame in particular. In the latter case, the efforts were split between the R&D team and the BU. With this aim in mind, the Woodstock team handled several interruptions, as seen in table 6.2, parts resulting from the realization that they lacked a particular type of knowledge, and some from the disagreements between different internal positions and their reactions to external challenges.

Interruptions	Enactment process	Outcome/enacted environment
Facing internal misalignments regarding segmentation criteria, and lack of agreement between the R&D team and BU regarding experimentation with segmentation	Acknowledging the high level of uncertainty Looking for support from high level management Entering a co-development partnership	Acceptance from group management
Learning the requirements of national markets differ	Finding players from each market to helped them gaining knowledge	Agreement regarding mandatory entry points in markets and that fact they take time to accomplish
Co-creator partnership found too costly by management	Labelling Co-creator as “ticket to entry” Identifying signs of commitment	Acceptance from group management
Technical hiccups	Trial and error together with Co-creator	Improving the product and creating learning opportunities
Mistrust between Co-creator and Woodstock team	Trying to get access to customer’s financial statements	Learning about end-customer purchase preferences and complaints ratio Create a feeling of transparency
Co-creator does not collect feedback from end-users	Bypass Co-creator as filter	Feedback from end-users and install new practice in the company
Window industry is characterized by flexibility and diversity	Benchmarking	Create reference points and obtain knowledge about how to incorporate flexibility and diversity in the business
Capacity limits in the pilot production- cannot respond to high order intake	2 actions: Set a max volume platform for sales (G1) Set higher price for higher volumes (3)	Gain control over the process

Table 6. 2 Enactment processes of market segments

Putting forward very positive customer feedback about Woodstock's business potential, together with the signs of commitment observed were convincing mechanisms employed to overcome instructions resulting from internal disagreements. Conversely, interruptions resulted from a lack of knowledge, for example special expectations deriving from the new market, were dealt with by adopting an imitative behaviour, and benchmarking the behaviours of other industry suppliers. These efforts were focused on enacting an internal environment, where there was dispute among those involved, regarding who the customer was and how Woodstock would serve them. Enacting this agreement involved aligning the actors involved, to try to answer: who are our customers? Can we be in this market and play by its rules and if so at what cost? Being in a co-development partnership gave members answers to these questions, as they learned about the industry's business model and the window industry's expectations from their suppliers. The key limitation was, of course, that the Co-creator was the only source of information in Denmark, so they partly enacted their Co-creator's view of this industry. When the team contacted potential customers from other markets, the Co-creator's negotiation position was weakened, beginning their transition toward mainly customer rather than mainly co-developer.

Finally, discussions about segmentation criteria and customers' choices were not as dense when analysing the internal documents and Minutes of the meetings, especially when compared with the density of discussions and meetings regarding production and technological development. It was implied from the outset that "the window industry" was the target, and so they adapted to challenges as they emerged.

6.4 Enactment of value chain

When creating a value chain⁸ for Woodstock, a trial and error attitude was adopted, especially on the production site. This was determined by the fact that no pre-defined processes were apparent at the company, as Woodstock was a new type of product for a new target market. The development team adjusted to this lack of knowledge by mapping out the environment in which Woodstock was intended to compete. Participation in fairs, researching markets, and learning what specialized complementary assets were needed, while contacting specialists, were key to building understanding (Internal documents from 2010). However, the expectation from group management was that the team would reach a point of generic subjectivity very quickly; allowing control over a stable, fixed flow of processes, to enable the production of profiles at the lowest cost. This goal became the condition of existence for Woodstock, and an internal validation factor, also reaching an automatized production setting whereby Woodstock's profile could be produced at a cost of two euros per square meter:

"Let's see what will happen. It was promised we would reach two euros per square meter cost, and if that is happening, then we have a very good business, if not, let's see." (CEO, Interview, 2014)

This goal became a constant filter device against which to measure ideas. Suggestions were evaluated in terms of helping or impeding accomplishment of this condition of existence. Setting up logistics and production processes and learning the right order for production processes, was a key concern bringing major challenges to the development team. As the focus was to reach general subjectivity, all the events that resulted in a feeling of "no control" (Business Director, 2013) were perceived as interruptions.

⁸ Value chain: "requires to create and distribute the offering, and determine the complementary assets needed to support the firm's position in this chain." (Chesbrough and Rosenbloom, 2002: 533).

As mentioned in the value proposition section, Woodstock passed through two important phases: a learning one, named generation 1; and a “*business one*” as labelled in the internal documents, namely generation 3, where expectations were that it would become a successful business.

6.4.1 Value chain interruptions in G1

From the initial idea suggestion that “*this was supposed to be a simple business*” (Portfolio Manager), G1 was eventually redefined by the statement that it was “*way too expensive to continue to G1*” (Portfolio Manager) “*impossible to have a business*” (Program Director), “*not an acceptable solution in the long run*” (Minutes, 2011). The creation of meaning for the G1 value chain was determined by *commitment* from external actors (customer and suppliers) and *uncertainty*, in the form of doubts and worries about costs, from internal actors.

As explained in the value proposition section, G1 designed and pushed the product into an expensive value chain determining the cessation of its development. The chain was as follows: the initial plates were produced at one of Pinta Inc.’s factories located in Germany, transported to their pilot plant in Denmark, where these were ground and cut, then transported to Finland for lamination at a wood producer partner, and finally sent to the Co-creator, their customer:

- Profiles (Germany) - pilot plant for grinding and cutting (DK) - lamination (Finland) - customer: Co-creator (Dk)

In this value chain, the ownership of different parts of the production phase were shared among the partners involved, and Pinta Inc.’s role was defined as that of “*the supplier of basic materials*”, choosing a position in the value chain:

“The connection between the different production specifications in the value chain was discussed and a hierarchy can be built: window production -> window profile production ->

laminate raw profiles wood/Woodstock. Co-creator is the clear owner of the top two, the wood supplier should take ownership of the lamination and Pinta Inc. will supply the basic material. All are committed, together with the product quality procedures agreed.” (Minutes, 2011).

Despite this commitment, numerous flaws were noticed once the chain began producing the first profiles for delivery to Co-creator. The logistics set in place were considered as “*complicated and very expensive, not the right formula; really crazy!*” (Program Director, Interview, 2013). Due to the high transportation costs, and the misalignment regarding the common understanding of “quality for Woodstock” among the actors involved, managers began to worry about the entire project triggering an end to the project, before it was too late to recoup any benefits.

“G1 was probably not the right approach, due to concerns that others expressed; that is I was not the only one worrying about them. The value proposition was worrying, the Vice President of Innovation was worried, the Program Director had worries, and we sort of discussed it very openly between us if we should kill this off, or if we were going the right way, or if it should be stopped before it became a problem.” (Senior Project Manager, Interview 2014)

Not only were the logistics too complicated and expensive, but also the profiles were created manually. Furthermore, the development team had problems building a tracing system for the plates, which continued to be an issue in subsequent development phases. A further recurrent problem was the difficulty creating a common understanding of the word *quality* throughout the entire value chain, especially for the German producer of the stone wool boards for Woodstock. This was a source of continuous frustration for the development team, stretching the cost side of the business model considerably. Consequently, production of G1 was stopped. In explaining the failure of G1, the innovator of Woodstock pointed out that the business model chosen was not unsustainable. Important to note here is that the interviewee used the word “business model” after I explained what it meant:

“What was really the big problem in the old business model was we planned to make a profile here, a square one, then send it to a wood provider; they would laminate it with their wood, and then ship it on. That meant that we had a lot of logistical problems, as they were not so big, meaning that we had to deal with a lot of them and none of them were used to conducting quality control with this, and the window elements come in so many dimensions, they come in small and big, they come in rectangular, they come in 8 different wood species and 10 different wood qualities. So, if I need to stock 8 different species of wood, of multiple dimensions, at 40 different suppliers... This is going to kill us! It simply could not work, we needed to get out of this.” (Senior Project Manager, Interview, 2013)

The position chosen in the value chain led to the collapse of the G1 business model, as did the choice of the wrong complementary asset. The Senior Project Manager explained that the challenge arising from being part of a conservative sub-supply chain, namely wood supplier, who was a reluctant to change the industry, was too big. See figure 6.3 for the supply chain of the wood windows.

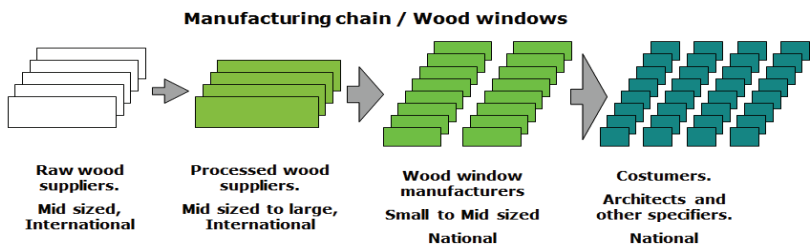


Figure 6. 3 Value chain positioning in wood windows. Source: Internal document, 2012

The next generation, G3, managed to bypass this chain to talk directly with the window manufacturers.

“G1 failed because it was not the right product. It was too expensive, it was too complicated to produce, it was logistically not adequate because it was relying on a lot of sub-suppliers that were not suited to making this product or to distributing it product.” (Senior Project Manager, Interview, 2013)

Despite all these interruptions and the negative result on the balance sheet, the project was not stopped. Two actions enabled the project to continue: the change in the product design, which allowed a change in the value proposition, and re-labelling the intention expressed in G1 for Woodstock. The Senior Project Manager’s innovative efforts resulted in a new window design, positioning Woodstock on the exterior of the window frame. This change determined the entire business model, enabling a shift toward a simplified value chain, thereby allowing better competitive positioning on the market.

Additionally, G1’s identity was redefined as a knowledge gathering exercise intended to position Pinta Inc. in the window industry, while G3 was expected to be a *“profitable business.”*

*“But then I also started G3 and started to flash some prototypes to show that there was another way to do this, and it seemed like we could do it, and then suddenly it became more a discussion about could we develop G3 and make it work, because if we could do so than that could reduce the failure of G1 and establish the fact that Pinta Inc. was a window systems supplier. **So, it changed from should we have a profitable business with G1, to should we have a business that paved the way for a profitable business with G3. So, it changed.**”* (Senior Project Manager, Interview, 2013)

To conclude, G1 was the first version of the business model, and was defined as a failure (the failure effected both the value chain and the design of the product, which offered the wrong value proposition). It was later reconsidered as a business model that *“paved”* the way towards the creation of a tangible business. G1 can also be considered the first significant interruption for the development team in terms of their endeavour to create Woodstock. After the faults were

noted, the project entered a kill no kill state, where support from VP R&D together with positive feedback from the market allowed the re-labelling of G1, and progress towards G3.

An important element at this stage of the development was that the BU, which was supposed to take over the project, saw development was ongoing and decided to postpone their decision, remaining involved in the development process.

6.4.2 Value chain interruptions in G3

The transition to G3 involved a short sidetrack called G2. This was a laminated version of G1, on which one of the sides needed to be painted. This version implied keeping the same value chain, and adding a new step for painting. It soon became clear to everybody involved that it was not the solution. G3 emerged, marking a major change in the value chain as the wood supplier was then eliminated, as the profile was positioned differently on the window frame. This adaptation simplified the supply chain; however, unpredictable events arose, as the team needed to find: new suppliers for paint solutions, support to paint the profiles, tape for mounting the profiles, creating and developing a pilot plant to produce Woodstock. Furthermore, an unpredicted outcome of the shift to G3 was that the visual and aesthetic aspects of the product became crucial, overriding insulation (as analysed in the value proposition section).

The distribution of interruptions in the value chain had consequences for the production process, due to the need to create convergent thinking around the notion of *quality*, and to determine the right production process in terms of flow, logistics, and hand over processes, from the innovation department to the BU chosen as the G1 business owner.

6.4.2.1 Production process related interruptions at Woodstock

The elements that determined the episodes of ecological change were related; such as finding the right production flow and quality when making Woodstock, and finding a production department that would be willing to take on the project.

One of the most important elements in the production of Woodstock was the creation of the pilot plant, put together by the R&D team at the beginning of the G1 phase of development. The pilot plant was situated at the headquarters, where the R&D section of Pinta Inc. was situated, the proximity making it convenient for the development team's creation of prototypes and models. The pilot plant was "just across the road" (Project Manager, 2013) and became during G3 a real production centre, of which the R&D team felt very proud. They had managed to set up an entire production line capable of supplying a single customer, Co-creator.

However, this production set up challenged Pinta Inc.'s identity, as the headquarters were not permitted to produce for commercialization purposes only, meaning that scope was a priority when convincing one of Pinta Inc.'s factories to take over Woodstock. Furthermore, the capacity problem was raised as well; given the limitations on the number of customers that could be served using the pilot plant. In this scenario, agreement needed to be created to hasten lead-time in production, especially when the R&D team began to produce for two different markets. The BU raised the issue in a Steering meeting, receiving acknowledgement from all the stakeholders regarding the interruption:

"I just want to make sure that everybody has seen this: there is a too short a lead time of producing for the German market while producing for Co-creator as well." (Steering meeting, 2013)

The factories proposed to take over production were those already producing raw boards for Woodstock, one situated in Germany and another in the Netherlands. As productions costs were considerably lower in Germany, Woodstock's BU began the process of convincing the director of the German factory to take over the entire production. However, given the different specifications that this product had from Pinta Inc.'s other products, it was a fearful that taking over might create an interruption. Therefore, before moving production away from the pilot

plant, the development team spent a considerable amount of time detailing the specifications of Woodstock to help helping the parties who were supposed to take it over to understand.

When engaging in the process of discovering an appropriate method for Woodstock's production, the identity of the project was constructed and established as *different* from the other projects run by the company. The difference was expressed relative to the fact that the stone wool boards needed to be processed at a higher level, involving compressing and grinding, to ensure attainment of a very high level of quality. This differential, high quality boards, set the project apart from other internal projects:

"The initial quality of what we produce: binder distribution, curing, mixing and all that kind of stuff is not an issue if you just set out insulation for a standard insulation batch somewhere, then not a problem. But if you then start compressing things and you need to paint it and grind it, you will find out that the wool distribution is not even, we know that already, but we don't care about it normally, but for Woodstock this is an issue, a major issue." (People Process Director, Interview, 2014).

The challenge of the product requirements being different led to increasing difficulty in finding solutions, as there were no retrospective examples to refer to. Moreover, it was considered normal practice at Pinta Inc. to *"just copy what we already have done"* (People Process Director), yet this was not an option here. The situation created the feeling that Woodstock was not understood well by the other parts of organization. The sense that *"they don't care"* accentuated the fact that in the case of problems and questions marks, the Woodstock development team would need to find their own answers.

"We get binder free areas that you cannot paint, we get pinholes because the quality is lacking and there is nobody else in the organization that cares about that because it doesn't matter. So

Woodstock has to go back in... there is actually a shelf... because is a project where we are bound to go back and improve quality ourselves, after the first time. We know that this is an issue but the others don't care. But for Woodstock it is imperative... it is important, it's very important so they have to make it better.” (People Process Director, Interview, 2014).

These issues resulted in the development team being subject to a continuous state of trial and error, as they needed to create new knowledge at the company. Their reasonable approach to taking decisions helped them to work within assumptions and test multiple scenarios until an acceptable solution could be found. The aim was to reach a level of general subjectivity; demanding a high level of certainty and control over the flow of the production process to allow the automatization of Woodstock's production. The latter scenario was perceived as the only business-relevant scenario for Woodstock, as production costs had been set to reach two euros per linear meter (as mentioned above), to allow a high mark-up of 40% (Portfolio Manager, Interview, 2013). For that reason, the team's efforts were focused on defining the *correct process flow*:

“First, we need to see the right process, so you're not ending up with something like this where we don't have the correct flow of the picture from the paint.” (Senior Engineer, Project meeting, 2012)

The trial and error phase continued for longer than anticipated, and while seemed natural to the development team, it challenged the business owners and higher management, who struggled to accept it. In the following two years, managers at different levels mentioned the same questions at several meetings.

“Another question is, I am not a specialist about the painting, but for me when you see these surveys concerning parameters like work-flow, one day you have to define the receipt, right?”
(Business Director, BU, 2013)

“It is 2014 and there has been much development, when do we get it?” (System Division Business Development Director, Interview, 2014)

“These additional production steps are cutting and grinding and painting, and should be made here at the pilot plant. Yes, and then when we would know how to do it, we can scale it up and do it right at full scale to supply all the markets.” (Portfolio Manager, 2014)

Furthermore, the quality of the surface and the visual features of the product were playing a central role in fulfilling Woodstock’s value proposition. When producing the profiles, the team had encountered numerous difficulties. They had combatted phenomena such as pinholes, craters, too high water intake, and loose wool tufts scattered around the boards. These continuous interruptions, *“an unexpected issue appeared this morning in production”* (Project Manager, Project meeting, 2013) set the team back every time, obliging them to act, spending resources to find, correct and learn how to avoid problems in the future. The project meetings for 2013 and 2014 were focused on learning, seeking solutions, and aligning policies around technical interruptions. To overcome this, actions were directed towards creating convergent thinking regarding the level of quality demanded of the stone wool boards for Woodstock produced at the production factory.

The stone wool boards for Woodstock were produced both in eastern Germany and in the Netherlands. Although, as mentioned above, costs were lower in eastern Germany, therefore the aim was to systematically move the entire production of Woodstock profiles to that factory. At that moment in time, the process of refining the stone wool boards for the profiles was still

being done at the pilot plant, in the R&D centre, at the company's headquarters. The necessity that the German factory now deliver goods of much higher quality than previously proved an impediment leading to high waste costs and extra work from the development team. Several meetings took place over a two-year period, as staff had to be sent to supervise and train the personnel in the factory on quality. The development team was sceptical that the move of all production to Germany could be done in the time plan set out:

"We discard many of the products from Germany due to quality issues. Two main issues are shots in the material and brown spots. Several actions have been planned to resolve the shots issue." (Project meeting, end of 2012)

The relocation of the pilot plant was also supposed to happen in steps, once the production process flow was in place and the employees in Germany could handle the level of complexity. To benefit the development process, the Steering Group decided at the beginning of G3 to keep the pilot plant at the headquarters, preferring to make no investments or modifications in Germany. An estimation of the timeframe for relocation of the pilot plant was lengthened to three years, based on number of customers that could be served.

"This scenario places the whole pilot plant at the headquarters, and makes no modifications in Germany. With successful development, it can supply commercial products for our pilot costumers in May 2013 in the necessary amounts. The lifetime of this pilot is expected to be from Nov 2012, and it will be 6 months after that the next stage is established in Germany. Given our current estimates that would be mid-2015." (Senior Project Manager, 2012).

The decision was justified by three arguments: time to market, investment levels and skills. The most important of these was that the launch of the product could be faster than that proposed in the scenario; were production was moved to Germany, costs would be lower, and the

development team would be present and in control of all the processes. The priority then became a *fast start*:

“The fastest start, the highest efficiency in development. Staff are located next to the pilot line, which ensures the best use of time and resources and makes a wider range of competences available to realize the project. This increases the chance of success. If the unit was established in Germany, all R&D-staff would have to go there frequently, since Germany is not staffed with qualified personnel to execute the development work. This would seriously delay the development and make dynamic execution impossible. Lower travel costs too.” (Senior Project Manager, 2012)

In terms of the disadvantages, it was specified that firstly, production costs in the pilot plant were considerably higher, given the difference in wage level between the countries, and secondly, production at the plant production was semi-manual.

An alternative might have been to use Pinta Inc. factories with a record of producing higher quality board than that made in Germany, but were situated in Western Europe, where the wage level was considerably higher than in eastern Germany. As the promise towards the group management was to produce Woodstock at only 2 euros per meter, moving production to these factories could not be considered.

