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Self-conception and image of context in the growth of the firm: A Penrosian History of Fiberline Composites

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PhD Series 32-2014



**Copenhagen
Business School**
HANDELSHØJSKOLEN

Self-conception and image of context in the growth of the firm

A Penrosian History of Fiberline Composites

Ellen Mølgaard Korsager

Doctoral School of Organisation
and Management Studies

PhD Series 32-2014

Self-conception and image of context in the growth of the firm

A Penrosian History of Fiberline Composites

Ellen Mølgaard Korsager

Supervisor:

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Doctoral School of Organisation and Management Studies,
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Acknowledgements

At this moment – a late Sunday evening – as I’m writing my acknowledgements, Tina Dico is playing on the radio. She’s singing *On the Run*, and it strikes me that she captures much of my experience as I was writing my dissertation:

*Everybody’s gotta end up somewhere
I’m just taking my time to get there
And it looks like freedom and it smells like fun
But it feels like being on the run*

The numerous, lonely, and sometimes frustrating hours in front of my laptop nearly broke me, so first of all I would like to thank my husband, Bo, and our darling children, Benedicte and Mads Kristian. They took care that I didn’t break.

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Ellen Mølgaard Korsager
Vejle, August 2014



Henrik Thorning in front of the first pultrusion machine 1979 or 1980
(From Fiberline's archive, Middelfart, Denmark)

Summary

My dissertation tells a history of Fiberline Composites a small Danish producer of reinforced plastic. The purpose of telling this story, which stretches over 25 years from the company's founding in 1979 to 2004, is to discuss the process of growth. In *The Theory of the Growth of the Firm* economist Edith Penrose seeks to explain this process and she proposes that it is best studied through historical analysis of the individual firm. This is the case, she argues, because firm growth is a path-dependent process of accumulating and exploiting resources and because every firm exists in a specific context of time and place.

The firm's available resources are exploited, or put to service, as a response to the (productive) opportunities that the firm sees and as Penrose notes the theory of the growth of firms is basically an examination of the changing productive opportunity of firms. Penrose describes productive opportunity as a subjective phenomenon. She notes that when the firm acts on such opportunities it will base its decisions on the company's own self-conception and image of context. As such these concepts are the key to explaining the growth process of the firm. The object of my dissertation is to discuss the connection between the process of firm growth and the self-conception and image of context of the firm.

To Penrose the concepts of self-conception and image of context is inaccessible. They are, she claims, an extremely personal aspect of the growth of individual firms because they are dependent on the ingenuity and preferences of the firm's entrepreneur(s). I argue, however, that by considering construction of meaning along the lines suggested by anthropologist Clifford Geertz, the subjective elements that Penrose points to may be treated not as unknowable, personal fads of the entrepreneur, but as shared cultural

expressions of the firm. As such the subjective elements of firm growth can become the object of analysis.

In my analysis I give a number of examples of how the growth of Fiberline has been influenced by the self-conception and image of context of the company: I discuss the connection between these concepts and the exploitation of resources in the company, I consider the role of experience and knowledge in forming the self-conception and image of context of the firm, I explore the influence on the company's perception of productive opportunities and I discuss how the self-conception and image of context of the company influenced Fiberline's decisions concerning specialization, diversification and market focus.

My analysis show two overall development paths of Fiberline. On the one hand the company had a determined focus on a single area of specialization and on the other a very broad market focus. Both were connected to the self-conception and image of context of the company. Put roughly it may be concluded that over the first 25 years of their existence Fiberline developed to become highly specialized generalists.

My study offer a new and closer reading of Penrose's theory of firm growth confronting the subjective elements she pointed to but didn't pursue further. It is a way of working with firm growth that allows for a microscopic perspective on the decisions and actions of firms as well as demonstrates the insight that may be gained by studying the growth process historically.

Resumé

Min afhandling fortæller historien om Fiberline Composites en mindre dansk producent af armeret plast. Formålet med at fortælle denne historie, som strækker sig over 25 år fra virksomhedens grundlæggelse i 1979 til 2004, er at diskutere virksomheds vækst som en udviklingsproces. Økonomen Edith Penrose forsøger i *The Theory of the Growth of the Firm* at forklare denne proces, og hun foreslår, at den bedst studeres gennem historisk analyse af den enkelte virksomhed. Dette er tilfældet, argumenterer Penrose, dels fordi virksomhedsvækst er en stiafhængig proces, hvor ressourcer opbygges og udnyttes, dels fordi enhver virksomhed eksisterer i en specifik kontekst både i tid og sted.

De ressourcer, der er til rådighed for virksomheden, udnyttes som en reaktion på de produktive muligheder, som virksomheden ser. Penrose bemærker, at teorien om virksomhedens vækst dybest set er en undersøgelse af virksomhedens skiftende produktive muligheder. Penrose beskriver produktive muligheder som et subjektivt fænomen. Hun beskriver, hvordan virksomheden, når den handler, baserer sine beslutninger på virksomhedens egen selvforståelse (self-conception) og dens forståelse af omverdenen (image of context). Derfor er disse begreber afgørende for at forstå virksomhedens vækstproces. Formålet med min afhandling er at diskutere forbindelsen mellem virksomhedens vækstproces, dens selvforståelse og forståelse af omverdenen.

For Penrose er selvforståelse og forståelse af omverdenen begge fænomener, der ikke lader sig indfange i analyse. De er, hævder hun, et ekstremt privat aspekt af den enkelte virksomheds vækst, fordi de er afhængige af virksomhedens entreprenør(er) og hans personlighed og tanker. Men ved at analysere betydningsdannelse (mening creation), som foreslået af antropolog Clifford Geertz, kan de subjektive elementer, som Penrose peger på, indfanges. De kan behandles ikke som entreprenørens private og personlige luner,

men som fælles kulturelle fænomener. På den måde kan også de subjektive elementer af virksomhedens vækst analyseres og undersøges.

I min analyse giver jeg en række eksempler på, hvordan Fiberlines vækst har været påvirket af virksomhedens selvforståelse og forståelse af kontekst: Jeg diskuterer forbindelsen mellem disse begreber og virksomhedens udnyttelse af ressourcer. Jeg overvejer betydningen af erfaring og viden i konstruktionen af selvforståelse og forståelse af kontekst. Jeg undersøger, hvilken betydning virksomhedens selvforståelse og forståelse af kontekst har for dens opfattelse af produktive muligheder, og jeg diskuterer, hvordan selvforståelse og forståelse af kontekst influerer Fiberlines beslutninger angående specialisering, diversifikation og markedsfokus.

Min analyse viser, at der var to overordnede spor i Fiberlines vækst. På den ene side var virksomheden fast fokuseret på en enkelt teknologisk base, hvilket medførte, at den blev højt specialiseret, på den anden side vedblev virksomheden at have et meget bredt markedsfokus. Sagt lidt firkantet så betød dette, at man i Fiberline udviklede sig til at blive højt specialiserede generalister.

Mit studie tilbyder en ny og tættere læsning af Penrose's teori om virksomhedens vækstproces. En læsning, som udfolder de subjektive elementer, som Penrose havde øje for, men som hun ikke undersøgte nærmere hverken empirisk eller teoretisk. Det, jeg foreslår, er en metode til at arbejde med virksomhedens vækstproces, som tillader et mikroskopisk perspektiv på virksomhedens beslutninger og handlinger, og som demonstrerer hvilken indsigt, der kan opnås, ved at arbejde historisk med virksomhedsvækst.

Table of contents

1. Introduction.....	1
Penrose and the historical study of firm development	2
Subjectivity, entrepreneurial attitude, and image of context.....	4
Research purpose.....	8
Studies of firm growth	8
Construction of meaning in business history	13
Research questions.....	18
2. Analytical strategy.....	19
The social nature of meaning.....	20
Change and Geertz' concept of culture.....	21
Thick Description and narratives	22
The case of Fiberline	23
Empirical material and the use of it	24
Focus and structure of the analysis	29
3. Founding a company and formulating a basic narrative.....	31
The circumstances of the start-up	32
Pultrusion.....	36
The basic narrative of Fiberline	39
Establishing a proper motive and a founder.....	40
Naming the product and the market.....	42
Specifying the production process and constructing the birth of a company.....	46
Conclusion - Product, process and potential	47
4. The prior experience of Henrik Thorning and the context of the Start-up.....	49
The plastic industry in Denmark in the 1970s and start 80s	49

The development of the composite industry in Denmark.....	51
Environmental concerns and organizing the industry	53
Dukadan and Henrik Thorning’s two years working there	56
Jotun.....	58
Innovation in the Danish plastic industry.....	60
Conclusion - Knowledge of materials, experience in production.....	62
5. Putting resources to service and strengthening the basic narrative in the start-up process	65
Getting started.....	65
The first sales	72
The everydayness of acute problems	76
Conclusion – Services in use in the start-up.....	79
6. How should the profiles of Fiberline be sold?	84
Pressure building.....	85
Strong export growth of the Danish plastic industry.....	89
A gradual focus on sales	90
Standard profiles and distributors	94
The origins of the international focus	97
The narrative of how profiles should be sold and to whom	100
Conclusion – The relevant demand for profiles	112
7. The efforts of financing and opportunities for growth	115
Continued pressure after 1983	115
Financing behavior over time.....	118
Bootstrapping and effectuation in financing behavior	124
Conclusion – Control and development.....	126

8. Productive opportunities and technological base	128
The growth of Fiberline and of the Danish plastic industry from the mid-1980s until the late 1990s.	129
External inducements to diversification - Processed profiles and systems	135
Internal inducements to diversification – phenol based profiles and construction profiles	142
Conclusion – The diversity of diversification.....	150
9. Market focus and developing the sales organization.....	155
The composites industry around the turn of the millennium.....	156
Seven good years of development and organization building.....	159
Establishing the sales organization	164
Diversification and uncertainty.....	166
Sales and the strategic plans of Fiberline in the early 1990s.....	168
Operational systems and the strategic plans in the late 1990s.....	176
Conclusion - Product properties and the development of sales.....	182
10. Discussion	185
The case of Fiberline and the theoretical choices I have made	185
How does the dissertation contribute to the study of firm growth and path dependency? ...	195
How does the dissertation contribute to the study of business history?	199
How does the dissertation contribute to the study of entrepreneurship?.....	201
How does the dissertation contribute to the study of internationalization?.....	210
11. Conclusion.....	225
Appendix 1: Financial development of Fiberline.....	231
Number of employees.....	233
Early development	234
Appendix 2: Composites and profiles	237
What is a profile and what can it be used for?	238
Fibers.....	239

Matrix	243
Appendix 3: The pultrusion process	245
Appendix 4: Methods for producing reinforced plastic	247
Archival material and interviews	249
Other materials and sources	253
Bibliography.....	255
Notes	266

1. Introduction

On May 1, 1979, in spite of bleak prospects, a handful of people met for champagne in a run-down production hall that housed a small company called Fiberline Composites. The young founder Henrik Thorning and his wife Dorthe Thorning had decided to celebrate this day as the company's birthday. On this day Fiberline, which had been founded in January the same year, managed for the first time to pull a usable product through their machine. They were trying to learn how to make profiles in reinforced plastic by a relatively new method called pultrusion.

Reinforced plastic materials are strong, flexible, and lightweight, and in the 1970s they had been known and used in a number of different industries for a period. Pultrusion would ensure better control of the process in which plastic material is mixed with reinforcement fibers. The potential lay in making more homogeneous profiles of greater strength, which would make the possible use of the profiles much greater compared to those already on the market. Henrik Thorning founded his company on this hope. However, it turned out to be exhaustingly difficult for Fiberline. To get production up and running was one thing, but it was quite another to manufacture larger amounts of profiles of a quality able to compete with well-known substitutes like steel or aluminum.

A year after the founding, around New Year 1980, Fiberline's situation was critical. Though they could now produce profiles of a somewhat even quality, the development of the production continued to be very expensive. On top of this it turned out to be next to impossible to sell the profiles, even though Fiberline was cooperating with one of Denmark's largest and most respected dealers of plastic materials. In the drawer of his desk, Henrik Thorning kept a note he had written on a particularly challenging day. It read: "Never give up." He looked at it often in the beginning, when the struggle for survival was intense.¹

25 years later, in 2004, the company had approx. 100 employees. The yearly turnover was growing fast; closing in on 200 million DKK and the years prior to 2004 had shown the largest profits in the history of the company. The main part of the profiles was exported, and Fiberline was present at most European markets. A small book was produced as part of the celebrations on the occasion of Fiberline's anniversary that year. It was given to employees as well as friends and acquaintances of the firm. The book portrays a confident firm that perceives itself as an entrepreneurial start-up, founded on the vision of Henrik Thorning, and grown to become an international technological leader of the industry.²

Indeed this would seem a happy history of development and growth. The object of this dissertation is to explore this process of growth by telling a history of Fiberline and by asking how Fiberline developed through time from idea to international company.

Penrose and the historical study of firm development

In *The Theory of the Growth of the Firm*, Edith Penrose seeks to explain the process of growth of manufacturing companies,³ and she proposes that such processes should be studied through historical analysis for two reasons. The first involves the way resources are exploited in the company. Penrose describes the firm as a pool of resources, the service of which may be exploited to meet productive opportunities thereby creating competitive advantage and firm growth.⁴ The key concept is service that describes how the resources of the firm are put to use. Penrose notes that

The important distinction between resources and services ... lies in the fact that resources consist of a bundle of potential services and can, for the most part, be defined independently of their use, while services cannot be so defined, the very word 'service' implying a function, an activity.⁵

For the growth of the firm the use of some services is more important than others; experience and knowledge are especially central. Penrose states that

In the explanation of the course of expansion of a particular firm and of the limits on its rate of expansion, it is illuminating to put the chief emphasis on the firm's "inherited" resources and productive services, including its accumulated experience and knowledge, for a firm's productive opportunity is shaped and limited by its ability to use what it already has.⁶

As the company pursues new productive opportunities, it draws service from its existing (inherited) resources, gaining new experience and knowledge, which can then be put to service in the exploitation of new opportunities. This cumulative process is fundamental for understanding the direction and method of the growth of the company. The process is controlled by putting the available managerial resources of the company to service: these then determine the pace and set the limit to growth. In this process, Penrose notes, the firm may use different tools of growth like diversification or specialization.⁷

Firm growth from this perspective is a path-dependent process drawing productive services from resources built up over time and limited by the managerial and entrepreneurial services available to the firm at any given time. In the foreword to the third edition of her book, Penrose concludes that "One of the primary assumptions of the theory of the growth of the firm is that history matters; growth is essentially an evolutionary process..."⁸ which is the main reason why company growth should be studied historically.

In a later text Penrose further notes that a second argument for conducting historical analysis is the contextual specificity of the growth process of any given firm. Quoting Schumpeter, who made the same point and also applied historical methods, she notes that "...the subject matter is essentially a unique process in historical time."⁹ The context specificity of any given firm (or industry, market or any unit of analysis one might imagine) in both time and place is a prime argument in the field of business history for the relevance of the field, but as noted above not the only one offered by Penrose.

In her case study of the Hercules Powder Company, Penrose exemplifies how firm development can be studied through historical analysis.¹⁰ Penrose tells the history of the development of the Hercules Powder Company focusing on the interaction between the productive opportunities of the firm and the exploitation of the services available from its resources. The starting point of the history is a steep dive in the market for explosives after the First World War, which pushed the company to explore new opportunities and yield new services from their entrepreneurial resources.¹¹ For this they turned to their development department, whose strong knowledge of chemicals could be operationalized in pursuit of new markets particularly in the growing plastic industry. Through the almost 50 years, Penrose analyzes the growth of the company, this would lead them to diversify into many different markets, while the knowledge base was continuously strengthened and could be put into new service.¹²

In the Hercules case study, Penrose makes her central point about firm growth by exemplifying the cumulative process of exploiting productive opportunities drawing on and developing resources, experience and knowledge. She notes that the history of Hercules demonstrates that the development of a company, though unique in its details, “is by no means unique in its general pattern and will be found repeated in greater or less degree in the story of any number of long-established successful firms.”¹³ Concluding the case study and expressing the main point she strived to introduce into economic theory, Penrose further notes that “The company's history illustrates the impossibility of separating ‘demand’ and ‘supply’ as independent factors explaining the growth and diversification of a firm.”¹⁴

Subjectivity, entrepreneurial attitude, and image of context

As described previously, the productive opportunity of the firm is a central concept for Penrose. Defining it, she notes that it “... comprises all of the productive possibilities that

its [the firm's] 'entrepreneurs' see and can take advantage of. A theory of the growth of firms is essentially an examination of the changing productive opportunity of firms."¹⁵ This notion has important implications for the way growth processes may be understood, because emphasis is not on what possibilities are "out there" but on what possibilities the company sees – or perceives. In the Hercules study Penrose argues that

Not only is the actual expansion of a firm related to its resources, experience, and knowledge, but also, and most important, the kinds of opportunity it investigates when it considers expansion. Moreover, once a firm has made its choice and has embarked on an expansion program, its expectations may not be confirmed by events. The reactions of the firm to disappointment - the alteration it makes in its plans and activities and the way in which it adapts (or fails to adapt) - are again to be explained with reference to its resources.¹⁶

In this passage Penrose elaborates further on the creation of path dependency already described as given from the way resources are exploited in the company. She maps out the process in the Hercules case study and concludes that

The ... interpretation of the growth of Hercules is based on a study of past history and of recent attitudes. It is clear that entrepreneurial attitudes, the "firm's conception of itself," have had a pervasive influence not only on its direction of growth but also on the method of growth and on the rate of growth.¹⁷

What Penrose suggests is an interrelation between the firm's conception of self and its exploitation of resources. Furthermore Penrose suggests a dynamic interrelation between these two and the context (environment) of the company. Underscoring the importance of the concept of entrepreneurial attitude, she notes that

As management tries to make the best use of the resources available, a truly 'dynamic' interacting process occurs which encourages continuous growth but limits the rate of growth. ... the environment is treated ... as an 'image' in the entrepreneur's mind of the possibilities

and restrictions with which he is confronted, for it is, after all, such an ‘image’ which in fact determines a man’s behavior.¹⁸

The idea of the company’s conception of itself and the relation between this and the company’s image of context is intriguing. Via the concepts of productive opportunity and entrepreneurial attitude, Penrose places conception at the center of both path-dependency and firm growth. However she doesn’t elaborate further and leaves resources as well as experience and knowledge at the center of growth analysis, even though the firm’s exploitation of all three (not just resources as already mentioned) is dependent on self-conception. Penrose had no fear of opening the black box of the company and showcasing it to economists, but she drew the line at phenomena like attitude and conception, which she considered too elusive for analysis.

Penrose touches upon the reason for this when defining enterprise in *The Theory of the Growth of the Firm*. In doing so she comes close to her use of entrepreneurial attitude in the Hercules case by saying that “There are probably many ways of defining enterprise, but for our purposes it can usefully be treated as a psychological predisposition on the part of the individuals to take a chance in the hope of gain.”¹⁹ She further notes that “This extremely personal aspect of the growth of individual firms has undoubtedly been one of the obstacles in the way of the development of a general theory of the growth of firms.”²⁰

In her introduction Penrose also notes that

... a theory purporting to explain the process of growth of firms can be useful on two levels. It can be useful even if it only presents a logical model yielding conclusions which seem to correspond to actual events that can be ‘observed’ in the growth of actual firms. But it will be even better if it helps us to understand the actions behind these events. For this, if we assume that firms act for a purpose, we must find an acceptable assumption as to why they act.²¹

In a later passage she is even more specific about the subjective nature of action as she notes that

If we can discover what determines entrepreneurial ideas about what the firm can and cannot do, that is, what determines the nature and extent of the ‘subjective’ productive opportunity of the firm, we can at least know where to look if we want to explain or to predict the actions of particular firms.²²

Penrose, however, restricts her exploration of why companies act to the analysis of the exploitation of resources. In the end then the notion of seeking to understand growth on a fundamental level, understanding why companies act as they do by considering self-conception and the image of context in the construction of (productive) opportunity, remains merely an idea for Penrose.

Foss and his colleagues, who discuss Penrose’s idea of the firm’s image of context, argue that from this perspective “The notion of productive opportunity is clearly a subjectivist (or, as some may prefer, ‘constructivist’) category.” Referring to Weick, they continue: “In terms of modern organization theory Penrose is here clearly talking about the ‘enactment’ of the environment that the management team performs.”²³ Foss and his colleagues only observe this, however, but like Penrose they do not unfold the idea or explore it theoretically or empirically.

I agree with Foss and his colleagues in comparing Penrose’s image of the environment to Weick’s idea of enactment. Also Penrose’s concept of entrepreneurial attitude or self-conception may be captured by Weick’s general idea of sense making or by Geertz’s notion of meaning construction – a shared social process.²⁴ Drawing on such concepts from interpretative cultural theory, one can learn more about how self-conception and the company’s image of its environment interrelate with the exploitation of resources in the company and influence firm growth. By considering construction of meaning along the

lines suggested by Geertz, the subjective elements that Penrose points to may be treated not as unknowable, personal fads of the entrepreneur, but as shared cultural expressions of the firm.

Research purpose

Penrose describes how the company grows through a process of exploiting productive opportunities by putting accumulated and unused resources to service. She points to both the company's image of its context as well as its self-conception as instrumental in guiding the decisions and actions of the company and, as such, an important aspect to consider when seeking to understand the growth of the firm. Penrose leaves this aspect unexplored, however, in both her theoretical framework and her empirical study.

The object of my dissertation is to add to the Penrosian understanding of firm growth by discussing the role of self-conception in the growth of Fiberline. I will be considering how an image of the context of the company is formed and seek to show how this image and the company's self-conception influence decisions and actions of the company and by extension its growth. This will bring the study of growth closer to explaining why companies act the way they do; conceiving particular productive opportunities, making particular decisions, and choosing particular ways to put particular resources into service.

Studies of firm growth

The literature dealing with firm growth is substantial and found within many different fields of research.²⁵ The work of Penrose is influential in strategic management as part of the foundations of the resource based view of the firm. The idea that firm heterogeneity can be explained by reference to the knowledge and resources of the individual firm has inspired new ways of thinking about market position and how competitive advantage can be facilitated.²⁶ In this, however, the long-term development of the firm is often not considered, and the original intention of Penrose's theory – to understand firm growth –

as well as the historical method she favored, is mostly forgotten in the strategic management literature.

Generally studies of firm growth have been preoccupied with explaining and/or predicting how much firms grow²⁷ and have typically applied a timeframe of either 1, 3 or 5 years.²⁸ Shepard and Wiklund conclude on the basis of an extensive review that the performance measurements most often applied are sales, number of employees, profit, assets, and equity.²⁹ Shepard and Wiklund are critical however of the generated knowledge of growth, and McKelvie and Wiklund in their discussion of the literature conclude that “Despite hundreds of studies into explaining firm-level growth differences, the main finding in this stream of literature is that researchers have been unable to isolate variables that have a consistent effect on growth across studies”³⁰ Quoting Coad’s conclusion on the basis of an extensive literature review, they further note that “The main message that seems to emerge is that growth is largely a random process.”³¹

Compared to the overwhelming number of studies focusing on explaining rate of growth or growth conditions, studies focusing on the process of growth are few. In their discussion of the theoretical development of growth studies this leads Davidsson, Achtenhagen and Naldi to conclude that “as regards modes and process the current state of knowledge is so under-developed that mere mapping out of the phenomenon would constitute worthwhile contributions.”³²

One of the very first observations by Penrose in *The Theory of the Growth of the Firm* is that growth does not only mean “change in amount.” It sometimes also denotes the process by which this change comes into being.³³ Penrose seeks to explain growth as a process, and studies with this focus most often draw on her theory or on newer resource-based theory derived or inspired from it.³⁴ These studies are of a diverse nature, but generally they apply the same short term frame as in other forms of growth studies.³⁵ Also

the field of Business History has difficulty presenting studies of the process of firm growth over time,³⁶ which might seem surprising, especially given the arguments Penrose gives for doing such studies. But the research agenda of the field appears to have been preoccupied with matters other than theorizing firm growth processes.

Penrose's framework and the resource-based view of the firm have been applied to a great extent in the study of multinational companies and internationalization.³⁷ But even though these topics have also interested business historians, they have mostly chosen other paths.³⁸ Pettus in his article on firm growth argues that "analysis of the sequential development of a firm's resource base over time is lacking in the literature"³⁹

Pettus initially ponders that "Although everyone seems to agree that resources are developed in a complex, path-dependent process ... no resourcebased theorist has explained or predicted this growth path."⁴⁰ By drawing inspiration from Penrose, but building mainly on newer resource-based theory derived from the strategic management field, Pettus sets out to explain and provide tools for predicting growth paths over time. He does this by formulating 5 steps of firm growth testing these empirically by analyzing the development of the 59 publicly traded companies in the American trucking industry over a period from 1980 to 93.⁴¹ During this period the industry was deregulated, which presented growth opportunities and threats for the industry and an opportunity to observe growth-paths in that situation. Pettus concludes that of the 59 companies in the sample 6 followed the ideal growth path he formulated via resource-based theory leading to the highest growth rates in the industry, while the other companies followed a number of less effective paths.⁴²

Pettus then might explain how the largest companies in the American trucking industry developed after the deregulation, described in the article as a Schumpeterian shock.⁴³ However in looking for ways of testing the optimal growth paths not much explanation is

given of the actual growth process of the companies. The reasons why and by what actions the companies developed are left unexplored.

McGovern and McLean's recent article on the history Clarke Chapman offer another example of a study of firm growth over a longer period of time.⁴⁴ They build their analysis on an in-depth study of a single company; compared to Pettus they offer a more detailed insight into the actual exploitation of productive opportunity in the company in the same way Penrose did in the Hercules study. Clarke Chapman was a subcontractor for the British shipbuilding industry, and through a study of the company from 1864 to 1914 McGovern and McLean give an example of the path-dependent process of exploiting productive opportunities by drawing on resources available in the company, leading to new knowledge and resources, creating new opportunities.⁴⁵

McGovern and McLean also discuss the influence of the structure of ownership of the company. They show that the will of the founders and their families to keep ownership and influence would often set limits on the growth of the company by hindering further investment of capital.⁴⁶ McGovern and McLean also consider different factors in the context of the company, which are not all part of Penrose's framework, but still important, they argue, for understanding the growth of this particular firm. These are mostly related to the economic situation in Britain in the period, a depression in the ship building industry, and subsequent labor conflicts. They also point to rapid technological change in the shipbuilding industry, to which the company supplied its products, as well as to the important influence of a strong social network of the management.⁴⁷

Apart from exemplifying how a firm grows over time, demonstrating Penrose's theory in a new context, McGovern and McLean also elaborate on many aspects of growth, which Penrose only touched upon and didn't investigate empirically. Both Pettus and McGovern & McLean offer interesting insights into the process of growth, as well as examples of the

form of knowledge that may be drawn from working historically and over time with firm development. However neither Pettus nor McGovern and McLean seek to explain growth on the fundamental level described by Penrose as understanding why firms act and none of them engage with the subjectivity found in her concepts of image and self-conception.⁴⁸

Connell offers a very interesting study focusing specifically on the company's image of the environment. She tells a history of the start-up of a Hong Kong trading company around 1782 and shows that by focusing on reputation and legitimacy the company influenced the legal environment for business to match their own image of context thereby creating new productive opportunities. This shows how the company shaped its environment by basing its actions on its own image of the context.⁴⁹ As such, Connell gives examples of ways of creating productive opportunity not considered by Penrose whose focus was mainly on more direct market opportunities as demonstrated in the Hercules case. Connell offers considerations as to why the company acts the way it does based on image of context. However she doesn't consider the same matter with reference to the exploitation of resources in the company and therefore only gives an account of part of the interpretative process of firm growth.

These few examples aside, historical analyses focusing on the developmental process of firms over time drawing on a Penrosian framework are, as already discussed, rare both in the study of firm growth and in the field of business history.⁵⁰ Studies, applying theory and tools from what could generally be called an interpretative paradigm, however, are now emerging in business history introducing concepts like sensemaking or construction of meaning to business history analyses. These might then offer a way to proceed if interested in the subjective aspects of Penrose's concept of growth.

As a last remark before turning to these, Ericson's *A Narrative Approach to Business Growth* should be mentioned as an example that introduce interpretative theory into growth studies.⁵¹ In her study Ericson interviewed around 70 former and current managers in the Swedish company Hilding Anders and asked them to tell her about the growth of the company through the last 70 or so years.⁵² From these narrative bits and pieces she gathers what she calls three plots. These are the company's growth narrative as she tells it.⁵³ Ericson's analysis is interesting as it shows the richness of narratives on growth at play in the organization and the clashes between these narratives. Ericson's point, as I perceive it, is that such narratives of growth are used by individuals to construct their organizational reality. Yet, no attempt is made to couple the narratives to actions in the past and the analysis, despite the fact that 70 years of company past is discussed, is essentially void of development or historical reasoning. Its focus is on the organization as a construct of the individual in the present.

Construction of meaning in business history

An interpretative take on studying organizations is by no means new, and cultural theory is an old friend of organizational studies. Drawing inspiration for example from anthropology such ideas have been cultivated in organizational studies leading to new ways of working with organizational culture and a growing interest in organizational practice.⁵⁴ In the field of strategy this development, which has been called the practice turn, has contributed significantly to the theoretical development of this field drawing in new focuses and methods.⁵⁵ Also organizational studies have seen a development in works drawing on semiotics or linguistics, embracing the general point that human reality is socially constructed and focusing on interpreting the expressions this construction finds in written or spoken language, narratives etc.⁵⁶ In the field of business history, however, culture has traditionally been studied by applying other lenses.

Business history has generally applied a concept of culture derived from economic reasoning. A main focus in these studies have been on explaining the effects of national culture, values, and other cultural phenomena on entrepreneurial activity, for example, and economic growth in general.⁵⁷ As Rowlinson and Procter noted in 1999, these studies tend to view culture “as a variable that can predict the efficiency of the firm.”⁵⁸ The point of their theoretical discussion of organizational culture and business history is to invite business historians to engage more with new cultural theory as discussed and applied in studies of organizational culture. Inspired by the use of cultural theory in organization studies they further note that: “The concept of culture implies an interpretive approach to business history that should move it away from deterministic explanations of corporate success and failure towards an emphasis on the meaning and interpretations of actors that help constitute organizations over time.”⁵⁹

Before this, Lipartito’s 1995 article on culture and the practice of business history offered a rare discussion and example of the use interpretative cultural theory in the field. As many business historians before him Lipartito ponders how performance differences even between companies operating in the same markets can be explained. He presents an empirical example and ascribes the performance difference between the American and Japanese car industry to historical and contextual specificity, but also to unique organizational culture constructs and the way these enable technological development of some companies in the industry.⁶⁰

In defining the concept of culture Lipartito draws on an anthropological tradition of seeing culture as a “mental apparatus for grasping reality,”⁶¹ which as Rowlinson and Procter note has also been applied in studies of organizational culture and organizational ethnographies.⁶² However, at the brink of the new millennium Rowlinson and Procter didn’t seem overly enthusiastic about the prospects of engaging organizational culture

studies in further conversation with business history. On the one hand, they argue, post-modernism has a strong grip on organizational culture studies making these very reluctant to accept the idea of the narrative structure (the writing of History with a capital H) associated with analyses in business history. On the other hand business historians unfamiliar with the subjectivity of post-modernism and heavily influenced by economic theory are also prone to empiricism.⁶³ Rowlinson and Procter conclude that “the challenge for business historians is to resist the temptation to disappear into the archive equipped with ‘a check list’ provided by economists ‘for assessing the economic value of different cultures.’”⁶⁴ In 2008 more than 10 years after writing his enthusiastic plea to business history for an engagement with new cultural theory, Lipartito considered the state of the art in *The Oxford Handbook of Business History* chapter on culture in the field. It shows a tendency to studies of culture still very influenced by economic theory and not many firm level analyses.⁶⁵ It would seem that business history had so far stuck to the well-known ‘check list’.

However considering the field today and especially focusing on Scandinavian or Northern European publications, a new take on culture in the field of business history appears to be emerging. It can open the field to a new reign of questions and answers focusing instead on meaning construction in and around the company than on parameters for assessing economic growth. In this the discussion and application of narrative theory and method have been decisive.

In a recent article Hansen discusses the benefits of a narrative approach to business history. Defining narratives he notes that

Narratives are basic instruments for ordering reality, assigning causality, and constructing meaning. Humans—whether modern historians or the people they study—make sense of the world by

telling stories, and these stories have the potential to frame the way members of an organization or citizens of a nation see the world.⁶⁶

This may help explain how “Individuals make decisions and take action on the basis of the narrative meanings they ascribe to their surroundings,”⁶⁷ and by extension then a narrative approach can be used to understand mechanisms of change and development for example in organizations. Referencing Weick who argues that organizations develop a “trained incapacity to see the world differently” Hansen in an earlier article notes that narratives “... set important limits to the list of strategic options available to the organization, thereby producing organizational inertia or path dependency.”⁶⁸

Theory on narratives offers both a way to study development over time as well as tools for doing textual analysis. Therefore the approach has been favored in studies of history (particularly social and cultural history) where most testaments to actions are in written text.⁶⁹ Hansen notes that “historians are uniquely positioned and suited to analyze how the creation of meaning varies across time and space.”⁷⁰ Within recent years this fact has been explored in business history through studies focusing either on the use of history or sensemaking in organizations.

History is a powerful tool, which organizations can use to create and alter brands and to enable organizational and strategic change. At the same time however history may also be a constraint on change as noted. Lundström gives an interesting example of deliberate use of history as a tool for both branding and identity building in her analysis of the Swedish phone company Ericsson. She focuses particularly on the company’s celebrations of jubilees and analyzes the change in these across time.⁷¹ In his study of the company August Thyssen, Fear exemplifies how history can be used as a tool of management control in the organization,⁷² while Freeland shows the use of history in struggles for influence across divisions in General Motors.⁷³

Hansen in his study of the Danish savings banks shows how historical narratives do not always help facilitate change, but can also work to constrain the company's capacity to change.⁷⁴ The same point is made at an industry level in a study of the Danish furniture industry. Hansen shows how the narratives of the individual organizations and the industry are locked into larger national or cultural narratives facilitating and constraining the actors in the same way as organizational narratives.⁷⁵ Mordhorst in his studies of a number of companies all originating in the Danish co-operative movement have shown how these companies are firmly locked into narratives of national Danish culture and how the companies struggle to formulate new meaning as these national narratives are questioned and lose explanatory power.⁷⁶ Another stream of recent historical studies is focused on the process of sensemaking as it finds expression in historical narratives in the organization. Both Abolafia and Hansen have used this approach to analyze sensemaking in the financial sector, seeking to explain aspects of financial crisis at the organizational and societal level respectively.⁷⁷

By the end of the 1990s the field of business history had certainly been slow to engage with interpretative theory as noted by Procter and Rowlinson. And Lipartito can probably not be blamed for overlooking a handful of studies drawing on new cultural theory in his 2008 state of the art. But today a new stream of research in business history is thriving. It shows the benefits of applying narrative approaches in historical analysis and the possibilities this gives for asking questions concerning meaning creation or sensemaking and change. However, so far business history has not explicitly linked these insights to the process of firm growth or to Penrose's idea of the role of image of context and self-conception in firm growth.