To better manage production in Germany a quality library was created at the factory, in order to offer the opportunity to understand the needs of Woodstock, to create a *“psychological effect.”* The purpose was to create alignment, and joined up action (Weick, 1995:43). Furthermore, within the same scope, it was proposed that the director of the factory in Germany join the Steering meeting, to understand the requirements and the implications for Woodstock of not receiving the appropriate quality from them:

“The reason why we think that director of Germany factory should be here is that we think that Germany production is the origin of some of the defects we’ll have to correct later on, the fish eyes and other things. It is something that will haunt us somewhat until we get it solved.” (Senior Project Manager, project meeting, 2014).

“VP R&D: and maybe there’s a psychological effect by having the library just next to the German production, so they can see if you produce like this, you get this, which we cannot accept.” (Steering meeting, 2013).

At the final evaluation meeting about Woodstock, the collaboration with the German factory was characterized thus:

“Average. It has required a lot of resources, however with marginal learning outcomes. This is, of course, not very positive as we have spent a lot of time there and not learnt at all.” (Evaluation meeting, 2015)

A Senior production engineer explained that the difficulties with the German factory were threefold: first its identity as an insulation business, which demonstrated that a strong embedded identity could hinder joint action; second, the cultural aspect, the high-power distance, lean focused, and low importance being given to quality issues; and finally the lack of a feeling of ownership.

“It’s a lean organization that has absolutely no capabilities of doing new things. Even doing the traditional things in the right way is challenging: something that is bad quality at two o’clock at

night, it is suddenly good quality at eight o'clock in the morning. That's the line of thinking."
(Senior Production Engineer, Evaluation meeting, 2015)

At the same meeting, it was specified that the number of quality issues faced over the years, could have been avoided if production had been moved to a system division type of production. The discussion was only about ascertaining if the right decision was made, but also about Woodstock's identity: was the project under insulation, a system division, or a combination of both?

"Project Manager: Would have been another culture if it would have been in Western European factories? Would these figures have been different?"

Senior production engineer: I think so, because they are more used to system thinking and system thinking is more quality added thinking. Look at the businesses in system divisions, their people are used to quality and they have just started a new factory in China and they already have 100% running god quality.

"Engineer: Do you think I've spent a week down there just for fun? It was lack of maintenance all over. It is an insulation related business." (Evaluation meeting, 2015)

The problems with the German factory went beyond quality, the Project Manager referred to a "political problem", as the managers at the factory were expecting some rationale for using the production plant. Furthermore, the Project Manager was aware that the quality was not at the level required, but that it was the only place to produce the product at a cost that would ultimately deliver a turn over, therefore, they needed to create solutions:

"This is huge political mess because on one side there is the factory's director, who has this plant standing there, he wants to make money, he invested a lot of money in this plant and he wants to produce. But we don't get the quality we did when we were in the Western Europe. And the wages are cheaper in Germany so we can make cheaper board in Germany, but if, in the

end, we have too much waste from Germany, then it might be cheaper going to the Western Europe.” (Project Manager, 2014)

Given this challenge, the focus was on the factory and staff learning processes, and on understanding the requirements of Woodstock. The Project Manager decided to create transparency by sharing process related documents and facilitating communication between Germany and the pilot plant. Optimization was always the focus, as the Project Manager was working with time line estimations and a precise cost structure for all the steps (internal documents). However, the quality from the German factory was always an issue:

“Still the raw material from Germany is not satisfactory. There is still too much waste, meaning that the boards cannot be used. There are some methods to improve the quality but the effect has not been evaluated yet.” (Steering meeting, 2013)

In 2014, quality took central stage in all the action lists of Woodstock’s Project Manager. In every project meeting, time was dedicated to discussing production both in the German line and at the pilot plant. Many of the project meeting’s minutes had contained “*hot issues*.” “Hot issues” were the technical challenges that pushed the development team to look further for a solution and which had a negative influence on costs, and the scenario when moving the pilot plant to Germany, versus building a second pilot plant close to the factory:

“Hot topics:

On our team day, the 30 June, we will make a SWOT analysis concerning the pilot production and moving the pilot plant.” (Project meeting, June 2014)

“Hot issues:

Pinholes in the finished profiles have a very high priority due to an increase in waste at the Co-creator (up to 30%). A brain storm meeting with participation from the Co-creator, paint

system, supplier of painting methods and Woodstock will be scheduled to discuss the pinhole issue.” (Project meeting, September 2014)

Interestingly, when interruptions occurred and were perceived as “crisis,” the tendency was to involve actors from the value chain and the customers, to reach a solution jointly.

Finding a place for producing was under continuous discussion, and in mid-2014 the development team had a team day, on which they created a SWOT analysis to build a second pilot plant in Germany. While many positive points were identified, such as lower variable production costs (VPC), and less handling, when optimizing the design process, the difference in understanding the concept of the “quality” of the stuff in that area was mentioned permanently as creating a bottleneck. This would involve extra costs for traveling for the R&D staff, and for training to undertake the knowledge transfer. The fear that knowledge would be lost was stated also. The more important question was the risk of moving a product that was still in its development phase, into production at the BU.

One of the methods by which Woodstock managed to balance its high development costs and quality related failures was by using: Exter, a spin off from Woodstock, that utilized the failed boards rejected from Woodstock. In this manner, the waste was lowered considerable and the costs were transformed in profits, as Exter was a very successful project. Exter was used to convince group management that Woodstock production costs could be lowered, and to convince the German factory that they have a business, and a product, which demands volumes. Furthermore, Exter was perceived as a great opportunity to improve the learning curve of Woodstock, as more resources could be put into trial and error processes.

“They will say, 'okay. We don't want to do that. It costs too much.' But then Exter, the other project, comes in with a very large volume for Germany, and since those specifications are

almost the same for the plates, then maybe Germany will realize that, 'okay. Now we actually have business for them: Exter and Woodstock.' Therefore, they can allocate the quality personnel to that; we need to be there all the time reminding them that they need to allocate people. As we are there all time, there is no problem, but the day we are not there, then they will have some issues.” (Portfolio Manager, Interview, 2014)

“Exter is not so sensitive to it. That's why unofficially when we have a bad production, it gets sent to Exter.” (Senior Engineer, 2014)

Concluding, Woodstock's production had to meet the value proposition promised to customers: high quality profiles, while meeting an internal value proposition demanded by stakeholders: low production costs. The dilemma of achieving the perfect cost-quality balance led the development team to understand they needed to align the meaning of quality. To achieve low costs, the team searched for general subjectivity: as they believed that creating a system with standard plots (Weick, 1995:71) and a controlled, predictable process flow would provide evidence of an established product with business potential.

6.4.2.2 Logistics-related interruptions

A special portion of the project meeting was dedicated to *logistics*. In this section, the process of transporting the parts, the invoicing and ownership of each activity in the value chain were discussed. The Business Director of the BU described and labelled logistics as one very important *problem*, and even as “the biggest challenge.” He mentioned that logistics needed to be coordinated with the level of service they offer, meaning a connection with the value proposition needed to be created:

“The biggest challenge would be the logistics: we have to agree on a certain service level. In the case of Co-creator, we have 9 profiles, 5 colours meaning 45 different articles for 1 customer. Co-creator if he wants more colours, let's says he want 12 different profiles, 20 colours - 240 profiles - how is the logistics going to be achieved?” (BU Director, Interview, 2014)

Furthermore, they needed to link their logistics to industry requirements, because the windows industry operates on a very short lead-time, this flexibility had to be present in Woodstock's value chain. The flexibility feature of the windows industry was a strong reminder that Woodstock was a different kind of business, and that more knowledge was necessary in order to be able to operate it. The BU director explained that the ideal scenario would be to offer a standard product, and reduce customization, the latter being an important challenge.

“Next to the fact that the windows producers have orders from one day to another, the lead time from order to delivery is 4 weeks. From the customer to himself, to us, and back to him, is pretty tight! How are we going to organize that logistics? What are we going to do? It will be a challenge for us to say no. After that, we give 9 colours, imagine if each customer chooses a different profile, so at the end of the day, we must produce different profiles, different colours and different customers, a magnitude of numbers! How are we going to stock?” (BU Director, Interview, 2014)

Stock, indeed, was very important, as the number of orders from customers had increased considerably. While this was a positive cue for the business, the Business Director knew there was a need not only to focus on stock, but also to create a system that assured coordination between the actors involved. The lack of coordination had created hiccups in the deliveries to Co-creator, as stocks were non-existent. For this reason, the need to coordinate between supplier of painting methods, Co-creator and Pinta Inc. was mentioned at several project meetings:

“Painting methods supplier should advise both us and Co-creator which profiles and quantities they are shipping. Orders from Co-creator are increasing.” (Project meeting, 2014).

“Some of the products that Co-creator has ordered now are for their stock. We invoice them once a month. Unfortunately, our deliveries to Co-creator have been subject to delays, because Painting methods supplier had fewer products in stock than we assumed. Painting methods supplier will make a count of their inventory this week – we will push them to do so during our visit.” (Project Manager, 2014).

In the search for general subjectivity, the manner of handling what the Portfolio Manager labeled “*a logistical nightmare*,” especially once more customers were being served outside Denmark, was achieved by always making two plans: one for the short term and one for the long term. This allowed the Woodstock team logistical control in the short-term, but control was to be passed to BU over the longer term. Orders were sent to Painting methods supplier, who was to paint them and supply Co-creator. Woodstock team’s role was to ensure coordination between Painting methods supplier and Co-creator regarding the timeline for ordering and supplying. In addition, the stock for Woodstock was to be kept at Painting methods supplier, at a volume that would permit a new production cycle in the pilot plant. It was agreed by consensus, as mentioned in the Steering Group meeting, that the shorter-term solution was more expensive:

“So that is the short-term solution. It will be a more expensive solution in logistical terms since Co-creator will not expect to have any stock profiles, besides what they have leftover.” (Senior Project Manager, Project meeting 2014).

The long-term solution involved handing Woodstock over to BU, with R&D no longer having any business-related responsibilities. It was made transparent at one of the Steering meetings that BU had to take responsibility for logistics and integrate it into the business development

plan, as logistics were likely to become increasingly complex. However, BU was asked to secure operations that were controllable, before accepting a full take over:

“Senior Project Manager: My comment on this is that it is hugely important that we take control of the logistics here, because logistics will be a major issue as this grows. I think we should get this part dealt with in business development. I think BU should take the responsibility for this analysis as soon as they are able to take over. We are certain that we know short-term how to get materials moved to Co-creator, but I think this is just as important as getting all the unit operations in place in the factory.” (Steering meeting, 2014).

The logistics set up differentiated Woodstock even more from the other Pinta Inc.’s projects. Woodstock was organized to have own its logistics, from the beginning through to the end, and it was defined as an “in between” type of business, with characteristics from both insulation and system business; as analysed in terms of differences and similarities in chapter five. This aspect raised issues of identity.

“We simply don't know who is going to take care of the logistics? It is different from the other businesses. It's something in between, where we sell insulation products on a pallet from a factory, and then we are in charge of the logistics until it ends up at the dealer. In the system division, we are selling through all sorts of dealers, but very much talking to architects and so on, about projects sales. But here, we want to have a direct person, direct delivery to the customer, so we'll own the logistics. And also own the technical sales staff because that's also part of the channel by which we support our customers and so on. We also need to be there.” (Portfolio Manager, Interview, 2014)

An additional interruption to logistics was the need to transport boards and profiles between headquarters, customers and suppliers. As the profiles had to be transported safely, the team

researched practices in the windows industry. They learnt that the profiles had to be cut into 6m lengths, which would then be transported between partners in 6m long baskets. The solution was identified by the aluminium industry, together with the idea of having a leasing price tag on the baskets, to ensure their return. Thus, the customers paid for the baskets, and received their money back when the baskets were returned to Pinta Inc.

“We bought 60 baskets, which are used in aluminium industry, and we bought them from a supplier, 6 meter long baskets are used for logistics. But the idea was – and that comes from the aluminium industry - that the baskets were the property of Pinta Inc. They will all get a set number and our name will be on the baskets.” (Project Manager, 2014)

To track the baskets, the development team added more steps to the chain, asking Pinta Inc. Scandinavia to put in place a tracking system to assure return of the baskets. As the trial with the baskets worked well in Denmark, the team began investigating if the formula could be copied for application in Germany.

Pinta Inc. Scandinavia was employed to support the development team in their trials when handling orders from, and invoicing, Co-creator. The challenge was that the R&D team had never been responsible for invoicing before, thus they had not had to master these kinds of competences and the need to be taken over by a sales BU was becoming more pressing as the number of orders grew. From the first order, until the handover happened, a period of more than two years, tasks were handled by the Portfolio Manager for R&D. He managed the task by creating a system intended to communicate both transparency and control. He organized several communication meetings at which Pinta Inc. Scandinavia, Co-creator, and Painting method supplier were present so that they would all commit to the system together. Furthermore, the aim was to create a routine, and invoicing via Pinta Inc. Scandinavia. This was set up to *“fit with their standard routine,”* proving the aim was to create a process that could become routine very fast, while guaranteeing control. In addition, the moment when Co-creator was asked to order

via an online system, shifting over from a practice of sending orders to the Portfolio Manager, provided evidence that general subjectivity was reached in the order handling process.

“Logistics: Portfolio Manager is not supposed to handle orders this week and we hope BU and Pinta Inc. Scandinavia have made an agreement. Portfolio Manager believes that Co-creator is ready to use the web-shop. We have requested Painting method supplier to find out how much they have in stock – by counting stock to make sure the automatically generated stock list is correct.” (Minutes, November 2014⁹).

However, the VP R&D questioned the fact that BU had showed few intentions to take over the order handling since the start of 2014. BU explained they were expecting an automatized system to be in place, before taking over, sending the signal that the development process was not at a level they were conformable with; requiring that they needed cues for a “ready business:”

“VP R&D: Are we still the ones taking the orders? I mean, when is BU taking over?”

BU: We agreed in the second quarter of the year that we would move this into a hopefully automatized system... and then it goes to Pinta Inc. Scandinavia. But today I’m not spending any time on this.” (Steering meeting, January 2014).

In conclusion, the development team, together on this occasion with the BU, were searching for the same approach to creating meaning, through coordination and creating a sustainable routine of practices for logistics. Furthermore, to keep acting and not damage the process with interruptions, the team worked with both short-term and long-term scenarios. The activity of labelling proved to be very powerful, as more focus was given to logistics, when it became labelled “a problem.”

⁹ The handover to the business unit was in beginning of January 2015.

6.4.2.3 Handover and transfer of knowledge interruptions

One of the most present discussions between the development team and BU concerned handing over Woodstock, that was moving it out of R&D's hands. This engendered several disagreements between the two actors, and much frustration, as their beliefs and expectations of each other were not aligned, or expressed clearly; this despite the communication matrix outlined at the beginning of the project.

The handover came with challenges that mobilized Pinta Inc.'s identity. As Woodstock had set up a pilot plant in Denmark, at the headquarters of Pinta Inc., the question of who would take over responsibility and ownership at that plant was foremost in everyone's minds from G1 onwards. The available options were that the pilot plant be taken over either by the German production business, as the boards were already produced there, or by a Danish production business. All the interested parties held conflicting preferences, and failure to take ownership of the pilot plant was considered "the biggest problem" affecting the handover process. A challenge arose, because in a normal Pinta Inc. project, the BU would take over the products after full development and assessment of what is needed to get to market from a production unit (people process director). However, both ideology and paradigms were used as arguments for not taking responsibility over the plant:

"The biggest problem is the pilot production over here at the headquarters. Who will have responsibility for that? Somebody needs to take responsibility, and the setup is normally that BU would just buy a finished product from a production department. They will claim, 'no, it's not BU because our standard setup is blah, blah, blah.' the formal way of doing it at Pinta Inc. Is that the production department takes responsibility? We have candidates. We have a German production department, and we have a Danish production department. The Danish one says, 'it's not us. We have never been involved, so, why should we? Just because it's in Denmark, why

should we? We don't know anything about it.' They have no interest in this. So, the last one, the only one to go in and discuss this with, is the German one, and they're just saying, 'no, no, we don't want it. We'll do it in three years when we get the plants in Germany, but we cannot run a plant in Denmark.' And R&D is saying, 'we're not allowed to do it.' we can do it like we've done in generation 1 by just kind of handling it like that, but Pinta Inc. is not a production department, We're not defined as a production department, so we're not supposed to be doing this." (Portfolio Manager, Interview, 2014).

One of the first interruptions to handover occurred in G1, with the discovery that it was not a relevant solution. The development team had decided to continue taking care of the operations, while further researching options to improve. The uncertainty surrounding the project made the BU choose to wait:

"Handover to BU: it was originally intended that the operations should be handed over to BU during 2012. With the changed scope of the project (change to generation 3), this is not relevant anymore. R&D will therefore continue running the operations. Co-creator is expected to change to generation 3 in q2 2013, but if they do not they will continue ordering generation 1 products throughout 2013. When the price agreement terminates at the end of 2013 Co-creator will not want to pay the full price for the product, and will change anyway to another product. R&D will run the operations until the termination of the agreement." (Concluding Report, 2012).

However, *"a realistic exit-date for R&D regarding involvement in production was discussed, and based upon the current experience and state of the business"* was considered to be at the beginning of 2015.

R&D's identity entered the realm of discussion as well; its purpose was not to conduct nor take responsibility for production, as was the case with Woodstock for more than four years:

“So it's also about, 'what are we good at?' we're good at doing development work and not running production, so maybe we should try to focus on where the experienced guys are.” (Portfolio Manager, Interview, 2014).

The records of Steering meetings from 2013 show internal discussions centred on handing over continued. The R&D team considered the inaction of BU as representing a lack of commitment towards Woodstock. In one of the Steering meetings, the Portfolio Manager asked the BU about its intentions; in particular, why some meetings had been cancelled. In his question, he again emphasized the difficulties encountered by R&D handling operations and invoicing, given their lack of experience, and constraints:

“I have a question about what is going on regarding the clarification of the internal setup, group transfer pricing, responsibility for the long-term business and production. There have been some planned meetings that have been cancelled. Where are we on that? Because that very much spills into how long R&D will need to handle all the invoicing manually, because it is quite a tedious job to do all this manual invoicing and stuff like that, so we should get it on track.” (Portfolio Manager, Steering meeting, 2013)

As discussions between these two actors, R&D team and BU were intense, VP R&D acted as a mediator, reminding both parties that the transfer had to happen as soon as possible, and that the existing long term plan had to be followed through. He also asked for the creation of a *common plan* and early considerations of how things should be done in the transition phase, given the time implication: *“things are not going to happen in a snap of the fingers.”* The short-term solution, formulated at the beginning of 2013, had established that the Portfolio Manager was in charge with the supply chain; i.e., order handling and delivery.

“Who is the supply manager for this business? It is clear this is only a short-term solution”
(Steering meeting, VP R&D)

The long-term solution stipulated that BU would take over Woodstock, and it was confirmed that this could not occur later than mid-2014. These expectations were not met, as the handover was a long process; it lasted approximately two years. The VP R&D had insisted at several meetings that the transition steps should be undertaken faster. In explaining their position, BU underlined that since the development of the product was not ready, the step could not be taken.

“It is a good investment that we are making. It is positive, people like this product. It has some pluses, some strong arguments in favour of the product. Let’s start. When sales are moving, we are going to get more sales personnel. If we feel that the business has taken off, then we will begin investing in it.” (Business Director, 2014)

The BU lacked the necessary cues to convince them that the product was ready for market, without further support from R&D. Additionally, the BU wanted to be certain, and they named this condition “*crucial*”, that the production cost level per linear meter would indeed be 2 euros, as promised:

“BU: I think that the moment we take it over it is a business and the development phase is ended. Now there is a product development element to it and there is production development process to it also. So assuming that’s all sorted by the end of the year, or in the next few months, and we can prepare, then yes we very much look forward to this. Plus, there is still an urge to justify the 2 euros per linear meter in terms of VPC. I think most of these things are crucial for taking over the plan and the entire project.” (Steering meeting, July 2014)

The Project Manager was given a special task for the handover, which involved creating a risk evaluation for the transition of business from R&D to BU. A special meeting was called to discuss these risks and devise a mitigation plan, with the aim of creating agreement over the fears and doubts proceeding from both parties. When predicting points of difficulty, risk factors were estimated and solutions proposed. The risks analysed preceded from two variables: the probability of the handover happening and its impact. The highest risks were believed to be:

- The loss of knowledge during the transfer, particularly of “*all of the small facts gathered over the last four years – logistics, process, design*”, and a consequent loss of quality;
- The risk that Co-creator would no longer feel a priority; and
- The risk that problem solving would become more difficult, since the path from problem to production would be longer.

To mitigate these risks the plan involved keeping the R&D staff involved in the process, as they had core knowledge, and this could ensure a close communication between R&D and BU.

A list of risks related to moving the pilot plant were also evaluated, and the following considerations highlighted: the production set up, which was in Danish, must be translated into German and English; not being able to get the same surface quality had been mitigated by positioning R&D staff in Germany; was Germany ready to accept demand for a high end/high quality product. The latter consideration was very high risk, as quality might suffer resulting in claims. The mitigation proposed was: “*to increase focus and help German organizations to change their mind-set to acquire a different type of product.*” (Handover Risk Matrix, 2014), acknowledging one more time the difference in mind-set.

The risk evaluation highlighted the fears of the development team, and how their work would be continued. Several questions were also mentioned by the People Process Director: “*now we have developed a business and a production process and you have included suppliers, sub suppliers. How do you communicate that to another part of the organization? How do you move it? Are they going to accept everything we decided? Are they going to like it? Are they going to have other ideas? How do you secure the quality? Is the organization ready to take this up?*” (People Process Director, Interview, 2014).

In the last Woodstock Steering meeting, BU had announced that the Steering Group format would be changed. VP R&D and Senior Project Manager were not mentioned as part of the formula anymore, and were thanked for their efforts. In exchange, the Program Director from R&D and the Project Manager of the follow up projects at Woodstock were retained. The director of the German factory was involved in deciding the new format, in order to improve commitment, as the pilot plant would fall under his supervision.

Making sense of the handover was a process that unquestionably differed from previous interruptions. The expectations of the development team towards the BU, and their desire to organize the transition process prompted several frustrations and a lack of communication. Several times, the development team had expressed doubts; specifically, that BU *“seems to have a different agenda,” “they are not in the same team with us”*; *“we would have needed more support from them.”* At meetings, the VP R&D refereed and tempered the discussions, reminding everyone they ultimately shared the same goal.

6.4.3 Conclusions

The value chain was the central element of Woodstock’s business model, and its principal focus was cost. When determining related elements, Woodstock’s identity was negotiated and renegotiated several times throughout the period of development, with emphasis on an eventual G4 version. The new director of BU, in his period getting acquainted with the business, asked the team why owning such a big part of the logistics was important. In his vision, outsourcing some of the production steps would be more profitable to the business. However, over the development period, this question had been asked before, and the inventor of Woodstock had always considered that creating knowledge inside the company was more valuable than buying it in. With knowledge creation in mind, a discourse of overcoming challenges through trial and error was adopted, and trial and error was accepted as the norm for creating flow in the

production process. The interruptions to Woodstock's development mainly resulted from the initial lack of knowledge of the window industry and the importance of *quality* to that industry. However, when choosing a factory to take over production, cost was critical, resulting in extensive discussions about the quality versus cost balance for the business.

Uncertainty also resulted in divergent thinking from the parties involved, and numerous frustrations. The development team was convinced that by achieving a very high level of control, and general subjectivity, across all the parts of the value chain, this would provide a strong cue for the BU to invest in Woodstock's potential. Thus, divergent thinking needed to be driven towards convergent thinking along the value chain. To achieve this, several instruments were employed: representations of reality, such as a quality library; a mediator for the arguments and debates, the VP R&D being present at all Steering meetings; benchmarking, applying imitative behaviour for the industry in which Pinta Inc. wanted to position itself. Porac et al (1989: 401) explained there is a tendency to imitate the behaviour of some industry peers, as it provides a "mutual enactment process."

Analysing the distribution of interruptions to the value chain, the enactment processes that maintained the ongoing flow of sensemaking were:

Interruptions	Enactment process	Outcome/enacted environment
No internal knowledge about the production process flows needed to create Woodstock	<p>Trial and error, work with assumptions.</p> <p>Labelled the goal: 2 euros/square meter and used this as a filter device for decision making</p> <p>Labelled project as "different"</p>	<p>Retention of production costs not to be higher than proposed (2 euros/square meter). Activities that would increase the costs were perceived as interruptions.</p> <p>Create agreement about the newness of the project and no retrospection was possible</p>
G1- too expensive logistically	Labelled as "not the right thing"	G1 stopped and continued

and no alignment over quality level	<p>and reaching agreement about this opinion</p> <p>Identifying the flows: production done manually, no tracing system, too high costs in production and complicated logistics, wrong position in the windows industry supply chain - very low business potential</p>	<p>with G2 and G3.</p> <p>Retention based on very positive market reaction and support from senior management.</p>
Internal fears about taking over Woodstock pilot plant	<p>Identifying concerns:</p> <ul style="list-style-type: none"> - Fear of not taking over a fully developed product - Fear of taking over a product with very different specifications 	<p>Reached agreement about who should take over. Invite the director of the production facility in the Steering Group.</p> <p>Coupling Woodstock with another product that could generate volumes</p>
Numerous, unexpected, technical issues were affecting Quality resulting in frustration between R&D team and German production	<p>Identify the sources of failure</p> <p>Identify important differences between insulation versus system thinking</p>	<p>Install quality libraries at all the actors involved in production</p> <p>Create agreement regarding the impact on the timeline</p>
Very high development costs	<p>Identify as a delay to the team attainment of the target of 2 euros per square meter</p>	<p>Use of waste and boards was considered a failure from Woodstock as raw material for other projects were decreasing costs</p>
Need to adapt logistics to industry standard	<p>Identify the need for flexibility in the industry</p> <p>Identify the importance of coordination among the suppliers involved</p>	<p>Benchmark industry practice (Aluminium practices)</p> <p>Create short term and long term contingency plan</p>
The need of invoicing and creating a platform for ordering	<p>R&D identifies that they have never invoiced before and admit a lack of knowledge</p>	<p>Portfolio Manager takes over the task temporarily</p>
Internal frustration between R&D and BU over the handover date	<p>BU identifies Woodstock as still in a development phase, both as a product and in terms of</p>	<p>Setting a short-term plan</p> <p>And mediating between two</p>

	production	internal paradigms
	R&D identifies a fear of losing knowledge and drop in quality	Reaching agreement through a mitigation plan

Table 6. 3 Enactment processes of the value chain

Many times the source of these interruptions were divergent points between the actors involved, as they had different expectations that were not met, therefore the enactment was focused on creating agreements, better communication practices, transparency and even trust.

6.5 Enactment of value network

Chesbrough and Rosenbloom (2002:534) explain that value network show the role of suppliers, customers and other third parties involved in creating value when taking a product to market.

For Woodstock, the value network plays an integral role in the development of both the product, the production process, and the business model, given the newness of it. The Woodstock team, aware of the kind of support needed, was seeking out co-developers, rather than simply suppliers or customers. Therefore, in cases where potential suppliers were not interested in co-creation, they were not taken into consideration as part of the value network:

“This supplier is on hold. Their existing method is too expensive, and they have not shown interest in co-development of other solutions. They want us to pay for tests, which in the end supports their development.” (Project meeting, March 2012)

As the aim of Woodstock was to create a wood looking-like window, the team contacted and worked with suppliers from the windows industry, in both G1 and G3. The challenge was that the Woodstock material, even though it was expected to appear as wood from an aesthetic point

of view, was stone wool. Thus, the solutions provided by the suppliers were often unsuitable, and the necessity to develop solutions that would be applicable to Woodstock arose. For example, in one of the Steering meetings from 2013, when G3 was under development, this uncertainty was clarified, with the aim of reaching an agreement:

“Business Director: Just one question. I know the answer, but just so everybody from this group is aware: how do you rate the risk from the paint solution given by Paint System with the new formula?”

Senior Project Manager: That is based on a gut feeling, I would rate it as medium. They have made this product for other uses and they have, as far as I understand, evaluated it for high volume use in the wood industry and it performs well. The uncertainty is, of course, that our material is not wood. That means we cannot draw a direct correlation with the positive tests they have had on wood.” (Steering meeting, September 2013)

Therefore, the interruptions to the value network came from two sources: the first was that the project was being worked on with only one supplier providing two of the most important components of Woodstock, and second the trial and error phase undergone to create solutions to fulfil the objectives of Woodstock. Despite the risks and number of major hiccups that occurred, the one supplier policy remained the same from the beginning of G1, until the handover of the project to the BU. Interestingly, this appears to be linked to company ideology, as it was a normal practice at Pinta Inc. to work with one supplier:

“What I am saying is that now we have been producing one of our core products for 40 years and we are still fooling around with one supplier, and we can still not define what it is that we want from our supplier.” (Senior Engineer, Evaluation meeting, 2015)

“Paint specialist: I hear that it is not a general policy of Pinta Inc. to have second suppliers of anything. I think that’s a real problem!”

Production director: We are challenging the core of Pinta Inc. We don’t even have a second supplier for our binders. If you start discussing about a second supplier, you’ll hear: ‘We will deal with that in time, purchase will find something.’ I think we are conducting projects according to the Pinta Inc. line of thinking, mechanically and physically orientated, and not process oriented, and Woodstock is like a Swiss precision clock, everything has to fit. Upper management is thinking: ‘yea, we’ll deal with that later on.’ But it is not like that.” (Evaluation meeting, 2015)

Woodstock had one supplier for paint system, Paint System as discussed in section 6.1, and one to provide a solution for how to paint the profiles, Profile Painter. With both these actors the team ran into major interruptions, but the risk was known and accepted by the shareholders, as apparent at the last Steering meeting for Woodstock:

“What I would like to highlight regarding Profile Painter is that we currently have a monopoly like situation where there is only the one sub-supplier and we run a high risk if something breaks down or if something goes wrong with the price negotiation. So I just want everybody to be aware that this is a risk.” (Steering meeting, December 2014)

Two episodes led the team to question the retention of such a policy.

An important element of the Woodstock production was the paint, as analysed in the enactment of the value proposition. As the material was made of stone wool, it was very difficult to find a type of paint that would not be absorbed by the material. A solution was developed together with Paint System, after a careful search inside the company. The collaboration with them began in 2010, with G1, when they were chosen because they were *“the biggest supplier of paint to the*

window industry” (Internal document, 2010). Problems with the painting not being suitable for the Woodstock profiles were evident from the outset, and Paint System committed to creating a powder coating solution. The development took longer than expected, pushing back internal deadlines agreed with the Co-creator for launching G3 to the market several times. The development and business teams began reflecting on the fact that they were “*very dependent on external companies*” (Project Manager, Interview, 2014). An incident that highlighted this dependency took place in mid-2013 when Paint System announced, while the team was preparing for a launch campaign with Co-creator in September 2013, that they were not able to provide a paint solution anymore, due to a problem with one of their suppliers. The interruption was labelled a “disaster,” as no alternatives were available, and the development and testing of alternatives would take a considerable amount of time.

“We are very dependent on external companies. Only one disaster occurred when Paint System had that news for us. But it would have been nice if we had been able to take precautions against such events right from the beginning by not relying on one supplier.” (Project Manager, Interview 2015).

Both the development team and the BU were aware of the risk they were facing. When asked to explain their selection criteria for agreeing to accept such a risk, the facts listed were:

- a. Lack of resources:
“We lack resources, so we just decided to focus on one supplier” (Project Manager, Interview, 2014);
- b. Internal deadlines demanded we bring the product onto the market fast, resulting in a lack of time to develop alternatives:
“It takes too much time to develop a new supplier, and we didn’t have that, we have to launch our product and that is our priority” (Portfolio Manager, Interview, 2014);
- c. The knowledge that they were operating with small volumes, which would result in manageable losses:

“Right now the volumes are so small, that we can just take it back” (Portfolio Manager, Interview, 2014); and

- d. It was a known risk, that had been subjected to high levels of debate leading to agreement:

“Then, of course, on the supplier side there, we talked about how we needed to have alternatives on the paint side, and we had actually accepted that we only had one supplier with this solution. When Paint System suddenly pulled the plug on the solution, which was the risk we had accepted, suddenly action was needed. Of course, that messed up the whole thing, but the good thing was that it was a known risk. Nobody blamed anyone when it happened, and that was nice!” (Portfolio Manager, Interview, 2014).

The word “blame” indicates the importance of engaging in the decision-making process together, to be able to share risks. In this case, the team and the BU had to focus on the supplier situation only, and not on further internal interruptions, which might have occurred in the absence of pre-existing alignment. Moreover, when the “disaster” happened, the team realized that they had already enacted an acceptance of this risk at the intersection between managerial expectations to launch the product fast and risk expressed small operational volumes. Nevertheless, in the evaluation meeting, the development team asked themselves why *“searching for alternative suppliers”* was on the activity list, but it was never budgeted for; therefore, it was not sustained by the BU.

When the situation arose, the decision was made to postpone the launch for several months, a decision accepted and understood by Co-creator, and to use the paint already in stock for orders in the pipeline while developing a new solution with the Paint System, who would remain as the sole supplier, while another supplier would also be sought out. Interestingly, the criterion employed for searching for an alternative supplier was that they must be *“one of the biggest suppliers of powder paint in the world”* (Project meeting, September, 2013), which was the same criteria used when finding other suppliers.

The development of an alternative solution to that of Paint System was not without major hiccups, leading the management team to label their behaviour as exhibiting a “*lack of commitment*” based on the reality that the development of a solution for Woodstock was not a core business aim of Paint System. The team also admitted that they had made this discovery very late in the process and that it would therefore be difficult and time consuming to build up a relationship with a new supplier. The issue of *time* was repeatedly cited as an obstacle when seeking out a new supplier.

“In the last half a year we really learned that they don't look at this business with us as a part of their core business, and unfortunately we have also realized that it takes a long time to get rid of a supplier” (Steering meeting, end 2013).

The episode coincided with the group management meeting, where all the activities in Pinta Inc. were evaluated. At the meeting, given the situation in Woodstock, the “kill/no kill” decision was on the debate table, and the worst was expected. In an interview with the vice-president of innovation, after the meeting he affirmed:

“It was very close to be killed, and, this time, I told them clearly, ‘don’t keep it for my sake!’ It is true that they were seeing this project was my toy, so it was important to tell them that. So it’s not on my hands anymore and they still kept it. That’s a good sign, I think they finally see the potential!” (VP R&D, Interview 2014)

The second episode prompting frustrations about the one supplier policy was the relationship with Profile Painter. Their role in the value chain was to support the painting of profiles vertically, for a length of 6 m, the window industry standard. Furthermore, this supplier had to find the right painting processes for spraying the profile to assure its aesthetic appeal. A number of debates took place between the development team and the supplier, as the painting process that occurred was causing visible impedances to the aesthetic flow. Profile Painter, as another supplier, needed to provide the necessary quality for Woodstock, resulting in the company

getting a quality library installed at their premises. Moreover, the Project Manager observed that the company needed more time to understand and adapt to the Woodstock material, as they had never encountered it before. Points of concern raised with this supplier were several: the impact of trial and error conducted at Profile Painter on the cost side, as the level of waste was significant, and the credibility, as they were not delivering as promised.

“We discovered that Profile Painter makes changes to their processes without advising us. Furthermore, their process is not entirely constant, e.g. we have seen them making a 20 Minute stop in the middle of a process when preparing to shift to painting other profiles.” (Project meeting, October 2014)

The incident was labelled a *“real problem”* (Project meeting, February, 2014), as the supplier encountered difficulties painting profiles vertically on a length of six meters, the cutting length used in the window industry. They could provide the service for three meters instead, and that had a significant impact on Woodstock’s cost structure. The three-meter solution was accepted as temporary, given the order intake from Co-creator, which had to be taken care of.

“There are still some challenges for painting 6 m profiles by 1st of March, and we doubt that it will be ready and we propose a new deadline.” (Project meeting, February 2014)

“This is a temporary solution, as Profile Painter charges us per profile, not per meter, this is a very costly operation.” (Steering meeting, March 2014)

“It’s critical because it is extremely expensive for us to produce profiles in 1.5- 2, or 3 meter lengths, it’s not feasible for our business. So, we need to make them in 6 meter lengths very soon!” (Senior Project Manager, Interview, 2014)

As the problem persisted, the new head of the BU asked the development team to rate the performance of the supplier; it was acknowledged that they were performing well as co-developers, but poorly as suppliers.

“New BU Director: How would you rate our collaboration with Profile Painter?”

Project Manager: as a co-development partner, I would say 8, and as a supplier we have seen sloppiness, so it is lower.” (Steering meeting, October 2014)

The situation with Profile Painter ended up being the same as that with Paint System, and the fact that it was an accepted risk, known to everyone, meant that no contingency measures taken:

“Business Director: What I would like to highlight regarding Profile Painter is that we currently have a monopoly like situation, where Profile Painter is the only sub-supplier and we do run a high risk if something breaks down or if something goes wrong in the price negotiation. So I just want for everybody to be aware that this is the risk” (Steering meeting, December 2014).

During the development of Woodstock, all the actors involved in the value network, from suppliers through to customers, were co-developers at different levels. Only when Co-creator began ordering via an online system and being invoiced for the purchases, moving away from ordering directly from Portfolio Manager in the second half of 2014, did the R&D Vice President observe the pressing need to implement effective supply chain management assigning an individual to be responsible for it. The number of orders from Co-creator and a new customer on the German market, revealed the need for better coordination among all the suppliers in order to deliver on time. The supplier-Woodstock relationship has changed, and the risk of not managing the new expectations was likely to increase costs considerably:

“We do not have a supply chain manager yet? We need supply chain management: From a production point of view, it is now important to start supply chain management for our customers, also from a cost point of view this is needed, as we want to keep track of the costs.”
(Steering meeting, November 2014)

6.5.1 Conclusions

Concluding what had been learnt, table 6.4 brings together the enactment processes for the value network. Woodstock was designed in a strong co-development partnership with both customers and suppliers, because of the newness of the product for both the company and the market. The creation of the value proposition was dependent on the input from all parties, which led managers to compromise, and accept situations as they were, affecting the cost side of the business model. The retention of one supplier was accepted, even though it was known that this would be a source of further ecological changes. The plausibility of the decision was influenced by ideology, as the practice has been met in the company before.