Research questions

As already stated the object of my dissertation is to discuss the role of self-conception and image of the context in the growth of Fiberline. I have clarified that I perceive Penrose's notion of self-conception to be compatible to concepts like sensemaking or meaning construction. Therefore, a narrative approach is well suited for my analysis as the basic assumption is that narratives are tools used for constructing meaning which is a point set forth in recent studies of business history. Another point to be drawn from these studies is that narrative approaches may help explain change in organizations because they lay bare the grounds on which organizations act and make decisions as well as explain inertia and blind spots in this. As such a narrative approach to my study may help me in explaining, as was a dream of Penrose, why companies act the way they do - in pursuing productive opportunities and exploiting resources, in diversifying or focusing or in any other aspect of growth relevant to the development of my case company over time. The questions I will seek to answer through my analysis are:

What narratives do Fiberline use and what self-conception and image of context is constructed by their use? How do they influence the company's decisions? How can the company's use of narratives be said to have influenced its growth? This last question may be split into three more specific sub questions: How did Fiberline's use of narratives influence what services were yielded from the company's resources? How did it influence the productive opportunities that were pursued? And how did Fiberline's use of narratives influence the company's choices concerning market focus and diversification?

2. Analytical strategy

Penrose's idea of the role of self-conception in the development of the firm is basically a matter of meaning creation. This is captured in new cultural theory, which as demonstrated is now just being introduced into business history. I will be applying a concept of culture formulated by anthropologist Clifford Geertz. He defines it as follows:

The concept of culture I espouse ... is essentially a semiotic one. Believing ... that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretative one in search of meaning.¹

The central point is the searching for meaning. Geertz captures how the individual actor makes sense of existence by a process based on a continuous interplay between the interpretation of a specific situation and the context surrounding it. This constant interpretation (the spinning of webs) is closely linked to dynamics of change and development as every action is based on the meaning constructed. In this lies a logic of action new to the field of business history, as Lipartito notes:

The logic of action in history was clear – individuals always understood and pursued their self-interest, and the self-interested actions of individuals constituted society. Business historians followed a similar logic, even though their unit of analysis was the organization more than the individual... These positions were strikingly different than those being developed by historians under the influence of cultural theory. Culturalists saw all aspects of human thought and behavior as contingent and variable.²

Penrose notes the same subjectivity of action and speculates how to find acceptable assumptions concerning why companies act the way they do.³ Geertz's assumption is that every act is based on and can be explained by the meaning created in the situation, which he exemplifies by referencing the history of the many meanings of a wink.⁴

I will dwell shortly on two main points of the cultural theory of Geertz before turning to the analytical tools offered by it. The two points represent the main arguments why the ideas he offers are particularly well suited for my purpose of making an historical analysis focused on development over time. One is the social nature of meaning and the implications this has for analysis. The other is the matter of how change may be understood, which is important in order to study development.

The social nature of meaning

Organizational theorist Barbara Czarniawska notes that one use of the word social is simply to point to the opposite of being alone.⁵ Geertz continually stresses the shared nature of meaning as constructed by the actor in interplay with the context of the specific situation. This by extension gives social nature to actions (he uses the term social action),⁶ which is a position that has been called the depsychologization of culture.⁷ In this Geertz is opposing a more subjective view of culture drawing on psychology.⁸ For example American anthropologist Ward Goodenough claims that “culture [is] in the minds and hearts of men... [It is] whatever ... one has to know or believe in order to operate in a manner acceptable to its members.”⁹ Here the object of anthropology is a search for a mental code or key to understanding culture (and maybe even pass for a native).¹⁰ Geertz’s claim, on the other hand, that culture exists in a social setting, has a very practical analytical consequence as it moves the study of meaning away from the mental sphere, which is at best very difficult to access, and into a shared sphere, where it can be studied. This is among the main reasons why Geertz’s concept of culture has been widely used. The point has been particularly appreciated in social and cultural history, where the gap in time between the researcher and the culture studied most often marks a further hindrance of knowing the heart or mind of the actor(s) and where actions can be difficult to map out.¹¹

Earlier, when discussing the considerations of Penrose regarding the company's self-conception and the reservations she had about including such aspects in analysis, I mentioned her view of conception as something particularly private and inaccessible. Geertz however makes it clear that meaning creation is not a psychological process but rather takes place in a social/shared setting, and he offers concrete tools for studying it.

Change and Geertz' concept of culture

Because of an insistent focus on a single situation or a very small series of situations in his analyses, Geertz has been criticized for producing an understanding of meaning creation that is too static.¹² Though the depsychologization of culture has been appreciated in the field of history, it does on the other hand seem most interesting to many historians to ask questions concerning some form of development through time and not just a single event or situation. In any case change is the specific focus for me.

At first glance the thick descriptions and interpretations of a single situation so distinctive in Geertz's writing depict the cultural constructs under scrutiny as stable and resistant to change. However, the situations he focuses on almost always captures a moment, where these constructs are being challenged often by external pressure.¹³ Change, it could be argued, is at the center of his analysis then.¹⁴ Also he stresses the importance of historical context, the human need to narrate the past into meaningful entities and the importance of a firm understanding of stable elements in a culture for understanding change.¹⁵ Microhistory (or at least parts of it) has applied Geertz's cultural concept for analysis of processes of (often social or political) change.¹⁶ The focused analysis offered through Geertz's cultural concept provides possibilities for understanding such processes, because it ties meaning and action together. But as Geertz notes this (a messy reliance on human cognition) will of course leave the anthropologist (or historian) with an image of change much less organized than often preferred. "It is not history one is faced with ... but a

confusion of histories ... There is order in it all of some sort, but it is the order of a squall or a street market," he notes.¹⁷

Thick Description and narratives

Geertz proposes thick description as a way of doing analysis of meaning construction. Often thick description is merely seen as another way of proposing a detailed, in-depth, and focused analysis; this however is not all there is to it. In his definition of culture Geertz speaks of cultural analysis as being an interpretive science in search of meaning. He elaborates on this by saying: "It is explication I am after, construing social expressions on their surface enigmatical."¹⁸ This explication or unfolding of social expressions is done through thick description. Geertz has borrowed the notion from British philosopher Gilbert Ryle and exemplifies it by Ryle's story about the multiple meanings of a wink already mentioned. His point is that each wink gains meaning from the interaction between the specific performance of it and the context of that performance.¹⁹

The interrelation between the specific situation, the context, and the meaning constructed is mirrored in a duality in Geertz's analyses between long descriptive passages dealing with the situation and the context of it and passages in which the construction of meaning in the situation is interpreted. Geertz makes it clear, though, that the descriptive parts of the analysis despite their style are also part of the interpretation as it represents the researcher's reading of the situation.²⁰ Also the interpretation starts long before the pen touches the paper (or the fingers the keyboard) and the researcher is thus communicating a distilled interpretation.²¹

Working as an anthropologist Geertz relies on ethnographic data collected in field studies through participatory observation, where he focuses on actions and interpret meaning from these. However he notes that interpreting action can be compared to analyzing text,²² and he is attentive to what he describes as a human need to narrate the past into sensible

entities.²³ The same is noted by Carr who claims that any experience is given a narrative form by the actor in order to make sense of it, so it may be operationalized in the present; that is used as grounds for action.²⁴ This - the performativity of narratives – guides what can and can't be done in a situation by rendering some actions more meaningful than others. In this way meaning creation, action, and narratives are connected, and it is through the same mechanism inertia and blind spots can be created as already discussed.

By nature of the past it is not possible to study situations and actions as they play out—like an anthropologist. The historian is confined to whatever traces are left over from the past. From the traces of the past meaning creations may be interpreted and actions understood by doing narrative analyses. The sources business historians may draw on in such an analysis can be constituted by a large number of different materials all expressing narrative forms. Narratives create order, assign causality, and construct meaning.²⁵ They are stable over time and it is by their stability that blind spots and inertia may be created.²⁶

To sum up: A thick-description of the meaning constructed in the company can be done by analyzing the company's use of narratives. Thus, the company's subjective grounds for making decisions and acting may be analyzed as part of a history of the growth of the company.

The case of Fiberline

By now it should be clear that I have chosen to do a case study of Fiberline and as such it seems a good idea to offer both some considerations about what – if any – general knowledge can be gained from this as well as some arguments why I have chosen Fiberline. As I am claiming that narratives are used to establish meaning, I should probably start by telling my story, about how I came to know Fiberline in the first place (fundamental to my choice of using the company as a case of course). My introduction to Fiberline was mostly due to coincidence and my own sense of beauty (or simple

curiosity). Some years back I was invited to visit the company by a colleague. I accepted the invitation, as I wanted a closer look at the company's very stunning buildings. Until then I had only seen these from the outside passing by on my way to work. The inside proved equally impressive, and the people I met were welcoming. It isn't often that historians or other researchers are allowed to romper about a company's archive with as much freedom as I was given in Fiberline. To this it also needs to be added that I have been working with the history of Fiberline as an independent researcher and have never been asked or commissioned to write for the company.²⁷

Through her case study of Hercules, Penrose wishes to discuss general patterns of firm growth, and the same can be said for my use of Fiberline. In the manner of Geertz, the intention of my analysis is to give actuality to the concept of firm growth. He explains the value of thick description as a contribution to scientific debate in general as follows:

The important thing about the anthropologist's findings is their complex specificness, their circumstantiality. It is with the kind of material produced by long-term, mainly ... qualitative, ... and almost obsessively fine-comb field study in confined contexts that the mega-concepts with which contemporary social science is afflicted ... can be given the sort of sensible actuality that makes it possible to think ... realistically and concretely about them ...²⁸

The aim is to draw large conclusions from small, but very densely textured facts; to support broad assertions about the role of culture in the construction of collective life by engaging them exactly with complex specifics.²⁹

Empirical material and the use of it

The archival material of Fiberline is rich, which is an advantage that is not to be underestimated, least of all by the historian. Through the meticulous effort of Dorthe Thorning, the archive of the company is large and well organized. Amongst many other

documents she has kept almost every piece of written information ever to pass between members of the board and the management of the company including a large number of lengthy reports from the management concerning the everyday running of the company. Apart from being uncommon³⁰ (perhaps especially considering the relatively small size of Fiberline) this rich archival material is a precondition for doing historical analysis in the depth and detail intended here.

Like many other growing companies Fiberline has seen a number of moves between offices, into new office space and even a move of the entire company. In the bustle of growth, archives are often lost or reduced, but at Fiberline they have been kept and cared for. I have thus been spared the frustrating job of tracking down deserted warehouses or almost forgotten basements in the hunt for useful materials. All archival material as well as all interviews, my notes from these, and the transcripts of the two most extensive interviews are in Danish. I have translated every passage I quote into English. In the analysis I distinguish between three main types of sources, which I will use to different ends: the material from board and management, interviews and contextual material.

The material from board and management

Through the first years Fiberline was owned by a handful of people. Henrik Thorning, the founder and manager, owned a part, and he and the other owners formed the board. In 1993 Henrik Thorning became the sole owner of the company. Since then the board members have consisted of different professionals, paid for their effort and functioning as an advisory board. The board meets every three months, and prior to each meeting Henrik Thorning, assisted by Dorthe Thorning, writes up a report about the daily dealings and future plans of the company. These reports are long (up to 10 typed pages) and often structured by topic such as sales, marketing, administration, production, or procurement. Sometimes new topics are included for example strategy. In the archive the report has

been filed alongside a copy of the invitation to the board meeting (which contains an agenda for the meeting) and the minutes of the meeting the report was written for.

In general the records of board meetings are structured around the agenda of the meeting. Often the report from management is just the first order of business followed by others. Henrik Thorning would typically start a meeting by talking the board through the report. The board would comment and then attention would turn to the other points on the agenda. During the first years of the company's history, these would often concern the financial situation of the company or dealings with important customers. Often they circle back to the topics in the report and discussion continues. Henrik Thorning frequently took notes of the meetings and wrote the minutes. Often (especially after 1990) Dorthe Thorning would attend the meetings and write the minutes. But there were also periods where other members of the board would write them, examples are Niels Jørgen Kovstrup (a co-owner who also worked on and off at Fiberline through some years) or Jørn Hansen (member of the board and lawyer for the co-owner Dukadan).

The reports from management, the minutes from the meetings, along with a number of letters that have passed between members of the board and the company (often concerning some acute problem) constitute a sort of ongoing dialog. These texts express "the acute nature of lived experience" as noted by Musacchio Adorasio³¹ and in them the established narratives of the company are often drawn on or referenced to make sense of events. However just as often in this form of texts the narratives used by board and management to make sense of a specific situation is implicit; they are shared by all and taken for granted. In these cases I will seek to draw in other sources in which the narratives are more explicitly used. This could for example be the many strategy documents made by the company and other forms of text, like articles, in which mainly Henrik Thorning tells about the company.

The advantage of the written strategy plans are that they have been worked through and discussed as a piece of concrete text between board and management. The strategy plans were formulated through a number of board meetings, in which the members discussed the topic at length finally agreeing on a strategy that was then written up and signed by the board. The style of such plans (and other similar texts I will draw in to my analysis) stands out compared to the material from the board meetings by more clear expression of narratives. Meaning is condensed in these texts and they can deliver good insights into the self-conception and image of context of the company. As Fiberline grew and the organization was formalized, the written strategies also became more extensive. Around the middle of the 1990s the strategies would be worked out by the leadership group and then presented to the board that would approve and sign it.

Interviews

I have conducted a number of interviews that may be used for the analysis of Fiberline's history. A part of these are long unstructured interviews with Dorte and Henrik Thorning together. Here I would simply ask them to tell me the history about themselves and the company. After these I conducted a number of shorter interviews with Henrik Thorning. These were more structured, and I would normally send him an e-mail with questions in advance. The questions were on specific elements in the archival material. I would for example ask how a new member of the board had been chosen or ask him to explain a particular development in the production or a quality problem discussed. I have used these short interviews to support descriptive elements in my analysis, and I have used interviews with members of the management group in the same way, for example with vice president Stig Krogh Pedersen. The long interviews where Dorte and Henrik Thorning tell their history about Fiberline (and also their upbringing) are different. They are Dorte and Henrik Thorning's present sense of the history of Fiberline. During my

analysis I will use parts of these interviews to illustrate how narratives of the past live on through to today.

Contextual material

I will be focusing on the context as it made sense to and was narrated by Fiberline in the documents from board and management, strategic plans, etc. Individuals and companies alike may draw on larger narratives in constructing meaning. These may for example be narratives of national community as shown by Mordhorst in his studies of the Danish dairy company Arla.³² In the case of Fiberline these are, for example, shared ideas about the entrepreneur or shared narratives of the plastic industry, for example about the competitive nature of the industry. To understand how the world made sense to and was narrated by the Danish plastic industry, I will draw on materials from the Danish Plastic Industry organization representing its members in the industry. Mostly I will draw on the monthly magazine of the organization, which contained lively discussions between members and the management of the organization on various topics relevant to the industry. Henrik Thorning was active in these discussions, and Fiberline was from the beginning a member of the plastic industry organization and later also of the section for composite industry established as part of the Danish plastic industry organization.

As noted Penrose points to the context specificity of firm development by noting that the growth of every company is a unique process in historical time.³³ Through the analysis I will discuss the context of Fiberline more generally in order to facilitate my understanding of Fiberline's image of environment. In *The Theory of the Growth of the Firm*, focus falls primarily on the market context of the firm.³⁴ But as demonstrated by McGovern and McLean in their study of firm growth, many institutions of the surrounding world can influence the company by inducing it to act in one way rather than another.³⁵

I have sought to overview the Danish plastic industry by gathering and drawing on material from a long line of publications from both the Danish and European industry organizations; e.g. journals and conference proceedings. I have also looked for statistical material on the development of the plastic industry. This has been tricky, however, as the composite plastic manufactures like Fiberline are sometimes registered as part of the glass manufacturing industry. At other times they are categorized as part of the conventional plastic industry, the development of which is also closer to that of the composite plastic manufactures. This is my focus, therefore, in order to see the development of Fiberline as part of a relevant industry and its development.

Focus and structure of the analysis

In my analysis I will be covering a period of roughly 25 years of the company's history, from its founding in 1979 to 2004. Geertz notes that thick description really only stops when the attention of the ethnographer, exhausted by the intense focus of the analysis, is drawn to new things.³⁶ Other considerations, however, also guide the matter of focusing the analysis. In my case an important argument for ending my analysis around 2004 is the practical consideration of my case company, who were most comfortable in granting me unhindered access to their archive knowing that I would not take my analysis too close to present day.

In the first chapter I will establish what I believe to be the basic narrative of Fiberline. It expresses the self-conception and image of context of the company at a fundamental level. Constructed around the company's founding, this basic narrative was continuously reconstructed throughout its history. In the second chapter of the analysis I will consider the context in which the basic narrative of Fiberline was formulated; I will focus especially on the prior knowledge and experience of Henrik Thorning to show how these influenced the establishment of the basic narrative. In the third chapter I will discuss the

start-up period and show how the basic narrative directed the actions of the company in this early period leading to a buildup of a particular set of resources, strengthening the self-conception of the company and making it focus its actions on the exploitation of this particular set of resources.

In the fourth chapter I will discuss how the basic narrative, which had been strengthened through the start-up, was challenged by the difficulties of selling the profiles through the first years. In order to cope with these problems and make them sensible to the company, a new narrative of sale was established. It functioned to elaborate the basic narrative and as the grounds for acting in selling the profiles. In the fifth chapter I will discuss the efforts of Fiberline in raising capital and show how the self-conception of the company was also important in these efforts.

In the sixth chapter I will discuss the influence of Fiberline's self-conception and image of context in the company's perception of productive opportunities and in their decisions to act upon these opportunities. This is closely linked to Fiberline's decisions concerning diversification in which the company also acts on the self-conception established in the basic-narrative. In the seventh and final chapter of the analysis, I will discuss how the narrative on sale that had originally been established to cope with difficulties in the early years of the company's history influenced the long run development of the company as it made Fiberline conceive of its market context in a particular way, which influenced the company's market focus.

3. Founding a company and formulating a basic narrative

At the end of the day on January 31, 1979, Henrik Thorning got into his car, an Alfa Romeo, and drove the short way home to his wife and two young sons. He had quit his position as a technical manager in the Danish division of Jotun, a large producer of plastic materials, and that day had been his last on the job. In October of the previous year, he and his wife Dorthe Thorning had made the decision: now was the time when they would start up their own company.¹

He came home that Wednesday in January to a company that existed only in the form of a small office in the basement of his and Dorthe's house in the city of Kolding, where a business and financing plan had been drawn up. But over the following months Fiberline began to take shape. Henrik Thorning's idea was to start a production of profiles in reinforced plastic (See Appendix 2 for more details on reinforced plastic and profiles). These materials are strong, flexible, and lightweight, and in the 1970s they had been known and used in a number of different industries for a period.² But Henrik Thorning wanted to make profiles using a new method called pultrusion. This would ensure greater control of the process in which plastic material is mixed with reinforcement fibers. Potentially this would give a more homogeneous product of greater strength which would make the possible use of the profiles much greater compared to the profiles already on the market.³ So far there had been only a little experimenting with pultrusion in Europe, and no one had much success with the method yet.⁴ Therefore, Henrik Thorning would have to build up a production without really knowing if it would be possible to refine the process of pultrusion to a level where it could be industrialized.

In this first chapter of the analysis, I will establish what I see as the basic narrative of Fiberline, in which the self-conception and image of context of the start-up is expressed. Penrose, in a rare consideration of the start-up situation, notes that

The selection of the relevant product-markets is necessarily determined by the ‘inherited’ resources of the firm – the productive services it already has. This is true even in the extreme case of the prospective new firm with no resources at all other than the entrepreneur himself and what capital he can raise; the particular productive activities to be undertaken by such a firm must be chosen from among the alternatives suitable to the abilities, finances, and preferences of the entrepreneur.⁵

Fiberline and Henrik Thorning draw on the basic narrative when they make decisions and act; the preference of Henrik Thorning in focusing on particular productive activities and markets finds explanation in this narrative. The construction of the basic narrative is strongly influenced by the prior experience and knowledge of Henrik Thorning, which can be said to be the inherited resources of Fiberline or the productive services available to the company in the start-up situation. These inherited resources will be the focus of the chapter following this one. Before I turn to the basic narrative in this first chapter, I will begin by describing the circumstances of the start-up of the company in 1979 and the method of pultrusion.

The circumstances of the start-up

Henrik Thorning’s first few months working from the basement at Terresseparken in Kolding held many different challenges. Decisions had to be made concerning financing, equipment, machinery, personnel etc. Henrik Thorning agreed to buy a pultrusion machine from a Norwegian company called Plastkonstruktioner. The price was 740.000 Norwegian Kroner.⁶ After making this decision, he started to look for a suitable site for the production in the area around Kolding, where he had a strong network of family and

friends, some of which were to become an important part of the start-up. Also it was from this area he drew most of his professional experience, and he had good knowledge of the other companies in the composite industry, many of them clustering in the southeastern part of Jutland and particularly around Kolding. The existing composites companies were mostly using different methods of laying up fiber class to create for example boats. Since Henrik Thorning was planning to exploit the method of pultrusion to create a production of a different kind, these could not be perceived as immediate competitors. Instead, they presented a knowledge base from which experienced employees might later be drawn. Part of this professional local network was also Henrik Thorning's old employer Jotun. They were to deliver the polyester for the production, and as Henrik Thorning already knew the market well, he felt sure to get a good price. Jotun's sales manager Peder Irgens was (and is) a good personal friend of Henrik and Dorthe Thorning, and at Jotun, he dealt with the business of Fiberline.⁷

In a newly developed industrial area in Kolding, a local contractor was building a small production hall which suited the need of Fiberline. After the lease was signed, though, the contractor went bankrupt. The machine, however, was on its way from Norway, and Henrik Thorning was now in a hurry to find a new location. He found some empty buildings in the village of Nr. Bjert just outside Kolding. They were owned by a company called Peter Madsens Maskinfabrik and had been used for manufacturing equipment for the agricultural industry. The lease was only for part of the buildings, which also housed other small production companies, but included the right to use a parking lot in front of the buildings as well as some additional buildings for storage.⁸ Dorthe and Henrik Thorning decorated the small office in the corner of the production in orange and brown as the fashion of 1979 dictated. Here, Dorthe Thorning would set up her work place, which included an electric typewriter—very advanced technology at the time she thought and one of her most valued possession.⁹ Before Dorthe and Henrik Thorning had moved

in and started decorating office space, funds had been raised. Their strong family network played an important role in this effort.

Dorthe and Henrik Thorning had discussed their plans for starting up a company with Dorthe's older brother Anders Hallen Pedersen many times. He was following their efforts and was interested in investing in the company.¹⁰ Anders Hallen Pedersen owned a company called Dukadan, one of Denmark's largest distributors of plastic products and intermediates, and by the late 1970s Dukadan had invested in several different production companies in the plastic industry.¹¹

Henrik Thorning and Anders Hallen Pedersen agreed they would both invest 200.000 DKK in the company. Anders Hallen Pedersen represented Dukadan in this venture, while Henrik Thorning invested as a private individual (He borrowed the money from his father).¹² Apart from the 400.000 DKK invested by the owners Fiberline started out with further capital of 800.000 DKK. These were provided as a loan from FIH and from Aktivbanken A/S, who also granted an overdraft to support the day to day running of the company.¹³ The bank had been created in 1970 after a merger of four local banks.¹⁴ W.O. Christiansen had been manager of one of the four banks, Kolding Folkebank, and after the merger he was part of the management of Aktivbanken. He became Fiberline's contact in the bank, where both Henrik Thorning's father and grandfather were already customers after having used Kolding Folkebank before the merger.¹⁵

Today Henrik Thorning tells that he met with W.O. Christiansen already in 1978 to present him with the business plan for Fiberline. The plan was drawn up before Henrik Thorning quitted his job, because he wanted to be sure he could get the necessary capital before this. They met for coffee and what Henrik Thorning describes as a casual meeting at 11 am, one day in October. Henrik Thorning gave him the business plan and W.O. Christiansen promised to look it through after lunch the same day. In the afternoon he

called Henrik Thorning and said that everything looked fine and that the bank would be happy to lend the requested sum to the new company. He stressed, Henrik Thorning explains, that the material seemed to be well prepared, and that as both Henrik and Dorte Thorning were of respectable family he knew well it would be no problem.¹⁶

On January 27 1979 the founding was registered by the Danish authorities.¹⁷ Both the shares and the votes were divided equally between the two owners. Danish law stated that a joint-stock company with a share-capital of 400.000 DKK or less could chose to have a board of just two members, whereas companies with a larger share-capital were obligated to establish a board of at least three members.¹⁸ Still Fiberline chose to form a board with four members.

Henrik Thorning asked his friend Kai Busch to be part of the board of Fiberline. Kai Busch was managing director of Kolding Trikotagefabrik a local textile company.¹⁹ Dukadan were to be represented in the board by Anders Hallen Pedersen and his company's lawyer, Jørn Hansen. The two of them were used to working with each other in Dukadan and with the many subsidiaries already owned by the company.²⁰ Jørn Hansen could be very frank and sometimes appears to have taken it upon himself to communicate the attitude of Dukadan in situations where it would have been more difficult for Anders Hallen Pedersen (as a brother in law) to do so.²¹ This might also have been the point of forming a larger board, as a buffer for potential disagreements in the family, but nothing was stated directly about the matter.

Altogether Henrik Thorning appears to have been rather well prepared, not least for raising capital, before he quit his job in Jotun. Penrose notes that "the type of entrepreneurial service needed to raise capital may not be closely related to the type of services needed to run a firm efficiently, for successful raising of capital depends on an entrepreneur's ability to create confidence."²² Henrik Thorning certainly seems to have

inspired confidence, probably well aided by the relevance of his experience. But his network, both private and professional, was also important for his ability to raise capital and as such an important resource of the prospective firm which was put to service in the start-up situation.

In his article on the *Lessons from Iago*, Hjorth has discussed the persuasive abilities of the entrepreneur. He uses Shakespeare's Othello and particularly the sly and cunning character of Iago as an allegory to discuss how the entrepreneur prior to the start-up uses narratives to make sense of his idea of the prospective company and just as importantly to convince others of the idea.²³ Therefore, it may be assumed that the basic narrative of Fiberline to which I will soon turn (or at least a version of it set in future) expressing the core of the idea of the company was constructed well before the founding of the actual firm and instrumental in inspiring confidence in Henrik Thorning, making him persuasive.

Penrose also notes, however, the persuasive abilities of the entrepreneur are not the same services needed to run a firm efficiently. In the view of Henrik Thorning the efficient running of Fiberline rather demanded that resources in production and product development were put to service and as noted his intention was to build his company on producing profiles by pultrusion.

Pultrusion

At the middle of the 1970s, laying up and molding fibers soaked in plastic materials by hand was the most used method for making reinforced plastic. Apart from serious health issues, this was a problematic method because it was hard to control, which again made it difficult to ensure a homogeneous quality of the products. This meant that only quite simple constructions could be made in the material. Other different methods of molding then being used in the industry had the same problems of ensuring even quality. Thus,

many were experimenting with different forms of continuous processes because they would in principle be easier to control and optimize.²⁴

The method of pultrusion is based on a continuous process. It was first developed in the 1960s by Brandt Goldsworthy, an American mechanical engineer working for many years in the aviation and automobile industry and the lead innovator in many different methods of producing reinforced plastic materials. By 1976 approximately 40 companies in the U.S.A. were producing profiles by pultrusion, by a number of different methods, in an industry with no overall standard and mostly producing simple profiles.²⁵ The methods used had many limitations and the product was rather expensive compared with profiles in other materials, for example steel. The fibers were mostly pulled (hence the name of the method) through open polyester baths, making it difficult to control the placing of the fibers as well as problematic to ensure a healthy environment.²⁶

In Europe the experiences with pultrusion of profiles was still limited; although there were attempts in both England and France, no one had yet been very successful in developing the method to a stage where it could be industrialized. The products manufactured were still very simple and often of poor quality. As in America, the fibers were pulled through systems of open baths.²⁷

Jotun, where Henrik Thorning worked, was interested in developing new uses for the reinforced plastic materials and was also developing new methods of production. The company was focusing, however, on another method called filament winding, which is used to make pipes, poles etc.²⁸ The company Plastkonstruktion in Norway was working with pultrusion, and they had developed a way to inject the plastic material into a closed chamber through which the fibers were pulled. In October 1978 Henrik Thorning visited Plastkonstruktion in Norway: he saw that what they were doing for developing the process of pultrusion had potential and could make it possible to produce the profiles with

greater accuracy. Also the profiles could be shaped in countless ways (at least in theory) and given numerous different properties so that they might be used in many industries.²⁹ A production based on this form of pultrusion would then be different from that of most other composite companies in the region (and Europe in general). As mentioned these generally focused on a simpler process and a product with only one or very few uses.

In pultrusion as it is done in Fiberline today, reinforcement fibers are pulled through a guiding tool where they are placed very precisely. This is important for securing the desired properties of the finished profile. The fibers are then led through processing equipment where they are impregnated with plastic, called the matrix material. The combined mixture of fibers and matrix is pulled further through heating equipment where the profile is cured to its final form. The fully cured profile is then pulled forward to a saw that cuts the profiles into defined lengths.³⁰ The process enables continuous production of composite profiles with a constant cross section and material properties tailored to specific purposes (see appendix 3 for a drawing of the process and further details).

This new form of pultrusion required less manual labor than the older methods which would potentially help close some of the price gap between profiles in reinforced plastic and other materials. Another advantage was the improvement of the working environment gained by injecting the plastic material into a closed chamber instead of using open baths.

At Jotun, Henrik Thorning had been tasked with evaluating the different existing methods for producing reinforced plastic as part of his job. This had drawn his interest to pultrusion, and he had found it to be the most efficient method compared to the six other methods he evaluated (see appendix 4 for the main points of the evaluation). Also, he knew that Jotun was working with the development of new types of polyester that were easier to control in the curing process and would be well suited for pultrusion.³¹

As Henrik Thorning tells it today, pultrusion is a very difficult process to master because there are many variables to control: for example, the fit between the fibers and the geometry of the tool, the temperature and curing process as well as the reaction between the plastic material, the fibers and the different chemicals that are added to different purposes (to accelerate the curing of the profiles or to give them different colors for instance). The difficulties of pultrusion were also a general point raised when discussing new methods in the plastic industry in the early 1980s.³²

Plastkonstruktioner never really mastered pultrusion. According to Henrik Thorning, the Norwegian company's problem was a lack of focus on this single process—and eventually they gave up. This observation seems to be important for Henrik Thorning, who sees determined focus as a main explanation why Fiberline learned to master the process.³³ This focus and the process of pultrusion in general is a key part of what I have chosen to call the basic narrative of Fiberline which I will first present then elaborate on in the following.

The basic narrative of Fiberline

The basic narrative is centered on three core ideas of Fiberline; the product, the process and the potential. It is continuously formulated and reformulated from the start-up and, though not unchallenged, it continues to give sense and purpose to Fiberline up to today. It may be formulated along lines such as these:

Henrik Thorning founded Fiberline to produce profiles in reinforced plastic. It was simply too good an idea to pass over and he believed he could make pultrusion work. Profiles in reinforced plastic is an amazing product with many beneficial properties. If produced by pultrusion the profiles are usable for endless purposes and they have the potential to challenge profiles in steel and aluminum.

The main function of the basic narrative is to give purpose or meaning to Fiberline. It constructs the company's conception of self which as noted by Penrose is the grounds for action. Also the basic narrative creates an image of the environment (or the market) in which elements are in clear opposition to Fiberline (the steel and aluminum profile industries). This contributes to strengthening the self-conception of Fiberline. To know who you are it is good to know what you are definitely not.

In the following sections I will unfold the basic narrative through a line of examples and also discuss how this "micro" narrative of Fiberline draws on larger narratives for example of entrepreneurship to strengthen the self-conception of the company. I will first discuss how the motivations of Henrik Thorning are narrated and how he is established as the founder of the company. I will then consider the understanding of the product and the perception of the market in the basic narrative. I will also discuss the role attributed to the method of pultrusion in the narrative and finally connect these points to the construction of the company's birthday.

Establishing a proper motive and a founder

In November 1981, about three years after the founding of Fiberline, a local newspaper featured an article on the young company. It was mostly built on an interview with Henrik Thorning in which he discusses founding the company and his motivation for doing it. In the article it is noted that Henrik Thorning took the leap from a permanent position in Jotun. As he explains:

At that point I had worked in the Jotun Group for three and a half years. It was an excellent company and I was satisfied in working there. But at some point you get an idea that you would like to try out in practice... I think that for some people it is natural to be self-employed and start something up.³⁴

The same point was made almost 25 years later in 2004 in the publication made for Fiberline's anniversary. Here on the very first page it is noted that

It had always been Henrik Thorning's intention to become self-employed and his own master. It was just a matter of finding the right moment and the right product.³⁵

This statement establishes Henrik Thorning as the founder of Fiberline as expressed in the basic narrative. Also Henrik Thorning is using both passages to motivate his choice to start up Fiberline. In both instances, he is drawing on general perceptions about the motivation and character of the entrepreneur as described already by Schumpeter who notes that

First of all there is the dream and the will to found a private kingdom, usually, though not necessarily, also a dynasty ... Then there is the will to conquer: the impulse to fight, to prove oneself superior to others, to succeed for the sake, not of the fruits of success, but of the success itself ... Finally, there is the joy of creating, of getting things done, or simply of exercising one's energy and ingenuity.³⁶

The dream of creating a private kingdom is partly expressed as a motivational factor for Henrik Thorning in the quotes above, but more clearly expressed is the joy of creating and of getting things done. In this respect his motivations are apparently archetypical of the entrepreneur.