Interruptions	Enactment process	Outcome/enacted environment
Learning that Woodstock needed different solutions to wood	Identify that wood-solutions do not apply to Woodstock	Accept suppliers and customers who are willing to be co-developers
One supplier policy – challenging the ideology	Identify this as an inherited practice State the long time needed to find and developed a new supplier Selection based on lack of resources, focused on delivering to customer	Temporary retainment for development purposes and to meet customer's expectations High agreement over risk

Several development hiccups with suppliers	Identify the newness of the business to suppliers as well	Temporally retained solution to achieve a fully developed process flow
High impact on costs	Labelling the delays a consequence of “lack of commitment”	Install a quality library
	Lack of alignment regarding quality	

Table 6. 4 Enactment processes of the value network

6.6 Enactment of Revenue Model¹⁰

Woodstock was created based on an ideology whereby volumes and production in the “cheapest” manner possible were considered the DNA, at the core of the business. Pinta Inc. presented itself as “*the world's best producer of stone wool fibbers, in the cheapest way. That's what we are, That's the core, our DNA*” (VP R&D, Interview, 2014). Value is measured in tons, which creates the problem of not being able to measure the real business value into production. “*That's the problem! We cannot drag the value from the customer into production, and interpret it into production figures, we interpret it as tons*” (VP R&D, Interview, 2014). Of the existing internal businesses, parts of the system division, had managed to shift slightly from this mind-set and measured value costs, by pricing in square meters, not tons. In this context, the Vice President of Innovation knew that Woodstock could not be sold to the market in the Pinta Inc.’s usual way, given both the high level of refinement of the stone wool material in Woodstock in comparison with the other internal products, and the competitive windows market they were targeting. Furthermore, as the technology for producing Woodstock was so much more complex, the aim was to get a premium price for the stone wool, that otherwise would have been sold by the cubic meter; i.e., by trying to move away from the “*bulk type of thinking*” (Senior Project Manager, Interview, 2013).

¹⁰ Revenue model: “to estimate cost structure and profit potential of producing the offering” (Chesbrough and Rosenbloom, 2002:533)

Therefore, the focus was on lowering Woodstock's production costs for reaching two euros per linear meter, to have a *"sales price of 4.50 or more euros"* (CEO, Interview, 2014). Yet, given the specific feature of Woodstock, namely high quality, it created many internal struggles, as the prioritization of quality resulted in greater than expected production costs. Thus, having a mind-set of thinking in big volumes meant pricing a high-quality product, with the services that the R&D team has created around the product, was one of key barriers to creating a realistic business model for Woodstock.

The enactment of the revenue model focused on two aspects: creating agreement about the level of production costs, and, secondly, learning how to price such a product, by moving away from the price per cubic meter mentality that drove Pinta Inc.

6.6.1 Reaching intersubjectivity on cost

Woodstock underwent different stages of development, which had not been planned or predicted initially. This had resulted in frequent adjustments to the budget allocation; meaning adjustments were dictated by the cost of numerous interruptions in production and unforeseen logistics, as analysed in the previous sections. G1 failed because it had a design that required logistics that were too costly for the value they created on the market, with the result that the team had to design G2 and G3. Several cost centres had represented a key challenge for the development of the business, as both were in a learning phase in the case of Woodstock, namely level of waste and waste handling across the entire value network, unknown process flow, alignment on quality, and production in the German factory.

To allow the development, the team chose to sell Woodstock with a negative margin, as being a *"learning (...) experience, compared with having a product in the market, it is hard to quantify. This is the cost for getting experience in the market. The experience is being worked into the development project along the way"* (Internal documents, Steering meeting Report, 2012). The

team began working with variable production costs (VPC) to create a so-called “*learning curve*.” Due to this label, failure and unsuccessful attempts were accepted as learning experiences. The concept of a learning curve led to acceptance that G1 had been essential to delivering a common understanding of the deficit that needed to be covered, and to support arguments to use an industrial setting, to reduce production costs:

“There is large sensitivity in the business plan in relation to sales volume and sales price. A learning curve for VPC has to be established and potential investments for automation have to be identified. The cost scenario for Woodstock is based on a German factory running for 12 months and no automated manufacturing process.” (Project meeting minutes, 2011)

Yet, in the case of G1, the production of the window was double in cost to the market price; therefore, the deficit, which was to be covered by Pinta Inc. was significant, and G1 was halted, and labelled a *learning experience*: “*Because we see that G1 worked fine with the customer, we had no complaints.*” (Senior Project Manager, Interview, 2013).

The majority of interruptions were caused by lack of *alignment* (a word used by the VP R&D) between the R&D team and the BU regarding the costs of development and ownership of those costs. While R&D was operating according to market cues, BU applied costs cues to legitimize the creation of Woodstock; therefore a common agreement, possibly even a compromise was needed. Conflicts between the two actors were triggered by the fact that the Business Director felt overwhelmed by the level of cost of the product, in comparison with the promised scenario of a learning curve where the product would cost approximately five euros. Looking at the budget for 2013 and that for 2014, the Business Director asked:

“What have you done with half a million? How do we handle all that cost? Who is covering it, who controls the costs? Are all these VPC costs for me? Because it doesn’t make any sense to me! Just look at the amount!” (Business Director, Steering meeting, 2013)

The facilitator negotiating all internal interruptions was always the VP R&D. He was the convergent point between the two sides, and he continually reminded everyone how different Woodstock was in comparison with all the other internal projects, as it was dependent on warranty and liability. He underlined repeatedly that this dependency made predictions about sales and breakeven points a challenge, as they needed to allocate more time for the integration of new customers. In this setting, the VP R&D reaffirmed the importance of aligning expectations:

“It’s extremely important that you align expectations, because if somebody believes that you will get skyrocketing sales in just one year... then the expectation will be too high. And in a thing like this it is also important to say that we are moving into a learning situation where we will every day experience something new. And one thing that I think is critical here, on the sales side, is to learn that this business is much more about warranty and liability, which we are not used to, to the same extent, in Pinta Inc. so that means that integrating new customers will take longer, and that is really also a matter of aligning the stakeholders.” (VP R&D, Steering meeting, November 2013)

Furthermore, since the project received very high costs, he suggested:

“Start looking at this as if it is a business, not a product! Get a business controller, and think about this as being an established business. Moving from R&D into an operation is a challenge for us. At the same time, we have to develop stuff, we have to make sure that the quality is in place.” (VP R&D, Steering meeting, November 2013)

Considerations like these led to an agreement to operate with negative contribution margins, and a common understanding that VPC levels were high and would be “*as long as we run from the pilot plant*” (Steering meeting, January 2014). Moreover, the VP R&D emphasized quality; he assured the group that costs were at an acceptable level, as long as quality was not compromised. Attaining the right quality was a phrase repeated constantly to explain the failure to meet the VPC learning curve. In order to create agreement on this issue, meeting the VPC learning curve was a requirement added to the risk matrix and presented in Steering meetings.

“Project Manager: Then we go to number 11, not meeting the VPC learning curve, it is also a new one. We have put it, from a quality perspective, we have put it between low and medium impact, you might think differently if you’re paying.

VP R&D: Quality before delivery, delivery comes before cost, Quality comes before cost savings, and that’s why we’re doing this this way.” (Steering meeting, January 2014)

At the same time, they had managed to create a buffer to reduce waste, and thereby costs, by having additional projects utilizing the boards rejected by Woodstock. This afforded a significant advantage during and discussions around this spin off, when analysing the value chain, and reminded the team that they were in a volume sensitive business, where VPC was calculated per square meter adding a certain level of mark-up, making them depended on creating large volumes. However, the Business Developer has emphasized that as long they were in a pilot production setting; it would be very difficult to produce large volumes given the capacity of the pilot plant. VP R&D reminded the Steering Group that this was much more than a production capacity issue; it was also a cost problem, as the VPC was calculated on very low production runs:

“VP R&D: I don’t think it’s a capacity issue, I think it’s a cost issue.

Business developer: Point taken, you're very right. There is one thing, all the VPCs are calculated on very low production runs, and if he's going to increase sales heavily, we can go to bigger production runs and that will have a huge impact on the costs for us, positively. So let's see." (Steering meeting, January 2014)

The Portfolio Manager defined the scope of the project: *"we're going for a commodity product and therefore we simply need to be in control of our costs."* The VPC were the most debated aspects of the business model and management knew that whilst Woodstock was going to be produced in Denmark, not in an industrial setting, handling orders meant the production VPC was going to be very high. Therefore, while further investment had begun to be calculated to industrialize the production, VP R&D asked for transparency concerning both the VPC source and calculation, and the creation of a business plan for Woodstock to guide the team, by helping them to create reference points. In the evaluation meeting, beginning 2015, it was discussed that some costs were not presented in the reports, creating a false impression that production costs were lower than they were. This issue created moments of mistrust between R&D and BU, as the end result of a learning curve was higher than expected. The perception of the BU was that these numbers, VPC on quality aspect, had been conveniently omitted:

"So the blue column in the excel file, it's actually where we were not wise enough when we calculated the VPC. We forgot something, we forgot to include that normally quality control is a part of VPC, we forgot." (Portfolio Manager, 2015)

This comment produced immediate reactions to explain the numbers that were missing from the initial calculations due to the lack of knowledge at the moment of production, as the team did not have the right production formula and so there was continued trial and error. As they did not know how to handle that kind of uncertainty, they had chosen not to insert any values at all, summing up lower VPC, and arguing against its plausibility:

“We lacked knowledge about the final specifications for the profiles. We had no idea about what the volumes might be, or how to spread the transport costs of a truck to several profiles. So, it was definitely wrong to say we forgot something. We calculated and incorporated everything corresponding to our knowledge at that time. There were things that we knew should be part of the cost, but we could not evaluate it, we commented on it.” (Business Controller, 2015)

The decision to estimate to zero what was unknown was challenged, due to the consequences of presenting a product cheaper than it was to group management.

“Business controller: In order not to make the product too expensive, we took them out from the beginning. There was a discussion about leaving it or taking it out.

Portfolio Manager: This is one of my issues. What I want to do is to highlight we were not completely honest about the price. Sorry if I provoke you here. And it is exactly what you said, we would have killed the product if we had been completely honest about the cost.” (Evaluation meeting, 2015)

“Project Manager: Let me challenge you in another way: the BU would not have been completely honest with us in the absence of understanding about this. They cannot handle the truth.” (Evaluation meeting, 2015)

However, the business controller pointed out that the real issue with the VPC calculations was not the manner of calculating the data, even though a number had not been written down, it was *“verbally commented on”* (Business controller, 2015), it was the way it was communicated. The numbers were avoided in business negotiations between BU and R&D, when revealing the price of the business upon transfer from development to the BU.

“The problem is what followed after that, some say open communication was used and filtered for business negotiation and this was a mistake. If we are talking about doing something wrong or right, at the time transferring the business was discussed it would have been wise to say: listen there are these five items that I don’t know how to incorporate, how should we deal with it?” And this was a mistake.” (Business Controller, 2014)

Lack of knowledge was introduced as an argument to explain the situation, and the fact that the team had been working up three different scenarios: the learning curve, the pilot plant production where everything was done manually, and therefore, had higher VPC, and the predictions for an industrialized setting where the target estimation was two euros. Full automatization was identified as the only scenario in which Woodstock would be “a good business” (Program Director, 2014), and this scenario was possible, according to the BU, in the German factory, in spite of the several quality issues that had emerged there.

“The factory down there is just a big black box sucking money and if you don’t keep track of that it is difficult to explain where all the money went.” (Project Manager, Interview, 2014)

When transferring the business from R&D to BU, a higher learning curve, with approximately 40% more variation than promised, but promising a production cost scenario to two euros in an industrialized setting appeared to be attainable.

6.6.2 Benchmarking pricing structures

Market research had helped the business and R&D team identify that Woodstock was a product with superior qualities in comparison with other profiles on the market. Moreover, none of the windows on the market shared similar properties to the Woodstock window. In these conditions,

the dilemma was how to price a premium product, while accommodating existing practice in Pinta Inc. to operate with high contribution margins. High margins were expected from Woodstock if it were to be perceived as a worthwhile business. The team considered that benchmarking against other materials available in the marketplace was the easiest solution:

“It has proven very difficult to get real prices on windows for the chosen target segment (passive house type). Evaluation of what our solution is worth in actual monetary terms is difficult. We have to rely mostly on comparisons with other materials, like wood, alternative insulation materials, and other tangible/intangible benefits.” (Internal document, 2011)

“In Pinta Inc. we operate with very big contribution margins, and if we compare businesses, then they will find out that Woodstock is only contributing 5%, that will not be seen as a good sign. They will say ‘out with them’. So, it needs to be a comparable contribution margin based on other businesses, or group management will not believe in it.” (Portfolio Manager, Interview, 2013)

Even though benchmarking seemed to be the most reasonable solution, the question of against whom was raised very quickly. In G1, Woodstock defined itself as a competitor to wood windows, while the changes in G3 allowed it to go up against wood-aluminium and aluminium windows as well. Furthermore, any decision had to include an understanding both of Woodstock’s customers and how their product would be positioned for the end customer, as a wood window with higher insulation properties, or as wood-aluminium with maintenance-free features:

“It’s also about pricing, because the wood-aluminium windows are priced at 50% above normal wood windows. So, if our customers, the window manufacturers, are going to say ‘okay this is a wood window’, and sell it as a wood window with better insulation properties, then we would

have a lower premium, because there's a mark-up with wood-aluminium because its maintenance-free. So, we go and say 'okay we can do the wood-aluminium which is maintenance-free' so the customer would get that plus the insulation. So, that's why it's important to find out which segment our customer is targeting. And how he will price it, because that also tells us something about how we can price it." (Portfolio Manager, Interview, 2014).

Interestingly, the discussions on pricing strategies and profit models for Woodstock were very limited at both project and Steering meetings. In the Steering meetings, the need to debate pricing considerations was triggered by an important campaign launch with Co-creator at the very beginning of 2014. In preparation for that event, the Project Manager had drawn attention to the fact that too much attention was being paid to the technological development of the product and all the costs involved, and far less to discovering the appropriate pricing strategy for the profile. Co-creator was to begin promoting the window to their customers, namely carpenters and was planning a marketing campaign at the handball championship to which 150 carpenters were invited, therefore, decisions about pricing strategy was needed.

"I find when we're talking about the launch that we have underestimated and keep underestimating the things around the physical product. If we launch and we don't, for instance, have a price, or we don't have a logistic solution, or have all other kinds of things, that it is just as troubling as not having a profile. So, therefore I put a little emphasis on presenting this here, because this needs to be on our list for attention as well." (Senior Project Manager, Steering meeting, September 2013)

Furthermore, it was emphasized that the business team should contribute to these aspects much more, as R&D was lacking competences in these articulated areas.

When determining the price, a combination of competitive strategy and cost sensitivity was adopted. The team found that they could compare it only with aluminium windows, based on a comparison of production costs, as they had to handle combinations of materials too, while wood frames were made of only one material. Additionally, Woodstock incurred extra costs when taping the profile onto the window frame.

“It's quite difficult to determine if there are going to be extra costs or not, and this also depends on what you compare it to. Compared to a wooden window, there would be extra costs because they have nothing on the outside. This window should be compared more with an aluminium window. Then you would have this kind of ever-shield on the outside.” (Business Developer, Interview, 2013)

“So that the discussion I think is about whether we should price position as aluminium or above or below. Where to get in to the market?” (Portfolio Manager, Interview, 2013)

The decision was made on pricing a linear meter, profiles times number of colors, as was standard for the industry, added services such as co-branding and thermic calculation had been included in the price.

“Sell it by the linear meter. Today we are selling it by the linear meter, six meters long that is standard for the industry. Price to be defined for each customer.” (Business Director, BU, Interview, 2014)

Furthermore, they explained the services offered were not incorporated into the revenue model, because they were positioning Woodstock as a product, not a service:

“Today we don’t generate value on the service, but you can also say that it is a service, because you can customize and we make specific calculations. But these are not reflected in the revenue model. We are selling it as a product and that it is, but maybe in 10 years’ time we’ll change.”
(Business Director, BU, Interview, 2014)

Interestingly, to compete, Woodstock decided to keep the same price level for all profiles, regardless of colours, even though the costs for developing profiles in different colours were significantly different between light and dark ones.

“It was discussed, but I think the decision made was that we wanted to be competitive in all colours and we needed super durable dark colours because of our substrate and because of our high demand for durability. But if you go out and buy an aluminium profile, you don’t pay differently for the different colours.” (Project Manager, interview 2014)

Yet, the most important discussion on pricing was triggered by the discovery that Co-creator was pricing the Woodstock window at a considerably higher price than their other windows. This was discussed above, and it triggered the VP R&D to ask the business team to define defining a real value proposition for Woodstock, as it was apparent that they were underestimating the product and leaving money uncollected.

Co-creator was pricing the Woodstock window 40% higher than the three-layer wood window. Its CEO explained the wood windows were not as successful as wood-aluminium windows, and that it saw Woodstock as competing against the later. As a wood-aluminium window commanded a premium price of 30-40% more than wood, Co-creator had decided to price Woodstock the same, adding an additional cost for the fact that more technical work was required to assemble a Woodstock window. In these conditions, Co-creator’s CEO explained that he was expecting a 15% turnover on a Woodstock window. This led the VP R&D to

emphasize the fact that a well-defined and known value proposition would help the team create the right pricing strategy. He drew attention to the importance of being fully aware of the value they were offering to the market, in order to understand type of value to be created. VP R&D criticized the lack of a business model for Woodstock.

“VP R&D: Can’t we then make a right value proposition by ourselves find out what is then deduce the right pricing structure? We really need to know what the performance we deliver is, what is the price customers are willing to pay and how do we drive that down to our target VPC cost for the end of the learning curve, so that we can see that there is still a business for us. That’s what I think we need to create and have an overview.” (Steering meeting, December 2014)

6.6.3 Conclusions

The fact that Pinta Inc. was a cost sensitive company was evident from their approach when building the revenue model for Woodstock. Based on competitor-driven and cost-based pricing, all the decisions when designing the business model for Woodstock were weighted against costs, even though quality was mentioned as the primary focus. Interestingly, toward the handover of the business to the business owner, it was affirmed that a value-based pricing should be approached; to capture the real value Woodstock was bringing to the market.

Table 6.5 summarizes the interruptions encountered when creating a revenue model for Woodstock. The main difficulties related to encouraging internal actors to accept the costs that accompanied the learning process. Furthermore, the development and business teams felt the need to reach a balance with the ideology; thus, matching the same level of contribution margins practiced, as the features were different for Woodstock.

Interruptions	Enactment process	Outcome/enacted environment
Identifications of cost centres	Label them as “learning processes” Highlight positive feedback from the market	Create agreement Create variable production costs for learning curve
Conflicts between R&D and BU on costs ownership	Consider failed expectations in terms of costs Identify the existence of high costs for pilot production scenario Perceive lack of transparency about VPC Identify miscommunications between parties involved	A mediator emerged calling for alignment and reaffirming Woodstock’s identity as different Accept that it was a lack of knowledge when calculating some VPCs Working with different scenarios
Lack of skills for handling costs	Define Woodstock as a business, and not simply as a product	Hire business controllers for handling costs
Quality versus costs decisions	Observe that quality comes first in Woodstock	Create an agreement Use spinoff projects to level up costs and reduce waste
Lack of knowledge in pricing high value products	Identify the conditions for existence: having a comparable contribution to the market with ideology Identify the difficulties when defining the competition Identify the need to have a well-defined customer segment Identify the imbalance between technology versus business focus in the development stages	Benchmarking: looking for reference points in potential competitors Mediator called to link the value proposition with pricing strategy and costs centres, based on customer and end consumer behaviour

Table 6. 5 Enactment processes of the revenue model

Aside from the above-described balancing act, the creation of a revenue model demanded well-defined customer segmentation and market positioning. As analysed in the value chain section, a confusion arose as Woodstock was a competitor for wood, aluminium or wood-aluminium has

many interruptions occurred, when defining inaccurate reference points addressing underpricing and profit losses. Moreover, creating focus on costs and reducing production costs resulted in fewer resources being allocated to defining pricing and profit-making strategies for Woodstock. Lacking this aspect, services such as co-branding were not retained long term, while others, such as variety of colours, energy calculation, and design, were offered free of charge.