Smith and Anderson have studied entrepreneurial tales, the written or oral stories entrepreneurs tell about themselves or the stories their companies tell about them. These tales, Smith and Anderson suggest, are used as tools of sensemaking for the entrepreneur and his company.³⁷ At a general level this is necessary, they argue, because "Whilst the capitalist engine of growth is anonymous and amoral, entrepreneurship is personal and thus capable of moral and immoral action."³⁸ Therefore, entrepreneurial narratives have several common themes that emphasize morality and hard work.³⁹ The point is that

motivation driven by the impulse to make things work and the joy of creating are considered moral and heroic, as opposed to motivation driven purely by the prospect of profit.⁴⁰ At a more personal level, Smith and Anderson further argue, the entrepreneurial tale functions as a sensemaking tool for the entrepreneur and the company by providing a rationale for the arguably irrational risks of enterprising.⁴¹ This element of risk is often managed in the narratives by framing the elements of hard work and morality as causal factors of success.⁴² As mentioned earlier Henrik Thorning links determined focus to Fiberline's ability to master the process of pultrusion and by extension to the success of the company, thus establishing himself as a proper and hardworking entrepreneur.⁴³

By pinpointing the social exchange in which the entrepreneurial tale is constructed Smith and Anderson's research exemplifies how the individual or the company draws on larger shared or cultural narratives in making sense of the role of the entrepreneur. Venkataraman et al. in addressing the same issue notes that

... the very person and identity of "the entrepreneur" could be and often is an artifact of ... narratives about entrepreneurship. Another way to think about this is to notice that in societies where the view of agency as located within individuals dominates narratives, more individuals begin to act entrepreneurial.⁴⁴

In my first interview with Henrik Thorning, he told me that he just wants to be remembered as a good engineer and that he was primarily motivated by his joy of creating stuff.⁴⁵ To him the engineer is an entrepreneurial character that makes things and triumphs in seeing these things work.

Naming the product and the market

To Henrik Thorning then entrepreneurship is about producing stuff as formulated in the basic narrative. This is evident for example in the publication made for Fiberline's

anniversary in which the start-up is further elaborated by a story of how Henrik Thorning got the idea for Fiberline:

By the end of the 1970s Henrik was, as a young engineer, employed as a manager of the technical department at Jotun Group Denmark who delivered raw materials to producers of glass fiber products. As part of his job he had analyzed different materials and had reached the conclusion that plastic composites had a unique combination of properties which was only exploited within a few industries. The task was therefore to find an industrial process which effectively and with the smallest amount of manual labor possible could convert the raw materials into products of even and high quality. One day in the fall of 1978 he returned home after a visit to Norway with a small plastic profile in his hand. It was lightweight but still surprisingly strong... The profile had been made by a production process called pultrusion... He had found both his product and his process.⁴⁶

There is no doubt that the product is central to Henrik Thorning's conception of Fiberline. The point of the 1981 article mentioned earlier was to give examples of start-up companies in Denmark that could grow and prosper in a period where many other small companies were having difficulties because of a recession in the Danish economy at the time. In the article Henrik Thorning describes the strengths of Fiberline and tells that

We are working with a healthy material that has many positive properties and I predict a great future... Steel is heavy, it corrodes and it's slow to transport. Aluminum is heat-conducting and then it bends much too easily. Reinforced plastic on the other hand is lightweight, it doesn't corrode or bend, it's easy to transport and it has greater strength than steel. In short reinforced plastic has better properties than the conventional materials used for profiles.⁴⁷

In an earlier article from February 1980, Henrik Thorning makes the same point. The heading of the article states that "Denmark's first factory for plastic profiles has been created in Nr. Bjert. Fiberline A/S, that produces reinforced plastic, may become a serious

competitor for steel and aluminum products.”⁴⁸ In the article Henrik Thorning further explains that

The product has so much potential that it can only prosper... The possible use for profiles in reinforced fiberglass is almost innumerable, because you get a product that has the strength of steel but only weighs a quarter or a fifth and with the rising oil prices it continuously becomes more competitive.⁴⁹

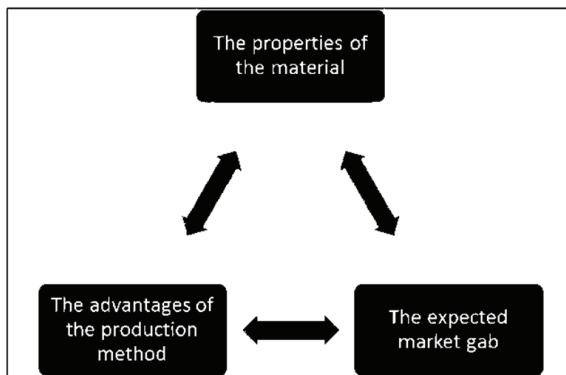
An important aspect of the idea of the product as expressed by Henrik Thorning is its versatility and by extension its good potential. To him the fact that it could be fitted to many different uses was a clear strength. In the 1981 article he compares the situation of Fiberline to other small companies and notes that “Fiberline is less vulnerable to industry specific recessions. If the construction industry is in trouble, there will be other customers that will place orders with us.”⁵⁰ In the article from February 1980 it is noted that

When asked who can use these new plastic profiles from Nr. Bjert, he [Henrik Thorning] answers that the group of customers at the current moment in time is first and foremost made up by a broad section of the industry, but that the profiles can be used with advantage for a long line of other and different purposes.⁵¹

The idea of the potential of the product—that the profiles can be used in almost any industry imaginable—is linked to Henrik Thorning’s image of the market. Again and again Henrik Thorning returns to comparisons between the reinforced plastic materials and steel and aluminum (as in the quotes above). The idea of the market as it is expressed in the basic narrative is very broad and focused on substituting products rather than direct competitors. Of these Fiberline only saw a few that didn’t seem threatening. In an article from August 1980 Henrik Thorning says about the competitors that “at home Fiberline is the only company that runs a production of profiles in reinforced plastic ... and across the globe there are no more than a handful.”⁵²

Today Henrik Thorning explains that he thought about the general structure of industrial production before the start-up and that he saw a missing link with great potential. As he sees it, materials are made into products by three different basic processes. Be it steel or aluminum or any other manufactured material, they are all made either as sheets, as molded parts, or as profiles. The composite industry could not yet deliver profiles that were able to compete. However, in substituting industries (for example steel manufacturing) profiles were big business. Thus to Henrik Thorning there seemed to be a gap in the market, a gap that held the potential for becoming a large industry.⁵³

Henrik Thorning adds that when he was thinking all of this through before the company's founding he summed up the idea for Fiberline in the figure below, showing the potential of profiles in reinforced plastic that he saw as being based on many considerations that were mutually dependent.⁵⁴



This is a visualization of the basic narrative as formulated by Henrik Thorning. From around 2004, he started using a PowerPoint presentation called *Meet the owner* for the introduction of new employees to Fiberline.⁵⁵ In this presentation, the same sense is

expressed. Here five out of the first 10 slides discuss the properties of reinforced plastic compared to steel and other products and the structure of industrial production.

In the article from February 1980 Henrik Thorning explains in a bit more details that “The product range of Fiberline is built around a program of standard profiles, for example angel and flat profiles and tubes as well as special profiles made to fit the specific demand of the customer.”⁵⁶ This focus on a standard program is a consequence of the basic narrative and the construction of the idea that the profiles can be sold to many different industries directly.

Specifying the production process and constructing the birth of a company

The method of pultrusion is central to the self-conception of Fiberline as expressed in the basic narrative. First of all it is a precondition for manufacturing the product which, as already discussed, is central in the narrative. Also the process of pultrusion is connected to Henrik Thorning’s conception of entrepreneurship and the role of the engineer. The anniversary publication is used to describe establishing the process of production at the start-up. Jens Johansen, the first foreman, is interviewed and on the first production he comments:

After having spent a month or so lining up the machine, we started the first experimental production. It was a so-called flat profile of 50 x 10 millimeters that today could be set up and produced with one hand tied around the back... But it turned out to be incredibly difficult. It [the profile] broke constantly and we didn’t know why.⁵⁷

He further observes that “We experimented as we went along and adjusted everything imaginable and finally we succeeded. That evening we had champagne!”⁵⁸ The joy of mastering the process of pultrusion expressed in this passage is central to the basic narrative; the focus on process is also part of the company name as Henrik and Dorthe Thorning explain it to be a visualization of the process of production.⁵⁹

Moreover, Fiberline chose its birthday in accordance with the basic narrative and the focus on the production process.⁶⁰ Many dates could have been chosen and celebrated as the company's birthday: for example, the day the agreement with Dukadan was made, the day the bank granted the necessary capital, the day of the formal approval from the authorities, or the day of the first sales. But Fiberline chose the day where Jens Johansen says they had champagne—the day of the first successful run of the production. By celebrating that day a particular sense of meaning or self-conception is being enforced as also formulated in the basic narrative.

The birthday, May 1, is still celebrated today, and the publication made for the 25th anniversary has already been mentioned many times. Like so many publications of that kind, it tells a tale of what happened. It is, however, first and foremost a tale of products and product development. Of 60 pages fewer than 10 describe sales, strategy, communication etc. The rest tell of production, new products, new projects, and of research and development.⁶¹ The publication is an artifact used to express the basic narrative of Fiberline and to reaffirm the company's conception of self.

Conclusion - Product, process and potential

In this first chapter I have discussed what I see as the basic narrative of Fiberline. It is centered on the product, the production process and the potential of the material. Also, it establishes Henrik Thorning as the founder of the company and promotes his motivations as driven by an explorative spirit rather than profit. In describing the basic narrative of Fiberline, I have drawn on a line of texts from the period around the start-up to the communication made for the 25th anniversary and through the following chapters I will give many other examples of the use of the same narrative throughout the years. I will argue that the continued use of this narrative shows a construction and reconstruction of a particular self-conception that has continued to exist through the years and over the

following chapters many examples of the continued use of the basic narrative will be discussed. This is evidence of the fact that the self-conception of Fiberline as it was established in the first years of the company's existence appears to have been quite strong and enduring. This is however not to say that such strong and enduring narratives necessarily exist in any case. Other companies may very well have experienced a much less stable or inhomogeneous use of narratives across a span of years.

In establishing the basic narrative, Fiberline and Henrik Thorning draw meaning from larger, shared narratives, for example of the entrepreneur and entrepreneurship as discussed. Smith and Anderson have explained this praxis to be a matter of establishing the company as proper and moral in the eyes of the surrounding world but also in the company's conception of itself.

In establishing meaning and constructing the basic narrative, Fiberline also drew on the prior knowledge of Henrik Thorning. As noted Penrose argues that in the prospective firm the relevant product-markets and the particular productive activities chosen are guided by the "inherited" resources available for service in the start-up. These inherited resources are put to service based on the self-conception of the company, which is constructed through the basic narrative. The knowledge and experience Henrik Thorning got prior to the founding are part of the inherited resources, or they are available services of Fiberline in the start-up and part of the context in which the basic narrative was constructed. In discussing the circumstances of the start-up in this chapter, the network of Henrik and Dorte Thorning has been shown to be an important resource put to service, for example in financing the start-up. In the following chapter I will discuss the context in which the basic narrative was first formulated and consider the role of the prior experience and knowledge of the entrepreneur, Henrik Thorning.

4. The prior experience of Henrik Thorning and the context of the Start-up

In the first chapter of the analysis I unfolded the basic narrative which functions to construct Fiberline's self-conception. This construction is influenced by the prior experience and knowledge of Henrik Thorning, which can also be said to be the inherited resources of Fiberline available for service in the start-up situation. Therefore, the prior experience and knowledge of Henrik Thorning will be the focus of this chapter as an important part of the context of the basic narrative.

First, I will describe the development of the plastic industry in Denmark in general and the composites industry. Then I will discuss Henrik Thorning's professional background, first in technical sales in Dukadan and then as head of technical development in Jotun Denmark. I will also place the experience of Henrik Thorning in the context of the plastic industry in an attempt to show that he worked at the forefront of the innovative development of the industry, granting him knowledge of the products and production methods, experience with developing both, and good entrepreneurial resources.

The plastic industry in Denmark in the 1970s and start 80s

The Danish plastic industry started growing after the Second World War but accelerated in the 1960s, powered by the massive growth of the Danish economy at the time. The period saw an explosion in the total turnover of the industry, and an estimated 75 companies in 1950 had grown to about 200 in the industry by 1970 and 528 by 1986.¹

The oil crisis of 1973 put a brake on economic growth in Denmark, and at the same time discussions about the negative results of the consumer society, especially for the environment, were growing.² For the plastic industry, which uses oil products in the production, the challenges of the crisis in 1973 were mostly in the form of a more difficult

supplier situation and rising prices on raw materials. Yet, there was also a growing skepticism toward the industry's use of different chemicals, many of which were suspected to be problematic for both health and environment.³ However, in spite of the oil crisis and growing skepticism towards the products in the public, the consumption of plastic continued to grow in Denmark throughout the 1970s; the versatility of the materials was great and numerous advantages could be gained by using them.

Through the 1970s a number of companies in the industry developed and specialized. They were optimizing and automatizing their production. A few companies grew larger, but the industry experienced a significant number of small or middle sized companies.⁴ Many were subcontractors delivering products to a single or a few different industries. This structure meant that many companies pushed for international sales, and exports increased through the 1970s and start 80s. Based on a 1984 survey of the Danish plastic industry, it was concluded that the international competitiveness of the industry was very good and that more than 40% of production was exported. This increase was attributed to a high level of knowledge and innovation in the industry and the structure of many small or medium sized companies thought to be better at adapting to technological development than large international competitors.⁵

Though the industry was developing well and growing faster than most other Danish industries at the time, there still were concerns at the end of the 1970s. As technologies for producing in plastic became more known and used, and as many producers were operating as subcontractors, there was a fear that customers would engage in up-stream integration, producing the plastic products themselves. However, this integration would require a large production and heavy investment on the part of the customer, and the discussion at this point in time was mostly speculative.⁶ Another worry was that the industry was entirely dependent on raw materials from a small number of large suppliers,

all of them international; the only Danish manufacturer, Mærsk Kemi, had stopped its production of plastic materials in 1978. Also fluctuations of prices for plastic material were great as they were directly dependent on oil prizes, a challenge for the nerves of most plastic producers in the 1970s.⁷ In 1979, however, the Danish plastic industry organization concluded that overall it was a prosperous industry, with great export potential. They hoped for more stable supplier conditions or that in the event of raising prizes they could pass these on to their customers as they had done before.⁸

A new worry of the plastic industry by the late 1970s was the pressure that was building from increasing restrictions from Danish authorities. As already mentioned the effort of preserving the environment underwent an institutionalization through the decade. Both the authorities and the Danish unions were concerned about the health issues in the plastic industry connected to evaporation of chemicals like styrene, a solvent added to polyester and commonly used also in the production of composites. It was suspected to cause cancer; although this hadn't been proven there were still many problems in using an organic solvent like styrene as it could, if inhaled, cause headache, skin eruptions, and short term amnesia.⁹ Therefore, there was a wish from the Danish authorities of reducing the allowed evaporation values.¹⁰

The development of the composite industry in Denmark

Composites are materials that have been made by combining different materials into one. Reinforced plastic materials are strong and lightweight, the main properties to be exploited in the early composite industry in Denmark. The first Danish production of reinforced plastic—to be used in boats for the navy—was made by a Copenhagen-based company called Sandersens Bådebyggeri in 1956.¹¹ In the 1960s a number of small companies started producing boats in fiberglass especially in the southeastern part of Jutland. The strength and light weight of the composites combined with its ability to bare

harsh conditions while being maintenance free made the materials ideal for boats. The Danish manufacturers mostly made small ships and boats for leisure use. They used a labour-intensive method in which fibers were soaked in open polyester baths and then laid up by hand and molded into form. The evaporation and handling of the styrene added to the polyester led to bad working conditions in many of these small companies often working in a primitive fashion.¹²

At the beginning of the 1970s the greatest part of the composite materials used in Denmark still went into producing boats, but a number of companies were experimenting with the new materials for other purposes. The development of the composite industry in Denmark was powered by entrepreneurial individualists rather than by large companies already in the plastic industry, and an estimated 400 small producers existed in Denmark in the middle of the 1970s. A number of these were founded in the southeastern part of Jutland, like many of the existing companies, particularly in and around the city of Kolding, making the city the center of what might be called a composite cluster.¹³

Most of these small new companies were founded by men who had been working and gathering experience in other composite companies in the area. Many of them, especially the first movers, had worked in the production of the companies building boats in composites. They started their own production using materials in known forms as well as known methods to make new products, for example oil tanks or trailers and caravans. The companies were drawing on practical production experience, exploring the possibilities of the materials and experiencing all kinds of problems as they went along.¹⁴

Close to Kolding in the small town of Lunderskov, a local furniture manufacturer started experimenting with fiberglass already in the 1950s. Eventually the company changed name to LM Glasfiber and in 1978 produced its first wind turbine blades in fiberglass. Today, almost half of all the reinforced plastic used in Denmark goes into producing parts

for the wind turbine industry, LM Glasfiber (now LM Wind Power) being the largest supplier for the industry and the largest Danish manufacturer of composite materials.¹⁵ In general the composite industry has experienced growth and consolidation similar to the plastic industry and today offers specialized products for a small number of industries on international markets.¹⁶

Environmental concerns and organizing the industry

In the 1970s and 1980s the relation between the producers of composites and the rest of the plastic industry was in some respects problematic. The use of open polyester baths made the composites industry a major consumer of styrene because it is added to liquefy the polyester. The consumption was heavily criticized as it was thought to reflect poorly on the entire plastic industry already struggling to create a better image. This was an important reason why the composite industry, already in 1978, decided to create a separate organization which became a subsection of the Danish organization for the plastic industry.¹⁷ Jotun was among the first members of the section, and their managing director was a member of the first board of directors.¹⁸

The 1970s saw the growth of the environmental movement in Denmark and the institutionalization of the effort to preserve the environment through the first laws of environmental protection, the establishment of a ministry for the same and a lively and continued public debate on the matter which was often also connected to a debate on the work environment in the Danish industry.¹⁹

By the end of the 1970s the Danish work environment authorities were demanding a drastic cut in the allowed evaporation of styrene in the production as mentioned. The limit intended by the authorities was considered impossible to meet by the section. Many doubted whether it was at all possible and most were worried that the investments necessary to meet the demands would be too expensive to bear.²⁰ Through lengthy

negotiations they eventually agreed on a smaller reduction, which however still meant that most of the companies (many still young and small) would need to invest in ventilation systems and other safety equipment. The limit would later be reduced further, ending in 1987 at the level originally intended by the Danish Working Environment Authorities.²¹

For many producers in the composite industry Jotun, who was an important supplier, played a role in the effort to adapt production to meet the restrictions. Jotun offered to help the small companies measure the evaporation and to guide them in setting up the production so that problems were minimized. Frequently, some results could be made simply by rearranging the production line to fit better with the natural stream of air from doors and gateways, which would lessen the necessary investments in ventilation systems.²² Henrik Thorning was often responsible for planning these tests and guiding the customers.²³

The section was active in arranging courses and other forms of education for the members. At first, these activities focused mostly on meeting environmental demands, but over time the section started offering education for their members on many other different topics, such as process technology. Through the section members could be educated by researchers working with reinforced plastic materials at a number of Danish institutions of higher education, including Research Center Risø, Aalborg University, the Danish Technical University, and the two Danish institutes for technology, or by engineers from the large suppliers of raw materials.²⁴

As a frequent participator in the activities of the section, Henrik Thorning was part of a milieu in which environmental and work safety issues were taken very serious, and where there was a constant pressure from authorities.²⁵ One result of the effort to meet the limits of evaporation in the production of composites was an intense focus on coming up with new ways of production that could be automated to a degree that it could be handled in

closed confinements.²⁶ This view was adopted by Henrik Thorning and, as demonstrated, an important aspect of his conception of the company was a focus on the methods of pultrusion as expressed in the basic narrative.

As seen the product was raised up to a level of perfection in Fiberline's basic narrative. In doing so, Henrik Thorning was not only referring to the potential of reinforced plastic profiles as a form of revolutionary renewal of industrial production and construction as discussed but also drawing on larger shared narratives about the proper way of doing business in Danish society. In the 1981 article on the strengths of Fiberline compared to other Danish start-ups discussed earlier, Henrik Thorning as noted starts out by stressing that "We are working with a healthy material."²⁷ In the article from August 1980 Henrik Thorning tells that "At Fiberline the profiles are made by infusing the matrix directly into the tools. This gives an environmentally-friendly production process."²⁸ For the February 1980 article the first foreman of the production at Fiberline, Jens Johansen, was also interviewed: "Jens Johansen says about the working conditions at Fiberline that it is something completely different than what he has so far known. The environment is fine. No dust or noise."²⁹ In stressing the environmental benefits of producing profiles by the new method of pultrusion, Henrik Thorning is establishing Fiberline as a proper modern Danish company.

In the publication produced for the 25th anniversary, the image of environmental benefits of Fiberline's production process is also stressed as one of Henrik Thorning's motives for choosing pultrusion as the founding idea of his company. This motive is presented alongside the original idea about the potential of the product wrapped in the lingo of the new millennium:

Pultrusion provided completely new prospects for producing high-tech products with a large content of knowledge that allowed for innovation

in almost every industry. At the same time it was a closed process that would secure a good working environment where there would be no problems in meeting the demands from the authorities.³⁰

Furthermore, the publication stresses that Fiberline has won awards for its work in reducing the environmental impact of its production. Also it is noted that Fiberline is one of the few companies in Denmark who by installing a private wind turbine is covering their own consumption of energy.³¹

Dukadan and Henrik Thorning's two years working there

Henrik Thorning was trained as a machine operator and had then become a mechanical engineer. When he was done with military training in 1973, he needed a job; he got a couple of offers, one of them from his brother in law Anders Hallen Pedersen. As Henrik Thorning was interested in plastic and saw his brother in law's company as offering the best possibility of influence, he chose Dukadan, where he worked for two years.³²

As already mentioned Dorthe Thorning's older brother Anders Hallen Pedersen was an important figure in the start-up of Fiberline, as his company Dukadan owned half of Fiberline when it was founded.³³ Like Henrik Thorning, Anders Hallen Pedersen was a mechanical engineer who served in the Danish air force after finishing his studies. In 1968 he founded the company Dukaplast A/S (later Dukadan A/S) after working for a couple of years in a Danish company that sold bottled gas. A friend from the air force and a cousin of this friend supplied the necessary capital. They came from a wealthy family that owned one of Denmark's largest steel trading companies. As part owner of Dukaplast, Anders Hallen Pedersen contributed mostly by running the company.³⁴

Among a wide range of other activities, the two cousins were trading plastic parts on the Danish market during the 1960s. Although not very successful, they could sense the potential in these new materials. Anders Hallen Pedersen could too, and the new company

was set up to focus only on dealing plastic parts. Dukaplast became a distributor on the Danish market for some of the biggest European plastic companies, the foundation of the growth of the company when plastic sales boomed in the 1970s.³⁵ The two cousins were not part of the daily running of the company, and it was mainly through Anders Hallen Pedersen's effort that it became a success.³⁶

Throughout the 1970s the company grew rapidly and began production of different intermediate goods in plastic materials. This would most often be done by starting up new companies owned partly or entirely by Dukadan. Some of these companies were sold off again while others were kept, but the main part of the business continued to involve dealing with different parts in plastic. Throughout these years the company earned very good profits, and Anders Hallen Pedersen took care to secure his influence in an agreement with the two cousins stipulating his share of votes at 50% even though he owned only one third of the company.³⁷

In 1979, when Dukadan became involved in Fiberline, Anders Hallen Pedersen was 38 years old. He ran a successful business that he had himself developed from scratch in just a little over 10 years. Through his co-ownership of Dukadan, he was also gaining influence in the much larger steel company owned by the family of the two cousins. He would later become a principal owner and managing director of it. The differences between Henrik and Dorthe Thorning and their little start-up and the accomplishments of the successful older brother were indeed substantial.

At Dukadan Henrik Thorning was hired to work in sales, but his contact with customers was mostly related to technical questions. This position gave him an opportunity of doing a lot of experiments, taking part in developing new products. One of these experiments, he remembers, concerned newly developed products for the fishing industry that needed

testing in the harsh environment in which they were to function. To do these tests Henrik Thorning spent 14 days on a fishing boat on the North Sea.

The period working at Dukadan was interesting; Henrik Thorning says that he learned a lot and also got the opportunity of observing an organization that had grown fast. To Henrik Thorning, Dukadan was however first and foremost a dealer of plastic parts, and in 1974 he left the company to work in the Danish division of Jotun, a large Norwegian manufacturer of paint.³⁸

Jotun

Originally Jotun manufactured marine paint for the whaling fleet in Norway, but the company grew to supply many different forms of paint globally. In 1972 the company, then already international, merged with three Norwegian competitors, one of which primarily manufactured paint like Jotun. Two of the companies, however, also produced materials for the plastic industry in the form of unsaturated polyester and synthetic resins. Like paint the plastic materials could be used in coating surfaces, but with other properties (for example better wearing qualities). For the Jotun Group the merger limited competition on the Norwegian home market and helped open the company up to further internationalization.³⁹ Part of the idea of the merger was also to develop the production of plastic materials as part of the business alongside the production of paint.⁴⁰ When Jotun Denmark was established in 1966, they set up office in Copenhagen where most of the large shipping companies who would buy ship paint were located. However, as Jotun's strategy changed to focus on polyester and resins, they decided to move to the southeastern part of Jutland where the Danish plastic and composite industries were developing most.⁴¹

Henrik Thorning was hired to be head of technical services in Jotun Denmark. By the time he began in 1974, the company had moved to its new headquarters in Kolding. In hiring

mechanical engineers like Henrik Thorning, Jotun sought to strengthen its capabilities in new areas, which might increase industrial production of products using their materials. Henrik Thorning was to work with composite materials that seemed to hold great potential and for which Jotun could supply the polyester.⁴² In Denmark the new industry of companies that used composite plastic materials in their production was flourishing. As mentioned the first movers were mostly using these materials to construct new, lightweight ships and boats, and in the beginning of the 1970s these made up the greatest part of Jotun's Danish customers.⁴³ Through their efforts, Jotun hoped to spur production of other products as the materials continued to develop and be industrialized. A test facility was established in Kolding, and here they mostly worked with development of the different methods for production of reinforced plastic materials. The young composite plastic industry at this time had many problems concerning the production, and as a large supplier Jotun worked actively to solve these.⁴⁴

Henrik Thorning generally had free rein to experiment in his job. He sought to further his knowledge about glass fiber, which was essential to producing the most used form of reinforced plastic.⁴⁵ For instance, he spent six weeks in France following the production at Saint Gobain, one of the world's largest producers of glass fiber. Also, as he explains, he participated in many conferences in order to keep up with the development in the industry.⁴⁶

Through his job at Jotun Henrik Thorning gained knowledge of composite materials and how they could be used and manufactured. Furthermore he got to know the Danish composite industry that was growing fast and becoming a part of the more mature plastic industry. In working with technical service at a large supplier, Henrik Thorning was positioned at the center of the innovative development of the plastic industry, which afforded usable knowledge and experience.

Innovation in the Danish plastic industry

Hansen and Serin have analyzed the development of innovations in the Danish plastic industry until the end of the 1980s. Based on extensive statistical material, they formulate three stages in the history of the industry where the innovative development is driven by different parts of the industry's value chain. First they argue there was a pioneering phase from the end of the 19th century until around the Second World War, when the industry was moved forward mostly by the innovations of entrepreneurs who would typically also produce their own raw materials, build their own machinery, and so on.

The second phase of development was driven by the producers of raw materials, mainly large international companies in the chemical industry like Jotun. This meant that new types of plastic found their way to the Danish market faster than before and that the Danish plastic producers benefitted from the international market they were part of through their suppliers. The competition among producers of raw material was fierce, and the product in itself didn't allow much differentiation apart from in the very first phase after the introduction of new materials. Therefore, technical service became an important competitive factor that developed through the second phase of the industry's history from being a matter of information about new types of plastic to becoming much more extensive.⁴⁷ Hansen and Serin note that "The technical service has become comprehensive and today it includes formulating and doing tests, construction and design assistance, and more."⁴⁸ This they further conclude is the reason why only around a half percentage of the total turnover of the plastic industry was allocated to research and development activities yearly through the 1980s. Actual innovative development in the industry occurred in a small number of large suppliers of raw materials.⁴⁹

Hansen and Serin, however, also note that by the end of the 1980s (when they did their analysis) this appeared to be changing and that the industry had moved into a third

development phase. As more and more complicated products could be manufactured in plastic, the customers of the plastic producers began to demand more: they would need help in picking the right materials and selecting the right tools for the production. This also meant that innovations would now be made in collaboration between supplier, producer, and often also customers. The producer had a central role in this development, and Hansen and Serin report cases where the producers would take active part in drawing the customer's end product. As such, they conclude, some of the plastic producers have developed resources vital for the customer's own development and a source of competitive advantage.⁵⁰ They further note that continued innovation and specialization would be important for plastic producers, and they speculate that this development will constitute a reestablishment of the position of the creative entrepreneur in the plastic producing company and in the industry. This development is furthered by the growing international competition which at the brink of the European single market was a much debated theme and the cause of Hansen and Serin's interest in the innovative development of the industry.⁵¹ Finally, they note that the importance of specializing is further advanced by the fact that the Danish plastic industry is made up mostly of small companies.⁵² This last point of Hansen and Serin on the internationalization of the industry and the continued specialization of the producers falls in line with the points drawn from the industry organization's own perception of the development of the industry by the end of the 1970s that I discussed earlier.

Jotun's development in Denmark through the 1970s offers an example of Hansen and Serin's second development phase of the plastic industry—especially considering the arguments for Jotun's establishment of a Danish subsidiary, their reasons for hiring people with knowledge of production development like Henrik Thorning, and his function in his job there. His function in Jotun exemplifies the extensive role of technical service given by the suppliers of raw materials in the period. In formulating and doing tests, in

assisting the producers in developing both construction and design, Henrik Thorning was at the center of the innovative development of the industry in the 1970s. From this much knowledge and experience could be gained. In addition, he was used to visiting and helping the many small start-up companies amongst Jotuns' customers and understood the challenges of these young companies.

As it would grow from the beginning of the 1980s, Fiberline was an example of the third phase described by Hansen and Serin. Henrik Thorning's company developed a praxis of cooperation with both suppliers and customers and often took a very active role in the product development of their customers. Fiberline also exemplifies the reestablishment of the innovative role of the entrepreneur in the plastic industry as expressed in the prominent role of Henrik Thorning in the company's basic narrative.

Conclusion - Knowledge of materials, experience in production

This chapter has focused on the prior knowledge and experience of Henrik Thorning. I have argued earlier that in or before the start-up of a company the entrepreneur will, to paraphrase Smith and Anderson, use the entrepreneurial narrative, what I have called the basic narrative, as a sensemaking tool for providing a rationale for the arguably irrational risks of enterprising.⁵³ In this endeavor, the prior knowledge and experience of the entrepreneur is important.

Henrik Thorning knew the plastic industry to be in a state of growth, and he had seen many examples of start-ups in the composites industry. He knew the strong environmental focus in the plastic industry and had practical experience with the challenges new rules and regulations brought to small companies. He knew that cleaner production methods could be the source of competitive advantage in an industry so regulated by public opinion and environmental legislation. As such the focus on pultrusion (with its environmental benefits compared to other methods of production) in the basic narrative is

not based on the engineer's interest in or fancy of a smart method alone, but actually draws on a shared perception in the industry that securing the work environment was necessary for the continued success of the industry. This knowledge was useful in constructing the basic narrative, because it made the idea of Fiberline seem convincing and the risk of starting up the company seem sensible.

The two years Henrik Thorning worked at Dukadan afforded him general experience in product development in the plastic industry. In Jotun this was further extended by knowledge of composites production. He assisted many start-up companies in developing their production of composites and acquired experience of many different methods. The period when Henrik Thorning worked at Jotun was characterized by the innovative development of the industry being centered on the suppliers of raw materials, which he experienced directly. Like his knowledge of the industry, this experience in production development was useful in constructing the basic narrative of Fiberline: it made it seem reasonable and convincing that Henrik Thorning could actually make the process of pultrusion work.

As mentioned earlier Penrose notes that the particular productive activities to be undertaken by a new firm are chosen from the alternatives suitable to the *abilities* and *preferences* of the entrepreneur, which is to a high degree provided by his prior knowledge and experience.⁵⁴ The use of the prior experience and knowledge of Henrik Thorning in making the basic narrative of Fiberline convincing enough to act upon as clarified above may be said to explain his preference in choosing pultrusion of reinforced plastic profiles as the productive activity of his company. His ability to start up a company based on this particular productive activity was also strongly influenced by his use of prior experience and knowledge, as will be evident from the following chapter focusing on the start-up. Here he would also put his inherited entrepreneurial resources to use—or

“in service” as Penrose would phrase it. The entrepreneurial resources of the company, Penrose notes, are those that are put to service as contributions to the operations of a firm, which relate to the introduction and acceptance of new ideas in the company.⁵⁵ The experience of Henrik Thorning indicates that he took strong entrepreneurial resources with him into Fiberline which, given the problems of starting up the production, was fortunate. This will be clear from the following chapter in which I will discuss the start-up period and process.

5. Putting resources to service and strengthening the basic narrative in the start-up process

In the last two chapters I have discussed how a basic narrative was constructed in Fiberline around the time of the founding. I have also shown how Henrik Thorning's prior experience and knowledge were important parts of the context in which the narrative was formulated, as both contributed to make the narrative sensible and convincing. In this chapter I will discuss how Thorning's prior knowledge and experience as inherited resources were put into service in the start-up of the company, and I will consider how the new experience gained through this contributed to reaffirm the basic narrative strengthening it further.

As with so many other companies, Fiberline's start-up was difficult in many ways. I will first discuss the process of getting the production running over the first circa two years; I will consider the first sales of the company and finally the challenges of financing the running of the company in the start-up period.

Getting started

It was not only for financial resources that Henrik Thorning looked to his network prior to the start-up as already discussed. From the office in his basement, Henrik Thorning hired a foreman and an engineer. He wanted them to be ready to start working even before the machine would be delivered, so that they would be well prepared to start production. The new foreman, Jens Johansen, who would be responsible for running the production, already knew the composite industry. He had been working as a foreman in a small company that manufactured fishing boats in fiberglass in the Kolding area. When Henrik Thorning was working at Jotun, they had gotten to know each other working on some projects together.¹ Furthermore, the new foreman had earlier been working in the textile

industry, and he had some experience with continuous production processes.² Svend Erik Dahlgren, who was to operate the machine, was also recruited from Henrik Thorning's network, but he didn't have any experience in production of composites. He was related to Alfred Hansen who was running Peter Madsens Maskinfabrik, and he knew the buildings well and could help set up the machine in them.³

To prepare the three of them went to Norway for a fortnight to be trained in working the pultrusion machine at Plastkonstruktioner. Jens Johansen later remembered the faith they had in their own ability and the possibilities of the new production as they returned. "I ... didn't know anything about pultrusion. But after two weeks in Norway, we went home assured that we had everything under control," he explains.⁴ On their return they started clearing the buildings and preparing for the installation of the machine. Plastkonstruktioner delivered a complete line including heating chamber, pulling devices, and saws as well as tools and raw materials for the first profiles. In principle Fiberline would soon be ready to begin production.⁵

But as already noted it wasn't until May 1, 1979, after weeks of testing, that the first profile was pulled successfully through the machine. Even more time passed before profiles could be produced in larger amounts. In August, after more than half a year of experimental production, it was still very difficult to control the process, and the quality of the profiles was poor.⁶ Earlier I quoted Jens Johansen when he told about the start-up of the production for the 25th anniversary publication and the process was clearly remembered as difficult.

According to the minutes Henrik Thorning opened the first meeting of the board, held about half a year after the founding, with a presentation "of the basic idea of Fiberline and the possibilities of the production."⁷ It isn't clear how this information was presented, but as production was the only topic specifically named in the minutes as part of this talk, it

probably received attention in proportion to the importance given to production in the self-conception of the company as expressed in the basic narrative. Following this presentation the board continued to discuss the production. Jørn Hansen asked how the quality of the profiles could be improved, as it was still very difficult to control it.⁸ Jørn Hansen and Kai Busch also questioned the large and expensive waste in production, and Henrik Thorning explained that this was due to the problems of getting the production running. Waste of fiber was caused each time they had to stop production and change the tool, as well as when the production failed.⁹

Around New Year 1980, a year after the founding, a large Danish company, E. Rasmussen Industri, placed the first substantial order at Fiberline. Amongst other things this company produced cabinets for electrical installations. The profiles in reinforced plastic had two very good qualities suited to this purpose: they were electrically isolating and could be produced with a complex geometry prepared for the installation making this procedure, as well as assembling the cabinet, much simpler. The order was very important to the board. Still E. Rasmussen Industri had to wait, as it was very difficult for Fiberline to produce the profile.

The minutes of the board meeting in March 1980 noted that “In the production the period has been marked by tests partly made in cooperation with the supplier of raw materials and by the production of colour samples for ER-I [E Rasmaussen Industri].” In September 1980 they were still not producing for E Rasmussen Industri, and it is noted that

The period since the last meeting has been marked by the running-in of the ER-I profiles. The running-in has taken longer than expected and it has proven necessary to make changes to the tools ... since the defect is in the construction of the tool, it is the supplier, Plastikonstruktion A/S, that will have to decide where the changes are to be done ... Jørn Hansen is stand-by with legal assistance.¹⁰

Almost a year after E Rasmussen industri had placed their order at Fiberline, they were still waiting for deliveries. Jens Johansen explains that

... It wasn't easy. The new tools from Norway were late and when they finally arrived we couldn't make it work. The sides of the profiles collapsed, the surface was peeling, the colors were wrong, and so on. Actually it took a couple of years to get an effective production running and in that period I can easily say that we felt the hardship of life.¹¹

And E Rasmussen Industri was not the only ones experiencing problems with the production of Fiberline. In the minutes of the board meeting on January 9, 1981, Henrik Thorning describes this problem, along with the result of the half-year prior to this:

The result is marked by the continued delay of the ER-I profiles and also the large waste from the running-in is influencing the contribution margin negatively. Dukadan has returned, at a cost of almost 20.000 DKK, pipes for idlers to Fiberline because they were flawed. The reason for the problem hasn't been found yet.¹²

Fiberline certainly seemed to encounter many difficulties in the start-up, and they appear to have worked hard at getting the production running and producing profiles of even quality. But as already mentioned Jens Johansen also describes a feeling of conquest as they got better and better, in time mastering the process. Jens Johansen observes:

After a while we became good at it. We produced still more complicated profiles and were always learning new things; tools, line ups, and combination of materials were continually improved, and we developed an entirely new production line, which we drew from scratch.¹³

He concludes that "It had been a tough and difficult birth – but now we could do it," and he further notes that it was because of the optimism and enthusiasm of Henrik and Dorthe Thorning that they didn't give up.¹⁴ Henrik Thorning continued to focus on the future and didn't seem to doubt that Fiberline would learn to control the production and produce

better profiles. Already in January 1980, for example, he initiated discussions in the board about how the capacity of the production could be boosted when it would become necessary.¹⁵ However, the board agreed that the company couldn't afford a second pultrusion machine in the foreseeable future; instead, they discussed if it would be possible to start up an evening or night shift in the production.¹⁶

An issue came up in the board almost immediately after the founding. It shows the speed of development of Fiberline's resources in production and development in spite of - or maybe because of - the difficulties encountered. The question involved how Fiberline should deal with the machinery that was invented as the production was developed. Kai Busch suggested that they should seek to protect these, for example a newly developed machine for cutting fiberglass, as there had been several inquiries from interested buyers. But Henrik Thorning, reaffirming the basic narrative, said that "...the primary job of Fiberline is to produce profiles..."¹⁷ Still the board agreed that possibilities should be explored, and in March 1980 they sold a machine for cutting fiberglass to the Swedish company, ASEA. It offered a good income to Fiberline at a time when the financial situation was critical,¹⁸ but it was not a method of income that the company pursued further.

The board also discussed a silo system for storing grain and other commodities made with Fiberline's profiles. The prototype was made in cooperation with a company called Sorenco. The board discussed if it would be possible to make a written agreement whereby Sorenco had to use profiles from Fiberline in any silos they might produce in the future. They agreed that Dukadan's lawyer Jørn Hansen would make a draft for an agreement that Fiberline could then negotiate with Sorenco.¹⁹ Apart from showing that the technological level of Fiberline's production and their ability to develop new products were growing, these cases are also early examples of Fiberline working together with a

customer not just to develop a profile for a specific purpose but to develop the end product for the customer. This method would become Fiberline's preferred one and, as discussed earlier, a general method of innovation in the Danish plastic industry. Henrik Thorning's attitude toward selling machinery, however, was clear, demonstrating his focus in producing and developing profiles.

In all Fiberline handled the difficulties of the start-up by focusing on getting production running and developing profiles. An important element was to put the firm's inherited resources into use. As discussed earlier such resources exist, even in the prospective firm. In the case of Fiberline, the resources to be put into service in the start-up included Henrik Thorning's knowledge and experience with materials, but also—and not least of all—the entrepreneurial resources he acquired in his prior job at Jotun working with the development of new products at the forefront of the innovative development of the industry. The new machinery that was developed and then sold is evidence of this, as is the profile developed for E Rasmussen Industri. It had been a difficult process to develop it, but they managed to do so; the result was an innovative product that would in time become much used in the electrical industry (though not always produced by Fiberline). The company's 25 years jubilee publication says about the profiles for E Rasmussen Industri that

These were large and complicated profiles that no one had made before. Technologically they were difficult to produce, and Fiberline was in a hurry to develop the process. In return the company learned pultrusion in its extreme.²⁰

Through such processes Fiberline developed new or at least stronger resources that might offer new services of production and product development. At the same time the experience of getting the production running served to reaffirm the sense expressed in the

basic narrative that Fiberline could make the process of pultrusion work as expressed in the quote above.

In discussing the different qualities of entrepreneurial services, Penrose distinguishes between those drawn from resources that are built up through the operations of the firm and those that are, instead, given by the temperament of the entrepreneur himself. As mentioned she also notes that such phenomena as temperament cannot be described in economic analysis but can only be observed in their effect.²¹ In an earlier chapter I discussed one of the four temperamental resources of the entrepreneur that Penrose mentions, namely what she calls the *fund-raising ingenuity*. I have shown that the ability of Henrik Thorning to raise capital, though clearly aided by his own ingenuity, was also facilitated by the context of the start-up: Henrik Thorning's prior experience and his strong network. Another temperamental resource of the entrepreneur discussed by Penrose is *entrepreneurial ambition*. Here she distinguishes between the 'product-minded entrepreneur' and the 'empire builder.'²² She notes that the product-minded entrepreneur is primarily interested in the growth of his firm as an organization for the purpose of production and distribution of goods and services. Describing such entrepreneurs, she notes that

Their interests are directed towards the improvement of the quality of their products, the reduction of costs [and] the development of better technology ... They take pride in their organization, and from their point of view the 'best' way to make profits is through the improvement and extension of the activities of this organization.²³

Henrik Thorning is an entrepreneur of this kind. However, like the fund-raising ingenuity exercised by Henrik Thorning, the service of entrepreneurial ambition he delivers to Fiberline is best understood in context, by considering the self-conception of the company. I have already discussed Henrik Thorning's prior experience and knowledge at length and shown what service was drawn from both in the start-up, as well as how they

were part of the context in which the basic narrative was formulated. Also I have earlier shown the basic narrative of the company to be focused on production and product development. It would become even more so as the company made new experiences through the start-up. In other words Henrik Thorning's product-minded behavior is not only a matter of temperament or personal and private fads, but also of self-conception constructed in interplay with the context of the start-up and expressed in a shared basic narrative.

The first sales

In the summer of 1980, Henrik Thorning made a trip to England to visit three companies producing profiles by pultrusion.²⁴ He wrote a long report to the board concerning the trip. About one of the companies, BTR-Permalin in Gloucester, Henrik Thorning reports that “they said that they hadn't sold anything the first two years they had been on the market with profiles; after that they had only moved forward.”²⁵ In the report Henrik Thorning mentions the positive expectations of the future of each of the three companies specifically and then repeats it in his conclusion. This need to establish and repeat the point may be taken as a first clue that the image of context as it was formulated in the basic narrative was under pressure to deliver sense to the world Fiberline experienced around them. As discussed previously, the first formulation of Fiberline's image of context was based on the idea of the potential of a product that could be sold to almost every industry and therefore had great market potential. Over the first couple of years, though, it became clear that it would perhaps not be very easy to sell the profiles—which appeared to have been quite surprising for Fiberline and was the reason Henrik Thorning sought comfort in the stories from English companies.

Bearing in mind that a strong focus on production and product development made sense and was central to the company from its very founding, one realizes, not surprisingly, that

the challenges of selling the products came quite unexpectedly for Fiberline. Furthermore, according to the agreement between the owners, Dukadan was responsible for supplying sales expertise to Fiberline. Dukadan had a substantial network of customers as well as an experienced sales department already functioning.²⁶ All of these resources could be utilized in selling Fiberline's products. The agreement between the two companies specified that every year they would settle upon a guaranteed minimum purchase from Dukadan.²⁷ Fiberline in return would have to pay compensation to Dukadan if they sold products without their involvement. Dukadan's focus was the Danish market, where their core business was, but they also had sales offices in Norway and the Northern part of West Germany.²⁸

At the very first meeting of the board, held in August 1979, sales were already being discussed, as Fiberline would be out of orders to produce within a month. Henrik Thorning noted, however, that in the long run things looked better as Fiberline was negotiating with a couple of very big potential customers one of them the Danish State Railways, DSB. But Jørn Hansen was worried that it could be dangerous for the company to invest in large deliveries of a special profile for a single customer. He stressed the "risk of investment in such big cases and furthermore the importance that small companies like ours finds small but broad niches."²⁹ Jørn Hansen's point was that Fiberline should focus on a number of standard products that could be used in different industries and thus sold on many different markets. This was the model used in Dukadan's subsidiary companies. The company had become successful by selling standard products—it was the source of their experience and resources.³⁰ The view was also in line with the basic narrative of Fiberline. As discussed earlier Henrik Thorning saw the potential of Fiberline in selling standard profiles exactly as described by Jørn Hansen. This approach was constructed or formulated as the best way to exploit the versatility of the profiles; it would also make Fiberline less vulnerable, as they could sell their profiles to many different industries.

Jørn Hansen's opinion seemed to be shared by the other members of the board, and Kai Busch suggested a "market and product analysis, including an evaluation of the strengths and weaknesses of the company."³¹ This, he thought, would make it possible to reach the right markets quickly with the right products. "Fiberline and Dukadan," Henrik Thorning said, "had already gathered some information at a Scandinavian industry fair." The fair was held yearly in the Danish city of Herning, and they agreed that Henrik Thorning and Anders Hallen Pedersen should present an analysis of the situation at the next board meeting.³²

At the next meeting Henrik Thorning presented the results of the market analysis. In addition to observations from the Scandinavian fair, it drew mostly on information about the American market from the fiberglass manufacturer Owens Corning. American reinforced plastic was primarily sold on five different markets, as Henrik Thorning explained: Electricity, sporting goods (ski poles for example), chemistry, construction, and transport. In the minutes of the meeting the board concluded that

...this is in good accordance with the special properties of the product, namely high electric insulation capacity combined with large heat resistance, low weight and great elasticity, corrosion resistance and high mechanical strength.³³

This reaffirms the versatility of the material, and it seems to have been the only comment the board had on the structure of the American market. Apparently they didn't consider any possible implications for the potential Danish market or the company's strategy. It appears to have been self-evident to Fiberline that a product of such potential could and should be sold for many different industries. Today Henrik Thorning talks about the naivety of the engineer in the start-up phase. He was so convinced of the superiority of the product, he says, that he almost expected it to sell itself.³⁴ This attitude corresponds well

with the above quote in which the American market survey is simply used to repeat the properties of the product and to reaffirm its potential.

However, the profiles didn't sell themselves. By the end of September 1979, production would be out of work within 10 days, once Fiberline had finished an order for gratings to be used in stables. This led to considerations in the board about how more sales in this particular market could be secured. In the minutes it is noted that

...when discussing the optimal sales effort concerning grating profiles for use in agriculture, the necessity of influencing all parties involved was mentioned – researchers, farming consultants, farmers, farm equipment manufactures etc. – at the same time.³⁵

Henrik Thorning then suggested that Fiberline should host a seminar about the possibilities of using reinforced plastic in the agricultural industry, a seminar to which representatives of the groups mentioned should be invited.³⁶ It isn't clear whether such a seminar was ever arranged. Probably there weren't resources to fulfill the task in the company at the time. But the quote expresses a beginning realization that selling profiles on the Danish market might be somewhat different from selling the well-known products already in the portfolio of Dukadan.

In November 1979, sales moved to the top of the agenda at the board's meeting. Anders Hallen Pedersen opened the meeting by announcing that realized sales were significantly below budget: "The reason for this is found in a larger inertia in the market than expected and in the fact that the sales and marketing effort hasn't been optimal."³⁷ As a consequence, he explained, Dukadan had hired three fulltime employees that were to be responsible for selling the products of Fiberline. Dukadan had also started distributing brochures and material samples to potential customers, but Anders Hallen Pedersen still found it difficult to estimate sales at that time. It was too early to say if the effort would pay off.³⁸ The responsibility rested on Dukadan, and as they had strong resources and

good experience in selling plastic products, their opinion carried weight in the matter. Dukadan acted as they usually did: when they stepped up their effort to sell standard profiles, they were putting their inherited resources in service.

The problem of selling the profiles didn't appear to be taken as an immediate challenge to the self-conception of Fiberline. The only indication so far that the basic narrative might be under pressure was a couple of vague clues, for example in Henrik Thorning's debriefing of the trip to England. The problem of sales in the start-up, however, points to a central challenge for Fiberline, namely how to deal with the general unfamiliarity of the product. When proposing to work the entire value chain of the agricultural industry, Henrik Thorning formulated his early considerations about this matter, but so far it was left unexplored.

The everydayness of acute problems

The result of the first six months was presented in November 1979. It was characterized as poor but not deterrent. This made good sense to everybody, and Anders Hallen Pedersen had just demonstrated Dukadan's will to invest considerable resources in selling the profiles by hiring more sales personnel. But Fiberline now estimated that they would be losing 200.000 DKK to keep running through January, and by April the same year the amount would grow considerably as repayment and interest on the pultrusion machine had to be paid. Henrik Thorning said that he saw Dukadan as the solution to this problem and wanted them to buy more profiles from Fiberline. His argument was that, since Dukadan could afford to put these in stock, it would be the cheapest and least risky way for them to help Fiberline and would keep Fiberline's production running. Anders Hallen Pedersen was reluctant, however, to guarantee that Dukadan would buy more profiles; instead, he offered to lend Fiberline the required sum.³⁹

Jørn Hansen and Kai Busch once again questioned the expenses for raw materials, mostly fiberglass and plastic, which were much higher than budgeted. Henrik Thorning explained (for a moment forgetting the waste in the production which continued to be substantial) that this was because Fiberline had problems getting supplies in smaller quantum than usual on the market. Therefore, they had to buy whole containers of materials, which surpassed their need and burdened their liquidity. The board agreed that Henrik Thorning should try to sell part of the materials to other companies, for example Plastkonstruktioner in Norway, which demonstrates the acuteness felt by the board in the situation.⁴⁰

In January 1980 the board met extraordinarily to discuss the result of the first year and a revised budget for the first quarter of 1980. The result of the first year was now noted to be “unsatisfactory on account of missing sales,” but it got worse as the record states: “Even the budget from the last meeting of the board (November 6, 1979) that until April 1, 1980 had an estimated monthly sale of only 120.000 DKK – or about half of the original budget – hasn’t been meet.”⁴¹ Fiberline would now, by its own estimate, be facing a shortfall of 500.000 DKK by July 1980.⁴² This loss had to be financed somehow and the board debated at length how it could be done. Anders Hallen Pedersen promised that Fiberline could borrow 50.000 DKK from Dukdan in both February and March.⁴³ The board also agreed that Fiberline should ask for a postponement of repayments from some of their creditors for one or two quarters. The company now had loans in three different banks, Norsk Exportfinans, FIH, and Aktivbanken who were all asked. The last of the three accepted and was also asked for a new loan to cover the last 220.000 DKK of the expected shortfall (which they granted).⁴⁴

But things didn’t get better. When the board met in March 1980, Anders Hallen Pedersen opened the meeting by presenting a new budget for 1980/81 based on their experience with sales in the first three months of the year. The new budget didn’t only require a

larger running credit but also left Fiberline with a deficit for the year.⁴⁵ Henrik Thorning couldn't accept this new budget and stressed that

The January budget must be met! If a budget doesn't seem to hold, you can't just make a new one; every possibility and resource must be deployed to meet the budget.⁴⁶

But Dukadan's lawyer, Jørn Hansen, replied that "The horizon must be better in sales ... The question is also if the new budget will hold... It will be necessary to supply the company more capital by issuing new shares."⁴⁷ Anders Hallen Pedersen responded: "More capital can be supplied either from the shareholders or from Dukadan. The last option will imply a change in the controlling interest."⁴⁸ Henrik Thorning closed the discussion by saying that every possibility had to be considered and that it might also be an option to raise money through a development fund. His conclusion of the meeting was that "The sales must be increased significantly, and before the next meeting of the board there must be a solution for Fiberline's need for capital."⁴⁹ Henrik Thorning, reluctant to accept that more capital was needed, focused instead on boosting sales in the situation. Dukadan's comment that they would take over the controlling interest of the company if they were to supply more capital threatened the Henrik Thorning as the founder and owner of Fiberline, which as discussed was an important part of Fiberline's basic narrative. His reaction in the above quote and the other discussions on the topic is proportionate to the risk that he might lose control of the company.

When the board met again in June 1980, sales prospects had gotten a little better with two new potential customers, one of them the Danish Armed Forces, interested in placing large orders with Fiberline. The record states that "Kai Busch and Jørn Hansen found that the potential contract with the Armed Forces was particularly interesting and thought that an investment of 25.000 DKK in tools shouldn't be a hindrance."⁵⁰ Dukadan also seemed to have intensified their sales effort as promised and the record states that "Anders Hallen

Pedersen mentioned ... that material on LSK-profiles has been sent to the electro technical industry and that material for the chemical industry and consulting engineers is on the way.”⁵¹ The overall spirit seems to have gotten better; although there were still debates about how to handle sales, there were no discussions about the financial problems of the company and no more immediate threats to the ownership of Henrik Thorning.

Through discussions about Fiberline’s financial situation over the period from the winter of 1979 to the summer of 1980, Henrik Thorning demonstrated his eagerness to maintain his influence in the company on the one hand while trying to meet the acute needs of the company on the other. He was eager for Dukadan to push harder to sell the profiles, still trusting their ability to do so, but he was also willing to borrow money through banks and funds. In general, Henrik Thorning didn’t appear to be very conservative in this regard. As just mentioned his role as founder and owner was better maintained by providing capital through banks that didn’t demand influence in board or management. Yet, Henrik Thorning continued to have a firm belief in the future success of the company, which as noted earlier may be connected to the potential of the product and the brilliance of the idea as also expressed in the basic narrative. So far the basic narrative hadn’t been contested to a degree where it didn’t provide sense to the world of and around Henrik Thorning. Therefore, there was no reason not to invest further in the development of the company - first and foremost in production and product development.

Conclusion – Services in use in the start-up

In this chapter I have discussed how the resources of both Fiberline and Dukadan were put to service in Fiberline’s start-up, about the first two years of the company’s history. It was a period and a process of many challenges, problems, and frustrations, but in dealing with these Fiberline strengthened the conception that they could make pultrusion work and that both the product and production process were something special. Jens Johansen’s

history about the feeling of conquest and the celebration of the first company birthday echoes this sentiment. I will argue that this confirmation of the self-conception of Fiberline gained through the difficulties of the start-up and the triumph of making pultrusion work is part of the explanation why the basic narrative was as stable and resistant to change as it turned out to be (and as will be clear from coming chapters).

Henrik Thorning continued to voice his faith in the future and was willing to indebt the company (further) on that account. But he also wanted to maintain the idea that he was the right and proper founder and owner of Fiberline. Dukadan had problems selling the products from the beginning, but so far this didn't cause Fiberline to doubt either Dukadan or the potential of the product. In other words the focus of Fiberline remained on the product and the production process, which made sense to them. As will be discussed further in the following chapter, this focus was so firm that after three years, at the brink of disaster, when Fiberline finally realized that they couldn't rely on Dukadan to sell the profiles and therefore formulated a sales strategy, they proclaimed to do so "To obtain orders, which will secure the most optimal exploitation of Fiberline's production capacity at all times."⁵² For Fiberline, increasing sales was seen as a means to optimizing production capacity.

In the start-up the inherited resources of Henrik Thorning were put into service as the company acted. Henrik Thorning's knowledge and experience were important, as discussed, but his entrepreneurial resources built up through his former work at especially Jotun were also put into service. The task of developing the production to a level where it could run steadily and efficiently was difficult and demanded much in the way of thinking in new combinations and ideas. But through the process of trial and error in starting up the production described in this chapter (and earlier by Jens Johansen), Fiberline eventually got skilled at producing profiles: the company acquired new available services that could

be put to use in developing the production further. In this way Fiberline started accumulating new available services through the process described by Penrose.

Penrose claimed herself that she knew little about new firms.⁵³ However, in applying a Penrosian framework focusing on self-conception and image of context to the start-up of Fiberline, much can be discerned about this new firm. The connection between the concepts of self-conception and image of context, expressed in the basic narrative, and the use of inherited resources of the prospective firm have been brought into focus—as has the role of Henrik Thorning’s knowledge and experience in accumulating available services for his new firm and in formulating and strengthening its basic narrative.

Though Penrose wasn’t interested in the new firm specifically, but rather mentioned it in passing to stress that it would grow according to the same mechanisms as a large and well established firm, *The Theory of the Growth of the Firm* is among the most cited in the field of entrepreneurship studies.⁵⁴ However, it is most often mentioned as part of the roots of the resource based view of the firm where focus, as discussed earlier, is mostly on describing the sources of competitive advantage in the firm and less on the process of growth itself.

An exception to this is Garnsey, who discusses the growth of the new firm based on Penrose’s theory and derives a three-step development process for it. Garnsey describes a preparation or search phase “... when entrepreneurs are seeking out opportunities and resources for a viable line of business. We can deduce,” she further notes, “that this may occur in some prior activity by the entrepreneurs, before the new firm is started.”⁵⁵ After this first initiative there is a phase of mobilizing resources. Garnsey notes that

Between the initial prospecting that inspires choice of an activity and the ability to perform productive services as an independent operation,

a period of learning must take place. Resources must be secured and the firm organized internally for productive activity.⁵⁶

This is followed by a period of early resource generation focused on gaining and sustaining returns. Garnsey observes: “From the time when productive activity that yields returns is under way to the time when levels of profitability assure self-sufficiency, major problems centre around securing the viability of the enterprise.”⁵⁷ These three stages, described as sequential, are deduced from Penrose based on her description of how resources are exploited in the company. Garnsey notes, as I have also done, that the initiative to act on productive opportunities according to Penrose is connected to the entrepreneurial predisposition or attitude of the company. However, Garnsey rejects this perspective as an avenue for exploring new venture initiative and growth and points out instead that Penrose’s analysis is focused on the recognition (not the construction) of opportunities, the creation of resources, and ways of matching these for future growth.⁵⁸ It is via this perspective that she further develops her idea of a Penrosian three-step process of new venture growth, which she then seeks to test on statistical material of new venture growth patterns.⁵⁹

In describing the search phase Garnsey points to opportunities as objects existing in the world around the entrepreneur. However, my analysis of the start-up of Fiberline shows the opportunity taken by Henrik Thorning in founding the company to be very closely connected not only to his prior knowledge and experience and to his existing network. This suggests that the opportunity of founding Fiberline was not available to everyone who might be searching for new opportunities, but should rather be seen as a construct of Henrik Thorning. As already discussed, Hjort describes how the entrepreneur may talk opportunities into being, an idea that has also been introduced into the field of entrepreneurship by Dimow and others who stress that, for example, sense making or narrative perspectives may be used to capture this construction of opportunities.⁶⁰

The two further stages Garnsey describes in her sequence of new firm growth constitute a period of learning followed by a period of early resource generation. However, as clear from the discussion in this chapter, it is very difficult to separate learning based on prior knowledge and experience from resource generation in the case of Fiberline. They are rather dependent on each other, which is also in line with Penrose's description of how productive services are accumulated in the firm exactly by a process of learning.⁶¹

I cannot agree with Garnsey in describing the growth of a new firm as a three-step sequence. I rather think it should be seen as a context-specific process in which the entrepreneur draws on both prior knowledge and experience as well as inherited resources in constructing a self-perception and image of context, which then enables action. However, Garnsey's description of the problems of securing the viability of the business in the start-up—developing the firm's resources and the available services that may be drawn from these to a point where they may sustain a profitable running of the company—is very close to the development of Fiberline as I have described it in this chapter. It would not be a short phase, though, and as will be clear from the following chapter, Fiberline still faced many challenges before it could develop into a profitable and self-sufficiency company.

6. How should the profiles of Fiberline be sold?

As discussed in the first chapter of the analysis, the image of the context as expressed in the basic narrative was inspired by the idea of the potential of the product and substituting industries were seen as the competition. This and the versatility of the profiles meant that Fiberline expected to sell standard profiles to a number of industries. Therefore, the partnership with Dukadan suited Fiberline well, as Dukadan offered resources and experience in selling standard plastic products to many different industries. In the start-up, however, selling the profiles turned out to be more difficult than imagined (as discussed in the previous chapter). But though this caused much debate in the board, it had not pressured the basic narrative to a point where it didn't deliver sensible options for action. Therefore, Fiberline continued to push for developing the product and the process, and Dukadan intensified its effort of selling standard profiles as discussed.

But Fiberline ended its 2nd financial year in April 1981 with a loss just as big as the first year; the turnover had taken a substantial dive and a heavy debt had accumulated (See appendix 1). Thus, by the spring of 1981, the situation began to seem desperate. Sales were still low and about half of the existing sale went to one single customer, E. Rasmussen Industri, making Fiberline even more vulnerable through its dependence on this one customer. Clearly action was needed if Fiberline were to survive.

Today Henrik Thorning says that it became clear to him that as far as sales and market strategy goes, a small company can't strategize at all, but can only react.¹ The object of this chapter is to discuss how Fiberline started focusing on sales to counter the difficult situation they were in by constructing a new narrative about how profiles should be sold. I will show how this new narrative was connected to the basic narrative, which meant that the effect wasn't a disruption of the original conception of self or context but rather an

adaption of it to present circumstances. The basic narrative's image of context was broad and unspecific in emphasizing substituting industries and in the potential of the product. The events of the period described in this chapter, from around the middle of 1981 to the middle of the 1980s, put particular pressure on this part of the basic narrative, forcing the construction of a more concrete image of the context that better accounted for the company's reaction in the difficult situation in which it found itself.

Before turning to the new narrative, I will first discuss the situation of Fiberline from around 1981 till 1984 in more detail to draw a picture of the grounds on which Fiberline felt compelled to act. Also I will briefly discuss the development of the Danish plastic industry in this period. After this I will consider how selling the profiles gradually became Fiberline's focus from around 1981, before discussing how a new narrative of the proper way to sell profiles was constructed and how it was connected to the basic narrative.

Pressure building

During its first two years of running, Fiberline suffered heavy losses. Generally the period from the founding until the middle of the 1980s was marked by a long line of crises, and the company was in acute need of raising capital. As discussed Henrik Thorning seemed to keep optimistic about the future of the company and therefore he was not reserved in his attitude toward lending capital if necessary and possible.

However, as evident from the discussions on financing in the board, which I referenced in the former chapter, it was becoming clear that not everybody on the board was as optimistic – or as bent on keeping control of Fiberline in the hands of Henrik Thorning. Anders Hallen Pedersen had hinted that if Dukadan were to invest more they would also want a larger part of the shares. The lawyer Jørn Hansen stated plainly: “We are getting closer to the day where results must start showing. If one doesn't believe in better results in 1981 it must be stopped now.”² As seen Henrik Thorning managed to solve the

immediate problems in the spring of 1980 through new loans from both the bank and Dukadan; about a year later, in April 1981, Fiberline again persuaded Dukadan to supply more capital as a loan.³ But things didn't get better, sales were still low, the production still expensive, and Jørn Hansen became still more critical. The minutes from the meeting of the board in August 1981 state that

Jørn Hansen found the situation critical and was of the opinion that we in December – if the company doesn't balance at that time – have to decide if Fiberline must be supplied more money, must be sold or liquidated.⁴

It was becoming clear that Dukadan and Fiberline didn't view Fiberline's prospects in quite the same way. This discussion culminated in February 1982 when Anders Hallen Pedersen announced that Dukadan intended either to sell all its shares in Fiberline or to take over the company entirely—and that for now they would redraw from the board. They didn't want to risk losing more capital. Later, they noted that the situation with Fiberline was so much more disappointing: Dukadan had never before invested so much in a new product and, to their knowledge, it remained to be seen if there was any actual market for it.⁵ They did, however, agree to continue as Fiberline's distributor, and a new agreement about this was signed around the same time as Dukadan sold their shares.⁶

As discussed earlier Henrik Thorning's position in the company was closely linked to the self-conception of Fiberline as formulated in the basic narrative. Therefore, he saw this situation as a question of both securing the survival of Fiberline and keeping it in his control. As before he would draw on his network to come up with a solution. In August 1982, six months after Dukadan withdrew from the board, it was announced that Dukadan had sold all their shares. Four new owners, all personal friends of Dorthe and Henrik Thorning, became members of the board.⁷ Without implying of course that Henrik Thorning resorted to the tricks and games of Iago, as discussed earlier, this seems to

demonstrate some degree of fund-raising ingenuity, taking Fiberline's situation into consideration.

Henrik Thorning first bought all the shares in Fiberline from Dukadan for 1 DKK and then started to look for investors.⁸ The four investors agreed to lend the company 1.360.200 DKK in all and then bought a part of the shares each from Henrik Thorning for 1 DKK. Shares were distributed amongst them according to their share in the loan. After this deal Henrik Thorning and Niels Jørgen Kovstrup each owned 24 % of the shares. So did Torben Nymand who, apart from being a friend of Henrik and Dorthe Thorning, was the managing director at a local industrial company. Peder Irgens, whom Henrik Thorning knew from his time at Jotun, owned 14 % and so did Kai Busch, who had been member of the board from the founding of the company.⁹ Niels Jørgen Kovstrup had been working as a consultant for Fiberline from April 1981 and knew the company well.¹⁰ For Henrik Thorning this new situation offered a different kind of influence on the board, as he was now dependent on four fellow owners. But apart from Niels Jørgen Kovstrup, these were not as actively involved in the running of Fiberline as Dukadan had been. They were, however, all active in the board's discussions and were in dialog on many different aspects of running the company.¹¹

This new supply of capital was much needed. For the remainder of 1982, things seemed to be going a little better and Fiberline was, for a period, adhering to its budget. But by the beginning of 1983 things were back to normal with a not quite efficient production running small series, poor sales, and very tight liquidity.¹² This situation immediately pressed Fiberline to find new funds, and ways of financing the continued running of the company were discussed again. So far the board agreed on asking for an expansion of the credit in Aktivbanken, while more possibilities were discussed.¹³ At an extraordinary general assembly in June 1983, it was announced that Fiberline had undergone a

reconstruction to try to save the company by getting rid of some of the expensive debt.¹⁴ When the board met again in July 1983, the financial situation was still uncertain and the liquidity very tight.¹⁵

It was particularly disturbing that E Rasmussen Industri over the summer of 1983 was buying less and less and didn't seem too eager to renew their contract with Fiberline, though it would soon be running out. In the end E Rasmussen Industri didn't renew the contract, and by the winter of 1983 they had moved all their business to a competitor.¹⁶ Losing such a big client led to a 23% drop in the turnover for the financial year of 1983/84 that ended with a new deficit (see appendix 1). The situation was frustrating. It would soon be five years since Fiberline was founded, and still it seemed very difficult to establish a profitable and self-sufficient company. Applying Garnsey's concepts, Fiberline seemed to have great difficulty in moving past the initial learning phase of development. Dukadan's exit had demonstrated that at least they didn't believe it likely to ever happen. But what sense could be drawn from this continued state of crisis? And what should be done?

Here in the summer of 1983 Henrik Thorning was pretty clear on this. The solution to the problems was in boosting sales efforts! To help out in this particular situation, he suggested that the board should for a period take part in the running of the company, thereby enabling him to work more intensely with sales traveling intensely to visit customers. Now Henrik Thorning seemed as focused on sales as he had earlier been on production. This change was, however, long in the making.