6.7 Conclusions

The aim of this chapter was to analyse the enactment processes that informed the creation of the elements of Woodstock's business model. The research question that has guided this chapter is:

What are the enactment processes that enabled the creation of the elements of Woodstock's business model and how do managers of Pinta Inc. made sense of the emergence of a new business model?

In identifying the main interruptions for the creation of Woodstock business model, the features of ideology and paradigms active in Pinta Inc. have been the source of several interruptions. The manner how these have collided with the new identity willing to emerge, have determined the believing team in the project to enact, thus create solutions and routines that have not been met before in the company. The acceptance of these ones, for example co-branding, co-creation and end-consumers' visits, have determined further interruptions and new enactment processes. Some of the outcomes were retained for good, such as acceptance of co-creation practices, and others only temporarily, for serving a short-term purpose, for example co-branding.

Analysing the emergence of Woodstock's business model, it can be observed that it was an effort of reaching acceptance, translated through compromises from different parts, of working at an intersubjective level. Yet, BU was always running after best-case scenarios where generic subjectivity, meaning control and processes that act as a Swiss watch were achieved. The value for retention for them was control. However, their run after control triggered mistakes, counter productivity and conflicts between the actors involved, and, in the interest of keeping the project moving further, they had to redefine goals and accept decisions at the intersubjective level. At

this level, “face-to-face social interaction in real time” (Weick, 1995:72) and possibility of “mutually reinforcing interpretations, and beliefs, values, and assumptions” (Weick, 1995:73) it was possible to co-enact with both Co-creator, and the suppliers, acting as co-development partners.

Moreover, even though the creation of Woodstock was a collective effort of many parts involved, each one drawing on different vocabularies (Weick, 1995:107), there was no actual focus on how the collaboration should happened, and it was expected to run efficiently. In situations of conflicts between paradigms, a mediator emerged, in the person of the vice-president of innovation, mediating the disagreements, and facilitating the process, especially from selection to retention.

By grouping the identified interruptions (table 6.1 - 6.5), six main categories have emerged:

- a. Underestimation of the product: lack of information about the market value and the attractiveness of Woodstock for the end consumers made the company perceive it as a simple, standard solution for windows industry; however, the end customer taught them that Woodstock ought to be positioned in the marketplace as a distinctive product with advantages over the other types of window frames available, as a 3rd look!
- b. Quality versus cost dilemma: Woodstock had to be a high-quality product to answers the requirements of the market, while internally, the conditions for existence imposed by group management was very low production costs.
- c. Divergence between paradigms: The R&D team and BU had numerous points of failed alignment regarding the type of business Woodstock would be. This included misalignment on the topic of who was responsible for developmental costs, and why learning costs were so high; BU did not predict the need to generate so much new knowledge for Woodstock’s business; R&D had expected much more involvement from the BU; choice of the wrong specifications as reference points in the benchmarking practices; and postponement of the hand over date.
- d. Challenging the ideology: the product demanded Pinta Inc. adopt new practices: warranty, aesthetics and quality, co-creation and co-branding, adapting its logistic

practices to new industry requirements, exhibiting flexibility and diversity. The company's one supplier policy failed, and issues arose as R&D became a production and business development unit, as well.

- e. Lack of knowledge regarding pricing high value products, production processes for high quality specifications, as well as handling costs.
- f. Moments where there was a lack of trust both internally, between R&D and BU, and towards Co-creator.

As seen in table 6.6, these interruptions were encountered several times throughout the enactment processes, and had influenced the creation of each element. While the value chain was the element that required the most attention, as it was the most inundated with interruptions, market segmentation and creating a competitive strategy were the sections less challenging for the development team (R&D team and Bu together). It was only needed for knowledge and intersubjectivity between the paradigms. Furthermore, the creation of value proposition was a matter of understanding the potential of the technology on the market, reaching alignment between paradigms, and getting acceptance from the ideology. The revenue model has encountered challenges emerged from lack of knowledge on how to handle premium products, how to handle costs resulted from the need of high quality, misalignments between paradigms, and challenging the ideology. Lastly, the value network creation needed to first reach intersubjectivity about the technology's potential on the market and need for quality, and to overcome the one supplier policy that made Woodstock vulnerable to changes.

Elements/ interruptions	Underestimat ing their product	Quality versus cost dilemma	Divergence between paradigms	Challenging the ideology	Lack of knowledge	Lack of trust
Value proposition	✓		✓	✓	✓	
Market segment and strategic positioning			✓		✓	✓
Revenue Model (Costs Pricing)		✓	✓	✓	✓	
Value Chain (Production costs Logistics Handover)	✓	✓	✓	✓	✓	✓
Value Network	✓	✓		✓	✓	

Table 6. 6 Interruptions in Woodstock's business model creation

Moreover, Woodstock had proved itself to be a product that challenged the teams' knowledge base and established routines, as only few meanings could be based on retrospective, correlating findings with patterns encountered by the company before. Therefore, the team has chosen to bracket the musts and non-negotiable conditions for becoming a supplier for the window industry, and approached them through benchmarking. In this manner, reference points inspired by the windows industry were formulated for dealing with warranty and aesthetic (value proposition), flexibility and diversity (market segment) that challenged the logistics (value chain), pricing (revenue model). The creation of reference points allowed the team to enact. However, the enactment of these elements was a combination between retrospective, imitation/benchmarking, and enactment. The first step was to try to find solutions inside the company, looking back at different existing practices. If there was no answer, or not suitable answer for Woodstock, imitation was the second trial. Thirdly, when realizing that the reference points gathered from the industry were not matching the needs and potential of Woodstock, the team had to enact, beyond retrospective and imitation.

When interruptions were a result of challenging the ideology of Pinta Inc., labelling the phenomenon was a method that helped reaching intersubjectivity. In this manner, G1 was labelled and accepted as a *learning process*, while covering the costs of working with a Co-creator, an essential *ticket to entry*. Bracketing activities have supported labelling. For example, bracketing the window industry to be a fragmented market, Co-creator's signals of commitment as cues for group management.

In table 6.7, the outcomes of the enactment processes are clarified, reflecting the managers' intentions to establish a "workable level of certainty" (Weick, 1979:3), thus intersubjectivity.

Elements/ interruptions	Underestimating their product	Quality versus cost dilemma	Divergence between paradigms	Challenging the ideology	Lack of knowledge	Lack of trust
Value proposition	Focused on one national market at a time Label Woodstock a “3 rd look”		Creating a temporary collective agreement (temporary retention) about co-branding	Defining and re-defining targets for installing warranty	Define G1 as “valuable learning”	
Market segment and strategic positioning			Get acceptance from the ideology, which acted as a mediator		Trial and Error with the Co-creator Reach intersubjectivity regarding mandatory entry points into the market	Get feedback from end-users and install new practices at the company
Revenue Model (Costs Pricing)		Going from generic subjectivity (control) to intersubjectivity Use spinoff project to level up costs and reduce waste	A mediator emerged when asked for alignment and reaffirming Woodstock identity of being <i>different</i> Accept that it was a lack of knowledge that caused problems	Benchmarking Mediator asked to link value proposition with pricing strategy and costs centres, based on customer and end consumer behaviour	Hire business controller for handling costs	

			calculating some VPC			
Value Chain (Production costs)	Benchmark industry practice (aluminium practices)	Install quality libraries for all the actors involved in production	Setting a short-term plan Having mediator between two internal paradigms	Portfolio manager takes over tasks temporarily	Retention of production cost not to be higher than proposed two euros/square meter. Activities that would increase the costs were perceived as interruptions.	Invite the director of the production facility in the Steering Group.
Logistics Handover)	Create short term and long term contingency plan	Create intersubjectivity regarding the impact on the timeline	Reaching intersubjectivity through a mitigation plan	(One supplier) Temporarily retained for development purposes and to meet customer's expectations High agreement over risk	Temporarily retained solutions offered to achieve a fully developed process flow for customers	Coupling Woodstock with another product that could give volumes
Value Network	Accept only suppliers and customers willing to be co-developers	Install a quality library				

Table 6. 7 Outcome of the enactment processes

Analysing further, certain enactment steps had a cumulative effect in the emergent process of G3's business model, whilst others were extracting and had a non-cumulative effect, which has resulted in further interruptions (see table 6.8). As such, certain enactment steps have allowed learning, and even collective learning, for example through the installation of a quality library along the entire value network, while others steps perceived as "problems" kept being repeated. One example of the latter kind of actions was noticed with regards to solving capacity problems, keeping one supplier policy, benchmarking wrongly, or failing to build tracing systems. These were encountered in both G1 and G3.

Enactment with cumulative effects	Enactment with non- cumulative effects
Eliminated the wood party and the need for tools from G1, thus changing the value chain	Capacity problems in G1 continued in G3
Co-creation and co-development	One supplier policy failed in G1, which repeated in G3
Allowed for trial and error events with the co-creator	Failed in building a tracing system in G1, and had the same problem in G3
Learned about liability and warranty	Failed benchmarking (too much imitation), for both building the warranty, positioning the product on the market, and in the revenue model
Installed quality libraries along the entire value chain	BU waited to have a fully developed product before it considered the revenue model
Looked for feedback from the end-user	Hired a business controller late in the process
Pilot plant	Defined Woodstock as a business, not only a product, but only close to the handover
Hired paint specialists and a key account manager for the German market	Focused mainly on technology and product development, late on pricing and business cases
The director of the factory in Germany asked to join the steering group in order to create alignment in terms of quality	
Applied co-creation principles for the German market	
Connected with a spinoff for reducing costs in waste	

Table 6. 8 Cumulative and non- cumulative effect of the enactment processes. Examples

Analysing the enactment steps that have determined further interruptions, as outlined in the second column of table 6.8, shows that the arguments used for these actions were related to values such as:

- a. *Time*. As seen in chapter six, a lack of time was frequently mentioned as the main reason for not choosing another supplier, even in the cases of interruptions;
- b. *Cost*. Producing a pilot plant and taking the risk of not being able to produce for an intake of orders;
- c. *Feel of control*. The business unit would take over only when they knew that the production and logistic flow worked perfectly, thus generic subjectivity. Based on these expectations, they have postponed taking over Woodstock several times. However, at the handover moment, these processes were still under development, albeit to a lesser degree. Furthermore, the action of benchmarking for defining the reference points to be followed in Woodstock's development was explained through the same need of control: "*Do we have reference points for these? We need reference points to compare ourselves with. That would also help us to control the process, or how else would we know that we are on the right track?*" (Steering meeting, 2014)

Additionally, for elements that were perceived as being crucial for the business, such as production costs and production flows, it was expected to reach a generic subjectivity, thus high level of control. For elements, such as market segmentation, competitive strategy and even revenue model, however, they were willing to accept greater risks and uncertainty, and working at an intersubjectivity level was accepted.

On the other hand, looking at the first column of table 6.8, the values that allowed the enactment of cumulative decisions were always based on an acknowledgement that there was a need for:

- a. *Learning and experimentation*: that is, the acceptance of co-creation and experimentation with a co-creator, and building a pilot plans for trial and error. This was fuelled by positive feedback from the market that determined that Pinta Inc. accepted co-creation activities with both markets, despite the costs. Positive feedback from the market has also allowed co-branding to be temporarily retained, even though the BU did not agree on the need for this element. The market reaction to Woodstock in both G1 and G3 was the most influential cue for group management, and the decision by the CEO to allow Woodstock to be developed;
- b. *Reaching intersubjectivity along the entire value network*: implementing quality libraries, enlarging steering group, and accepting risks only in cases of high intersubjectivity for the risk (as in the case of the interruption with the paint system)

Therefore, as seen in table 6.7 as well, in the case of elements such as market segmentation and competitive strategies, reaching intersubjectivity was a sufficient condition for going on, as it allowed further iterations. However, for elements perceived as vital for Woodstock' acceptance as a business, such as production costs and logistics, it was expected to reach a generic subjectivity, namely high level of control.

Interestingly, majority of interruptions have resulted from the divergence between internal actors, resulting in paradigm disagreements based on different expectations for Woodstock and from each other. This implies that, in the majority of cases, time-consuming interruptions did not result from certain technological faults, but from the manner R&D and BU approached them. Failing reaching intersubjectivity resulted in subsequent interruptions. For example, the BU was perceived as a passive observer of the enactment processes of R&D: regardless of the numerous times R&D requested assistance, they only seemed willing to intervene when costs were set to increase. They seemed to be waiting for the cues that would signal that Woodstock is ready to be taken over. By acting as a passive observer, the BU had difficulties understanding and accepting the business model the R&D team has developed; for example, accepting the co-branding policy and exclusivity given to certain customers. Thus, once the BU had taken over, new models were considered, as they could not internalize those practices in their unit. Acting as a mediator, the VP R&D played an important role in establishing convergence between these two actors and sensemaking process. Yet, regardless of all these factors, the condition for the existence for Woodstock was cost based imposed by the ideology.

The heterogeneity of the interruptions demonstrates the emergent nature of a business model, which has to overcome more than only inertia and resistance to change, as shown in the business model literature. These interruptions have generated a back and forth between intersubjectivity and general subjectivity, and, therefore, has influenced the emergent nature of the individual interpretations and organisational actions. Actors involved in Woodstock project have realized that moments of general subjectivity are not only difficult to reach, but also very challenging to be maintain. They have learnt, especially BU, to accept working at an intersubjectivity level. Therefore, the heterogeneity of the interruptions has determined working with contingency steps and accepting solutions on short term, called by Sandberg et al. (2015:11) "satisfactorily restored" moments, which had allowed the project to move further.

Finally, several important aspects relating to how the elements of the business model emerged and evolved should be highlighted, as not all the components of the model emerged simultaneously, as

affirmed by the activity system perspective, but were enacted progressively together with the development and increasing complexity of the product, in the dialog between intersubjectivity and generic subjectivity; thus, innovation and control (Weick, 1995:72). This also shows people do take plausible decisions, as Weick (1995) explains, sense was made of interruptions as they arose, and not ahead of time. As seen before, these elements did not stand-alone; they influenced each other in different stages of development to enable the emergence of something new. This observation is opening the discussion about interlinkages, which is to be addressed in the next chapter.

Thus, following chapter will analyse how the elements presented herein interacted with each other, to reveal the process informing business model enactment.

Chapter VII: The Emergence Process of a New Business Model

7.1 Introduction

In the previous chapter, interruptions had to be overcome to allow the development of Woodstock. The analysis showed that each interruption determined not only the development of certain elements in different ways, but also a co-influence relationship between them, unexpected and unpredicted by managers. As certain co-influence relationship, for example value network-cost, has triggered further interruptions, it required from R&D team and BU to continue the enactment processes.

The research under activity system perspective and dynamic capability argue for the existence of continue, tightly coupled linkages between the elements of the business model, a priori planned by managers who seeks to design, or re-design a business model. Zott and Amit (2010:2918) explain these linkages offer insights into the processes that enable the activity system's evolution in time. Still, in Woodstock's case, these linkages were enacted by the manner how managers made sense of certain interruptions. As interruptions happened over time, these linkages appeared in time as well, some temporarily, until meaning was created, other being retained for good.

Therefore, the purpose of this chapter is to analyse the emergence of these linkages and the role they played in going from the intended to the "real-ized" (Weick, 2001: 187) business model. I begin with analysing how the elements are linked to each other, the presence of these linkages and their sources, followed by showing the emergence process of G3. I conclude the chapter with an objective (Weick, 1995:34) illustration of the differences between the intended and the "real-ized" business model of Woodstock.

Thus, the research question guiding this chapter is: *What enables the emergence process of a new business model?*

7.2 Co-influences between elements

The first element enacted was the value proposition, embedded in the technology, and then the customers, since the VP R&D decided to focus on the windows industry. The analysis in the previous chapter shows that their lack of knowledge regarding the industry determined the institution of a co-creation partnership. This type of partnership - co-creation - was new for Pinta, and yet, given its success, it was decided to apply it for entering further markets as well. Figure 7.2 shows that both the Danish and German markets were entered in the same manner, i.e. via co-creation. Thus, the link value proposition - customer was the first enactment step in dealing with uncertainty. Indeed, it has generated knowledge about the product, the level of quality needed, the production specifications, the end-user needs, and the industry. Most importantly, the co-creator was the main source of “memory” for Pinta Inc., given the fact Pinta Inc. was lacking sources of retrospective (Weick, 1995) in creating this kind of products; therefore, they needed to insource a “memory” to rely on.

“We were looking at this technology and thinking what should we do with it, and then the VPR&D, he came from the windows industry and knew their struggles and said ‘let’s do something for them, we can really do something for them’” (Senior Project Manager, interview 2013)

“The last time we have created a new business was 20 or 30 years ago, we don’t remember anything and we don’t know how to do it, so working with a Co-creator was a very smart decision” (Portfolio manager, interview 2013)

Learning from the co-creator about the nature of the industry, which was highly fragmented, lead to the question of market segmentation. Thus, a connection emerged between the VP and competitive strategy. Interestingly, the competitive strategy element was brought into discussions only when changes were needed in the value proposition due to customer requirements.

In the case of G1, the focus was on the value chain and logistics, since there were many actors involved in the chain, making the logistics very expensive. Once on the market, these costs became clearer as customers were not willing to pay as much, meaning the company needed to subsidize. Here, the link between cost and profit became the determining factor in stopping G1. In G3, the value proposition became more enlarged, for example in terms of its lack of maintenance and aesthetics, while eliminating third parties from the supply chain. The change in design allowed the company to position themselves against other competitors. However, the dependency of value proposition on the suppliers became even more accentuated. Firstly, there was a need to create a common warranty, thus the enacted link VP-value network was determined by the industry requirements of giving warranty. Secondly, the creation of aesthetics and the visual quality of Woodstock needed a very high level of intersubjectivity regarding the definition of quality along the entire value network.

The new value proposition in G3 required the questioning of how value could be captured from such a product, avoiding giving things “for free” (Business director). The newness of Woodstock in Pinta Inc. made the development team and the BU question the means of pricing such a product. Learning about competitors’ practices and getting end user feedback influenced the linkage between these two elements. In terms of learning what their new competitors were practices, benchmarking was the first solution of the R&D team and BU to deal with uncertainty. It became an important strategic step used in both G1 and G3, when R&D and the BU were bracketing practices and creating reference points to imitate. In this light, competitors’ practices were used as a source for benchmarking for the components of the VP – namely the type of warranty needed, the level of aesthetics, and logistics - in terms of practices that were used for transporting the profiles from production pilot- supplier- customer and back, as well as pricing mechanisms, as seen in figure 7.1

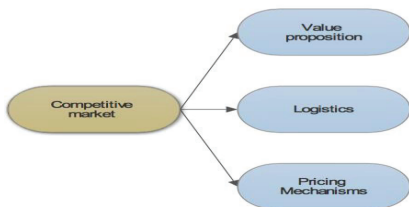


Figure 7. 1 Source of benchmarking

Nevertheless, not all of these linkages were mentioned permanently, as benchmarking was no more relevant after R&D team and BU has gotten the feedback from customers that Woodstock needs to be positioned on the market as a third look.

Furthermore, as seen in chapter six, the most mobilized element in the development of Woodstock was the cost due to co-influences between production costs - value proposition. Present in all project and steering meetings, Woodstock expected to be aligned with the other internal businesses in terms of the mark-up level. Thus, Woodstock's core linkage was the production cost – value proposition as a condition of existence imposed by group management.

“In Pinta Inc. we operate with very big contribution margins, and if we compare business, then they will find out that Woodstock is only making a contribution at 5 %, that will not be a good sign.” (Portfolio manager)

This independency between production costs- value proposition was the only link that has been decided from the beginning of the project and was kept along the entire development process.