As discussed, the optimistic view of the potential of the product and its versatility established in the basic narrative gave sense to the partnership with Dukadan. It rendered their resources in selling standard products primarily on the Danish market relevant to Fiberline. Therefore, focusing on sales didn't immediately make sense to Fiberline; as the

following will show, this turn of focus, so clear in the 2nd half of 1983, had only been reluctant and gradual. However, before turning to the first sales efforts of the company, I will shortly describe the development of the Danish plastic industry in the period.

Strong export growth of the Danish plastic industry

Considering the general market conditions for the Danish plastic industry in the period suggests that it wasn't just the structure and routines of Dukadan that hindered their success in selling profiles on the Danish market and that other elements were involved. The Danish economy was in crisis with low growth rates, a high unemployment rate, high inflation, and a deficit on trade as well as public finances.¹⁷ This affected the Danish industry in general. The plastic industry was further challenged by new restrictive environmental legislation passed in 1979 and 1980: for example, a law obligating companies to register every product made with any form of chemical, an expensive and time consuming process for companies in the industry.¹⁸ These factors meant that the Danish plastic industry was experiencing either declining or very slow growth in turnover in the beginning of the 1980s. Many companies were producing plastic packaging for food and consumer goods and were thus hit hard by the fall in the private consumption in Denmark. Another large group of plastic producers delivered to the construction industry were equally hard pressed by the economic crisis; this was for example where much of Dukadan's business was located. The plastic industry managed to secure a small growth through these difficult years because the industry generally experienced growth in export activities.¹⁹ For this reason it was presented as an exemplary industry, for example by the Danish Minister of Industry, Ib Stetter, who in 1983 was very satisfied with the positive influence of the plastic industry on the Danish trade balance.²⁰

Growth in export happened even though the largest export markets of the Danish plastic industry, Sweden and West Germany, were experiencing some of the same economic

challenges as Denmark. The plastic industry organization ascribed the growth in export to the technological ability and flexibility of the industry focusing on the many companies that, like Fiberline, made complicated products in modern plastic materials. It was underscored that this growth happened not only in spite of difficult times, but also in spite of the challenges brought on by the new environmental legislation. This legislation weakened the competitive advantage of the Danish companies on international markets by adding demands that international competitors didn't have to meet.²¹ In all there seems to have been a strong export focus in the industry. As it turned out Fiberline also came to pursue an international sales strategy with great eagerness, though it was initially seen to be forced on them by circumstances.

A gradual focus on sales

As discussed in the previous chapter Dukadan had problems selling the profiles already from the founding of Fiberline. They had, however, demonstrated their commitment to the partnership in November 1979 by promising to hire sales personnel to work exclusively with Fiberline's products. Yet, sales never took off in the hands of Dukadan, and not a single meeting of the board was held without it being noted that Dukadan was not buying as much from Fiberline as budgeted.

Henrik Thorning would repeatedly seek to influence Dukadan and help them to sell more profiles. He offered to train Dukadan's sales personnel, to accompany them when visiting potential customers, and to help them calculate and specify the profile structure needed by customers. Fiberline also repeatedly encouraged Dukadan to update sales materials; they produced their own materials and asked the sales consultants of Dukadan to deliver these to potential customers.²²

The agreement between Dukadan and Fiberline that was drafted as part of the founding in 1979 has already been mentioned: it specified that every year the two companies should

settle upon a guaranteed minimum purchase from Dukadan. Fiberline in return would have to pay compensation to Dukadan if they sold products without their involvement.²³ The idea was that Dukadan would buy standard profiles for stock, as they did with their other products. An important part of Dukadan's competitive advantage as a distributor was a well-assorted stock that kept delivery time to a minimum.²⁴

However, it turned out that some of the customers interested in the profiles couldn't find a standard profile that fitted their specific need and would ask to have a special profile made instead. E Rasmussen Industri was an example of a customer that wanted a special profile. The task of selling these was different from selling standard profiles, as the potential customer often required more consulting in getting the right profile for their need. Therefore, Dukadan, whose sales personnel didn't have the required knowledge for this, would often have to involve Fiberline in the process of selling special profiles.

As a consequence Dukadan decided in August 1980 to give the responsibility for selling special profiles to Fibeline, meaning that they would pass on inquiries for special profiles directly to Fiberline. Henrik Thorning objected to this decision with reference to the very limited resources of Fiberline. In the minutes it is noted that

Henrik Thorning finds that the decision is good in principal, but due to the capacity [of Fiberline] it would have been desirable if the change was made at a time when the ER-I deliveries were "on track" and Fiberline had gotten the head more above water financially.²⁵

The new structure meant that the sale of standard profiles still had to go through Dukadan, also if the sale were made as part of Fiberline's sale of special profiles.²⁶ Unwelcome as this new responsibility was, Fiberline took it on; afterwards, their focus would gradually be drawn to sales. In April 1981 it is noted in the record of a board meeting that "Fiberline has had a number of visits from national and foreign companies with interest in the

pultrusion process.”²⁷ This and the experiences of Fiberline’s first direct sale to international costumers over the first months after the new agreement with Dukadan led to *Export* being put on the agenda as a new point, because Henrik Thorning wanted to discuss it. Here the following was noted:

For now the existing structure is maintained so Dukadan is responsible for export of standard profiles and Fiberline for export of special profiles. Jørn Hansen found it fair that Fiberline received a provision from Dukadan when they [Fiberline] sold standard profiles to customers that buy special profiles.²⁸

This indicates that Fiberline had suggested taking over the responsibility of all export sales, which demonstrates Fiberline’s realization of the need for selling the profiles themselves. However, Dukadan, who was established in both the German and the Norwegian markets, refused this arrangement, which meant that so far Fiberline was confined to focus on selling special profiles if they wanted to influence the sale directly.²⁹ But Fiberline’s proposal indicates a remarkable change in the attitude of the company: coming from a position where they complained of a lack of resources for taking on a sales effort of their own to a point where they argued for more responsibility in selling the profiles on international markets.

And Fiberline appeared very serious in their new focus. In April 1981 Niels Jørgen Kovstrup was hired for a year as a consultant (before he became a co-owner). Amongst other matters of structure he would focus on systems for controlling production and quality.³⁰ The idea was to lessen some of the work load on Henrik Thorning, thus freeing up resources for the sales effort. Fiberline also began communication with the local municipality of Kolding about consulting support for exporting special profiles. A business consultant from the municipality was researching the possibilities, and conclusions would be made in the early autumn of the same year.³¹

The report from the export consultant was discussed at the meeting of the board in August 1981; clearly not everybody was as excited about export sales as Henrik Thorning. It was a tense meeting because of Fiberline's desperate situation at that time, which frustrated everybody and made the conflict between Dukadan and Fiberline obvious. Henrik Thorning pushed again for a harder effort in sales, and Dukadan insisted again that much was already done and that the problems might not rest with them alone. A clear sign of this conflict was that Henrik Thorning, who is the author of the minutes of this meeting, for the first time distinguished between *them* in Dukadan and *us* in Fiberline. The proposal from the business consultant from Kolding municipality appears to have been included in the material for the meeting, but unfortunately it has not been saved in the archive. The report led to heated discussions opened by Kai Busch. The minutes state that "Kai Busch found the proposal interesting, but questioned the current resources of Fiberline and also found that the Danish market should first be exploited fully."³² The record continues:

Henrik Thorning agreed that the Danish market should of course be exploited fully before export activities are launched and that it will be. Henrik Thorning also referred to the proposal, which explains why export is necessary.³³

This was followed up by Anders Hallen Pedersen who is quoted to have asked "whether the quality control of Fiberline was sufficient to prevent large, expensive claims abroad?" The minutes continue: "Following this, Henrik Thorning informed [the board] that Fiberline is establishing a systematic quality control, thus making the possibilities for such complaints minimal."³⁴ Seeing as Niels Jørgen Kovstrup had only recently been hired for making such a system and that he would have to manage the task on a very limited budget, this would seem a somewhat distant hope. Clearly, the rest of the board was skeptical about this new focus on export. However, the interest shown by potential

international customers and the disappointment so far in the Danish market meant that, to Fiberline, export seemed the best option for selling profiles in the situation.

As discussed previously, the company's situation was critical, because Fiberline had been slow in taking up an active sales effort. This, I will argue, was because Fiberline's basic narrative was essentially one about production which, as explained earlier, was the central element of the company's self-conception. Fiberline's image of context was based on the same focus on production and an abstract idea of the potential of the profiles. If the profiles were just good enough, they would sell themselves. However, this image of the context was now under growing pressure, first from the disappointing sales, and then from the still more desperate financial situation, and finally from the conflict with and subsequent exit of Dukadan. This tension between the self-conception of the company and the growing contextual pressure paved the way for Fiberline's new and increasing focus on sales. This focus was strengthened further when E Rasmussen Industri pulled their business away from Fiberline. Acting in this situation the company would, however, continue to draw on the conception of the product formulated in the basic narrative as a versatile substitute to traditional materials that should, therefore, be sold as standard profiles to various different industries.

Standard profiles and distributors

In the months following August 1981, Fiberline extended their international engagement, and from February 1982 they appeared to have agreed with Dukadan that Fiberline could now also sell standard profiles outside Denmark. The record of the board meeting in January 1982 states that "In the coming period Fiberline will focus on the existing sales program for example by building [a web of] dealers of the standard profile program on the close European markets."³⁵ This was the first time Fiberline formulated structured thoughts of a specific sales strategy. Two connected elements were particularly important

in this strategy, namely the focus on selling standard profiles and the idea of building up an international network of distributors that could sell the standard profiles. So far, however, the international connections were so scattered that this was an idea or vision more than a plan.

At the next meeting of the board in February 1982, Anders Hallen Pedersen announced that Dukadan intended to sell all its shares in Fiberline. After this Dukadan was still to sell Fiberline's products in Denmark, but apart from that Fiberline was now independent of the company. A new distribution contract between the two was made following the sale of Dukadan's shares. It stated that the agreement of dividing the responsibility between selling special and standard profiles was upheld. Dukadan was only to sell standard profiles at the Danish market, however, leaving Fiberline free to work international markets as it pleased, without having to hand customers over to Dukadan.³⁶

When the original board of Fiberline met for the first time 3½ years earlier, Henrik Thorning had presented the company. At that time, he opened the meeting by presenting the idea of the company and its product. When the new board met for the first time, Henrik Thorning again made a general presentation of the company and his immediate plans for it. Now, he opened with sales and explained what he saw as the sales strategy of Fiberline. As in the first discussions on sales strategy quoted above, his remarks indicate a push toward international sales and a heavy focus on standard profiles:

At the current moment the sales strategy of Fiberline is focused on strengthening the sale of standard profiles by establishing agencies in the nearest European countries. Producing standard profiles is something Fiberline can do directly without large expenses for development and start-up, and standard profiles are used in every industry and is therefore not a product that is sensitive to market trends.³⁷

As discussed the idea of selling standard profiles was connected to the vision of the product and its potential as formulated in the basic narrative. In establishing the basic narrative in the first chapter of the analysis, I drew on a number of articles in which Henrik Thorning presented his vision for Fiberline and argued exactly as he does in the passage above, that the profiles could be sold to every industry, thus making Fiberline less sensitive to changing conditions in any single industry than many other companies. This basic idea, which I have described as the idea of the versatility of the profiles, is the very reason why Henrik Thorning was so focused on selling standard profiles. The focus on building up a network of distributors to sell standard profiles in these early thoughts on sales strategy show that Fiberline still ascribed to this part of the original idea of Fiberline. Another example of the same can be found in Fiberline's first written sales strategy made in March 1982 just after Dukadan announced that they wanted to sell their shares. The written strategy states that Fiberline is aiming for 75 % of the sale to come from international customers and that it should mainly be standard profiles sold through a network of distributors. It is noted that

A well-functioning system of distributors and agents must be established at the desired export markets. The distributors must primarily be trading or engineering companies who have the technical and commercial knowledge to meet our goals. The distributors must be of a size where they can deliver an effective effort to sell Fiberline's profiles.³⁸

So far, however, only one distributor seemed to be in play, and at the August 1982 meeting, Henrik Thorning told the board: "A key issue has been Fiberline's participation in the Hannover trade fair in April where we connected with the company Arthur Krüger in Hamburg who is a potential distributor in Germany."³⁹

The origins of the international focus

The focus of the new sale strategy on establishing a network of distributors made sense to Fiberline, because it connected to the idea of selling standard profiles. But the early effort in sales is not only marked by this focus but also by an international focus, seen for example in Henrik Thorning's eagerness to discuss exports in the board. As noted the agreement with Dukadan had made it most interesting for Fiberline to focus on international markets, as this was where they first became independent of Dukadan. This development coincided with the first interest in Fiberline's products from international customers, which probably helped to intensify the focus. Another important element in the export eagerness of the company was Henrik Thorning's prior knowledge and experience, both helping to make the international focus seem meaningful to Fiberline.

Henrik Thorning knew the general export success of the Danish plastic industry. His former experience made him used to working with international companies in the industry, for example the large industrial corporations that supplied fibers and other materials to the industry. Today, Henrik Thorning says that he considered finding a German distributor the first step in getting profiles out onto international markets. The consultant from Kolding municipality had particular experience in guiding Danish companies in exporting to West Germany and had a good knowledge of that market. Also, Henrik Thorning knew that many American pultrusion companies were subcontractors to the American electrical industry because of the good qualities of composite plastic. The German electrical industry was large and as such might be prosperous for Fiberline. Arthur Krüger already sold many different products to the industry, which made them particularly interesting to Fiberline.⁴⁰ Henrik Thorning didn't just tell the new board about the connection to Arthur Krüger. With great eagerness he also related all the experiences of the company at the industry fair in Hannover in April:

The interest in our products at the Hannover trade fair was very good, and the participation in this fair has already led to orders, among others from the company Chainant Associate Co. in Bangkok, Thailand. Fiberline has also had a visit from Iroma Karo from Fiskas in Finland who is interested in cooperating about developing tubes ... and profiles ... Løgstør Rørindustri from Denmark is also interested in cooperating about heating pipes and manager Hübsmann has suggested that Henrik Thorning and he travel to U.S.A. to look at equipment ... for the pultrusion machine. ... The Swiss companies Gummimagg and EBO have shown interest in our products and August 23rd Fiberline will be visited by manager Eggli from EBO ...⁴¹

Focus was clearly on international sales now and the reports from management show this to have been pursued with the same eagerness as the production had been developed earlier.⁴² For example, the report from management in December 1982 states that

In the period the marketing has been characterized by cooperation with our German and Finnish distributors. Fiberline has trained 8 salesmen from Arthur Krüger in Hamburg ... and Henrik Thorning has trained all ETRA's sales personnel in Finland. ... Niels Jørgen Kovstrup has been in France where he has visited three potential distributors. ... Henrik Thorning has been in Holland to visit a large dealer of plastic called Eriks. Eriks will look in to the possibilities of selling Fiberline's products in Holland and maybe also in Belgium and Luxemburg.⁴³

After a short Christmas break Henrik Thorning was off again. To the board he reports

Henrik Thorning has traveled for a week with Krüger's sales manager and visited approximately 25 customers in Germany. The German market is very interested in our products and Krüger does a good job. From several of the customers we got sample orders as well as indications that we can compete first and foremost with Grillo in Germany. ... In January Henrik Thorning visited two companies in Switzerland; Magg Technic AG and Angst + Pfister who are both interested in being our exclusive distributor in Switzerland. ... Fiberline have had a visit from Celtite in France who also wishes to market our products in France.⁴⁴

The above considerations concerning how Fiberline came to focus on sales and why this focus became international depicts a company that didn't venture into international markets based on a plan or according to a particular model of how it should be done. Instead, it was an incremental process driven by necessity. I have earlier discussed the concept of opportunity and argued that contrary to the view of Garnsey (and many others) it should be seen as a construct of the entrepreneur rather than a 'pre-existing phenomenon out there.'⁴⁵ Considering the early internationalization of firms, Schweizer, Vahlne, and Johanson also take the concept of opportunity as a point of departure; as they note, opportunities might be created by the entrepreneur, in the sense that prior knowledge and experience makes the entrepreneur capable of recognizing an opportunity when he comes across one.⁴⁶ To this rather traditional image of the entrepreneur, Schweizer, Vahlne, and Johanson add the concept of effectuation to explain entrepreneurial action and early internationalization drawing on the work of Sarasvathy.⁴⁷ The point is that in situations of uncertainty the entrepreneur will make decisions based not on rational calculation but on what knowledge he has, using the resources available in the situation and with no clear goal besides handling the situation. This is effectuation.

When Fiberline started to pursue international sales, the company was in a situation that - to use Schweizer, Vahlne, and Johanson's words - was characterized by "no predictability, possibility of setting goals, or independent environment."⁴⁸ And when acting in this manner, Fiberline attempted to exercise control over what could be done with available resources, that is to say they used effectuation logic. Henrik Thorning's statement mentioned earlier, that when it comes to markets a small firm can't strategize but can only react, captures this logic.

In this chapter I have so far discussed how the financial situation grew ever more desperate, the problems of selling the profiles, the escalating conflict with Dukadan, and

later the loss of E Rasmussen Industri as a customer challenged the existing image of context of Fiberline. This induced Fiberline to act by gradually becoming more focused on sales. I have also considered how the actions of the company in the situation, forming a sales strategy that focused on selling standard profiles through a network of international distributors made sense to Fiberline, because it drew on the conception of the product and its potential as constructed in the basic narrative of the company. By drawing on the first experiences of sales as discussed, and by linking these to the conception of self in the basic narrative, a new narrative was constructed, which I discuss in the following section. It explicated in what way the profiles should be sold and explained why this was the case by establishing a new image of context of the company, one better suited to the situation in which Fiberline had to act yet still connected to the self-conception already established.

The narrative of how profiles should be sold and to whom

Philosopher David Carr, mentioned earlier, has noted on the construction of narratives that “Sometimes we must change the story to accommodate the events; sometimes we change the events, by acting, to accommodate the story.”⁴⁹ In this particular situation Fiberline primarily sought to accommodate to the events and adapt their story by formulating a new narrative about how the profiles should be sold. The new narrative centered on three issues: The high technological level of Fiberline’s production and products, international markets, and the need to supply customers with guidance. It can be formulated along lines such as these:

The profiles of Fiberline are the best and most technologically advanced on the market. Because the technology of Fiberline is so advanced and the product is new, selling it requires that customers are guided. Profiles can be sold to every industry imaginable. But the Danish market is conservative and lacks the vision to accept new products. Therefore, the profiles are sold internationally.

As mentioned the main function of this narrative was to construct sense in the difficult situation of the company in the first half of the 1980s which enabled Fiberline to act and get active in selling the profiles. In the following sections I will unfold the narrative. I will show how it was linked to the basic narrative which kept the fundamental self-conception of the company intact throughout the crisis, while still allowing the company to act by moving focus from production and development to sales.

Technology and competitive advantage

In 1985 Fiberline wrote a prospectus—in yet another attempt to attract investors—in which the company presents itself. Commenting on the quality of the products, it is noted that

The production was started in May 1979 on a foreign produced machine. At the same time a development effort was begun which has brought Fiberline to a lead position in Europe, so that today the company can produce more complicated profiles of a better quality than any of the few existing competitors.⁵⁰

Further along in the prospectus, competitors are discussed, and it is noted that there are only around 10 who, like Fiberline, produce intermediates for different industries. Of these 10 it is further noted that

All our competitors except Drapol in Norway use an older American technology that neither in quality nor in possible product range measures up to the technology Fiberline has developed... The pultrusion process is extremely complicated. Even large and financially strong companies have after persistent attempts given up. Therefore it is very unlikely that a large number of competitors will appear in the nearest future in spite of an expansive market...⁵¹

In an interview with the Danish newspaper Børsen in July 1985, Henrik Thorning discusses the market success of the company (noting that turnover had grown three years in a row and for a moment leaving the otherwise shaky financial state of the company

aside). The article states that "... even though Fiberline only has 10 employees the company has become the most advanced producer of profiles in reinforced plastic in Europe with the largest product program of around 4000 profiles."⁵² Further along in the article, Henrik Thorning is quoted:

One of the reasons for our leading position is that reinforced profiles are the only thing we produce and solely in the form of intermediates. Our competitors in Europe are part of large industrial groups and they avoid the difficult jobs because unlike us they are not forced to produce better and cheaper products to survive ... Actually the largest European producers have started referring customers to us when the jobs becomes too difficult. I haven't heard about others than us who can make as complicated profiles.⁵³

These examples of Fiberline's evaluation of its own position compared to the competition on the European market express the same self-conception, focused on the product and the process, as the basic narrative. As discussed the image of context constructed in the basic narrative was rather vague and focused on a broad idea of substituting products. Now, after being pressured to start focusing more on external matters as already discussed and by gaining new experience in sale, a more specific image of the competition is formed. It is, however, still tightly coupled to the basic narrative and its focus on the development of Fiberline's product and production process.

One might respond that there isn't much difference between comparing your own market position to a general category of substituting industries and a rather anonymous group of competitors performing below your own level. I will argue that this is because this change or adaption of external focus was only gradually adopted into the company's image of context, just as the focus on sales was only slowly developed. This is also evident from the fact that from the company's founding, through the first phase of focusing on sales until 1985, Fiberline's competitors were only discussed a handful of times in reports from

management and at board meetings – less than once a year. Only gradually did Fiberline construct an image of the competition in the composites industry, and at this point, in the mid-1980s, it was still very general. In later strategies, such as the one from 1993 for comparison, competitors are named, evaluated, and ranked according to a number of different parameters, first of all technological but also market position and financial state.⁵⁴

When Fiberline first met competition, it was connected to the process of developing profiles for E Rasmussen Industri. In this process Fiberline had worked with the Norwegian company Plastkonstruktioner (now named Drapol). In the winter of 1981 Drapol asked to acquire Fiberline's knowledge about producing the profile. Fiberline declined. A year later Drapol went bankrupt, which put an end to further discussions of shared knowhow.⁵⁵ But it was not only Drapol who had invested resources and was interested in the profile developed for E Rasmussen Industri. At the December meeting in 1982, Fiberline's board discussed the following, concerning Jotun, who supplied most of the polyester for the production:

Henrik Thorning has been in Sandefjord ... where we discussed a corporation agreement between Jotun and Fiberline. One of the problems is that Jotun wishes to sell the special polyester systems and color pasts that has been developed for the E. Rasmussen profiles to other pultrusion customers including Tehalit in Germany, which is a competitor and might be one of the manufactures that E. Rasmussen would use as supplier of the profiles ... which Fiberline is currently making. Henrik Thorning ... made it clear to the management of Jotun that this would be unacceptable.⁵⁶

Fiberline later lost E Rasmussen Industri—to Tehalit.⁵⁷ It isn't clear, though, if Fiberline managed to keep Jotun from handing over knowledge concerning the profiles or if Tehalit simply caught up with Fiberline and could now manage to produce the same profile at a lower price. It is clear, however, that when Fiberline started to encounter competition,

price was a parameter. In June 1984, it is stated that “Our competitors have ... started to react and fight us in markets where they have lost ground, and in some cases they have responded with alarmingly low prices.”⁵⁸ However, rather than discussing this further Henrik Thorning, according to the minutes from the meeting, describes an example in which competition was not on price and Fiberline was chosen instead of another German company, Grillo. This, he explained, was due to the superior quality of Fiberline’s products, which made them more suitable for the customer, who was in the electrical industry and needed precision in the products.⁵⁹

In all, Fiberline didn’t seem particularly worried about competition on price, though price-competition might have seemed disturbing to a company that had not only lost its biggest customer to a competitor delivering at a lower price but was also claiming to pursue a strategy of selling standard products in large quantum.

March 1985 seems to have been a particular busy month for Henrik Thorning who was now, intensively, touring most of Europe in his car. His report of this month was extensive. Of the new Italian distributor he comments:

March 11th and 12th Fiberline had a visit from the Italian company Blumer. Blumer has hired a dedicated Fiberline consultant who will be working exclusively with our products and at the meeting he was carefully introduced to these as well as clearly informed that the sale of standard profiles is of highest priority. Blumer has taken a market survey in Italy, and it was concluded that it was an interesting market for the company and that the market is growing rapidly. Blumer amongst other things brought a transcript from the Italian Register of Companies concerning the company Top-Glass in Milan. This company started pultrusion in the beginning of the 1970s. Today it has 30 employees and a turnover of 26 million DKK. In the coming period it will be the task of Blumer to try and capture part of Top-Glass’ market shares in standard profiles in Italy.⁶⁰

The strategy for entering the Italian market focused solely on standard products; therefore, Fiberline could expect to compete specifically on price. This, however, was not followed up by further considerations about its ability to compete on this parameter. Instead, when considering competitors Fiberline continued to refer to their own technological superiority, which they saw as their own main competitive advantage. Though the image of context had developed under the experiences of selling profiles, it still appeared to be tightly connected to the self-conception of the Fiberline as first formulated in the basic narrative and, therefore, focused on development of the product and the production.

Constant attention and information

Another element of the new narrative of sale was a clear concept of how the customers should be handled. As described, Henrik Thorning aided new distributors in many aspects of the sale by accompanying them around Europe to visit customers. This was necessary, as customers would often be using profiles in reinforced plastic for the first time; therefore, they would have to rethink their own product before they could integrate the profiles. The vital necessity of aiding distributors in guiding customers was an experience Fiberline took from working with Dukadan in the start-up phase. In September 1983 Henrik Thorning reported that

The main effort in marketing is currently in backing up distributors; that is traveling with the sales personnel of our distributors. It has proven necessary with a very careful introduction to Fiberline's products ... Only then does the effort yield results, as it is now clear in Germany.⁶¹

This was an important point for Fiberline after the experience of entering into the Danish market without sales consultants with the proper special knowledge for the task. It was already a topic in the first attempt at a sales strategy mentioned earlier, which was stated

that distributors should “be trading or engineering companies who have the technical and commercial knowledge to meet our goals.”⁶²

The focus on delivering service to the customers in the form of help for calculations, etc., was not only a result of Fiberline’s experiences. It was also connected to selling special profiles, which—despite the focus on standard profiles—continued to generate around half of Fiberline’s turnover throughout the 1980s.⁶³ In the process of developing a special profile, the customer would always work together with Fiberline, as a new tool had to be custom-made to meet their needs. By working with customers in this way, Henrik Thorning could draw on his previous knowledge and experience, because it was similar to how he had worked in Jotun. Also, the conception of the potential and brilliancy of the product, along with the expression of this through the focus on the technological superiority of Fiberline’s products in the new sales narrative, made the need for servicing customers seem reasonable. Help and effort seemed especially needed in selling a new and technologically sophisticated product.

In considering “the composition of selling opportunities relevant to the firm,” Penrose notes that

The type of product in which the consumer might be interested is in effect very often suggested to the entrepreneur by the firm’s resources, and the possibilities of successfully introducing it largely depend upon them.⁶⁴

She further concludes that, because of this, a great deal of innovation is connected to the firm’s desire to use its existing or inherited resources.⁶⁵ In developing the product and the process of pultrusion to a level of technological superiority, as Fiberline did, there certainly seems to be some evidence for Penrose’s last claim about the connection between innovation and the inherited resources of the firm. That the firm’s inherited resources also have an effect on the company’s conception of selling opportunities is

equally evident in the case of Fiberline. The connection between Fiberline's inherited resources and the selling opportunities the company saw as it began to focus on sales comes through in the connection that, as I have argued, exists between the basic narrative of Fiberline and the new narrative of sale.

This connection between the firm's resources and its selling opportunities seems particularly clear when the firm is introducing a new product. Penrose argues that "When firms get into the production of products about which consumers know nothing, and for which there is no market expression at all of consumers' wants, overt demand is clearly irrelevant."⁶⁶ Elaborating on this she quotes Schumpeter: "That new commodities or new qualities or new quantities of commodities are forced upon the public by the initiative of the entrepreneurs ... is a fact of common experience..."⁶⁷ Schumpeter assigns the success of such an endeavor to qualities of leadership in the entrepreneur, which is equal to Penrose's idea of the temperamental characteristics of the entrepreneur (which I have discussed earlier).⁶⁸ In this line of thought, selling an (almost) unknown product is much like raising funds: it requires the same ingenuity (a form of selling ingenuity) or the same ability of convincing others as previously discussed.

In traveling over Europe, putting pressure on distributors, giving constant attention to customers, and guiding them in their choices, Henrik Thorning can be said to exhibit this ingenuity in forcing his product on both current and potential customers. It is evident from the example of Fiberline as well as from Penrose's argument that the resources available to the firm govern selling opportunities. Such efforts cannot be understood outside context—or without considering the self-conception and image of context of the firm, so important for how the firm puts resources into service.

The market – broad and international

In June 1984 sales for Germany accounted for more than 50% of the total sale. Arthur Krüger was reported to be very positive about the development of the German market, and the company had presented Fiberline's products almost exclusively at the 1984 Hannover Fair.⁶⁹ In spite of some challenges sales looked better again after the loss of E Rasmussen Industri. The report from management stated that

Since the last meeting of the board, Henrik Thorning has traveled several times in Switzerland, Germany, Holland, Belgium, and Finland. ... The progress is best in Germany and Switzerland, slower in Holland, and the sales to our distributors in Italy and Finland are currently very small. In these countries constant pressure and follow-up is necessary to accelerate the development. In general it can be said though that the interest in composite materials is increasing rapidly, and we are currently engaged in several large, interesting projects with good chances of success.⁷⁰

The attitude of the newest distributors in Italy and Finland shows that Henrik Thorning constant sales effort was necessary. At the meeting of the board in November 1984, the board discussed the sales strategy of Fiberline; some members noted that it might not be a good idea to focus too much on the Italian and Finnish market if they were so difficult to penetrate. To this Henrik Thorning responded sharply and the following is noted in the record:

Henrik Thorning noted that he sees the market of Fiberline as global and that we evaluate the concrete sales opportunity to a customer or an industry as opposed to evaluating the country from which the customer in question originates. By saying that we won't focus on e.g. Italy, Spain, or other more remote countries, we will cut off large market opportunities. Finally Henrik Thorning concluded that he sees it as his responsibility where and when we must sell the products of Fiberline.⁷¹

The market focus in this quote is very broad. Looking at the 1985 prospectus, written around the same time, this idea of the market seems to be connected to the idea about the potential of the product, part of the fundamental vision of Fiberline as formulated in the basic narrative. I have already discussed how this vision was connected to Henrik Thorning's perception of the structure of industrial production (where he believed that profiles in reinforced plastic were missing) and the many positive properties of the material, when taken together, seemed to promise a product of great potential. The market analysis of the 1985 prospectus opens with a repetition of this fundamental vision of Fiberline:

Plastic composites are the group of materials where the sum of the positive technical properties of the material is largest. Furthermore the production of composite materials from the single element to finished product requires less energy than needed for producing for example steel and aluminum. Looking at the development of traditional materials for production for example steel and aluminum it is noteworthy that the development has moved from primarily molding parts to producing intermediates in the form of profiles and pipes because these can be combined in countless ways within many different areas of production.⁷²

And in concluding the remarks on the market potential of the company, it is noted that

The technical analysis of profiles made by pultrusion therefore is as follows:

- excellent technical properties of the material,
- pultrusion is the optimal process for producing composites,
- the market for profiles make up a substantial part of the industrial market.⁷³

Both of the above quotes reaffirm Henrik Thorning's original vision of Fiberline, and the same focus is evident when the possible applications of the product are mentioned. Here the vision of Fiberline is also connected to a broad market focus:

Fiberline sells material-technical and geometric properties more than they sell pultruded profiles in reinforced plastic. This means that *all* industries are customers or potential customers. Within the specific industry Fiberline are searching for the possibilities where the combination of properties and price is favorable for the seller as well as the customer.⁷⁴

This broad market focus was part of Fiberline's image of context, which had been formed as the company started focusing on sales. In this broad focus, however, Fiberline didn't only draw on its own basic vision. The broad market focus also seems to have been strengthened by the experience of losing business from E Rasmussen Industri. As discussed this loss had been a severe blow for the young company, following which Henrik Thorning really stepped up his effort in selling profiles and building up a web of distributors. The 1985 prospectus, in a section about the dependence on large customers, notes:

Not regarding the loss of the largest customer of the company, which made up circa 50% of the turnover in the financial year of 1983/84, the turnover has been growing steadily. Since 1983/84 the targeted growth has been evenly spread out on markets as well as industries, so that Fiberline today is much less valuable than before.⁷⁵

In the 1981 article mentioned earlier, Henrik Thorning compares Fiberline's situation to other small companies and notes that "Fiberline is less vulnerable to industry specific recessions. If the construction industry is in trouble, there will be other customers that will place orders with us."⁷⁶ The experience of losing E Rasmussen Industri kept this idea fresh in mind, as in the quote above. When Fiberline constructed a new strategy in 1992/93, a clear and prioritized object was to secure that at any given time the turnover generated from one customer would never be above 20%.

Such considerations also served as an argument for seeking to sell profiles on international markets, the point of Henrik Thorning's reply to the board from November

1984 quoted earlier, in which he fears that a focus on certain markets will limit market opportunities. Also I have earlier discussed the influence of Henrik Thorning's prior experience and knowledge in making the company focused on international markets. However in making sense of the problems of selling profiles in the first years, Fiberline also drew on other elements that were used in the new narrative of sale to explain the international focus. As noted in an earlier chapter, poor sales had the potential to threaten the self-conception of the company, as it was difficult to explain why a product of such great potential turned out to be so difficult to sell. The focus on international sales as formulated by Fiberline in the new narrative of sales offered a satisfying explanation. In the 1985 article already mentioned, Henrik Thorning observes that

Danish companies are slow in changing material for construction. They have too little experience with composites, and it is a bit of a cultural revolution for them to change construction material. ... Sweden and West Germany that are our largest markets are generally much further developed.⁷⁷

In a similar profile article from 1990, Henrik Thorning is asked whether the newly freed East German market holds potential for Fiberline. He answers, "We are speaking of advanced materials that are most suited for highly developed companies in Western Europe and USA."⁷⁸ Further along in the article it is noted that

The new materials are a bit of a cultural revolution for many companies and their employees. In Henrik Thonings own words: "A blacksmith know what iron is, but the many different combinations of materials are something completely new."⁷⁹

But Henrik Thorning adds optimistically:

A new generation of engineers has started to learn about these materials and they are very interested – even though it takes a certain time to introduce new materials. It also took many years for aluminum to become recognized ... In theory we can become large.⁸⁰

In 2003 Henrik Thorning was interviewed about the development of the composites industry in Denmark for the 25 anniversary of the Composites Section of the Danish Plastic Industry Organization. In the interview he describes the development of his own company by first reaffirming the basic narrative, referencing the conception of the structure of industrial production as it was formulated already in the start-up:

Basically the world consists of three different things: plates, profiles, and molded parts! No one had made profiles in composites before, and when I noticed the process of pultrusion we started. It turned out to be rather difficult in practice, and the market was also more skeptical and conservative than I had anticipated so it was 10 years before it really took off.⁸¹

The idea of the skeptical and conservative market is especially connected to the Danish market. In the new narrative of sales it serves two purposes: it explains why Fiberline had difficulties selling the profiles despite the brilliancy of the product, and it explains why the company now deals with international markets. In this way this part of the new narrative of sales functions to establish a link back to the basic narrative. It is instrumental in maintaining Fiberline's fundamental conception of self, even though a growing tension between the image of context of the company and its self-conception, as discussed, had challenged the company to act and change its focus and its dealings.

Conclusion – The relevant demand for profiles

The object of this chapter has been to discuss how Fiberline started focusing on sales to counter a difficult situation in which its existence was threatened because sales didn't pick up in the hands of Dukadan. In this situation a new narrative of how profiles should be sold was constructed. The function of the narrative was to enable Fiberline to account for the company's reaction and changing focus. The new narrative centered on three elements of selling the profiles: the technological superiority of Fiberline's products, the need for constant attention to and guidance of customers, and a focus on international markets.

Each element of the new narrative was connected to the basic narrative. Therefore, the meaning created by the new narrative didn't disrupt the original conception of self of the company, although it allowed for the focus to change from production and development to sales when this was needed to survive the crisis of the first years.

The image of context of the basic narrative was broad and unspecific in emphasizing substituting industries and the potential of the product. In some respects the new narrative was as abstract as the basic narrative. This was the case for the view of competitors established in the new narrative. Based on the conception of Fiberline's own technological ability, it was at first rather vague. In time, however, the image of the competitors would become much clearer, as argued. The market focus was very broad, which connected to the basic narrative and the idea of the versatility of the product. Also the broad market focus was further strengthened by the vulnerability Fiberline felt when it lost the business of E Rasmussen Industri.

Returning to the idea of the image of context, Penrose notes that "... demand from the point of view of the firm is highly subjective – the opinion of the firm's entrepreneurs."⁸² She further elaborates how this affects the way the world external to the firm should be understood:

Many changes in the external world are appropriately treated as environmental changes affecting the rate of growth of firms through their effect on entrepreneurial expectations about productive possibilities. I have placed the emphasis on the resources with which a firm works and on the development of the experience and knowledge of a firm's personnel because these are the factors that will to a large extent determine the response of the firm to changes in the external world and also determine what it 'sees' in the external world. This is particularly evident when we recognize that changes in the knowledge possessed by the managerial personnel of a firm will not only change

the productive services of other resources, but will also change the 'demand conditions' as seen by the firm.⁸³

It may be said - as a general and concluding note on how the new narrative of sale discussed in this chapter influenced the development of the company - that by formulating the new narrative about sales, Fiberline constructed a demand for their profiles. The conception of demand, that is Penrose's point, in all its subjectivity gives the company grounds on which to act. The abstract vision of the product in the basic narrative already includes an idea about the relevant demand, but the new narrative served to clarify this demand to the degree possible without disrupting the fundamental self-conception of the basic narrative. Later, I will discuss how the demand Fiberline saw for their products was connected to productive opportunities. Before turning to this, however, I will further discuss the efforts of financing through the first years of running and seek to connect it to the general financing behavior of Fiberline.

7. The efforts of financing and opportunities for growth

Earlier I discussed the difficulties Fiberline had in raising capital during its start-up. In this short chapter I will consider the development of the financial situation of the company from around 1983 till 1986. I will use the chapter to discuss the influence of the self-conception of Fiberline on the financing behavior of the company. I have included this because I see it as an example of how the company's self-conception influenced its growth. Finally I will elaborate on Fiberline's financing efforts by connecting it to the discussion of bootstrapping in the literature on entrepreneurial financing.

Continued pressure after 1983

In March 1984, the board was expecting a loss for 1983/84, because E Rasmussen industry had moved their business away from Fiberline: the company's liquidity was pressed. An important element in this was the challenges Fiberline faced in handling the expensive tools needed to produce special profiles. This situation stretched the company's limited resources. Fiberline tried but had problems getting customers to invest in the tools, and so the company often chose to invest themselves to secure the order.¹ As discussed earlier Fiberline was now very bent on sales, and Henrik Thorning was active in pursuing international customers.

In October 1984, Kai Busch wrote a letter to the board. He warned against focusing too much on sales because the financial situation of the company was so serious, and he found that the board wasn't consulted enough, which was unacceptable. Kai Buch's letter expressed both concern for the rapid growth of sales and frustration caused by the uncontrolled development that followed.²

In the fall of 1984, as before, the strain put on the finances of Fiberline by the situation compelled the board to consider an increase in shared capital. They agreed that it would

be preferable if they could find an investor that wouldn't demand influence in the board.³ First the faithful bank, Aktivbanken, was asked for yet another loan. Henrik Thorning also told the board that he had contacted a Danish investment fund called BCF, but nothing ever came from this. Instead a deal was negotiated with Aktivbanken in which they would loan Fiberline 600.000 DKK, provided that shareholders loaned the company a similar sum.⁴ At the next meeting of the board, Henrik Thorning could happily report that Fiberline's immediate financial problems had been solved to his satisfaction; Fiberline's investments in 1983/84 and the first half of 85 had been settled. The thoughts about involving an investment fund seem to have been abandoned at this point.

It was still the opinion of the board, however, that more money was needed soon to secure the company.⁵ Liquidity was still pressed and, as indicated by the financial report of the first half of the year 1984/85, it was clear that Fiberline was now struggling with paying off the debts built up since the reconstruction in June 1983.⁶ Henrik Thorning concluded that "Despite a possible smaller profit in the financial year [1984/85], Fiberline hasn't got large liquidity reserves to meet potential fluctuations in sales or unforeseen expenses. With the current liquidity, it will also be impossible to expand the capacity [of the production]."⁷

In June 1985, Aktivbanken allowed Fiberline an expansion on its running credit for July and August. Fiberline had also pressed for new loans to finance the future running of the company, but by this time the bank had gotten a new management team who remained critical.⁸ This let Torben Nymand to suggest that Fiberline upped its efforts to find an investor. He brought it up often, whereas the rest of the board only entertained the idea of an investor when all other options for financing the continued running of the company seemed to have been tried. Now, however, in light of the bank's attitude, the option had to be considered again. As the board parted in June, they agreed that a prospectus should be

made and finished before the summer holiday—and that Torben Nymand and the lawyer Jens Lauersen were to make a report about the possible implications of a capital expansion.⁹

Over the summer the situation became even more difficult. The report from management made for the meeting of the board in end July 1985 notes that the bank had declined a request to extend the company's running credit. It was the opinion of the bank's new management that this couldn't be done without a guarantee by the owners. "This puts Fiberline in a very unpleasant situation," Henrik Thorning noted and continued

Our main supplier of glass fiber has already informed us that if we do not balance our credit they will not continue deliveries. Therefore Fiberline must have the liquidity problems solved immediately if our production isn't to be stopped by mid-August.¹⁰

When the board met they discussed the material made to prepare an extension of the share capital. Fiberline expected the bank to be active in helping them find an investor, and a meeting had been planned. Communications continued over the summer, but nothing came from it, and eventually the idea of finding an investor was yet again abandoned.¹¹ In the meantime Dorthe Thorning and Knud-Erik Madsen (a newly hired accountant) would juggle creditors, paying what they could in an order that wouldn't stop deliveries of the most important supplies and drawing on the patience of those who had some left. Fortunately, sales were good over the summer of 1985, and the production didn't cause problems. Thanks to this and increased pressure from Fiberline, Aktivbanken by August decided to extend the company's running credit.¹²

Clearly the challenges of securing the financial resources for investments and the general running of the company were many over the period from its founding and till around 1986. After this point, however, the board rarely discussed finding new investors again.

Financing behavior over time

As discussed earlier Penrose considers fund-raising ingenuity a service lent to a company by its entrepreneur(s) by way of personality or temperament. However, she also considers the general financing behavior of a firm over time, which is less bound to the individual. She connects this to uncertainty and risk, noting that “‘Uncertainty’ refers to the entrepreneur’s confidence in his estimates or expectations; ‘risk’, on the other hand, refers to the possible outcomes of action, specifically to the loss that might be incurred if a given action is taken.”¹³ Both are subjective concepts. In the discussion of risk and uncertainty Penrose is inspired by Knight and the Austrian school of economics: for example, when she argues that uncertainty may be met by obtaining information, but is still inescapable and a matter of judgment in the situation.¹⁴ It may also be argued, however, that the narratives of the company may function to reduce uncertainty and that this may be observed in the case of Fiberline. As discussed earlier, it is a basic assumption of my project that narratives function to establish a company’s self-conception and image of context– or to make sense of things in and around the company. As such the narratives in use form the basis on which the company makes decisions and acts. That is, a narrative that seems convincing to the company in a specific situation will reduce the uncertainty experienced in that situation and serve as a (comfortable) base for making decisions and acting on these.

Penrose also considers the increasing risk to the financial position of the firm as expansion proceeds; she notes that there are two broad types of responses to risk and unavoidable uncertainty. One is a conservative financial politics in which expansion is restricted to the extent permitted by funds obtained from a specified source, for example the company’s own accumulated funds. The other response is to arrange the firm’s expansion by taking some risk – as little as believed possible. “Risk avoidance,” Penrose notes, “is the goal of the entrepreneur in both cases, but the effect on the expansion

programme of the firm is very different.”¹⁵ She then concludes: “The methods of handling risk and unavoidable uncertainty often become more or less a part of the tradition of a firm, changed only rarely under the impact of special circumstances.”¹⁶ She observes this behavior to be part of the company through time; as such it should be considered something shared that goes beyond the personal fund-raising ingenuity of the entrepreneur. Penrose attributes the behavior in handling uncertainty to the company’s entrepreneurial attitude, which as discussed in the introduction is a term she clarifies by reference to the company’s self-conception.¹⁷

Fiberline’s very first efforts at financing, in the beginning of the 1980s, were not connected to expansion – but rather to survival. However, one can safely assume that this entails the same kind of decisions as planning expansion. These decisions must have been marked by a particularly high risk, as the continued existence of the company was immediately at stake. Henrik Thorning, as mentioned, seemed rather liberal in his view of borrowing capital, and in general he doesn’t appear to have felt much uncertainty. Using Penrose’s terms, one could say that Fiberline’s risk-avoidance behavior wasn’t conservative as in the first case Penrose describes, but rather more like the second case she mentions. In 1987 and 88 for example, when Fiberline was getting more settled, production was running smoothly, turnover rising, and profit began to be made, Henrik Thorning invested heavily in the development of the production.¹⁸ In the terminology of Penrose, Fiberline was certainly running a risk, as the possible outcome of that action could be a loss at a time when Fiberline’s ability to handle any loss was still limited. The investments in 1987 and 88 did turn out to be larger than Fiberline could immediately handle, resulting in losses that year, which frustrated the rest of the board.¹⁹ For example, this problem came up in a strategy process initiated in 1992, where Ole Tandrup, a new member of the board, questioned if investments during the last years of the 1980s had been profitable.²⁰

As noted narratives may work to reduce the uncertainty experienced by the firm. I have already discussed the formulation of the basic narrative of Fiberline at length and shown how it was strengthened by the company's experiences during start-up. Furthermore, the chapters following this one will show that the basic narrative of Fiberline was resistant to change and that meaning continued to be drawn from it many years after the founding of the company. I will argue that Henrik Thorning was willing to indebt the company and that he didn't seem to be particularly burdened by uncertainty: he could continue to draw sense from the basic narrative, thereby reducing the uncertainty he might otherwise have felt in situations characterized by risk.

One element of the basic narrative that might work to reduce the uncertainty felt by Henrik Thorning was the potential of the product and the brilliance of the idea so central to Fiberline's self-conception. As noted earlier Henrik Thorning maintained a firm belief in the future success of the company; for example, he continued to bring up extension of production capacity in board meetings.

Another element of the basic narrative important for the financing behavior of Fiberline was that the basic narrative established Henrik Thorning's legitimacy as the right and proper owner and leader of the company. Henrik Thorning's role as founder and owner was better maintained by providing capital through banks, which didn't demand influence from the board or management.

That Henrik Thorning's influence was important to maintain, however, was never specifically noted in reports from management or minutes of board meetings. It appears to have been self-evident to everybody – a precondition for discussing financing. This apparent self-evidence of Henrik Thorning's ownership may have been enforced by the larger shared narrative of entrepreneurship that focuses on the character and by motivations of the entrepreneur—which the basic narrative of Fiberline draws on.

The minutes of the board meetings reveal numerous examples of situations over the years when the board discussed financing and one member mentioned that it may become necessary to find an investor.²¹ The rest of the board would then usually agree. Yet, at the following meetings nothing would be said about the topic, which appears to have been dropped as soon as the financial state of the firm became just a little better (for example, if the credit of the bank had been extended enough to get Fiberline through the following months). The repetition of this pattern is the only trace of the meaning ascribed to Henrik Thorning's ownership and control in reports from management and board meeting minutes.

Earlier I have referenced a prospectus that was made in 1985. It is the only one of its kind in the archive of Fiberline, and as a source it stands out because it is among a small number of texts intended for external readers. The minutes of the board meetings, the reports from management, and the strategy documents that would later be written were intended only for the board and management to read. In discussing the financing behavior of the company and the influence of the conception of Henrik Thorning's control of Fiberline on this behavior, the prospectus also stands out because the direct reason for formulating it was that Henrik Thorning's ownership was under pressure. So, potentially, the document might undermine an important part of the company's self-conception. However, in the prospectus this dilemma is dealt with by referencing what might be called the moral legitimacy of Henrik Thorning's ownership, making it clear that his right to control Fiberline surpassed the legal right of ownership should he be forced to give that up.

The prospectus opens with a reformulation of the basic narrative of Fiberline with its focus on the brilliancy of the product and the vision of the company. Repetition is used in this case to establish a common ground for understanding the company in the same way

as it was used before the founding to make the potential of the firm seem convincing – to both Fiberline and its investors. In keeping with the basic narrative, the first paragraph explains what plastic composites are and why they are brilliant.²² The next passage explains that the company was founded by Henrik Thorning and that it is an independent company. In the same passage the technological ability of Fiberline’s production is established and compared to (nameless) competitors.²³ After a short presentation of the board, the prospectus states the company’s vision. It hasn’t changed since it was first formulated in 1982: “Development, production, and sale of profiles and components in reinforced plastic.”²⁴ This is followed by a passage (quoted in chapter 6) concerning the structure of industrial production and the potential of plastic composites in this as a substitute for steel and aluminum, thus repeating the basic narrative in detail. Finally all the good properties and technological superiority of the method of pultrusion are repeated in detail.²⁵ In all, the first four pages of the prospectus firmly reestablishes Fiberline’s vision and potential as formulated in the basic narrative. From this base, Henrik Thorning’s legitimate ownership is then established in the prospectus as the organization of Fiberline is presented. In this section it is first explained that Fiberline’s management consists solely of Henrik Thorning. This is then followed by his CV and the following remark: “Henrik Thorning founded Fiberline in 1979 and apart from being the general manager he also serves as development and sales manager responsible also for export and procurement.”²⁶ Therefore, it may be that Henrik Thorning and Fiberline were using the prospectus to search for investors and that doing so might demand influence and control. However, the prospectus also makes it clear that Fiberline really is Henrik Thorning and that Fiberline will not be able to function without him.

In more than one situation concrete offers to invest in or buy Fiberline were made by actors in the company’s network. In 1981, when Fiberline was hard pressured to find new resources, E Rasmussen Industri suggested that they could invest in the company so that

production capacity could be expanded. The board of Fiberline declined the offer, however, responding that they wanted to develop more steady production before they engaged in an extension of the capacity.²⁷ In 1985 (around the time when the prospectus was written) the large competitor, Bekaert, offered to buy Fiberline. Although Henrik Thorning said he would keep discussing the matter with Bekaert, nothing further was ever done.²⁸

Torben Nymand seemed to be the only co-owner who ever seriously considered the option of finding an investor or selling Fiberline. Considering the situation the company found itself in during the first part of the 1980s, it would seem that the owners of Fiberline stood the best chances of profiting from their ownership in the future by finding a strong investor. But the view of Torben Nymand, though reasonable, collided with the basic narrative of the company as explained above.

Observing the reaction of Fiberline in these two situations and keeping the points just made about the influence of the basic narrative on the financing behavior of the company in mind, two further points may be made. One is that Henrik Thorning's influence and ownership were more important than the ability to invest in developing the product and the production, though a strong focus on product and process is also part of the basic narrative. Interest from potential investors in buying or investing in Fiberline put the company in a situation in which the ability to invest in developing product and production might be gained by offering control. But these were not terms Fiberline could accept. The second thing that may be observed is that this attitude, based on the company's self-conception, may have influenced its growth, as only Torben Nymand seemed to consider, by keeping the company from benefiting from a strong investor.²⁹

Bootstrapping and effectuation in financing behavior

I have argued that the financing behavior of Fiberline was based on the company's self-conception, which explains the company's willingness to bare risk. Within the field of entrepreneurship the concept of bootstrapping has been applied to explain the financing behavior of small, new firms. Bootstrapping methods, shortly put, are different ways a company of limited resources may seek to follow opportunities without raising external financing for it.³⁰

Fiberline, as demonstrated, was very active in raising external capital: the company drew on personal networks not just in the founding but also later when finding investors after Dukadan sold its shares. In Aktivbanken the family connections of Henrik and Dorthe Thorning helped the company raise the necessary capital for the founding. The bank manager stayed positive throughout the years, even though Fiberline often faced problems paying down their loans, also through the reconstruction of the company in 1983. As seen it wasn't until a new management took over in the bank that Fiberline would have problems renewing loans and expanding their credit.

However, Fiberline also applied a long line of internal bootstrapping methods to free resources for the continued running of the company. For example, they tried to sell off part of their supply of raw materials, in 1982 they built a new machine from spare parts from the existing machine, and they bought used machinery when developing the production. Niels Jørgen Kovstrup worked for free for a long period, and both Henrik and Dorthe Thorning invested much more time in the company than was mirrored in their salaries. Fiberline also considered (and used) a long line of funding options that might supply capital without increasing its debt to banks, for example by borrowing money from the owners or trying to find a company that would invest in the tools for production and then lease them to Fiberline.

The concept of bootstrapping offers a tool for guiding attention to these methods of generating resources. Most often, however, the literature on bootstrapping offers no considerations of the motives of the company or the entrepreneur, apart from securing the best (future) profit for the company.³¹ One example is Winborg who set out to explain the motivations for bootstrapping in new businesses. On the basis of a questioner survey among 120 Swedish business incubators, he concluded that there are three reasons for applying bootstrapping: to reduce cost, to escape capital constraints, or to reduce risk.³² These do not, however, move the concept of bootstrapping outside the constraint of what might be called the profit motivation paradigm. The question of why companies act the way they do (Penrose echo in my head) is, basically, only seen from one perspective. Fiberline uses bootstrapping methods to all three ends described by Winborg, but the logic of the company's financing behavior finds explanation in other motivations as well, as already discussed (for example, the will of Henrik Thorning to maintain control).

Another element in Fiberline's use of bootstrapping methods to consider is the company's need to make do with what's at hand in order to make decisions in complex and uncertain situations throughout the start-up. This aspect of the company's financing behavior can be captured by the concept of effectuation which, as already discussed, describes the company's actions as it attempts to react in a situation of uncertainty by using the resources at hand, with no other clear goal than handling the specific situation.

A different concept used to describe the same situation is bricolage, which like effectuation has been used for explaining the entrepreneur's actions (as well as for many other purposes across a long range of disciplines). The concept of bricolage was adopted from anthropologist Levi-Strauss and based on an extensive review of the entrepreneurship literature on the concept. Baker and Nelson propose to define bricolage

as “making do by applying combinations of the resources at hand to new problems and opportunities.”³³

Through an analysis of the narrative told in the start-up of a toy store, Baker show bricolage to be in use in most decisions. Rather than focusing on the distinction between exploiting internal or external resources (as in the bootstrapping literature), Baker focuses on mechanisms of resource-seeking (seeking new resources) and bricolage (making do with what’s at hand) and shows the two to be coexisting in the narrative of his case company. Apart from considering the exploitation of a broad range of resources, not just those that are connected to financing, Baker also analyzes the use of bricolage in the company’s exploitation of its network. He concludes that the company most often makes do with what connections it already has in searching externally for resources.³⁴ This was certainly the case for Fiberline. As argued, this finds explanation both in the company’s limited resources and the need to act in difficult situations, as well as in the perception that Fiberline should remain in Henrik Thorning’s control.

Conclusion – Control and development

In this short chapter I have discussed the financing behavior of Fiberline through the first half of the 1980s, when the company went through many difficulties in securing capital. They sought to exploit what resources they already had to the fullest and to balance the risk in supplying external capital. I have argued that the basic narrative of Fiberline was decisive for the firm’s financial behavior. Henrik Thorning proved willing to run considerable risk and, at the same time, didn’t seem much burdened by uncertainty. Both these elements of Fiberline’s financial behavior may be explained by the self-conception of the firm established in the basic narrative. An important element was the conception that Henrik Thorning was the owner and leader of the company; the risk taken in borrowing from banks during the first years was based on this notion. This behavior,

however, was also based on the conception expressed in the basic narrative of the product's potential. In later years, when the position of Fiberline was more settled, the company's continued risk-taking should probably mostly be viewed as an expression of this conception. Penrose defines uncertainty as the entrepreneur's confidence in his estimates or expectations. Henrik Thorning never seemed much burdened by uncertainty.

Along the way Fiberline rejected offers from interested investors and as such turned down opportunities of further developing their production and product, even though the technological superiority of both was an important part of the company's self-conception. In this sense, the narratives in use in Fiberline may be said to have influenced the company's growth. Fiberline's attitude toward investors is also apparent, which is a related point. Ultimately, Henrik Thorning's ownership and control of the company were more important than its immediate development.

8. Productive opportunities and technological base

I have already mentioned the importance Penrose ascribes to the concept of productive opportunity, which to use her words again "... comprises all of the productive possibilities that its [the firm's] 'entrepreneurs' see and can take advantage of."¹ As noted, this observation introduces the subjective elements of her theorizing, leading her to formulate the concepts of self-conception and image of context. She connects these concepts to the growth of the firm by way of their influence on the firm's actions. I have argued that self-conception and image of context can be captured by focusing on and analyzing the company's use of narratives. I have discussed two important narratives of Fiberline: the basic narrative formulating the idea or vision of the company and a newer narrative about sale. I have considered the influence of these narratives on Fiberline's development. As seen, the company's actions so far have been taken more to secure survival than to establish growth as such. However, I have also argued that the mechanism guiding the actions of the firm is the same in both cases.

The object of this chapter is to discuss the influence of Fiberline's self-conception on the productive opportunities the company saw and the decisions it made to take advantage of these during its development from circa 1985 to the middle of the 1990s, a period when growth finally took off. Therefore, I will discuss diversification suggested by Penrose as a potential path of growth.

The basic narrative constructed the overall opportunity Henrik Thorning saw in founding the company: his vision. In this chapter I will focus instead on how Fiberline sought to take advantage of the more specific opportunities the company saw in the course of its operations. Discussing the economics of diversification, Penrose notes that "A single 'opportunity' in the sense used here is merely one of the components of the whole

productive opportunity of the firm...”² It will become clear that opportunities as perceived by Fiberline came in many different forms, some more easily recognizable than others. Some were brought to the attention of Fiberline from external pressure, whereas some were exploited by internal inducement.

As noted, Garnsey argues that the last step in a firm’s early growth is a phase of consolidating. She observes that “From the time when productive activity that yields returns is under way to the time when levels of profitability assure self-sufficiency, major problems center around securing the viability of the enterprise.”³ As already seen, Fiberline’s prior phase of learning was long; it stretched out over a couple of very difficult years in the beginning of the 1980s. The same can be said for the consolidating phase, as it was not until the end of the 1980s, almost 10 years after the founding, that the continued struggle for survival was over. The mid-1980s was a period of unsteady growth after which growth became more steady.

First, I will describe Fiberline’s overall growth in a bit more detail and connect it to the general development of the Danish plastic industry in the period. I will then discuss the development of production and products in the period, showing the company applying different logics to perceived opportunities and using already existing narratives to different ends in different cases. All these examples illustrate how the firm’s narratives constructed its self-conception and influenced the perception of opportunities, the decisions to act on these, and thereby the growth of the company in this period.

The growth of Fiberline and of the Danish plastic industry from the mid-1980s until the late 1990s

The three years after 1979, during Fiberline’s start up, had shown poor growth in the Danish plastic industry, influenced by the economic crisis in both Denmark and many of the countries the industry exported to at that time. In 1984, however, the Danish industry

and the plastic industry in particular were back to the high growth rates known from before the crisis.⁴ From 1984 to 85, industry turnover grew by more than 20%, mainly because of export sale accounting for almost 2/3 of the growth.⁵ The largest export markets were Sweden, West Germany, England, and Norway.⁶

Around the middle of the 1980s, the Danish plastic industry mirrored a general European development of specialization among producers (as already discussed). This specialization was primarily attributed to the technological development of the industry from the 1970s onward, creating a long range of different options for manufacturing specialized products with export potential and good competitive strength. The Danish plastic industry was part of this development, evident in the growing export sales and the often rather weak home market positions of the companies in the industry.⁷

In 1985 Fiberline exported 60 % of their products to 9 different European countries. The company was probably benefitting from the same positive factors as were many others. However, during the 1980s, Fiberline's limited resources at times seemed to hinder the company from taking full advantage of the market opportunities they saw. For many other Danish plastic producers, the good market conditions of the 1980s led to better earnings and new investments in production and development.⁸ For Fiberline, however, development became a challenging balancing act, which took up much attention as the company, to paraphrase Garnsey, sought to consolidate.

From April 1985 to April 1989, Fiberline's turnover grew 27% a year in average, and as such the company might be said to be in growth. As seen previously, when discussing the narrative of sale, this was also how Henrik Thorning described development in this period. However, Fiberline's ability to generate a profit largely remained to be seen. Investments continued to be made in developing production and the product; at the same time the production was often running with problems causing waste and slowing down the

output rate.⁹ This meant that the profit margin continued to be low until 1989 (see appendix 1).

Though turnover grew and production was extended in this period, the number of employees didn't grow at the same rate. It had been part of Henrik Thorning's considerations before the start up that the method of pultrusion wasn't labor-intensive and that, as production got more effective and employees increased their skills, more could be produced without increasing the number of people in the production. In 1987 there were 12 people in Fiberline: A foreman for the production and one for the processing department, 5 people in the production, three in the administration, and Henrik and Dorte Thorning.¹⁰ At this point in time it was, however, also viewed as a problem that Fiberline was now at a size where it was becoming more demanding to manage the production, yet the company could still not afford to hire an engineer to administer and plan it.¹¹

By 1987 the growth in the Danish economy at the start 1980s had been replaced by a recession.¹² Private consumption in Denmark declined in both 1987 and 1988. In the plastic industry, though, a great part of the companies now exported most of their products, which generally secured their continued growth throughout the period. Thus, the Danish plastic industry was benefitting from the fact that the industry's large export markets hadn't experienced a drop in growth at the same level as in Denmark.¹³ In 1988 taxes on Danish industry were lowered, only a modest rise in wages occurred, and the exchange rate of the Danish krone dropped compared to the largest export markets. This further contributed to improved export conditions,¹⁴ and after a period in the middle of the 1980s, in which the prices of raw materials had grown, the price was again declining, which also had a positive effect on the competitiveness of the industry.¹⁵

Through 1986 and the first half of 1987, Fiberline's sales were growing fast; production continued to do its best to keep up, and debate about extending the capacity continued. By

late summer of 1987, Fiberline invested in two new pultrusion lines, and a processing department was established.¹⁶ These investments were financed by lending capital from three different banks. Extension of the production, however, immediately led to a number of problems, and for a longer period efficiency was falling and delivery times growing.¹⁷

Fiberline continued to invest in production and buildings through 1988. In the same period, many resources were also invested in developing new profiles made with phenol, a form of plastic that could be used in profiles for more advanced purposes but was more expensive than polyester and more difficult to work with.¹⁸ Heavy investment meant that even though turnover had almost doubled in two years, Fiberline experienced a deficit for 1987/88 (as mentioned earlier). Once again the board considered expanding the share capital as more investments were planned. In the end, however, Fiberline decided instead to take out another mortgage on the buildings.¹⁹ As mentioned in the former chapter, Henrik Thorning was very reluctant to use any method of providing capital that might threaten his control of the company.

In 1988/89 Fiberline experienced a profit, judged to be primarily a result of the production now running more efficiently, whereas sales hadn't live up to the budget through the year.²⁰ Fiberline, which had gotten better at controlling and planning the production, was now benefitting from the investments of the previous years. 1989/90 showed the same tendency, with a turnover that was even now declining, but with a very good profit rate making it the best year yet. Most of that year's profit was used immediately to buy out three of the co-owners in the spring of 1990. Henrik Thorning bought all of their shares. His shares were then converted into A-shares, and the shares of the last co-owner Torben Nymand were converted into B-shares, ultimately leaving Henrik Thorning in complete control of the company.²¹

After the steady growth in the Danish plastic industry during the boom of the late 1980s, many started to invest in production like Fiberline. In the beginning of the 1990s, however, demand had fallen and overcapacity was driving prices and profit margins down. This was, for example, often the case for the suppliers of plastic components to the electrical industry, where some of Fiberline's large customers were located.²² Fiberline's financial reports in the first years of the 1990s show that, like other companies in the industry, they too were experiencing falling prices. From 1990 to 91 the turnover more than doubled but the profit margin was now falling again. In 1991/92, turnover fell and then grew very slowly through the following years, as did the profit margin. Manufacturers in the Danish plastic industry were generally concerned about the market and price structure in the beginning of the 1990s, and some, for example those producing packaging for the consumer industries, were harder hit by the recession and drop in demand on many European markets than Fiberline. During this period, when there was a tendency to increased turnover but weak profits margins, Fiberline started up its first process of formulating a written strategy, which I will return to later.

The five years from 1992 till 1997 were marked by extensive growth in Fiberline—taking off especially around 1994. This growth was particularly shaped by two new customers. One was a European manufacturer of systems for windows and doors.²³ By using a profile in reinforced plastic with high insulation properties inside frames, the window manufacturer could produce lighter windows in new and thinner designs that could still be fitted to meet the authorities' growing demand for insulation.²⁴ Therefore, Fiberline developed a new profile, and the Swiss company grew to become both a large and steady customer.

The other customer that was particularly present in the development of Fiberline throughout the 1990s was LM Glassfiber (known today as LM Wind Power), the large

Danish producer of wind turbine blades. The wind turbine industry was growing fast in the 1990s. Three of the 10 largest producers in the world were situated in Denmark at the time, and the industry estimated that by around 2000/01 more than 14.000 people worked in the industry in the country, including the large group employed by sub-contractors like LM Glassfiber.²⁵ They had factories across the globe, had captured around 40-45% of the world market for wind turbine blades, and were by far the largest Danish producer of reinforced plastic.²⁶ The wind turbine industry's technological development demanded larger turbines that could generate more power. To make larger blades there was a need for further reinforcement than that offered by the existing glass fiber constructions. However, this change required specialized knowledge and resources for production that LM Glassfiber didn't possess: the company produced mostly by employing a lay-up method that wasn't suited for making the new, necessary reinforcements.²⁷ Fiberline developed and produced a blade root made with carbon fiber, giving the root more strength and allowing for larger blades.²⁸ LM Glassfiber soon became Fiberline's largest customer so far.

The global growth of the wind turbine industry and the significant role of Danish companies in this growth ensured that the Danish plastic industry as a whole made it through the economic crisis of the early 1990s without the decline that many other industries experienced.²⁹ Overall, the Danish plastic industry maintained growth rates around 5-6 %. It was clear, however, that had it not been for the rapid growth amongst producers of reinforced plastic, the Danish plastic industry would have declined through these years. The large wind turbine manufactures, their sub-contractors, and their sub-contractors bore the growth of the industry in the 1990s.³⁰ However, the last years of the decade, from 1996 till 1999, also indicated that it could be difficult for sub-contractors in the wind-turbine industry to remain profitable under pressure from large customers and growing competition.³¹ This was also the case for Fiberline. The company's turnover and

number of employees grew rapidly through those years, but profit margins remained low. Through the period Fiberline invested heavily in development and expansion of the production. As shall later become clear, the return on these investments was debated, and not everyone on the board believed that it was the right path to growth for Fiberline.

In the two following sections, I will consider a number of examples of how productive opportunities were conceived and what decisions were then taken in order to act on these. All are dependent on the self-conception of the company. In some cases Fiberline would prove to be very reluctant to move into what might otherwise look like a very good opportunity, because it conflicted with the basic narrative of the company. In other cases, the company was quite eager to exploit a perceived opportunity because it was born out of its fundamental self-conception.

External inducements to diversification - Processed profiles and systems

While discussing Fiberline's basic narrative, I described the special position not only of the product but also of the production process in the company's self-conception. As mentioned, the history of Fiberline as told in the 25th anniversary publication opened with Henrik Thorning finding not just his product but also his process.³² The basic narrative raises Fiberline's product to a level of perfection, which not only refers to the versatility of reinforced plastic profiles but also to the product's potential as a form of revolutionary re-newer of industrial production. I have discussed how the focus and status of the production was enforced through the first experiences of the company in the start-up. For example, Jens Johansen spoke of the feeling of conquest in learning to control the production, and Henrik Thorning told about learning pultrusion in its extreme.³³ I have also noted how this self-conception, focusing on product and production, influenced the company's image of context, causing Fiberline to rank competition according to their production capabilities and establishing Fiberline's own technological knowledge and

resources as its main competitive advantage. As discussed in a previous chapter, Fiberline later established a new narrative, allowing the company to focus on sale. This narrative drew on the same basic conception of the product and even furthered the company's focus on technological ability. As such it didn't disrupt the self-conception captured in the basic narrative, which continued to thrive alongside the new conceptions of sale.