Table 7.1 showcases these linkages with quotations from the case:

Year	Interruptions	Elements and linkage	Source of the link	Quotes
2010	Entering a new market never served before	VP-customer (Co-creator)	Enacted link, determined by the need of learning. The elements influence each other.	"The co-creator was a tremendous source of information, and we would have been very slow without him." (Program director)
2011	Learning about the industry being fragmented	VP-competitive strategy	Emergenced link determined by the industry specificity, where the VP is influenced by the industry.	"It was a crisis moment finding out how fragmented the market was. How are we going to serve them all?" (Program director)
	GI failure	VP-cost –value chain	Link emerged from the nature of the design and the focus on logistics.	"The final product was not very good. As you have heard the story, it was a design problem and value chain was way too complicated and expensive." (Project manager)
				"GI failed because it was not the right product. It was too expensive, it was too complicated to produce, it was logistically not adequate because it was relying on a lot of sub-suppliers that were not suited to make this product or to distribute this product." (Senior project manager)
		Cost-Profit	Link that was needed for keeping GI on the market, but did not exist in this case.	"I could see that we have to ask more for this if we wanted to make money on it, the cost was higher than the customer was willing to pay, we didn't provide

				<i>enough value." (Senior project manager)</i>
2012	G3	VP-competitive strategy	Link enacted by the change in design, which positioned the product against new competitors.	<i>"We moved into another segment, because we could make a different surface." (Program director)</i>
	Co-branding	VP-profit	Link expected to exist as a legitimization of value proposition. It was not present, which determined co-branding to be stopped.	<i>"Co-branding is only specific to the Danish window manufacturer; we are not going to take it to another customer. (...) It costs money and I don't think it generates profits." (Business director)</i>
2013	Warranty building: looking for reference points	VP-competitive strategy	Enacted by the willing to benchmark, thus to learn. Here the VP is influenced by the industry.	<i>"I did a bit of stuff on warranty also. So I looked through all the homepages and looked at what are they actually promising their customers? I was looking, of course, especially for the aluminium windows to see what I was up against." (Senior project manager)</i>
		VP-value network	Link emerged from the need of fulfilling industry requirements in terms of warranty. The elements influence each other.	<i>"Before we make the warranty, we need a warranty from our (sub) suppliers." (Senior project manager)</i>
	Challenges in building aesthetic quality (in focus for entire 2013 and	VP-customer-value network-value chain- (production) costs	Linkages emerged from the challenging situation of building in terms of aesthetics. Several technical issues had influenced the	<i>"We are now working on a quality library with examples of surface phenomena. Acceptance criteria are to be coordinated between us, our customer and</i>

2014)			visual quality of the profile, increasing costs.	<i>“Pinholes in the finished profiles have a very high priority due to an increase in waste by the co-creator. A brainstorming meeting with the participation of the co-creator, the supplier of the paint system, the supplier of painting methods and Woodstock will be scheduled to discuss the pinhole issue.” (Project manager)</i>
	Capacity challenge	Production-customers	Link emerged from the business success that raised the question of balance between production capacity and number of customers and orders.	<i>“It is of a bit chicken and egg story, we are talking with a limited number of customers, and we can't talk to them because we don't have production, we can't produce profiles. We learn from this discussion.” (Business director)</i>
	Enter German market	VP-customer-competitive strategy	Link enacted when they interact with possible German customers.	<i>“We got help from a German customer to enter the market; Co-creation again.” (Business director)</i>
	“Logistics nightmare” – need to learn how to embed flexibility in the	Customer-value chain-value network	Links enacted by the need to coordinate the offer of flexibility. Link enacted by the industry requirements.	<i>“The German market wants a sandy structure instead of the smooth surface we have today.” (Project manager)</i> <i>“Next to the fact that the windows producers have orders from one day to another, the lead time from order to deliver is four weeks. From the customer to him and to us and back to him is pretty tight!”</i>

value chain				(Business director)
				<i>"The painting methods supplier should advise both us and the co-creator about the profiles and quantities they are shipping. Orders from the co-creator are increasing."</i> (Business director)
One supplier policy	Value network - value proposition	Inherited link from the company, which was used to work with one supplier.		<i>"We are very dependent on external companies,"</i> (Business director)
				<i>"It is common practice in Pinta Inc. to have one supplier."</i> (Business director)
	Value network - cost	Link emerged from the dependency on one supplier.		<i>"This is a temporary solution, as Profile Painter change us per profile, not per meter, so this is a very costly operation."</i> (Project manager)
				<i>"It's critical because it is extremely expensive for us to produce profiles in 1,5, 2, or 3 meter lengths, it's not feasible for our business. So we need to make them in 6 meter lengths very soon!"</i> (Project manager)
How to price premium products?	Competitive pricing- customer strategy-	Link emerged from the need of learning how to price G3. Input came from both the industry and		<i>"How will the customer price tell us something about how we can price it."</i> (Portfolio manager)

			their customers. The purpose of this link was to learn how to create a linkage between VP-revenue model:	"It's also about pricing, because the wood-aluminium windows are priced at 50% above normal wood windows." (Portfolio manager)
2010-2015	Woodstock's condition for low production cost	Production proposition costs-value	Inherited link from the ideology, as a very low production cost was considered Pinta Inc.'s core competence.	"The discussion I think is whether we should price position us as aluminium, or above, or below. How to get in to the market?" (Portfolio manager)
				"It's in our DNA to produce stone wool cheapest on the market. That is what we are good at, and we are proud of it. Woodstock needs to reach low production costs to be accepted by group management." (VP R&D)

Table 7. 1 Linkages in business model

In table 7.3, a certain working logic of the R&D and BU teams can be noticed, a combination of reactive and active sensemaking. The team has a reactive manner of making sense when it concerns creating things that they are not experts about, such as a competitive strategy or a pricing and profit formula. In these cases, they tend to respond rather than create stimuli. For example, when noticing the pricing strategy of their customers, they realized that they had under-priced their product, which had a high value on the market. On the other hand, the R&D and BU team displayed a more courageous attitude in enacting and experimentation - even improvising - in areas where they were confident, such as production and technology development.

The elements of the business model, as given by the theory, were not all present in managers' mind from the beginning of Woodstock's development, as seen in Table 7.3. These have been enacted, and they became visible in glimpses, in moments of interruptions when people needed to pay attention to them; same with the linkages between the elements.

Additionally, table 7.3 shows that the linkages between the elements could have not been planned in advanced, as suggested by activity system and dynamic perspective. In Woodstock's case, these seemed to have three sources:

- a. They were enacted by the team, in search for learning: co-creation, benchmarking. In the case of co-creation, there was a co-influence relation between value proposition - customer, yet, in the case of competitive strategy - value proposition, there is only a single way influenced, as seen in figure 7.1.
- b. They were inherited from the ideology: production cost - value proposition, with a co-influence relation.
- c. They emerged from unexpected events and manner how managers made sense of the event, and numerous the trial and error episodes. Moreover, some of the co-influences emerged as a further interruption, such as value chain - cost, while others, customer-value network, triggered solutions to the aesthetic-related interruption.

Apart from these links, there is also an expectation of a co-influence between value proposition - profit, to legitimize the business. In Woodstock's case, this link had the ability to stop both G1, and co-creation.

Thus, the emergence of a business model became an outcome of how these moments of interruptions were made sense of, and based on which source of enactment. Figure 7.2 and 7.3 are a snapshot of the processes of business model emergence in Woodstock, G1 and G3, incorporating the development within the time frame and the linkages between the elements:

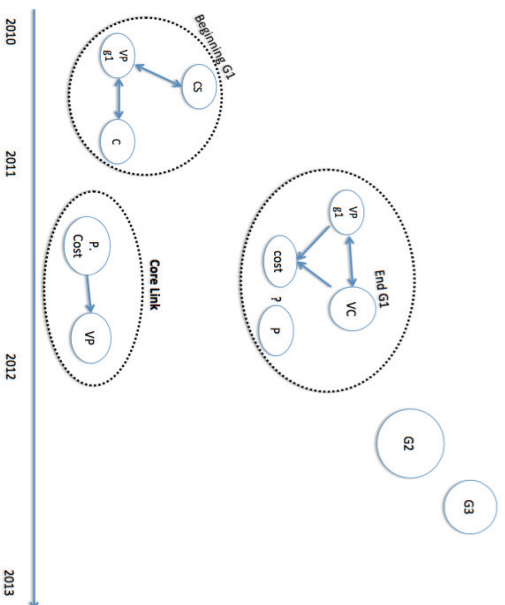


Figure 7. 2 Interlinkages in the G1 business model

- (V/P- Value proposition
- CS- Competitive strategy
- C - Customer
- P cost – Production costs
- P – Profit
- VC – Value chain
- VN – Value network)

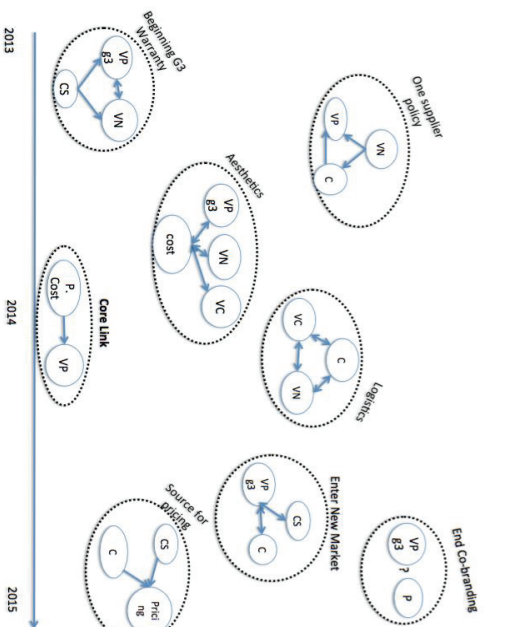


Figure 7. 3 Interlinkages in the G3 business model

As analysed in table 7.3 and then shown in figures 7.2 and 7.3, these elements are not present all the time, and neither in the complete formula as suggested by the activity system or dynamic capability stream of research on business models. They appear in groups of several elements in different constellations, when these elements become important, but not before.

The figures 7.2 and 7.3 also reveal that there are multiple mediation processes that allow the emergence of a business model. In some episodes, the cost is being the mediator device between value proposition and market – linked inherited from ideology, while other times the customer between the value chain and value network, or value proposition - value network: links emerge from the need of learning. Thus, the enactment source of a linkage, as identified previously, is deciding who is the mediator in a certain interruption.

7.4 Conclusion

The research question guiding this chapter was: *What enables the emergence process of a new business model?*

My analysis shows that the emergence of linkages between the elements of the model enables a model to get a certain shape. And, as “*meaning tends to be stabilized locally*” (Weick, 1995:113) this shape is stable until the next interruption and the emergence of new linkages, mediating a new shape. The manner elements are interacting and influencing each other set things in motion, and both interruptions that end-up in solutions retained permanently, or interruptions enacting further interruptions, have a cumulative effect towards the new model.

Chesbrough and Rosenbloom (2002:550) argue that a business model is a “*construct that mediates the value creation process. It translates between the technical and the economic domains, selecting and filtering technologies, and packaging them into particular configurations to be offered to a chosen target market.*” However, my study shows that there are several mediation processes that enable the emergence of a new model, scattered in time, not in a coherent manner, and each one has a different mediation device, influenced by the sources that have determined the enactment of a link.

Moreover, as seen in the previous chapter, these mediation processes are happening between two levels, intersubjectivity and generic subjectivity, thus between innovation and the need of feeling in control.

Therefore, my study shows that, the so-called “interdependencies” in the activity system and dynamic capabilities perspective are not designed from the beginning, but they are enacted as a consequence of a certain interruption. Each episode is different in terms of elements and type of linkages. In Woodstock, the only linked set from the start of the project was production cost-value proposition, however, these have suffered adjustments during the development process of Woodstock, from G1 to G3.

7.4.1 Woodstock: from intended to realized business model

As seen in chapter five, the program director and the vice president of R&D asked the newly created marketing group to provide support in developing a business plan for Woodstock. Within the plan were considerations about the business model that Woodstock should achieve, and what was decided was the so-called “*scenario C: sell finish profiles to windows producers (...) the business model chosen is direct sales through BU sales organization, selling directly to windows producers*” (Woodstock Business plan, June 2011). Analysing this decision, it can be observed that considerations were given regarding what to sell, to whom and the positioning of the project within the organization. Furthermore, the choice was made based on some predefined “parameters” (Woodstock Business plan, June 2011), namely “*business potential, product liability and risks, long-term business potential, resources and competences, investments & cost.*” These parameters, as seen in table 5.3, have helped them to formulate assumptions about the type of internal resources and competencies needing to be developed, the amount of investment required, a prediction of the long- term potential, the risk possibilities and the business potential of the different markets. This was the foundation for creating Woodstock’s business model.

Woodstock has known two generations within its R&D, namely G1 and G3, where Pinta Inc. went from being a supplier of basic materials to being a supplier of fully developed profiles for window

producers. Both generations, G1 and G3, were rooted in scenario C, even though the changes brought in by G3 were considered more significant. These changes, and the manner they were dealt with (as seen in Chapter six), determined a gap between the intended and the realized business model until the moment of full handover to BU.

G1 was intended as a finished profile for windows, laminated with wood in such a manner that the stone wool would be inside the profile, where Pinta Inc. was “*the supplier of basic materials*” (Internal document, 2011). The value proposition was higher thermal insulation properties and design services which were embedded into a value chain (see figure 6.2), where the company was dependent on the wood suppliers for laminating the profile, and on providers of special tools for cutting the new profiles. Additionally, the value proposition included co-branding, since the vice-president of R&D had come up with the idea, and was insistent on it. Upon reaching the market, the profiles had proved to be too expensive and required Pinta Inc. to subsidize them considerably. This determined the decision to stop producing G1, and to continue selling it at a subsidized rate until the stock was gone. The reaction of the market was very positive, and G1 sold out. This reaction from the market ensured that the team continued the development and created G3. The failure of G1 was labelled as being “valuable learning” for Woodstock in terms of both its technology and business model:

“The feedback from the market was incredible! If we look back, the profiles were not that good, but still, people were willing to buy them. We learned a lot from G1, and we discovered that we needed a business model where we are in charge, not our suppliers” (VP R&D, Interview 2013)

Consequently, Generation 3 was designed by moving Woodstock in front of the frame (see figure 5.2) and Pinta Inc. became the supplier of fully developed profiles for window frames. In this manner, the value chain was simpler, following the removal of the wood and tool providers. Whilst the design choice made the value chain cheaper, it resulted in a considerable change in the value proposition. G3 was still, according to scenario C, a “*finish profile to windows producers*”, but it became a product where its aesthetics and lack of maintenance were considered to be the main selling points and its high thermal insulation was a secondary value. The co-branding remained until the exclusivity agreement with the co-creator expired. Furthermore, with regards to these new

features of Woodstock, the development team had to also start considering the end user. They realized that the definition of aesthetics in a business-to-business context, which they were used to working with, was very different to a business-to-consumer context. Furthermore, Woodstock G3 could not be a standard solution, since the window market was very fragmented, with extremely different regulations in terms of warranty and aesthetic regulations from country to country. Thus, each solution needed to be particular to each country, thereby requiring co-creation for entering the market. Additionally, G3 was a model that required very close collaboration with the suppliers, given the need for high quality profiles and aesthetics, as well as being a challenge to the significant production routines of Pinta Inc.

G3 became a model that combined elements from the insulation and system division models. Thus, it required its own production line since the quality of boards needed to be very high, they needed to own the logistics, and Woodstock G3 needed to be at a premium price because it was not bulk business. The only fixed target which the development team and BU had was the creation of a window profile at a production cost of 2 euros per linear metre; at the handover moment, this had still not been reached. As seen in chapter six, G3 was considered within Pinta Inc. as being a very different - indeed complex – project that challenged existing ideology. Yet, it was allowed to be developed even though it was not “a fast project” (Internal document, 2010) as expected, nor was it “a simple business” (Business director, BU, interview 2013). It developed fundamentally from the initial idea as enshrined in the following quotation: *“Please, just remember which product we started with, a wood laminated. So, that was the reality. Later on it became much more a facade panel.”* (Evaluation meeting, 2015)

The differences between G1 and G3 are presented in table 7.2.

Business model elements	Woodstock G1	Woodstock G3
	<i>Scenario C: sell finish profiles to windows producers</i>	
Customer	Small windows producers (Co-creation)	Small windows producers (Co-creation)
Value proposition	Insulation – EU2020 solution Design	Maintenance free Aesthetics

	Co-branding Role of Pinta Inc.: the supplier of basic materials	Full warranty High thermal insulation – EU2020 solution Design and Co-branding Standard solutions, different from country to country Role of Pinta Inc.: supplier of fully developed profiles for window frames
Value chain	Profiles (Germany) - pilot plant for grinding and cutting (DK) - Tools machines - lamination (Finland) - customer: Co-creator (Dk) BU sales organization	Profiles (Germany) - pilot plant for grinding and cutting (DK)- painting- Co-creators BU sales organization
Value Network	German factory, wood suppliers, tools suppliers. Supply driven business model: Pinta Inc. provided the raw material, while the wood manufacturers laminated and produced the profiles.	Integrated supply chain: German factory, paint system supplier, partner for applying the paint, tape supplier.
Revenue model	Pricing: as wood competitors	Cost target 2 euros Pricing: as aluminium competitors

Table 7. 2 From intended to realized business model

The development of Woodstock has not stopped with G3, and when the new business director took over the BU, he questioned Woodstock's model. In his mind, Generation 4 was created, where parts of the value chain were licensed out. However, he was waiting to propose any changes until Woodstock belonged entirely to the BU. *"I don't understand why we need to own the logistics? There should be other ways to do this, so I am planning further development of a generation 4 after the handover!"* (New business director, BU, interview 2014). This statement shows that having a business model is not a stable state, and different managers would enact different situations in different ways.

Chapter VIII: Discussions and Conclusions

8.1 Introduction

The aim of my thesis was to analyse the enactment process of a new business model within an established company, through a new theoretical lens, namely sensemaking, where the focus was on enactment theory. Rather than looking at the normative ways that companies could or should innovate a business model, my study presents insights into the actual sensemaking processes, and the interruptions that lead to a new business model. With this purpose, I conducted an ethnographic study that traces how a business model is ‘real-ized’ (Weick, 2001: 187). My study illustrates that the enactment of a business model is not a liner process, as shown by the activity system perspective, nor it is strictly dependent on the internal resources, but rather an emerging one, a collective effort of reaching temporary intersubjectivity that would allow innovation to continue, against ideology and divergences between paradigms. Furthermore, whilst the business model is an outcome, it is not a fixed one; it is only “*a moment in the process*” (Weick, 1995: 33).

With the purpose of formulating an answer to the main research question, I will summarize my findings from chapters five, six and seven by mobilizing the research questions employed for each chapter. In the next section, I discuss the contribution to the business model research outlined in chapter two, followed by reflections on conducting ethnographic studies, and suggestions for future research possibilities. The last section is about implications of my findings for managers.

8.2 Summary of findings

8.2.1 Frame and cue

The first research question employed was *What frame did managers draw on when developing Woodstock and why was Woodstock perceived as a sensemaking trigger?* and it was addressed in chapter five. The question follows Weick (1995)'s argument that sensemaking consists of three components - a frame, a cue and a connection - and understanding what people "draw on" (Weick, 1995:109) when interpreting objects is central to sensemaking. Thus, the question aims to analyse the case company together with the actors involved in the creation of Woodstock's business model in order to showcase why Woodstock was perceived as a cue that triggered a sensemaking process. Woodstock was localized inside two vocabularies, that of ideology and paradigms, specifically vocabularies of work. It was born in a company where the vocabulary of the ideology was centred on factories, the engineering of stone wool fibres, costs and producing the raw material in the cheapest way for the market. The latter was considered to be the company's "*DNA*". Furthermore, Woodstock was developed at a moment when a significant number of changes were occurring in Pinta Inc., since there was a new vice-president of innovation, the financial crisis had led to the formulation of a new strategy along with reflections on how many business models they had and should have, the creation of a new group marketing department, and finally the presence a new CEO.