Using a concept from Penrose, it may be said that Fiberline's technological base was and is the process of pultrusion. Penrose defines the concept of technological base in discussing diversification which is a central tool of growth:

Each type of productive activity that uses machines, processes, skills, and raw materials that are all complementary and closely associated in the process of production we shall call a 'production base' or 'technological base' of the firm, regardless of the number or type of products produced.³⁴

A firm may have several such technological bases, and they may be very unlike from firm to firm. Different bases can be distinguished from each other, she notes, by the fact that moving into a new base "... requires a firm to achieve competence in some significantly different area of technology."³⁵ Clearly, however, Fiberline has only one technological base – profiles made by pultrusion - and that base is not merely a product of inherited resources or knowledge and experience. The base is closely linked to the company's self-conception, and it may be argued that this base was even part of Fiberline before any production, products, competitors, or customers. Fiberline's technological base, captured in the focus on product and process as well as technological ability in the company's narratives – both the basic narrative as well as the narrative of sales, is strong and affirmed by experience.

A firm may diversify, Penrose further notes, within or outside its area of specialization. To diversify inside the firm's own area of specialization means that it will start producing

new products based on the firm's existing technology and sold on the firm's existing markets.³⁶ Penrose notes that

In any given circumstances ... much diversification is almost a necessity, in the sense that no firm would expect to compete successfully if it did not produce at least a minimum product lines or a minimum of its own intermediate requirements, the number of products involved depending on the circumstances.³⁷

As seen earlier, when discussing the standard profile program developed at great expense by Fiberline in the early 1980s, the company clearly saw an advantage in offering a number of product lines. That no firm, as Penrose argues, can expect to compete successfully without a minimum of intermediate requirements seemed less clear, however, to Fiberline. This is evident, for example, from the company's unwilling attitude toward processing profiles. In the following I will argue that this unwillingness was based on the strong product and production focus that was part of the company's self-conception.

Fiberline established a connection to the company Arthur Krüger already in 1982 when it became Fiberline's distributor on the German market as already mentioned. Almost immediately, Arthur Krüger started pushing Fiberline to process profiles to make them easier for customers to use directly in their own products.³⁸ This could, for example, be by cutting them into desired lengths or by drilling holes in them. However, Fiberline was reluctant and didn't seem to perceive any opportunity in the situation. The company tried to convince Arthur Krüger that if they wanted profiles processed, they could process them themselves or find another firm that could. Fiberline would be happy to deliver the profiles. The reluctance followed Fiberline for almost five years, during which they tried different options to avoid processing profiles—even though they felt pressure from distributors and customers. In the 1985 Prospectus, three years after Arthur Krüger first brought it up, it is noted that

The market for processed standard or special profiles is growing, as more and more customers inform us that they find the material excellent. However, they are not able to process the profiles themselves, because they do not possess the special processing technology required. Therefore, Fiberline in cooperation with a subcontractor has started delivering processed profiles.³⁹

It was further noted that there appeared to be good earnings to be made in processing and that they might consider processing. However, it wasn't until 1987, that a processing department was finally established as part of a large investment in production.

After 10 years of interest from customers in 1993 when the first written strategy was formulated, the processing department had become a fully accepted part of the production, now described as part of the firm's competitive advantage. In the material made to prepare the discussion of the strategy, board member Ole Tandrup paints a picture of how he sees the company in the beginning of the new millennium then years into the future. True to the basic narrative of the company, the vision starts out by concluding that the basic operation of the company will be the same in the future: namely that Fiberline will be a pultruder of components in reinforced plastic.⁴⁰ When elaborating on this under the heading of *Technology*, processed profiles are described as an integrated part of production:

The special competence of Fiberline (that we master the technology of pultrusion) is exploited fully. The production is concentrated on a small number of processes. Strategic alliances have been made concerning the production of complementary products (e.g. grating/plates). In our production of finished products, we won't step our customers on the toes. The processing department is large and advanced. Our speed of production has increased significantly.⁴¹

Processing the profiles is an example of how Fiberline saw a productive opportunity in diversifying inside its own technological base by offering not more product lines but rather more functionality to the existing product. But it took a long time for Fiberline to

grasp the opportunity, which was originally forced on the company by customers (through Arthur Krüger). The company was reluctant to pick it up, because it conflicted with the basic conception of Fiberline as a pultruder. The passage quoted above mentions two further examples of how Fiberline would diversify inside its technological base: the production of complementary products and that of finished products. Both opportunities were, like processed profiles, forced on Fiberline by customers and only reluctantly picked up by the company.

The idea of selling complete systems was already considered in 1983 when it is noted in a report that “Currently the possibility of selling complete systems is being explored.”⁴² The 1985 prospectus explains that apart from profiles “... systems includes parts for assembling as well as fittings, so the customers can assemble the profiles to a finished product in a very easy way. This is very common in aluminum and steel profiles ...”⁴³ But further along it is concluded that

Fiberline doesn't deliver finished products partly because we do not wish to compete with our customers partly because Fiberline is first and foremost a profile manufacturer ...⁴⁴

The idea of selling complete systems mostly came from Arthur Krüger, who for example saw possibilities in selling grating systems ready for use. This would require that Fiberline assembled the profiles into a finished product. Today, Henrik Thorning says that he resisted this change because he didn't believe it to be part of the idea of Fiberline, which is also clear from the quote above. Today, he also notes that he tried to convince Arthur Krüger that if they wanted to sell complete systems they should arrange production themselves and that Fiberline could then deliver the profiles.⁴⁵ This form was chosen throughout the first years, evident from the 1985 prospectus where it notes: “Our distributor in Germany, Arthur Krüger, Hamburg, delivers a system for control boards based on our profiles.”⁴⁶

As with the processed profiles, the 1993 strategy plan reveals a new realization of the opportunity in selling finished systems. The plan was written up and signed by the board in 1993, but it had been drafted and discussed in the board since the first half of 1992. In the draft, written by board member and management consultant Ole Tandrup, there had been no mentioning of making finished systems a sales objective. However, in the final version from 1993, it has been added and even listed as the prime target in sales.⁴⁷

Around 1990, after customers and distributors had pushed for years for a system, Henrik Thorning came up with a new and easy way of making a grating system that required a minimum of processing and in which Fiberline's standard profiles could be used. These were then put into production. They turned out to be a very good idea; the production was relatively easy to control and they sold well at a good price.⁴⁸ Undoubtedly, this is why finished systems were singled out in the sales objectives of the 1993 strategy. Now, as Fiberline could see that they were earning a profit from selling these systems, they began to conceive of them as an opportunity and not just something forced on them from outside.

Fiberline was rigid in keeping to its core process and didn't attempt much diversification. When it was attempted, it only occurred within their technological base and only as a result of external pressure after long hesitation. The almost obsessive focus on product and process of the basic narrative meant that broadening the company's productive base was difficult to reconcile with its self-conception. Therefore, some productive opportunities were actually first constructed as such only after Fiberline had engaged in them to comply with pressure from customers. In other words, it took a long time for Fiberline to realize that some intermediate offerings enhanced its competitive advantage and could contribute to the company's growth.

Throughout the 1990s, Fiberline also had other indications that diversifying outside its technological base might add to its competitive ability. In August 1993, for example, there was some interest especially from the offshore industry in buying complete crating systems to be used for footbridges on oilrigs. Fiberline's profiles could be used for railing, etc., but the tough environment meant that the fittings on Fiberline's own grating system weren't suitable and that molded or casted grating in reinforced plastic was required.⁴⁹ However, Fiberline couldn't mold, and in a report from management it is noted that

Henrik Thorning has been in the USA to find a suitable supplier of casted grates in fiberglass. The reason for this is that the market in a number of industries demands this type of grating, and if we do not have these in our program, it will give competing companies a possibility of selling their products.⁵⁰

The board discussed it, and the minutes of the following meeting concluded: "Molded grating was discussed as there would be a good synergy, but Fiberline will not produce these."⁵¹ The company clearly had no interest, although Fiberline already had good experience in working with reinforced plastic and the process of casting was believed to be easier to control than pultrusion. Though it took Fiberline a while to find a supplier of casted grating that could satisfy quality demand, the company would rather use a subcontractor than diversifying outside their own technological base.

The small narratives that Henrik Thorning is constructing in minutes and reports concerning finished systems and processed profiles are drawing meaning from the same fundamental self-conception as the basic narrative constructed in the start-up. This is for example the case when Henrik Thorning is telling that Fiberline is *first and foremost a profile manufacturer* and that therefore the company *will not* process profiles or make finished systems. For why should Fiberline do anything else than manufacture profiles? Before Henrik Thorning founded Fiberline he did, as already mentioned, analyze and

compare all the existing methods of producing fiber reinforced plastic and he concluded that pultrusion was the best. Or as it was later put in the jubilee book: “Henrik Thorning had found his process!” This is part of the self-conception first formulated in the basic narrative and as I have noted earlier it raises Fiberline’s product and process to a level of perfection. The small narrative Henrik Thorning establishes concerning processed profiles and finished systems are sensible and convincing to him because they draw on the conception established in the basic narrative. Because of this connection between the situation where Henrik Thorning is pushed by external force to consider processed profiles and finished systems and the basic conception of the company Fiberline was slow in conceiving opportunities in the situation.

Internal inducements to diversification – phenol based profiles and construction profiles

Both processed profiles and finished systems are examples of productive opportunities conceived and acted upon very hesitantly by Fiberline. In both cases the company’s self-conception and especially its strong focus on the process of pultrusion meant that Fiberline was unwilling to enter into the diversification (within or outside its technological base) necessary to exploit the opportunities at hand. In this section I will discuss a very different way of conceiving of and acting upon opportunities also used by Fiberline and also influenced by the meaning expressed in the company’s narratives. When the self-conception of the company made Fiberline resist external inducements, it had to process profiles and produce finished systems; the same self-conception fueled the development of construction profiles, from internal inducement as it were.

I have earlier discussed what Penrose notes to be a typical attitude of an entrepreneur driven mostly by his own enthusiasm and less by any specific idea of a market. She uses this to exemplify how demand is a constructed and subjective phenomenon.⁵² As

discussed in a previous chapter, Fiberline originally saw the demand for their product to be broad and really without limitations. A consequence of this conception was that the small company, in spite of a very fragile financial situation in the early 1980s, invested close to a million DKK in developing a combination tool to be used for building up an extensive program of standard profiles in the belief that these could be sold at numerous markets. This was an early example of an internal inducement to act founded on the self-conception of the company. Fiberline's strong focus on product and process was decisive. This focus, coupled with the engineering spirit established as Henrik Thorning's main motive for founding the company, continued to influence how the idea of demand was constructed in the company and on what productive opportunities were conceived.⁵³ The result, as I will discuss in the following, was a tendency to engage in often very expensive and difficult development projects inspired primarily by internal inducement and without knowing if a concrete market existed for the product once it was developed. Clearly this is a very different path of development involving a different use of the company's narratives than what I have just discussed as the path to selling processed profiles and finished systems.

Ever since the company's founding, Henrik Thorning was aware of and often mentioned the possibility of using other materials than glass fiber and new types of plastic in production. Adding other matrix materials or other forms of fiber would give the profiles new characteristics, making them attractive to even more different industries. An example that this was part of Henrik Thorning's vision for the future development of Fiberline since the company's inception occurs an article from 1980 in a magazine called *Ingeniøren* in which he talks about production and notes that

By using other resins and other fiber materials for example epoxy and carbon fiber strength, rigidity and heat resistance can be further tailored to various purposes. The possibilities are endless.⁵⁴

This thought was closely connected to the idea of the product's versatility and potential in the basic narrative and, as such, made good sense to Fiberline. Henrik Thorning held on to this idea while developing production in the start-up and past the development of the combination tool for making standard profiles. At the end of the 1980s, Fiberline started developing profiles using phenol instead of polyester. Phenol, for example, would give the profiles high fire and temperature resistance, meaning they could be used for electrical installations in challenging environments. But producing with phenol was difficult, and developing the new type of profiles turned out to be as demanding as learning to pultrude in the start 80s. By December of 1992, Fiberline still hadn't managed to produce profiles of a decent quality in phenol. The challenges were much like those in the start-up, for example, difficulties getting the surface of the profiles even.

But in 1994 Fiberline mastered the production with phenol at a similar level as polyester. In a five page article written for the magazine *Plast Panorama Scandinavia* Henrik Thorning with great enthusiasm tells about these new profiles and how they are produced. If the process of learning to control the production of the phenol profiles was like first learning to pultrude the narratives told about the phenol profiles are like the ones told in the start-up about pultrusion. In the article Henrik Thorning concludes that the properties of phenol based profiles are even better than polyester based profiles and that the possible use is almost endless. "Composite materials based on phenol are amongst the construction materials of the future," he concludes.⁵⁵ Such tales of the potential of the product and the process, as argued when discussing the basic narrative of Fiberline, expresses Fiberline's fundamental idea and vision – its self-conception.

Many resources were invested in developing the phenol based profiles, but experimental production was expensive and caused waste. In March 1993, this development process and the general investments in the production were questioned by the board; some weren't

certain that phenol profiles would sell in an amount that would make development profitable any time soon.⁵⁶ The same skepticism is mirrored in discussions throughout the second half of 1992, leading up to the first written strategy in 1993. The very thorough background material for the strategy made by Ole Tandrup includes a list of strategic topics discussed in the process. For example, the following questions are raised:

Should Fiberline invest in being in the technological lead instead of cashing in now?

Have the returns on the last investment of 3-4 million DKK been good enough?

Can Fiberline be developed into the competence center of the future?⁵⁷

The last question expressed Thorning's hope, and he often repeated it in Fiberline's communications in the period. The first two questions indicate, however, that he was not unchallenged in the decisions he made about developing the company. Some of the board members realized that other paths to growth than continuously seeking the technological lead might also be possible—that other strategies might suit the company's resources better and should at least be discussed.⁵⁸

In the end, though, these discussions that questioned the self-conception of the company didn't leave much trace in the written strategy from 1993: both Fiberline's competitive advantage and an evaluation of the competition focus heavily on production and product development as well as technological ability. Like processing the profiles or selling complete systems, phenol-based profiles became a diversification inside the technological base of Fiberline. However, this one was driven rather than impeded by the self-conception of the company and its image of context or perception of demand.

This was also the case when Henrik Thorning in the mid-1990s decided to start the development of a program of profiles for construction. In August 1992, Fiberline finished developing a single beam for construction made in cooperation with the consulting

company Rambøll og Hannemann and used for a specific project.⁵⁹ Fiberline continued to deliver profiles for constructions for projects, but it wasn't until the spring of 1995 Henrik Thorning really started engaging in the development of profiles for construction. In a report from management from March of that year, he describes a trip he made to USA in which he visited an American company producing profiles for construction, as well as some of the customers using these products:

... We made a number of visits to different firms where we saw grating and construction profiles in use and had the opportunity to discuss the function of these with the customers. An extremely interesting visit which just confirms our view that the market is developing positively.⁶⁰

After this trip Fiberline started to focus on development of a complete program of profiles for construction. The basic idea was that reinforced plastic could be used to substitute steel in construction work, as it could deliver the same strength but also offered a number of other positive properties. Profiles weren't particularly difficult to develop, and already in the fall of 1995 Fiberline ran a campaign focusing on selling them.⁶¹ The company also developed and patented a bracket system for assembling profiles, thus making these easier to use.⁶² On top of the development of the program of profiles for construction, however, came the more difficult task of making a design manual. In a report from management it is noted that

... we are running campaigns ... particularly aiming at selling our construction profiles. Parallel to this we are working intensely on the documentation material, like our Design Manual that we for different reasons haven't finished completely yet, partly because of some technical difficulties with documentation of strengths and partly because of difficulties of translation as it is hard to find translators for language as technical as in this case. However, we are counting on finishing it in Danish, German, and English by the end of September.⁶³

To use these profiles, architects, engineers, and technicians had to be able to calculate the properties needed for each particular construction. Since reinforced plastic was a new material and most were used to working with steel, Fiberline had to provide assistance in order to sell these profiles. This was the point of the design manual. It was a basic idea expressed in the already established narrative of how profiles should be sold, and as such the project made good sense to Fiberline. The design manual would make it quicker and easier to design and create structures based on Fiberline's profiles. But it took almost nine months to develop the extensive manual. In this period, Henrik Thorning would turn his attention to this task and to some extent leave the sales effort to Fiberline's sales department, which had now been established.⁶⁴

In December 1995 the manual was finally ready in a Danish version and half a year later, in June 1996, in English and German.⁶⁵ It had been very expensive, because so many tests had been made to document every aspect of the construction system. Being extensive, it was also expensive to produce, and more than a 1000 copies had to be sold to cover the expense.⁶⁶ Fiberline expected a lot from the new profiles and the design manual; the company perceived a very good market potential for a system that could be used in constructions of any kind. For example, they had already delivered some to the off-shore industry and for wastewater treatment plants. The 1996 strategy plan notes that, as something new compared to former plans, construction and project sale should make up at least 30 % of the turnover.⁶⁷

As discussed in a previous chapter, the experiences with its start-up and the difficulties Dukadan had in selling the profiles made Fiberline conceive of sales in a particular way, focusing on information and counseling. Fiberline also perceived the market in general as rigid and slow in adapting to new materials. Therefore, Henrik Thorning had from early on talked about the importance of working the entire value chain in the relevant

industries. Now, as the program of construction profiles had been developed, Fiberline invested many resources in marketing them in a quite unusual way. Henrik Thorning contacted the municipality of the city of Kolding and offered to build and co-finance a footbridge the municipality was planning. Rambøll, the consulting engineer Fiberline had worked with earlier, and Fiberline's suppliers of glass fiber and polyester were engaged in the project and also sponsored part of the expenses. The idea of the project was to construct the bridge using only reinforced plastic to demonstrate the possibilities of the material and the profiles for construction.⁶⁸ Fiberline took care to market the opening of the bridge, also used as an occasion to host a conference for engineers and others focusing on construction in reinforced plastic. In an interview concerning the project that was more than two years in the making, Henrik Thorning commented:

With our bridge we have proven that plastic-based composite is an excellent material for building bridges and that it can live up to high safety demands and that even large constructions can be made by regular standard profiles ... we believe that the many obvious qualities of the material will mean that it will now get its great breakthrough in larger constructions.⁶⁹

The bridge project fell in line with Fiberline's narrative about how profiles should be sold, and it drew on the firm's image of context as established in this narrative. The object was, on the one hand, to create general as well as industry-specific awareness of the unknown material and on the other to offer consulting to engineers through the conference. The hope was that activities such as these might erase the rigidity Fiberline conceived as part of their market context.

Fiberline had begun developing the construction profiles and the design manual based on incipient interest from the off-shore industry, for example, but without more than a general conception of demand. It was imagined that the new profiles would sell well in the German construction industry, as Henrik Thorning had seen them do on the American

market. The construction profile program had the same qualities of versatility and potential as the original standard profile program.⁷⁰ It connected to the basic narrative as well as the narrative of sale: therefore, it made sense to the company to engage resources in developing it. However, sales of the construction profiles didn't live up to the expectations. Already in February 1997, when Fiberline revised its strategy, the company had lowered expected sales of construction profiles to 20 % of total sales.⁷¹

One problem was the general unfamiliarity of the product which continued to be a source of wonder and frustration to Fiberline. Another (related) problem was that customers actually willing to take up the challenge of working in a new material, especially those in the German construction industry, were asking for a common standard for the profiles that might guarantee their quality. None existed, which was believed to damage the sale of the construction profiles. However, Henrik Thorning also saw this as an opportunity: he engaged in developing a standard, investing as many resources and as much attention in this as he had done in the design manual and drawing heavily on the manual in the process. In February 1997 Henrik Thorning reported:

... Fiberline has attended a meeting in London concerning standardization of construction profiles, the leading companies of the pultrusion industry, which means Topglas in Italy, DTP in France, Bekaert in Belgium, Fiberforce in England, and Fiberline in Denmark, agrees that the time has come for standardizing construction profiles. Among the companies mentioned there is no doubt that Fiberline is leading with Bekaert as number two and that our input and attitude towards standardization will be decisive. Here it is fortunate that we have developed our Design Manual, as it can't help providing the basis for future ways of calculating and designing composited constructions. The standardization committee will meet again in March when we will also participate and have one of the main assignments.⁷²

In the end Henrik Thorning managed to push through a standard matching Fiberline's construction program as described and defined in the design manual. As Fiberline was

almost alone in being able to meet this standard, they agreed to make an A (E17) and a B (E23) standard. Fiberline could then conform to the A standard and most others to the B standard.⁷³ This was a long and frustrating process, however, and the standard was not introduced until 2001—and only after much effort from Fiberline and Henrik Thorning.⁷⁴ It may be argued that through this effort Fiberline won an influence that wasn't really proportionate to its size compared to its European colleges; still, when considering Fiberline's self-conception and the company's image of its competitors as described earlier, taking the lead in this process clearly reaffirmed the meaning established by the company's narratives.

Conclusion – The diversity of diversification

In this chapter I have discussed a number of different productive opportunities that Fiberline conceived of and acted upon in the years from the mid-1980s to the end of the 1990s. My point in the discussion has been to show how the narratives in use, formulating the company's sense of self and context, have had a decisive influence on this process. The company's self-conception have sometimes worked to constrain and at other times to generate action, thereby influencing its diversification and growth.

Considering why firms choose to plan for expansion, Penrose argues that the firm is either inspired by internal or external inducements or cautioned by internal or external difficulties in acting upon productive opportunities.⁷⁵ In choosing to expand, the firm has two options: expand by requiring new resources from outside, putting these into service, or seek to take advantage of unused resources of its own and put these into new use and service. Within Penrose's framework, this choice leads to two basic growths paths, as the firm can either grow by merger or by diversification.⁷⁶ Diversification in the work of Penrose includes entering into new markets with new or familiar products. She uses the term market area, a point I will discuss further in the following chapter. In this chapter I

have primarily discussed diversification in reference to the development of new types of products—what Penrose calls technological base(s).⁷⁷

As noted Penrose argues that in most cases some degree of diversification is necessary, because it is difficult for a firm to compete without offering a minimum of product lines and/or intermediate products. As seen in this chapter, Fiberline was rather rigid in its diversification and kept to its technological base, pultrusion. This base is closely linked to Fiberline's self-conception, and it may be argued that this base was even part of Fiberline before the founding of the company. The technological base of Fiberline as expressed in the focus on product and technological ability in the company's narratives – both the basic narrative as well as the narrative on sale – is strong and affirmed by experience. In this chapter I have discussed different ways in which Fiberline conceived of and acted upon productive opportunities, all closely connected to the company's technological base.

Fiberline did not easily perceive the production of processed profiles and finished systems as an opportunity, even though in this case external inducements seemed strong. Since the start-up, customers were interested in having Fiberline deliver processed profiles, and distributors were also eager to have Fiberline develop finished systems. But Fiberline conceived of itself first and foremost as a pultruder. This conception, as I have argued, was the basic explanation for Fiberline's hesitant attitude toward processing as well as production of finished systems.

The case of developing a program of construction profiles and the design manual for using it was driven by the self-conception of the company in a more direct fashion. When Henrik Thorning was inspired by the use of profiles for construction in America, he saw a concept that fit firmly into Fiberline's basic narrative. The potential and versatility of profiles in reinforced plastic had induced Fiberline early on to develop the difficult combination tool, which would enable Fiberline to deliver a broad range of standard

products to many different industries. This was also the case with the program of construction profiles that also drew on the conception of the product as a form of structural revolution in industrial production. As discussed, there turned out to be some important external difficulties for selling the construction profiles in the amount Fiberline had imagined. The board questioned whether the resources invested in both the program and manual were proportionate to the potential.

In all it may be concluded that, of the productive opportunities discussed in this chapter, Fiberline seemed most keen to act upon those that would enable the company to develop its technological base. This was so, because Fiberline's technological base – the process of pultrusion – was the essential idea behind the company, the key to Fiberline's self-conception. In Fiberline a close relationship exists between self-conception, product, and technological development.

When discussing the economics of diversification, Penrose describes a situation that she finds common in the competitive behavior among some technologically advanced firms in the modern economy. These operate on a market “where consumers and producers alike are caught up in an almost compulsive obsession for that which is ‘new.’”⁷⁸ Referencing Schumpeter's concept of creative destruction, she notes that firms who manage this situation (and here she specifically talks about large firms) are not destroyed, but are rather forced to become more creative. In today's world so rich in innovation lingo, this probably seems like a positive scenario to many. Penrose also observes: “The process finds great favour in the eyes of those who see it as an important means of sustaining investment in a highly developed capitalist economy.”⁷⁹

In pointing to the behavior of this kind of company, Penrose appears to think primarily of ‘fads of fashion’ associated with the consumption of consumer goods.⁸⁰ However, she also notes that such obsessions of course have to reside not only with the consumer, but

also with the producer. If the firm doesn't see a relevant demand in the situation, it will probably not take any action to develop new products. My point in mentioning Penrose's discussion of this form of competitive behavior is that in the case of developing construction profiles, Fiberline acts like a company obsessed with that which is new, driven not by demand from consumers but, as argued, by its self-conception and idea of demand. Furthermore, I have argued that this was a pattern of development followed in other cases – in developing the combination tool or the phenol-based profiles, for example – and as such an important pattern in the growth of Fiberline.

However, Penrose generally describes the position of these firms as vulnerable and notes that this specific pattern of competitive behavior has consequences for their growth:

... it has considerable significance for the pattern of growth of firms. On the one hand it intensifies the vulnerability and restricts the process of growth for firms that confine themselves to a narrow range of products; on the other hand, it compels firms to specialize in a relatively narrow range of basic areas of production and restricts the rate at which they can diversify their fundamental activities.⁸¹

Fiberline certainly didn't want to diversify its fundamental activities. The company specialized in a very narrow range of basic areas of production (really only one) and kept to a narrow range of products. To counter the vulnerability that might arise from this situation, it sought instead to diversify its market activities. In doing so, Fiberline was as driven by its self-conception and image of context as it was in developing products and production, which will be the focus of the following chapter.

9. Market focus and developing the sales organization

In the previous chapter I discussed the concept of diversification, linking it to productive opportunity as Penrose does by arguing that diversification is one of the firm's two basic growth paths. So far, I have mostly considered productive opportunities and diversification regarding Fiberline's development of its technological base, and by extension I have focused on the development of production and products. However, as noted earlier, the firm's productive opportunities comprise all of the productive possibilities that the firm sees and of which it can take advantage. As Penrose argues, diversification may also involve entering new markets or offering new products on old markets.¹ This is a matter of the firm's market focus, which will be the topic of this final chapter of the analysis.

As discussed in an earlier chapter, Fiberline developed a narrative of how profiles should be sold in order to allow the company to account meaningfully for the challenges of selling the product in the start-up and to establish a reasonable explanation for the actions deemed necessary to cope with this situation by starting to focus on sales. This narrative was based on three ideas: the technological superiority of Fiberline's products, the need for constant attention to and guidance of customers, and a focus on international markets. Although elements of this new narrative were connected to the basic narrative, it offered a more concrete image of the context, drawing on the experience of sale. In some respects, however, the ideas expressed in the narrative of sale were also abstract: for example, the view of the competitors, which was in vague and not very concrete the beginning.

In addition, Fiberline's market focus, as formulated in the narrative of sale, is very broad. As discussed it connects to the vision of the versatility of the product in the basic narrative and it is really only specified further by the international focus. The tendency to perceive

Fiberline's potential markets very broadly was also strengthened by the vulnerability Fiberline felt when it lost the business of E Rasmussen Industri in the beginning of the 1980s. This loss made the company conceive of the broad market focus as a safeguard against becoming too dependent on only a few large customers.

The object of this chapter is to discuss how Fiberline's market focus developed and to consider the role of this development in the company's growth. I will discuss how the market area was diversified and consider the influence of the company's self-conception and image in this. Focus will be one the roughly 10 years from the middle of the 1990s to around 2004. First, I will briefly describe the development of the composites industry at the turn of the millennium. I will then discuss Fiberline's general development in the period before turning to the development of Fiberline's market focus and sales organization, connecting both to the use of narratives in the company.

The composites industry around the turn of the millennium

As discussed at length, Henrik Thorning had a very clear vision for Fiberline when he founded the company. This vision was connected to his idea about the structure of industrial production in which he envisioned reinforced plastic profiles as a competitor to steel and aluminum profiles. Therefore, he also saw and described the market potential of the profiles as infinite and, as already seen, Fiberline continued to refer to substituting materials as their main competition. Yet, this "cultural revolution," as it was often described by Fiberline, in which reinforced plastic would substitute for steel and other traditional materials, had been long in the making. At one point Henrik Thorning, when he spoke of the revolution, started adding that it would take a generation of engineers to adapt to the new material.²

In view of developments in the worldwide sale and production of fiber reinforced plastic composites up to the turn of the millennium, this last point would appear to be accurate.

However, one might even speculate that one generation of engineers would not suffice. A 2002/03 report on the European manufacturers and suppliers of reinforced plastics concludes that growth in the use of these materials haven't lived up to the prospects as described at the time of the first commercialization of these materials. By the turn of the millennium, only 1.1% of all materials used in production across the globe were estimated to be reinforced plastic, and the industry continued to grow merely around 4% a year worldwide depending on economy in general.³ The information about the industry in the report was primarily based on a detailed questioner distributed amongst more than 1500 European companies in the industry.⁴ The report opens by stating that the industry is so diverse regarding production methods and output that it can seem difficult to describe it as a single industry. There are, however, common factors and generally the competitive position of the reinforced plastic producers is estimated to be rather weak.

As discussed earlier, suppliers of matrix (plastic) materials were for the most part large international producers of chemicals. This had been the case when Fiberline was founded, and more than 20 years later, in 2002, these companies had grown few and even larger by a long line of mergers and acquisitions. The producers of reinforced plastic were generally not these companies' main customers and tended to have a weak position in which it could, for example, be difficult to avoid that prices followed the development of the oil price closely.⁵

The producers of glass fiber, by far the most used form of fiber in reinforced plastic, had undergone a similar development in which production was found only in a few very large companies. By the end of the 1990s, growth in the sale of glass fibers was only around 2-3% a year, and the price had dropped 25% over 3-4 years. This might of course be a good thing for customers. Yet the development meant that only few investments were made in production capacity; many producers seemed to focus instead on diversifying into new

materials and markets. This was the case, for example, for Owens Corning, one of the World's largest manufacturers of glass fiber. Also, the long-term development of the market for glass fiber was estimated to be quite uncertain in the report.⁶

In general, the position of the reinforced plastic producers compared to their large suppliers was weak, a situation intensified by the structure of the companies in the industry around the turn of the millennium. These were generally small compared to their large suppliers.⁷

The report on the international market for reinforced plastic points to the development of the wind turbine industry as a (rare) example of a prosperous, growing industry using fiberglass in many different forms. The Danish companies in the industry are perceived as driving this development. As the technological leaders of the industry at that time, they were also believed to be a source of innovation for the reinforced plastic industry.⁸ From 1996 to 2000 the global wind turbine market had grown 25-30% a year—and it was expected that it would more than double in the following five years.⁹ In many countries, for example, German investments in wind energy were encouraged by different forms of legislation or systems of subsidies, and here, as well as in Spain and USA, the market was growing rapidly. In 2002/03 LM Glasfiber had 47% of the global market for wind turbine blades.¹⁰ As noted Fiberline had already started delivering to LM Glasfiber in the early 1990s, and the growth Fiberline experienced from the middle of the 1990s to the middle of around 2005 was closely connected to LM Glasfiber (and a couple of other large customers). The difficulty of being a sub-contractor of plastic products in the wind turbine industry have already been mentioned as one of the reasons for the low profit margin many Danish producers of composites experienced in the early 1990s. In general, dependence on public grants and subsidies of the wind turbine industry were both worrisome, as was the general structure of the industry, with a very few large producers of

wind turbines and a large group of often small and highly specialized sub-contractors in weak bargaining positions.

Seven good years of development and organization building

As discussed in the previous chapter, the five years from 1992 till 1997 were marked by extensive growth in Fiberline especially taking off around 1994. Yet, even though their turnover and number of employees grew rapidly throughout those years, profit margins remained low. Throughout the period Fiberline invested heavily in development and expansion of production. In an interview Henrik and Dorthe Thorning gave to *Plast Panorama Scandinavia* in 2006, the magazine of the Danish plastic industry organization, they talked about the difficult start-up. Dorthe Thorning noted that it had been seven very difficult years, but that coming through them they continued to believe that seven good years were waiting ahead.¹¹ They were—but not until the beginning of the new millennium. The seven years from 1999/2000 until 2006/07 were, by all comparisons, the best in the history of Fiberline. With the exception of 2002/03, turnover grew rapidly throughout these years; the profit margin continued to stay above 10% and topped at 18% in 2005/06. After 2003 the number of employees also grew rapidly and topped at 162 in 2007 (see appendix 1). Many of these new employees were in production, which was continually expanded. In 2000 Fiberline produced profiles on 12 machines in two different production sites.¹² Fiberline, which now owned all the buildings of the old machine factory in Nørre Bjert, had extended these as much as possible, after which they started production in a second location. To this end, Henrik Thorning had found some buildings in Middelfart on the island of Funen, approx. 20 kilometers from Nørre Bjert, and here three machines were installed in 1997.¹³

Alongside the expansion in production, the rest of the organization grew too. In the middle of the 1980s, an accountant was hired, and around the beginning of the 1990s

Fiberline hired its first sales personnel. Most focus had fallen on establishing Fiberline's own sales organization in Kolding through the first years of the 1990s, in line with the important role of sales given by the establishment of the new narrative (as discussed in the introduction of this chapter and the topic of a former chapter). Around the middle of the decade, however, Henrik Thorning also started taking on engineers for quality control and documentation. The first was hired in 1996.¹⁴ As discussed in the previous chapter, many resources were invested in developing the program of construction profiles and writing the design manual throughout the late 1990s, and the development department was established during this process. It grew to become a large and important part of Fiberline's organization. This development fit nicely into the meaning expressed in the narrative of sale focusing on both the technological superiority of Fiberline's products and the need for consulting customers in developing their products. The development department would be part of this process and would also handle documentation, which was becoming increasingly important to many customers. Many resources were invested in the department, and it was given special status by Fiberline. Even though research and development was sensible with reference to the customer, the main explanation for the position of the research and development department from the mid-1990s is the connection between this department, Henrik Thorning, and the basic narrative of the company.