Woodstock was also developed at the intersection between two different paradigms. The first was R&D, where the vision was to create a truly innovative product, different from others that existed in the company, and the second was the Business Unit, which wanted to create something that resembled their normal business. The divergences between these paradigms were fuelled by the unfulfilled expectations that each had of the other. It became a source of interruptions in the development of Woodstock's business model.

Being a production oriented company, defined by its CEO as being very *traditional*, the focus was mainly on technology development, while "business model" type of considerations were not given primary importance. As seen in chapter five, the "business model" was actively used in three meetings at Woodstock's beginning, but not afterwards during their five years of development. In that context, the term *business model* was used to convey a message about how money flowed

inside the value chain, and “what we sell.” On the other hand, when managers were asked by me about either the company’s or business unit’s business model, they talked about their everyday questions in the context of Pinta Inc.: how to produce in a cheaper way, and positioning in the value chain, what is the “the route to market.” However, *business model* was not an expression that was present in their vocabulary. It was brought in the company by the new group marketing and, new CEO.

Interestingly, the documents from Woodstock’s beginning, created by a newly employed marketing manager, show that a business model would be chosen based on its perceived business potential, product liability and risks, long-term business potential, resources and competencies and investments & cost needed from the company side. Once the model was decided based on these preconditions, the business model became the objective to be achieved, as can be seen with Woodstock.

Regardless the theoretical perspective undertaken, researchers on business models have emphasised both the role of leadership in business models innovation (McGrath, 2010, Doz and Kosonen, 2010) and management skills in designing business models and the manner activities are related to each other (Zott and Amit, 2010, Teece, 2010). Furthermore, Chesbrough and Rosenbloom (2002) explain that technology managers must expand their manner of understanding how value can be captured from the technology, while Doz and Kosonen (2010) talks about the need of developing “meta-capabilities” in leaders to be able to foresee transformation possibilities in business models. While my findings resonate with these studies, they emphasize, first of all, the necessity of having a business model vocabulary that would guide a development team in their sensemaking process of a new technology and market.

Within this frame, Woodstock – especially in the form of Generation 3 – was threatening the company’s DNA. While G1 was considered “a fit” for the company, it died on the market; G3 grew into something that challenged the core of the company. Woodstock challenged the company’s manner of production, its definition of quality, its standing with regards to costs, its focus on producing the cheapest on the market, its usual ways of working with customers, its usual approach to business development and handing over procedures, the way it calculated costs and invoiced premium products.

My findings also show that Woodstock was perceived as being “different,” creating frustrations inside the company, due to the lack of retrospective possibilities. However, looking back, it was the

driver of enactment. There was no organizational memory about how to build a new business, given that the last business built by Pinta Inc. was almost thirty years ago. Thus, the enactment efforts have been focused on both creating a new business model for G3 and getting its acceptance.

My findings show that ideology was present when the preconditions for making the choice regarding the model were defined, but the development of the model *per se* was a matter between paradigms. Ideology would appear again in kill/no kill decisions in crisis situations. Thus, it is not only the dominant logic (Bettis and Prahalad, 1995), the inertia (Chesbrough and Rosenbloom, 2002) of a company that plays a role in filtering information in or out, but there are more vocabularies managers are drawing on in their sensemaking process.

8.2.2 Enactment processes for business model elements

The second research question guiding my analyses, and employed in chapter six, was:

What are the enactment processes that enabled the creation of the elements of Woodstock's business model and how do managers of Pinta Inc. made sense of the emergence of a new business model?

My findings show that not all the elements of the business models are planned by managers simultaneously, as argued by the activity system perspective (Zott and Amit, 2010), but they are enacted progressively, as response to a heterogeneity of interruptions, in the interplay between intersubjectivity and generic subjectivity; thus, innovation and control (Weick, 1995:72).

Chesbrough (2010) talks about confusion and obstruction as the main barriers for business model innovation, as this could challenge the firm's resource configuration, and the managerial cognition embedded in a certain dominant logic. My study reveals a large heterogeneity of interruptions, apart from these two, which have been encountered, or enacted, by the development team (R&D team and BU together) in their efforts to bring Woodstock on the market. These were provoked by: an underestimation of the product, given the lack of understanding of Woodstock's potential on the market; quality versus cost dilemma; challenges to ideology (by installing new routines); a lack of

knowledge (in pricing high value products, production processes in high quality specifications, handling costs); and a lack of trust between partners (both internally, between R&D and the business unit, and towards the co-creator). These interruptions have triggered different enactment processes that have facilitated Woodstock's business model to emerge, namely trial and error, experimentation, benchmarking for formulating reference points, labelling, co-creation and co-development.

Furthermore, each of the elements of the business model was enacted when it became important for Woodstock. The elements of the business model, as described by Chesbrough and Rosenbloom (2002), and emphasised by activity system and dynamic capability perspective, were not planned from the initiation of Woodstock as a project, but rather emerged through enactment. Thus, the creation of each of the elements differs, and there was no constant focus on them all along the development process.

For value proposition, labelling and benchmarking were important mechanisms that were mobilized to create both an internal and external acceptance of the new proposition offered by the company. Labelling was powerful for creating a common platform of understanding for all the parties involved. For example, the first generation of Woodstock was not named *a failure*, but rather *valuable learning*. In the same light, everything that was labelled as a "must" condition to be a part of the windows industry was approached via benchmarking, a risk averse strategy. In adopting imitative behaviour, thereby assuming that the window industry was an analysable environment (Daft and Weick, 1984), has resulted in creating reference points to be achieved by Woodstock. Facing uncertainty, these reference points allow the team to enact, and not to feel overwhelmed by the unknown. Interestingly, the input resulted from benchmarking industry practices was compared against other internal projects, and internal benchmarking was preferred in the case of elements considered key to the ideology, which in this case was the cost.

The creation of value proposition has necessitated further enactment efforts for getting acceptance from the ideology for installing new routines. Co-creation, and especially co-branding, has been seen as challenging for both Pinta Inc. and the BU. Co-creation has proved itself as being an extremely valuable source of organizational memory, helping the company in their selection and

retention processes, where there is a lack of retrospective possibility, as analysed in chapter six. The co-creator, the window manufacturer acting as co-creator for Woodstock during the entire development phase, has helped the team in their trial and error episodes which were established for understanding which type of product was needed in the window industry. The co-creator acted as Pinta Inc.'s memory, helping the team in their selection and retention process, since there was a lack of retrospective possibilities. Customers, therefore, in the same way as with suppliers, were chosen based on their willingness to participate in the development of the product, the production process and the business model. In this light, co-creation has been accepted by ideology. However, the same was not applicable for co-branding, which was retained only temporarily, to allow development with the co-creator. Given that the practice of co-branding was perceived as being a value proposition offered "for free," it was stopped when the agreement with the co-creator expired.

The cost element became the focus of all the discussions, being important especially when it collided with the notion of *high quality*, which was so crucial for Woodstock's value proposition. They had to work with learning curves to explain the cost of the trial and error efforts, and hire a business controller as these costs became too complex and difficult to be communicated to group management. Moreover, the issue of high production costs triggered the label for Woodstock of being "*very different*" in comparison with the other internal projects in the company. Therefore, the focus was on finding the right production process flow that would allow production at a certain cost level, thus reaching control over these processes. The discovery of the process flow provoked several interruptions, which had a significant impact on the cost structure, thereby determining the question of whether or not to stop Woodstock. However, the facts that have resulted in Woodstock being allowed to continue by the ideology were:

- a. Positive market reaction for both G1 and G3, where potential customers offered their support with no charges;
- b. The internal 'gimmick' of using the waste from Woodstock for other internal projects was considered successful, and resulted in decreased costs;
- c. Having a visionary leader who played the role of strong, trustworthy spokesperson of Woodstock in front of group management, and the role of a mediator when paradigms collided.

These three intermediaries, positive market feedback, possibility of reducing costs productions, and a visionary leader, have mediated the connection between the “frame and the cue” (Weick, 1995:110).

My study shows that in the cost versus quality dilemma, the enactment of intersubjectivity along the value network was a must. Reaching a common definition of quality through the installation of quality libraries at the premises of all the actors involved has made the achievement of targets more tangible. However, in the enactment of the value network, solutions were temporarily retained, such as having one supplier policy and accepting higher costs from them. The explanation for this was that a short-term focus meant that it was possible to deliver to the customer.

The enactment of the revenue model has once again pushed the company into benchmarking efforts, trying to imitate their competitors. Thus, benchmarking was a sensemaking resource in creation of value proposition, value chain and revenue model.

My findings show that for elements such as market segmentation and competitive strategy, reaching intersubjectivity among the actors involved was considered enough. However, for elements perceived as vital for the Woodstock’s acceptance by ideology, such as production costs and flow, and logistics, it was expected to reach a level of generic subjectivity (Weick, 1995:70) meaning a high level of control. Yet, my findings show that the run after generic subjectivity has triggered mistakes, counter productivity and conflicts between the actors involved. These were generated by the fact that the transition from intersubjectivity to generic subjectivity involved stopping the innovation efforts, and losing the “intimate contact” (Weick, 1995) with the actors involved in production and logistics. Failing at a generic subjectivity, the development team had to redefine goals and accept working again at an intersubjective level, together with the risks involved.

Thus, value for retention based on control had a non-cumulative effect, generating further interruptions, while retentions based on learning and experimentation and willingness to accepted intersubjectivity, had a cumulative effect towards Woodstock’s enacted model. At this level, managers’ intentions are to establish a “workable level of certainty” (Weick, 1979:3).

Therefore, the mediation between “frame and cue” has happened at two levels, intersubjectivity and generic subjectivity.

Lastly, my study reveals that product innovation is strongly interlinked with business model innovation. The two concepts are answering different questions (Markides, 2006), but the answers are dependent on each other. In Woodstock, while the BU was expecting to take over a fully developed product that they would then market, they found themselves needing to take decisions from the beginning of Woodstock development regarding value chain, networks, value proposition and customers. Interruptions emerged from the several unfulfilled expectations that R&D team and BU had from each other: R&D team has expected BU to be active in the business development side, while BU was expecting a fully developed product. The convergent point between them was the vice-president of innovation.

8.2.3 What enables the emergence process of a new business model?

The final research question addressed in chapter seven was *What enables the emergence process of a new business model?*

The research under activity system perspective and dynamic capability argue for the existence of continue, tightly coupled linkages between the elements of the business model, a priori planned by managers who seeks to design, or re-design a business model. Zott at Amit (2010:2918) explain these linkages, parts of a purposeful design, offer insights into the processes that enable the activity system’s evolution in time.

In contrast with this view, my findings show that the manner elements co-influenced each other was not planned, but linkages were enacted by the approach managers took in their sensemaking process when facing certain interruptions. When elements happened to be linked one to another, it was a result of either active enactment by development team, or emerged from unexpected events, or inherited from the ideology.

As interruptions happened over time, these linkages appeared in time as well, some temporarily, until meaning was created, other being retained for good. Furthermore, each interruption was different in term of elements and type of linkages, thus groups of several elements were interlinked in different constellations, when these elements become important, but not before.

My findings show as well that a permanent co-influence between elements, as in the one between production costs-value proposition in Woodstock, would showcase the central focus and the points of concern for the actors involved. Moreover, the link between profit and value proposition, was the one legitimizing an activity.

The different ways of interacting between the elements would determine the path from the intended to the “real-ized” business model.

8.3 Contributions

In this section I will discuss my findings in relation to the previous research on business models, with the purpose of providing a contribution to the business model innovation literature. As seen in these findings, what sensemaking does to the business model theory is that it reveals how people makes sense of the interruptions to keep the creation ongoing, illustrating that this is not a linear innovation process, but rather an emerging one. Sensemaking helps us understand why an organization does what it does, and helps us observe what is going to happen and how people are trying to act and explain their actions based on different values. It creates a retrospective development of plausible views to rationalize what they are doing. Furthermore, enactment is at the core of sensemaking, representing action, and this action would be influenced by identity and context. Enactment theory shows that a product grows into a model as people reach an understanding about where everyone is coming from - a compromise, at an intersubjective level. One cannot know the model from the beginning, since it is a process of considerable effort of trial and error, even breaking routines, and collectively building something.

Thus, in the following sections, I discuss what sensemaking adds to business model theory by showing what are its convergent and divergent points with other theoretical perspectives as identified in the literature review in chapter II, namely activity system, dynamic capability, discovery driven, cognitive and actor-network theory.

8.3.1 A dialog between sensemaking and the activity system perspective

Under the activity system perspective, a business model is a tightly coupled system where managers combine internal and external sources to make the “right decision” (Afua and Tucci, 2003), the “concrete choice” (Massa and Tucci, 2013), for an “optimal design” (Zott and Amid, 2010). It is an “objective, real entity” (Casadesus-Masanel and Ricard, 2010), which impacts on a company’s performance and is the responsibility of top managers. Furthermore, a business model is the operationalization of a strategy (Zott and Amid, 2010). Additionally, analysing this perspective through Daft and Weick (1984:289)’s Model of Organisational Interpretation Modes, the environment is assumed to be analysable, while organizations are passive and “accept whatever information the environment gives them (...) they take environments as given and interpret the environment within accepted limits” (Daft and Weick, 1984:288). Indeed, they rely on third-party resources (Zott and Amid, 2010).

In contrast, sensemaking, with its focus on enactment theory, shows that a business model is a loosely coupled system, and the linkages between the elements become important in moments of perceived crises. Thus, business models emerge, as well as the links between the elements; they are enacted by managers’ acceptance that more knowledge is needed, enacted by managers’ reaction to unforeseen situations, and they are inherited from ideology. Should those be designed and decided from the beginning, they became an intended model, an objective to be achieved, a moment where a meaning was “*stabilized locally*” (Weick, 1995:33) to allow things to move forward. However, in the latter situations, those models are prone to failure if they do not have the ability to reshape themselves when facing hiccups. Thus, the value of the business model is not reflected in the financial performance of the firm only (Hedman and Kalling, 2003), but rather an internal value defined by its ability to shape and reshape itself if required, given the interruptions that might occur. Therefore, the business model is the making of subjects into objects, collectively accepted objects, and then subjects again (Weick, 1995).

According to the activity system perspective, companies are seen as part of a system, a network of suppliers, competitors and customers. While my study shows the importance of co-enacting with

suppliers and customers, it also shows that these become resources in the sensemaking process. As Zott and Amid (2010) argues, “a business model conceived as an activity system is a set of interdependent organizational activities centred on a focal firm, including those conducted by the focal firm, its partners, customers, vendors, and so on”, but sensemaking shows that one cannot know from the beginning which are the elements, how are they connected, which elements are interdependent and which ones are not. They are enacted.

In terms of the role of managers, the task of designing business models is in the hands of top management, while the sensemaking perspective argues for collective work (Weick, 1995), at an intersubjective level where innovation is fostered, not only a top down made choice.

8.3.2 A dialog between sensemaking and the dynamic capabilities perspective

The dynamic capabilities perspective emphasises the importance of having strong internal capabilities, which are able to respond quickly to changes imposed by the environment (Teece and Pisano, 1994; Katcalo et al, 2010) and where the focus is being difficult to be imitated by competitors. Under this perspective, business models are stable for a certain amount of time, being therefore provisional and in a “permanent state of transitory disequilibrium” (Demil and Lecocq, 2010: 240). Focusing on resources and capabilities, managers need to make the choice about how to organize them, to create and capture value. For innovating a business model, managers need to be able to conduct “sensing, seizing and transforming” (Foss and Saebi, 2015) activities with the purpose of identifying opportunities, to know what capabilities and competencies to develop for refining the existing business model (Katcalo et al, 2010).

Weick (1995: 18) asks “*How can I know what I think until I see what I say?*” In my study, the development team was not discussing capabilities, but materials, which were determining the types of capabilities needing to be developed. Since the technology and business model development were an interconnected manner, the needed of having a business model vocabulary emerged. In the enactment perspective, managers do not limit themselves by concerns about capabilities, but they enact - improvise even - and select after whether a result is retained permanently. Managers take

plausible decisions that allow their organizations to move forward (in Woodstock, the team had to build a pilot plant, and their portfolio management acted as both a supply chain manager and created an invoicing system). Thus, from a sensemaking perspective, the questions managers would ask would not be about “*what type of capabilities do we have and what can be done with them?*” but rather questions about who needs to collaborate with whom in order to make things happen, and even more, “how does action become coordinated in the world of multiple realities” (Weick, 1995:75). Therefore, a business model becomes an organizational model that emerges from the interactions between actors, ideology and paradigms, rather than from the types of capabilities available. Thus, the fear of having a business model, which can easily be imitated, as Teece (2010) argues, should not be there, as meaning is made individually and transformed into “we” through “a connection through structures” (Weick, 1995:71).

Interestingly, Demil and Lecocq (2010) argue that managers need to consider how to combine the existence resources to generate new value propositions. They argue that it is an “ongoing interaction *between* and *within* the core components of a business model” (Demil and Lecocq, 2010:234), and these interactions are influencing the choice of what type of value proposition to be offered. Furthermore, Casadesus-Masanell and Ricart (2010:199) talks about “concrete” choices and their consequences, determining “virtuous cycles,” where the consequences are “flexible”, depending on the choice made.

However, my findings show that there is a scattered interaction between the components of the business model, having different sources, and influenced by different value for retention, either learning or control. Furthermore, at an intersubjective level, not only the consequences are flexible, but the choices as well, being influenced by the need to enact.

One consensus between these two perspectives is the acknowledgement that a business model is continuously evolving. However, the dynamic capability perspective argues that this happens as a result of an external factor - a push from the environment - while enactment theory argues for influencing / creating the environment. Given the evolving state of business models and their consequent “permanent state of transitory disequilibrium” (Demil and Lecoq, 2010 :240), managers are those who can stabilize the model for a short while, until further capabilities can be developed. In sensemaking, the creation of a model and the enactment of a moment of stability are given by reaching intersubjectivity - a shared understanding - between the actors involved.

Analysing this perspective through Daft and Weick (1984: 289)'s model, they would consider organizations as having a discovering interpretation mode, where the environment is considered analysable and active, intrusive in the environment, with the aim of "detecting the correct answer already in an analysable environment, rather than on shaping the answer" (Ibid. 289).

8.3.3 A dialog between sensemaking and a discovery driven perspective

The discovery driven perspective affirms the idea of enactment and applies a trial and error mindset in innovating business models, based on the belief that business models cannot be fully known from the beginning. Business models are approached from a more discovery driven rather than plan driven approach (McGrath, 2010), since "new business models rarely work the first-time around" (Sosna et al, 2010: 384). It argues that "making business models does fall under the realm of managerial choices" (McGrath, 2010: 248), and that one can experiment as far as possible to create a novel learning approach, at lowest cost, with incremental financial investments, until managers become confident about innovating their business models. Furthermore, experimentation allows companies to have an outside-in approach, and bring customers into their business model innovation trials. Installing a trial and error culture would convince incumbent companies and their leaders to not be afraid of the idea of innovating their business model (Doz and Kosonen, 2010; Sosna et al, 2010).

A checkpoint list of events has been suggested for planning the discovery process (McGrath, 2010: 259). Many of these points, such as conducting a market study, feasibility studies, and advertising studies, assumes that the environment the company is willing to step into can be analysable (Daft and Weick, 1984). While there is a large consensus between this perspective and sensemaking, enactment assumes actions even in environments that cannot be analysable, and it implies the ability to improvise. Furthermore, from a discovery driven perspective, leadership has a central role. My study shows that not only leadership plays a role, but also there is a shared responsibility for co-enactment of the actors involved.

Underlying the business model innovation process, the discovery driven perspective argues that the elements of the business model need to be studied separately to be understood (Mcgrath, 2010), and to see how they can be brought together in a loosely coupled organization. Sensemaking theory helps in doing this kind of analysis, showing that not only are the elements enacted, but also the linkages between each other.

8.3.4 A dialog between sensemaking and the cognitive perspective

The cognitive perspective has been the source of inspiration for a sensemaking study. Studies under this perspective, such as Tikkanen et al. (2005), Chesbrough (2010), George and Bock (2011), Aspara et al., (2013), Baden-Fuller and Mangematin (2013), and Martins et al., (2015), argue that a business model deals with “pragmatic sensemaking issues” (Tikkanen et al., 2005: 805). The assumptions formulated by this perspective, for example that business models can be both objectively and subjectively defined (Doz and Kosonen, 2010), that managers take decisions based on contextual rationality, and that they have a bias influenced by a belief system or dominant logic which is shaped in time by managerial actions, are also met under the sensemaking perspective.

Divergent points arise when sensemaking shows that enacting a business model becomes a collective effort for reaching intersubjectivity, a shared understanding that allows compromise. Thus, it is not only about management cognitive schemata, or the influence of inertia or dominant logic (Prahalad and Bettis, 1986). Furthermore, sensemaking gives people different vocabularies to operate with, and it shows that there is not only one type of vocabulary that influences the way meaning is created. Within Woodstock, both ideology and paradigms have influenced the development, and on many occasions, it was not the ideology that did so, but the negotiations between the paradigms, and the voices that were given to people.

In the model provided by Daft and Weick (1984), the cognitive perspective would fall between discovering and enacting, and assumes that managers are active and would adopt a trial and error approach towards intruding on the environment, no matter whether there was a perception as to whether this was analysable or not.

8.3.5 A dialog between sensemaking and the ANT perspective

Actor-network theory allows a social-material view of the business model, through which it becomes a boundary object, able to evolve in time and space (Doganova and Eyquem-Renault, 2009). Furthermore, Doganova and Eyquem-Renault (2009) explain that business models act as framing devices when embedded in artefacts such as business plans, power points slides and reports, and that they have a certain “performative power to shape and influence the action of others” (Mason and Spring, 2011: 1038). Using the same perspective, Demil and Lecocq (2015: 32) define business models as “an artefact that creates commensurability” and as a network of multiple artefacts.

In comparison to ANT, sensemaking gives the same opportunities for researching and studying the processes of creating a business models in practice, but it does not consider non-human actors. Furthermore, if in ANT a business model is a framing device for “influencing a sharing collective,” Mason and Spring (2011: 1038), in sensemaking the collective and their ability to reach intersubjectivity is what allows the business model to be created.

Thus, in the model proposed by Daft and Weick (1984), actor-network theory would be positioned at the intersection between the two types of assumptions about the environment. This is because the environment is acting as a non-human actor in a network, regardless as to whether the manager perceived it as being analysable or unanalysable. Moreover, given the management’s focus on creating, enlarging and maintaining a network, it falls under an active intrusive organization.

It is important to make the observation that in all the studies conducted under the above-analysed perspectives, the concept of a business model is assumed to exist and be actively mobilized/worked with within a company. In the case company analysed in this study, the concept was not used in the development of Woodstock, and neither were the managers aware that they were creating a new business model until the very last moment when differences were noticed in comparison with the existent ones. Therefore, sensemaking, and particularly enactment, is so powerful since these things can be created in the absence of knowing beforehand what you create. Related to this, Weick (1995:18) asks “*How can I know what I think until I see what I say?*”

Concluding the dialog between sensemaking and the other perspectives employed in studying business models, I propose to situate them in Daft and Weick (1984)’s model, which was analysed in chapter three:

<div>Unanalysable</div> <div>Assumptions about environment</div> <div>Analysable</div>	<div>UNDIRECTED VIEWING</div> <div>Cognitive Perspective</div> <div>ANT</div>	<div>ENACTING</div> <div>ANT</div> <div>Cognitive Perspective</div> <div>Discovery Driven Perspective</div>
	<div>CONDITIONED VIEWING</div> <div>Activity System Perspective</div>	<div>DISCOVERING</div> <div>ANT</div> <div>Cognitive Perspective</div> <div>Discovery Driven Perspective</div> <div>Dynamic Capability Perspective</div>
<div>Passive</div>		<div>Active</div>
<div>Organizational Intrusiveness</div>		

Figure 8. 1 Business model theoretical perspective, seen through Daft and Weick (1984)'s model. Source: Own creation

Furthermore, I would like to add the sixth perspective to the table created in chapter two, were the identified perspectives were analysed. As co-creation and co-development were main resources in enacting Woodstock, I am naming the sixth perspective, co-enactment.

Table 8.1 is my contribution to the business model innovation literature.

Perspective es/ Variables	Activity System	Dynamic Capabilities (including RBV)	Discovery Driven	Cognitive	Actor Network Theory	Enactment (Sensemaking)
Definition and focus in BMI	"BM as a system of interdependent activities that transcends the focal firm and spans its boundaries" (Zott and Amit, 2010:2016).	Create resources and capabilities that are not easily imitated, while finding a space in the industry and defending it. Business models are stable for a certain period; they are easy to emulate and are provisional, in a "permanent state of transitory disequilibrium"	Focus on trial and error, experimentation and modelling scenarios for generation, business model change and development. A BM is a set of assumptions about how an organization would perform.	"Cognitive devices, held in the minds of actors who influence technological outcome" (Baden-Fuller and Haefliger, 2013:423).	Boundary objects Calculative device, mediating the relationship between the agents involved. "An artefact that creates commensurability," "A network of artefacts."	A business model is an outcome, not a predefined model, a temporary moment of intersubjective stability BMs are objects- subject-objects A business model becomes an organizational model that emerges from the interactions between environment (different external actors), ideology and paradigms.
Company- environment relations	<i>Boundary spanning nature</i> : rely on third party resources and activities. Firm is seen as part of an analysable network.	Dynamic capabilities must be built inside the company. They cannot be bought or rely on externalities/ nor on the network. Permanent internal refinements to create consistency with the environment, as the firm	The outside-in approach makes the environment an important source for BMI.	Business model schemas can enact environments; they are not enacted by environments.	Environment is a non-human actor, part of the business model network.	BM can enact and be enacted. Both internal and external environments can be used as sensemaking resources.

		is a bundle of resources.				
Role of managers in BMI	To take rational decisions for creating an optimal business model design. Designing relationships between activities and determining the links between these ones. Thus, linkages are planned. To react to exogenous factors when redesigning a business model. BMI is responsibility of top management.	The crucial role of top management in shaping values and routines to make it difficult to be copied. Focus on the characteristics of senior managers. Organizational design -as managers need to make choices about how to organize their capabilities to effectively create and capture value. Manage multiple business models.	Assumptions-based decision making: business model cannot be foreseen. Fear of change lessens as BM experimentation is pursued. Have an outside-in rather than an inside-out approach. Focus on creating loosely coupled organizations, reducing design complexity to increase strategic flexibility.	Managers are sensemakers. Managers' visions determine the choice of technology. Managers manipulate and enact within the limitations of their own bounded rationality. Inter-organizational cognition.	Actors in the network They have a role in producing the materiality, the physical representation of a business model.	To develop a vocabulary of work. To manage, and bridge, the interplay between intersubjectivity and generic subjective. Visionary leader as mediator between frame and cue.
Triggers for BMI	Triggered by Internal causes: radical products, crisis, entering a new market, change in strategy; • External environment: push from the	Structural changes in revenue model and cost are the first symptoms of BMI. BMI is a result of both exogenous factors and intentional managerial decisions, change in strategy and technology.	Leaders are the main drivers of innovation.	Dependent on the "cognitive blindness" of leaders. Trial and error culture.	Failure of the network.	BMI can be triggered both by major or minor events, and by managerial cognition. How do we discover things to enact?

	environment to move up or down a value chain.				
Process of BMI	<i>Novelty, lock-in, complementarities, and efficiency</i> ; Adapting product innovation tools for a structured BMI approach (for example stage-gate, road mapping, front-end and back-end innovative processes).	Sensing, seizing and transforming. Initiation of different capabilities: from same industry or cross-industry. Abstraction, analogy identification and adaptation. Central position of organizational design, as exploitation and exploration should be built in, e.g. ambidextrous organizations.	BMI demands consistent small investments. Customers are central to innovating business models.	BMI is dependent on leadership, creating commitment, and effectuation. Trial and error and experimentation. Modularization. Reputational ranking for which elements to copy and which to dismiss.	Creating a network that allows the technological innovation to reach the market. Overcoming heterogeneous interruptions through trial and error, experimentation, benchmarking for formulating reference points, labelling, co-creation and co-development. Dependent on mediators (In Woodstock: positive market feedback, possibility of reducing costs productions, and a visionary leader).
Linkages between elements	Strong interdependencies between activities; links are designed and planned by managers.	The elements result at the intersection between resources. Ongoing interaction <i>between</i> and <i>within</i> the core components of a business model. “Virtuous cycles” – each choice has a	Linkages emerge as a result of experimentation.	Influenced by individuals and company's belief system.	No research available. ¹¹ They are scattered interventions, influenced by different retention values, and are: a. Enacted by managers' acceptance that more knowledge is needed; b. Enacted by managers' reaction to unforeseen

¹¹ As the result of my research

		consequence.				situations; c. Inherited from ideology.
Performativity of the BMI	There is a direct correlation between the degree of business model innovation and long-term survival of a firm. A business model is geared towards value creation to all involved parties, thus it needs to yield financial performance and return to the stakeholders.	Poor performance is expected at the beginning for start-ups or new business units. Good performance is given by the "creation and management of interactions between core components." Profit is the indicator of BMI consistency.	The success of a business model design cannot be anticipated in advance.	Challenges established, strong, system of believes.	"The advantages and benefits of a given BM are generally only identified and become obvious after its implementation" (Demil and Lecocq, 2015:53). "Performative power to shape and influence the action of others" (Mason and Spring, 2011:1038).	Being able to shape and reshape itself, as a response to stimuli
Relation with strategy	Strategy chooses the business model.	Strategy decides which dynamic capabilities to be developed (e.g. servitization), and which business model type to be employed.	Business model thinking helps managers to understand that strategies are discovery driven, rather than planning-oriented.	Strategy and business models are managers' mental representations.	Strategy is part of the network.	Both an indented, or emerging strategy, or a lack of strategy, becomes sensemaking resources.

Table 8. 1 Comparison of theoretical perspectives. Source: Own creation

8.3.6 How do established companies enact new business models?

The leading research question of my study was *How do established companies enact new business models?*

Having conducted an ethnographic study, which was guided by a sensemaking perspective, I am presenting an attempt to answer the question, being aware that different perspectives would formulate a different answer:

Following a sensemaking/co-enactment perspective, a business model can be defined as an outcome of a temporary moment of intersubjective stability that emerges from the interactions between environment (different external actors), ideology and paradigms. Business models are subjective interpretative manners of how managers choose which interruptions to focus on and their processes of restoration, influenced by the vocabularies they operate with.

Uncertainty, fuelled by lack of internal retrospective, determines developing teams to enact. Business models are enacted progressively, as response to heterogeneous interruptions, through trial and error, experimentation, benchmarking for formulating reference points, labelling, co-creation and co-development, and are depended on factors that mediates them, such as market feedback, visionary leadership, and cost issues. The enactment of a business model is characterized by scattered interactions between its elements in time, triggered by interruptions, and mediated by intersubjectivity or general subjectivity, thus by innovation and need of “mutually reinforcing interpretations, and beliefs, values, and assumptions” (Weick, 1995:73) or need of control. The linkages, being either enacted or inherited, were the enablers of the enactment process, allowing the model to be mediated, to be shaped, and reshaped as time passed and more learning was gathered.

Therefore, the enactment of a new business model becomes a search for answers to the questions: “*how does action become coordinated in the world of multiple realities?*” (Weick, 1995:75), *How do we discover things to enact? Who needs to collaborate with whom about*

what? How do we enact linkages? How do we reach and maintain intersubjectivity? How do we enact an interplay intersubjectivity – generic subjectivity - intersubjectivity?

8.4 Reflections on conducting ethnography

Every method has its limitations, and previous researchers have specified those that affect ethnographic research. Most notably, Hammersley's 1992 work *What's wrong with ethnography* discusses the challenges encountered when employing this method as well as describing a way forward. Hammersley (1992: 2) posed the following question: "To what degree can ethnographic accounts legitimately claim to represent an independent social reality?" and initiated the debate about "the myth of theoretical description." Similarly, Brewer (in Cassell and Symon, 2004: 318) set out two of the most common criticisms of ethnography, i.e., that the ethnographer is involved in the field and in creating situations where she can influence the actors, and, second, subjectivity and bias is present in her writing. In particular, those who promote research in natural sciences are advocating that the researcher should maintain distance from the field.

To maintain distance from the field, I chose not to be involved in the processes I was observing. At times, I was asked by the team to give my opinion with respect to various matters; however, I chose only to reflect the theoretical aspects of their question, and not to act as "consultant." For example, the development team held a brainstorming session to decide whether a new factory should be opened. They chose to approach the issue using a SWOT tool, and my involvement in the session was to explain how the tool was intended to be used. Furthermore, in another meeting I spoke about the definition and implications of "open innovation" at a conceptual level.

Another criticism of ethnography is the "open manner" in which data is collected (Brewer, in Cassell and Symon, 2004: 318). This is supposed to give the researcher the freedom to determine how they should handle and analyse data. However, Van Maanen (2011) amongst others demonstrated that ethnographic studies can be performed rigorously by following a systematic approach. Weick (1985: 568), described ethnography as a "sustained, explicit

methodical observation and paraphrasing of social situations in relation to their naturally occurring context”, thereby, highlighting the fact that it is a ‘scientific’ method.

Reflecting awareness of this concern, a postmodern critique was formulated to respond to the need to ensure the validity of the knowledge acquired using ethnographic methods. Underlining criticisms of representation, which questions whether ethnography can produce “universally valid knowledge”, ethnographers emphasize that they do not see the world “like it is” but rather that they have a “reflexive view” (Brewer, in Cassell and Symon, 2004: 319).

Arguing for the value of ethnography, Brewer (in Cassell and Symon, 2004: 320) states:

Post postmodern ethnography’ contends that while no knowledge is certain, there are phenomena that exist independent of us as researchers and knowledge claims about them can be judged reasonably accurately in terms of their likely truth. This shares with naïve realism the idea that research investigates independently knowable phenomena but breaks with it in denying that we have direct access to these phenomena. It shares with anti-realism recognition that all knowledge is based on assumptions and human constructions, but rejects that we have to abandon the idea of truth itself. This is the best ethnography can claim but it is more than enough.

8.5 Avenues for further research

There is need for further studies as to how the business model is enacted and works in practice. To reach this purpose, ethnographic studies are very powerful. I agree with Mason and Spring (2011) and Demil and Lecocq (2015) who argue in support of more ethnography. This would be an opportunity to bridge theory and practice and to study the practice of business model innovation, and, more importantly, the type of vocabularies employed. Furthermore, in my study the focus was a cost sensitive company; as such, it would be interesting to see how business model creation processes change when the ideology is different. Lastly, I believe that a study where co-enactment and ANT perspectives are used as lenses would allow a better

understanding of the social materiality of business models, and their creation, and how they help to reach and maintain stability moments.

8.5 Implications for practice

The Activity System Perspective advises top managers to focus on designing specific activities and interlinkages necessary for a certain type of business model. The Dynamic Capabilities perspective suggests that the creation of inimitable resources is imperative, while the Discovery Driven perspective emphasizes the importance of applying trial and error to business model innovation. Compared to these perspectives, the Enactment perspective distinguishes itself by suggesting that managers should *interrupt forward* – i.e., managers should actively look for non-recognizable cues, which would facilitate the creation of fast learning loops. My findings show that interrupting forward through trial and error, experimentation, benchmarking for formulating reference points, labelling, co-creation and co-development, permits an organization to innovate.

The managerial implications of my study aim to make managers aware of the following aspects:

- Business model innovation is not the same as product innovation, the former being a much more complex process which requires managers to formulate considerations about customers, partners, value chain, pricing mechanisms.
- The non-linearity of business model innovation requires managers to actively look for non-recognizable cues and interruptions.
- Business model innovation is not a top down, but a bottom up process with all the actors involved playing a pivotal role: middle managers, individual teams, sub-units. Thus, the challenge is to create a “*We*” to allow a stable intersubjectivity level where business model innovation can happen.

Firstly, my data indicate the difficulty of innovating an unknown concept for the company, namely a business model. When managers bracket, retrospectively, every innovation as being a product development case, they fail to recognize a business model innovation situation. Woodstock was a very vivid example of such a failure. Labelled as a product development project and wrapped into a linear plan to reach the market into one year, the focus was on the technological aspects. Only later did the innovation team realize that additional and different questions should be in focus, such as: *what is specific, and non-negotiable, for the new market we want to enter? What are the customers' expectations? What is the type of value chain needed to serve this new market never served before? What kind of revenue model and pricing mechanism are expected?*

The traditional mind-set of fully developing a technology first, and only then sent it to a business unit hoping to find a way to reach the market, failed in the case of Woodstock. Business model considerations should be given on an on-going basis as the technology is developing. Most importantly, managers should be aware that when a new market is targeted, which has never been served before, it is a business model innovation case. Thus, managers need to allocate resources and build mechanisms for understanding the innovation processes behind a business model, as this is not a linear, caught-in-rationality process, but rather a non-linear one built on numerous heterogeneous decisions derived from idiosyncratic situations.

Secondly, Woodstock was expected to perform according to predefined, linear timeline planning. However, given its radical potential, Woodstock has gone against the rational planning, creating numerous interruptions. As business model innovation is characterized by high uncertainty, chaos, and need for trial and error and fast learning loops, it is counter-intuitive to expect to handle an innovation process with classic control systems. My study shows that in their endeavour of creating a new business model, managers failed whenever plans and rigid schedules were used to manage the unpredictable nature of a given interruption. In the case of Woodstock, managers needed to enact, to accept execution before planning. Even though these interruptions were perceived as problems the moment they happened, they made the innovation team aware of the possibility of failure being around the corner. This resulted in a need to act despite lacking retrospective mechanisms to rely on, and interruptions became

mechanisms that drove innovation forward. Thus, managers should build structures/routines that allow non- linear process iteration for business model experimentation and innovation.

Enactment approach suggests that managers should design organizational structures that incentivize teams to actively search for interruptions, actively pushing the business model towards failure to discover potential vulnerabilities swiftly. The creation of fast learning loops would enable the unit(s) to handle interruptions while simultaneously innovating based on them. Thus, managers should create a new value regime for radical business model innovations, taking those initiatives away from the normative discourse *cost versus quality*, standards KPIs and bonus systems. These systems inherently create a strong fear of interruptions. Furthermore, managers should also create incentives that would encourage sharing found interruptions among all the participants as quick as possible.

Lastly, enactment also suggests that business model innovation is not a task exclusively left to top level management, but rather a bottom up process, conducted by a strong *We*, built from R&D, business units, customers, and external partners.

My study demonstrates that the largest number of interruptions was rooted in moments when the “*We*” failed to function, primarily because the actors involved were operating with different vocabularies of work and mind-sets. During these crucial moments, I suggest that managers should allow a new question to guide their business model innovation process: “*how does action become coordinated in the world of multiple realities?*” (Weick, 1995:75). As individuals originate from different departments and business units, there is a need for creating a common vocabulary shared among all the parties involved and willing to stay at an intersubjectivity level. This would facilitate co-enactment.

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