In the 25th anniversary publication from 2004 discussed earlier, the research and development department is central. The publication notes that:

It is true that from the outside Fiberline looked like any other traditional smaller production company, but in the humble buildings there was a knowledge-based company, that was constantly building up competencies of industries, materials and production...¹⁵

This passage, part of a section that tells about the focus on research and development in the 1990s, reconstructs parts of the basic narrative of Fiberline by referring to the constant development of competencies connected to the product and the process. As already seen, the idea about the potential for developing the product and the process was part of the basic narrative. This potential helped to formulate the fundamental idea of Fiberline and in the context of the anniversary text the potential of the product is connected to the special position of the company's R&D department. This is also evident in another passage in the anniversary publication concerning the development of R&D. An engineer who did his internship at Fiberline was interviewed about his impression of the research and development department. He said that to him Fiberline was an amazing place, partly because resources were available to startup most projects the engineers could come up with but mostly because, as he put it, Fiberline has "a certain indefinable creative spirit where development is enthroned."¹⁶

When establishing the basic narrative of Fiberline in the opening chapter of the analysis, I discussed how motives of creativity and joy of creation were part of the arguments used to establish Henrik Thorning as a right and proper entrepreneur. The same values are expressed more than 20 years later when Fiberline talks about research and development, as in the above quotes. I will argue that the fundamental meaning of or vision for Fiberline expressed in the basic narrative and connected to Henrik Thorning as an entrepreneur was passed on to the company's research and development department. This happened as the formal organization of the company was established, when Henrik Thorning engaged heavily in the effort of developing new products, for example, the program of construction profiles and the design manual. It meant that Henrik Thorning incorporated the legitimacy of his role in the self-conception of Fiberline into the research and development department.

In the previous chapter I mentioned that Henrik Thorning, as the sales organization began to function in the middle of the 1990s, directed most of his attention to development of products and production. Reports from management after this point indicate that, in general, he appeared to have traveled less to meet customers. I have also discussed how the narrative of sale was formulated in the 1980s to cope with a difficult situation that demanded focus on sale. From that discussion it was clear that the new narrative was tightly linked to the basic narrative and didn't disrupt the basic self-conception, focused on product and process. Henrik Thorning's "refund" focus on development from the mid-1990s and the special status attributed to research and development should, I would argue, be perceived as his return to the original idea of Fiberline: He had set the original idea a little aside to focus on sales in order to secure the immediate survival of the firm in a difficult situation.

Penrose describes industrial research (what would be called research and development today) as "... the deliberate investigation of the as yet unknown properties of the materials and machines used in production..."¹⁷ She describes this as an important and dynamic part of diversification and notes that it is especially valuable to the long term growth of the company if it is not too specifically connected to a particular product.¹⁸ The importance of research and development, as Penrose describes it, is "... the logical response of the individual firm to the challenge inherent in the Schumpeterian 'process of creative destruction'."¹⁹ If an industry is populated with firms competing hard to get ahead by innovation, this would certainly seem the case. However, Penrose also notes that some firms mostly undertake research because they are convinced that at some point some new opportunity will come from it. Put another way: "Many entrepreneurs very early on perceived the possibilities for improving the long-run profitability of their own firms through systematic research ... because they dreamed of new things."²⁰ This last description of the motivations for engaging in research and development is clearly in line

with Fiberline's perception of productive opportunities in general (as described in the previous chapter) and the company's self-conception, so closely coupled to the vision of the potential of the product and the process.

As already noted, Penrose is skeptical about this particular form of "innovative attitude," and in discussing industrial research she concludes that

The vision of unlimited opportunity thus invoked is a mere mirage for many. New knowledge may be gained, but at great expense, and for the small firm the use of its resources for 'research' in general is as likely to be wasteful as it is to be profitable unless the firm has a specific and reasonably original idea upon which it is working.²¹

Fiberline continued to recognize pultrusion as a very specific and original idea worth investing in for further development. Yet, as discussed in the prior chapter, Fiberline sometimes had problems matching its conception of productive opportunities to the needs or wants of the market. Fiberline, however, attributed this to the rigidity of the market rather than the value of the company's offerings as expressed in the narrative of sale—or when Henrik Thorning talks about the revolution of composites dragging out (for example, in the articles from 2003 and 2006 already mentioned).

Penrose concludes her discussion of industrial research by noting that "Research is essentially speculative activity, frequently adopted under necessity or as a matter of faith."²² The development of Fiberline's R and D department exemplifies the last of these two. It is, however, not just this department that may be characterized by engagement in speculative activities. The same may be said for Fiberline's sales organization: the development of the sales effort was just as dependent on the self-conception of the company as was the development of R and D. Sales effort is the central topic of this chapter to which I will now turn.

Establishing the sales organization

In an earlier chapter I discussed the situation in which the narrative of sale was formulated. I showed how Fiberline had difficulty coming to a point where they could start focusing on sales, because the basic narrative made them preoccupied with production. Drawing sense from the basic narrative and emphasizing the versatility and brilliancy of the profiles, Fiberline had originally imagined that if the profiles were only produced well enough they would sell themselves. Vague as it seems, this was the image of context as formulated within the basic narrative. However, Dukadan's inability to sell profiles meant that this image of context came under pressure to change, as Fiberline gradually realized that Dukadan wouldn't be able to help them sell profiles. On top of this, renewed crisis occurred when Fiberline lost its largest customer who had generated around half of its turnover. The result, as discussed, was a growing conflict between the company's image of context and its self-conception. The narrative of sale was formulated to supply Fiberline with a revised conception of itself and its context in this situation. It allowed Fiberline to act when the financial state of the company threatened to overcome it, Dukadan was pulling out, and their largest customer moved business to a competitor.

Arthur Krüger became Fiberline's first international distributor. Hearing Henrik Thorning tell about his thoughts prior to establishing this connection and considering the communications Fiberline had with the business consultant before they entered into the German market, one might say that the company appeared rather well prepared and deliberate in focusing on this particular market. Based on the experience of working with Dukadan, Fiberline had also some ideas about the kind of distributor it wanted to work with, as mentioned in the first written sales strategy from 1982. Preferred distributors, like Arthur Krüger, had good technical and commercial knowledge.

After signing the first agreement with Arthur Krüger, Fiberline quickly found more international distributors. As mentioned, Henrik Thorning traveled intensely all over Europe, where he sought to connect to new potential agents. Soon Finnish, Swiss, Dutch, and Italian distributors were found; by 1985 Fiberline had agents in 9 different countries in Europe.²³ When making agreements with distributors, he would take care to instruct them as much as possible in the use of profiles by inviting sales personnel to visit Fiberline for training. Henrik Thorning also continued to support distributors by traveling with them when they were visiting customers.

In 1985 Fiberline hired its first sales consultant who was to serve the Scandinavian market. It was difficult, however, to find people who were qualified, and the company didn't find a sales consultant with the right technical understanding and good experience with sales until 1990.²⁴ Though he was supposed to focus on the Scandinavian market, he soon aided Henrik Thorning in serving the rest of Europe where interest in their products was better.²⁵ It was also in the early 1990s that Fiberline established its first sales subsidiary in Germany. This had been mentioned as a possibility already in the first written sales strategy, but now it mostly came about by chance. Arthur Krüger had a department dedicated to the sale of Fiberline's products, and in January 1991 the manager of this department announced that he had accepted a job from a competitor and would therefore leave his position. This was problematic for both Fiberline and Arthur Krüger. They agreed to establish an independent sales company together and to offer the manager part of the ownership. The new company would operate from Stuttgart in the Southern part of Germany, so as not to be in direct competition with Arthur Krüger, whose main market was in the Northern part of Germany.²⁶ In January 1992, a British sales consultant was hired in a similar construction, though without Arthur Krüger's involvement, of course. The British sales consultant had worked for a British agent that Fiberline was no

longer dealing with, but Henrik Thorning believed the sales consultant to be qualified for the job.²⁷

Back home in Kolding, the sales department grew over the 1990s; the first sales consultant hired in 1990 proved efficient and advanced to sales manager with a small team of sales consultants working in the department. They serviced the Scandinavian market, but they also worked on other European markets, helping agents and servicing customers.

Through the last part of the 1980s and the beginning of the 1990s, most board discussions on sales had focused on establishing a market in Denmark by creating a sales department in Fiberline. Later the board mostly discussed how the two sales companies in Germany and England could be controlled and become profitable. Since the first written sales strategy was formulated in the beginning of the 1980s, no more structured discussion on sales had been part of the reports from management or in the minutes from the meetings. By the middle of the 1990s, however, the sale organization had grown large and complicated; Fiberline undertook selling efforts in many different markets with a large geographical spread as well as in many different industries. They did so through a number of different channels (agents, distributors, sales subsidiaries, and their own sales department).

Diversification and uncertainty

As noted at the beginning of this chapter, Penrose states that diversification in her framework involves both the production of new products and the entrance into new markets. Penrose's discussion of diversification following this definition is primarily concerned with diversification of production, which fits well with her overall focus on industrial production. Yet, the basic points concerning diversification that Penrose makes are valid of product as well as market diversification. In discussing how diversification

can be used as a solution to specific problems, Penrose considers diversification as a means to reduce uncertainty:

Diversification to deal with the temporary fluctuations in demand that are definitely expected but that cannot be estimated with sufficient accuracy to make profit calculations more than informed guesses comes very close to *diversification as a device for coping with a generalized uncertainty*. The larger and more pervasive effects of uncertainty – which give rise to a feeling that it is somehow safer to maintain a diversified portfolio, and to a general distrust of putting all eggs in one basket, even if that basket is closely watched – are not overcome simply by adjusting net revenue calculations. Many a firm has proclaimed the philosophy that its security is greater if it produces a wide range of products instead of focusing on those products which, even after all practical allowances for risk have been made, seem to be the most profitable. In other words, diversification becomes a hedge, not against those changes that are definitely expected... but against changes of any sort which the ‘luck of the game’ may bring.²⁸

Here Penrose is speaking about product diversification, but the same observation may be made concerning diversification of markets. A broad market focus may also be seen as a device for coping with generalized uncertainty. This, I will argue, is how the diversification of Fiberline’s markets described in the section above should be understood. In developing the sales organization and the sales effort to become broad, and in continuing to be unfocused on this development, Fiberline was acting according to the image of context formulated in the early 1980s and based on the company’s experiences then. Fiberline continued to believe that profiles should be sold on numerous markets to avoid dependency on a few large customers.

In the first chapter of the analysis I discussed how the idea of independence from a single industry, which Henrik Thorning, for example, expressed in some of the early articles about the company, became part of his considerations in founding a company based on the method of pultrusion. Henrik Thorning connected this idea of independence to the

product's versatility of the product. An example of this is the article from 1981 discussed in the first chapter of the analysis in which he talks about the success of Fiberline compared to other start-ups. Generally in the discussions about sales, Henrik Thorning references or restates the potential of the products, rather than addressing any fear of vulnerability. They are, however, two sides of the same coin. When I discussed the financing behavior of Fiberline in an earlier chapter, I noted that narratives could be used to reduce uncertainty. A narrative that seems convincing to the company in a specific situation will reduce the uncertainty experienced in that situation. Therefore, when considering sales strategy and organization, Fiberline—in the period described here—continued to face the vulnerability of dependence on a few very large customers. Within that context I would argue that the many references to the potential and properties of the profiles functioned to reduce the uncertainty felt in that situation.

In the following section I will give examples of how Fiberline's sales organization and strategy were discussed and developed in the period from the mid-1990s until 2004/05. This will show that Henrik Thorning became increasingly challenged on the broad market focus, both from the board and from his leadership group. It will also show that the process of developing a focused market strategy was difficult, slow, and continued to draw on the meaning created in the start-up years—and not only regarding fear of dependency on a few large customers.

Sales and the strategic plans of Fiberline in the early 1990s

As discussed in the chapter concerning Fiberline's first focus on sale, apart from the short and general formulations in the 1982 sales strategy, Fiberline's 1985 prospectus was the first time the company expressed any systematic thoughts on the market for its products. The prospectus contained a market analysis and as already noted it opens by repeating the fundamental vision of Fiberline. It is stated that

Plastic composites are the group of materials in which the sum of the positive technical properties of the material is largest. Furthermore, the production of composite materials from the single element to finished product requires less energy than needed for producing, for example, steel and aluminum.²⁹

And in the concluding remarks on the market potential of the company, it is noted that

Fiberline sells material-technical and geometric properties more than it sells pultruded profiles in reinforced plastic. This means that *all* industries are customers or potential customers. Within the specific industry Fiberline is searching for the possibilities where the combination of properties and price is favorable for the seller as well as the customer.³⁰

A bit further along in the prospectus this broad focus is motivated, and the experience of losing the business of E Rasmussen Industri becomes clear:

Since 1983/84 the targeted growth has been evenly spread out on markets as well as industries, so Fiberline today is much less valuable than before.³¹

As argued the potential of the product as narrated in Fiberline worked to reduce the uncertainty of dependency on large customers. Here, within the context of the prospectus, they are presented together. The point of the prospectus was to raise capital. Therefore, it was necessary to account in some meaningful way for why that need had arisen. Thus, the loss of E Rasmussen Industri, which was still very fresh in mind, was mentioned. Generally, however, it seems that Fiberline would rather talk of the potential of the product and how it could be sold than of the unpleasant situation of dependency. In the period described in this chapter, Fiberline was, as just mentioned, very dependent on two large customers, and in the minutes of the board meetings and reports from management they were discussed at length. These discussions centered mostly on how better prices

could be negotiated, how much they could be expected to buy, and how deliveries were going.³²

By the second half of the 1990s, Fiberline's sales organization had grown large and complicated. As mentioned above, the organization served a highly diversified market; Fiberline was active in many different European countries and many different industries. This would become a much debated topic in board and management. The years from 1995/96 till 1998/99 were characterized by growth in turnover, heavy investments in production, but also a declining profit margin, which furthered the discussions of the sales strategy and organization. Yet, already from the beginning of the 1990s, the path taken in sales was being questioned.

As mentioned earlier, the sales consultant hired in 1990 soon advanced to sales manager and amassed a small team of consultants in his department at Fiberline. The sales manager, Stig Krogh Pedersen, was the first to raise the discussion concerning market focus in 1991 by suggesting that Fiberline should present some thoughts on the segmentation of markets to the board.³³ In wishing to discuss market focus and segmentation, Stig Krogh Pedersen was soon joined by one of the newer members of the board, Ole Tandrup. As mentioned, he was a management consultant who pushed for a new strategy to be made. He wrote the comprehensive background material for the 1993 strategy, which was based on the first discussions held by the board in 1992.

This material included a formulation of Fiberline's vision and main goals, which functioned as a reaffirmation of the firm's self-conception as first formulated in the basic narrative. I have argued earlier and noted many times that this narrative established the fundamental idea of Fiberline, which was connected to the product and the process. As discussed in the previous chapter, this self-conception continued to be strong in Fiberline through time and had a strong influence on both the perception of productive

opportunities and the decisions made concerning specialization. It also frames the written strategy of 1993, along with background material. For example, the vision statement included in the material is a restatement of the very first idea of the vision of the company as expressed in the basic narrative; it is very close in wording to the first vision statement made in the first sales strategy from 1982.

The background material states that Fiberline's vision is to "Develop, produce and sell profiles and components in reinforced plastic materials," and it goes on to clarify a three step mission, of which the first step is "to develop and maintain a production program based on advanced production processes and complex geometries of a quality that is at the top level of the industry."³⁴ Here, in the background material for the strategy process, made after the first discussions of the new strategy, common ground was established by referencing the fundamental self-conception of the company.

The background material also includes a document called *Fiberline annum 2002*, which was Ole Tandrup's attempt to imagine and describe the company 10 years into the future (to inspire discussion in the board). In this document, Ole Tandrup formulated his critique of the current state of sales in Fiberline through his vision of sales in the future. The following was noted on marketing and sale:

The web of distributors has been adjusted with an increased influence for Fiberline. Our own sales department will cover the Scandinavian market... [we will have] joint ventures or sales subsidiaries on the most important European markets ... our sales organization will function at three levels:

- Expert sale - directly to large important customers where Fiberline is placed as a strategic supplier.
- Project sale – profiles, components and finished goods made on order.
- Retail sale – standard profiles, standard components and standard finished goods.³⁵

It was implied that all of this was rather far from the state of the sales department in 1992. Ole Tandrup concludes his comments on the strategy process by noting, under a heading called *Sale/Product mix*, that

Based on analyses of the development of demand and intensive monitoring of the competition, Fiberline should map out the future needs of the market and on that basis intensify development from a mostly product and production oriented to a mostly market oriented basis.³⁶

The passage expresses Ole Tandrup's basic point. The strategy was discussed at many meetings, as well as a one day seminar of the board over the second half of 1992. In the end Ole Tandrup's encouragement made Fiberline formulate a strategy that accounted for the actions believed necessary for starting to move in the direction sketched in *Fiberline annum 2002*. In the strategy as it ended up being formulated and signed by the board, the following is noted about markets:

It is the aim that

- A prioritization of the markets is made on the basis of market analyses and estimates.
- That the prioritized markets are worked in the following way:
Primary: through own sales department/sale subsidiaries or through joint ventures (who will have a department exclusively selling Fiberline products)
Secondary: through distributors/agents.³⁷

This is the first time any thoughts have been offered on prioritizing markets. Here, in the 1993 strategy plan, no further thoughts are given to how the prioritization of the markets should be done. The idea of organizing sales efforts into three levels as described in the quote from the vision text, was repeated in the final strategy. The thoughts expressed in the 1993 strategy plan of how the markets could and should be focused were still very broad. In addition, a line of general principles of the sales effort are also listed. The

principles were stated as objectives that Fiberline would strive for in the sales effort. Here it is noted that:

It is the aim that

- The sale is promoted in the areas where the sum of the positive properties of the products is largest and where the possibilities of substitution to competing products are least.
- The customer base is spread both geographical as well as in different industries and is made up by both public and private organizations.
- No more than 20% of the turnover is generated from a single customer.³⁸

This example illustrates how fear of dependency had made its way into the strategy. The first of the three objectives is basically a repetition of the potential of the profiles as it was formulated with connection to sale already in the 1985 prospectus. The point of the two last objectives is clearly to reduce dependency.

In 1992 Fiberline had only had a sales department for around 2 years, and it was still small. Apart from that the company was dependent on the network of distributors that had been built up through the second half of the 1980s. Carrying through market analysis and organizing the sales effort in three levels, as dictated in the strategy, seemed quite a task. However, since the sales manager had asked the board and management for some considerations on this point, it must be assumed that the sales department was ready to try taking up the task.

About a year after the 1993 strategy was written and signed, long-time member of the board Kai Busch wrote a letter to the other members of the board. He had done the same once before in a situation in the middle of the 1980s when Fiberline was in crisis and he feared that management (read Henrik Thorning) wasn't taking this seriously enough and therefore kept investing in the production. He wrote the second letter in 1994 because he

was worried about the company's long term development. He noted that it was his impression that the company was now at the brink of a growth phase, but that he feared that the development of the organization wouldn't be able to keep up as currently organized. He notes that to him it seems a basic problem that Fiberline had a tendency to develop a lot of new products and to sell these on more and more new markets. Therefore, what Kai Busch was asking for in the letter, and what he wanted the board to discuss, was which path of diversification they wanted to take. They would have to make up their minds. If they would like to continue making more new profiles, then it should be considered if that were not best done in markets in which they already had experience. If, on the other hand, they wanted to continue finding new markets, then they should stick to the profiles they were already very good at producing.³⁹ This was clearly a critique of the state of things as they were in Fiberline and, all things considered, a pretty precise analysis of the situation.

The board discussed the letter at the following meeting and concluded, apparently, that it would be best for Fiberline to focus on a few different uses of the profiles. But the only decision made at the meeting was that more money should be invested in research to find out where the profile's properties would be best put to use. Kai Busch's letter might have been an occasion to discuss the overall development of the company, but it doesn't appear to have been used as such. It was, however, a critique of the company's very broad market focus, which that made it clear that not everybody saw sense in this path.

As mentioned, Stig Krogh Pedersen had voiced his opinion early on that the sales effort should be segmented. Therefore, he probably saw the 1993 strategy plan as a step in the right direction, and in 1995 the sales department made a comprehensive sales strategy with the 1993 plan as a point of departure. Written by Stig Krogh Pedersen, it was edited and approved by Henrik Thorning before being discussed by the board.⁴⁰

The purpose of the sales strategy was threefold: to give a status of the sales effort compared to the objectives in the 1993 strategy, to discuss the market development, and finally to formulate a sales strategy and suggest a new sales organization based on that.⁴¹ In the status report which opens the plan, the first observation is that Fiberline is too dependent on two large customers, each of them above the limit of 20% of the turnover for a single customer stated in the 1993 Strategy and together buying just above 50% of Fiberline's products.⁴²

The plan states that sales should be done through subsidiaries, sales office (in Kolding), joint ventures (for example with a distributor), distributors, and agents. Prioritization of primary and secondary markets was done geographically; it was noted that the founding of the two subsidiaries in England and Germany, as well as an intense focus on the Swiss market from the Danish sales team, pointed to these markets being primary.⁴³ Basically the strategy stated that, so far, the primary markets were where focus already was. Also the three levels of sale mentioned in the 1993 strategy are part of the structure of the sales organization as described in the 1995 sales strategy, and an organizational chart is included. The chart maps out sales as they had developed before strategy discussions began and sort of raises experience up to become strategic. It lists 7 geographic focus markets. Each of these is divided in three levels according to the 1993 strategy: Expert, Project and retail sale. The chart then has 21 specific areas of sale; in 14 of those the sales organization is, it is noted in the chart, expected to undertake direct sale to all industries. Above all the sales strategy in the 1995 plan is a textual representation of the sales organization and effort as it had developed so far, which as discussed was not done by a coordinated plan but rather as a coincidental process.

Because different sales channels are discussed, the strategy also mention that in the future Fiberline will be more critical in choosing agents and distributors. Usually they would

make agreements with distributors about exclusive rights to work the market in a particular country or region, but now, as stated in the sales strategy, it was time to choose distributors and agents with knowledge in specific industries, for example off shore, and then have more than one company representing Fiberline in each country.⁴⁴ This is the only part of the 1995 sales strategy that points toward a new line of work in sales.

Looking at the 1993 strategy, it might appear that the company was ready to start focusing its sales effort, and the comments of Stig Krogh Pedersen, Ole Tandrup, and Kai Busch also seem to make clear the rationale of doing so. Yet, considering the 1995 plan of action for sale, it seems that one goal was to become more focused on particular markets, and another was to start acting differently. So far the sales effort was as broad and unfocused as before, although it had now been put on paper. I do not perceive this as the result of a lack of resources. As seen, large investments were made in the same period in production, the sales department was expanded with more personnel, and investments were made in the two new sales subsidiaries.

Operational systems and the strategic plans in the late 1990s

In 1996 the board started a new strategy process—or a brush up as they called it—of the 1993 strategy. Once again, Ole Tandrup opened the debate with a letter explaining his thoughts on the matter. The point of the letter was that more planning was necessary in sales and that the sales organization should have manuals for operations for every distribution channel (subsidiaries, joint ventures etc.). He didn't question the sales strategy as such but rather suggested a number of administrative systems that he believed were necessary to build up a focused sales organization.⁴⁵ The board seemed to agree, and in the 1996 brushed up strategy plan, a long line of operational systems that were to be established in order to control sales were described as target points. Apart from this, the sales strategy is described as in the 1995 document. The 1993 strategy plan only stated

that the market should be divided into primary and secondary markets, but these are not defined clearly. In the 1995 sales strategy the primary markets are, as mentioned earlier, described as markets in which Fiberline was already active. In the 1996 brushed up strategy plan the primary market of Fiberline is now defined as Europe and everything else is secondary.⁴⁶

It seems that Fiberline was still struggling with the idea of focusing its markets. On one hand board and management could see and understand the reasons for focusing their markets, and they could also see that it would take systems of operations and planning to develop the firm in that direction. On the other hand, however, it doesn't seem that anything really changed in their way of working with sales. The effort was still very broad, the organization large, and the establishment of systems was so far only an intention.

In 1997, Poul Rind Christensen became a member of the board of Fiberline. He was a professor of management at the University of Southern Denmark and, like Ole Tandrup, he had a firm focus on strategy in his work in Fiberline's board. During 1998 Poul Rind Christensen frequently asked for more discussions concerning segmentation of the customer base. Leading up to a new strategy process in 1999, he made a 10-page paper for discussion of how the customers – not the markets – could be grouped in portfolios and how their value to the business of Fiberline could be estimated. Also, Poul Rind Christensen suggested, just as Kai Busch had done some years before, that Fiberline should consider whether the company wanted to be a producer of special products to a small number of industries or if it wanted to pursue a strategy of selling standard products in high volumes.⁴⁷

In 1999 there seemed to be very good reason to think about Fiberline's situation. On the surface things looked good. Turnover was growing fast and every indication showed that

it would continue to do so in 2000. The profit margin was also better now than in previous years. The problem was that this large growth was mainly due to the largest customer. If not for that business, turnover would actually be declining.⁴⁸ In both England and Germany there were many problems of controlling the sales subsidiaries, and none of the companies had made any real profits yet. Fiberline was now in the process of closing the German company down because of massive problems in working with the two managers running the company.⁴⁹ The English company closed not long after.⁵⁰ In a plan for the development department from 1999 till 2000, the development manager noted that planning the work of the department was difficult, because years of developing new profiles meant that many recipes and different reinforcements of almost the same properties were in use. Fewer different profiles would make it easier both to plan the production and for the development department to keep up with testing and documenting.⁵¹ In all there were many challenges in running Fiberline at the turn of the millennium, and a clear point to be drawn from most of them was that Fiberline would benefit from a more structured and focused sales effort.

The sales department also made a plan for the year 1999-2000. In this plan Fiberline for the first time attempted a segmentation of its market, and as such there seems to be coherence between the situation of the company at the time and the action taken. In segmenting its markets, Fiberline returned to some of the first thoughts and experiences about the market formulated in the narrative of sale almost 20 years earlier.

The 1999 plan of action for the sales department opens with a market analysis. Commenting on the analysis and the growing sales to the two largest customers, the analysis concludes: "The original goal is still to make us more independent of these two important customers by increasing the sale of ... profiles for other customers."⁵² Also it is noted that Fiberline's six sales consultants spent around half of their time aiding

distributors and agents but that in spite of this Fiberline's own consultants were still more effective in their sale than the distributors. It is stated that "This only underscores the conclusion that the most effective path to growth is through a very direct presence at the market ... which in reality means more people that should be based in Kolding."⁵³

As part of the aims of the 1999/2000 plan, it is stated again, as many times before, that Fiberline will work to

Promote sales in the areas where the sum of positive properties of the product is greatest and where the risk of substitution to competing materials is smallest. Apart from that to secure that

- No more than 20% of the sale is for one customer
- The customer base is spread both geographically and in different industries⁵⁴

And under main targets the plan states: "We are in a situation where the market possibilities are by and large endless and the production program is better than ever."⁵⁵

In these four passages Fiberline is repeating the first images of the market and the potential for the product, which had been part of the company's self-conception since its start-up. The passage concerning the right way to penetrate the market, indicating that it takes very direct pressure, was part of the first considerations about sales from the first half of the 1980s. As in the 1985 prospectus, the idea of the product's potential and the wide market possibilities are connected to the fear of dependency, a fear that had been with Fiberline since it experienced the loss of E Rasmussen Industri's business in 1983.

The 1999 plan for the sales departments concludes with a sales strategy which opens with the following observation:

We are working with products that are highly specialized. These are used within a specific number of customer groups. This means, that we should work according to a focused strategy where specialization will give us the opportunity to differentiate ourselves.⁵⁶

Considering the narratives that had been in use in the same plan, in the four passages just mentioned, to reduce the feeling of uncertainty of dependence on a few large customers, this may seem a bit contradictory, as the conception expressed in the old narratives is that market potential is almost endless and every industry is a potential customer. This may be taken as a sign, as in the strategy plans of the early 1990s, that Fiberline knew and understood the rationale for focusing its market efforts. However, the company still had difficulties reconciling this with their self-conception in which the potential of the product was the central issue.

In 1999, however, focusing market efforts had been a discussed topic for many years in Fiberline. It may even be claimed that a counter narrative, explaining the rationale of a focused strategy, was challenging the meaning established in the older narratives—the basic narrative as well as the narrative of sale. So, Fiberline formulated a focused sales strategy and drew up a new chart of the sales department. It may at first seem like an example of the situation that Carr describes in which the narrative is changed to accommodate events. Yet, in formulating three new focus areas in the sales organization, Fiberline actually stuck very close to its basic understanding of the product and used it as a point of departure. This is basically the same situation as in 1982 when Fiberline formulated the very first sales strategy and noted that the point was to supply production with the most effective blend of products.

In the first chapter of the analysis, I used a line of quotes from Henrik Thorning to present his vision of the company. In these quotes he talks about the product's properties (the sum of which has been mentioned so many times since). In the 1999 sales strategy, these are used to focus markets and define three new focus areas. The three areas are: Insulation, Transport & Mechanics and Resistance. How these categories would make it easier for Fiberline to focus and structure their sales is not clear, as the three are as broad as the old

idea of selling either standard or special profiles. But, the three new focus areas were well suited to bridging the gap between what I have called the counter narrative of the need to focus the sales effort and the basic narrative with its fundamental idea of Fiberline and its prosperous product.

The transition from having a very broad market focus to becoming more narrowly focused was slow indeed. Yet looking at the strategy plan following the one from 1999, one realizes that even though Fiberline continued to formulate its target areas in broad categories according to the properties of the product, they got still more used to thinking of the market not as unlimited but as focused.

In 2004 Fiberline undertook a new and very comprehensive strategy process in the plan that followed the 1999 plan. As a part of the new strategy the sales organization was sketched. From this it is clear that the three original focus areas defined in 1999 had been altered and redefined and a new focus area had been added. Still expressing the same sense as earlier, the four target areas were: Strength & lightweight, Thermal insulation, Electrical insulation, and Load-bearing constructions.⁵⁷

During the discussion leading up to the 2004 strategy, each of these focus areas was analyzed, discussed, and its potential evaluated, which had never been done in detail before. Each of the four focus areas was assigned a sales team; for the strategy process, each team had analyzed their focus area and described the industries in which they were active. All in all, the 2004 process was much more focused not only on sales and product properties but also on target industries and end users, indicating that Fiberline was in the process of adapting its image of context to fit the actions deemed necessary to secure a profitable business as expressed in the counter narrative mentioned above. That it was still a slow progress is, however, clear when considering the conclusion of the strategy process. Under the heading of *Focus Areas*, 21 different areas of use falling in almost as

many different industries are mentioned. All of these were included in one of the four main focus areas.⁵⁸ Before formulating the list, comprehensive material evaluates the strengths and weaknesses of each area of use. None however are deemed uninteresting or given up in order to focus on more prosperous uses. Therefore, Fiberline would continue to focus on selling concrete reinforcement, door steps, structural columns, and beams for cooling towers in nuclear power plants, as well as tables for scanners to the medical industry and much more.

Conclusion - Product properties and the development of sales

The object of this chapter has been to discuss how Fiberline's market focus developed and to consider the role of this development in the company's growth. I have discussed how the market area was diversified and a large and complex sales organization was built up. In this I have considered the influence of the company's self-conception and image of context throughout the roughly 10 years from the middle of the 1990s to around 2004.

Penrose, as discussed, is most elaborate in discussing the firm's productive opportunities in reference to the development of new products. She also notes, however, that in seeking new markets the firm is reacting to perceived opportunities in the same way as when it develops new products. This is done using the same logic as when new products are developed by drawing on the firm's self-conception and image of context in constructing opportunities. In the previous chapter I discussed how Fiberline constructed and acted upon productive opportunities. I argued that due to the strong sense of product and process expressed in the company's use of narratives Fiberline primarily saw opportunities that would entail a development of their core technology, pultrusion. This meant that Fiberline was very reluctant to diversify outside a single production base.

As seen in this chapter Fiberline's self-conception and image of context also had a strong influence on the development of their market focus. However, whereas Fiberline was very reluctant to diversify production, the company was most eager to diversify its markets.

Penrose, as noted, states that diversification may be used as a device for coping with a generalized uncertainty, and I have argued that this was an important part of the explanation for Fiberline's market behavior over time. The experience of losing the business of E Rasmussen Industri in the early 1980s made Fiberline very focused on avoiding, if possible, dependence on the business of large customers. This was a clear reason for Fiberline's broad market focus, but as I have argued only one part of the explanation for it. The vision of Fiberline, formulated in the basic narrative, draws on Henrik Thorning's perception of the product: he repeatedly stressed the product's potential connecting it to the structure of industrial production and claiming that it could and should be sold in most industries. These two issues, the potential of the product and the fear of dependency, were two sides of the same coin. Both worked to make a broad market focus seem sensible to Fiberline, which meant that Fiberline kept acting in line with this rational.

The development of the sales department, the sales effort, and the strategy described in this chapter indicate that—where the market is concerned—Fiberline's self-conception and image of context worked to limit the strategic choices available in trying to formulate a sales strategy. I have shown how, over a long period, a counter narrative concerning the segmentation of the markets developed. This counter narrative presented a clear rational for focusing the company's market effort. However, Fiberline was slow and rigid in reacting to it, because it was in opposition to the self-conception and image of context formulated years ago in the stable and strong narratives of the start-up phase. At the turn of the millennium, Fiberline began to adapt to the rational of focusing by drawing on the

firm's fundamental self-conception to formulate the proper way of focusing their markets. Therefore, the first attempts were done with reference to the properties of the product. In this situation as before Fiberline adapted its actions to fit the fundamental self-conception of the company. This was also the case in the early 1980s when the narrative of sale was constructed. It also drew heavily on the original idea of the product's potential and became somewhat of an appendix to the basic narrative.

It may be concluded that in the case of developing Fiberline's market focus, the company's self-conception and image of context were as influential as they were in acting on productive opportunities and developing the firm's technological base.

10. Discussion

The focus of my analysis has been Fiberline's process of growth, and the purpose is to discuss the connection between the company's self-conception and image of context and its growth. As discussed in the introduction, this connection in one Penrose points to but doesn't explore further. Her point is that concepts of self-conception and image of context form the basis on which firms make decisions and take action. Therefore, these concepts are important for understanding the process of growth. In this chapter I will discuss my findings and the research literature they may contribute to.

I will begin by discussing my analysis and the case of Fiberline in reference to the overall purpose of the project, along with the theoretical choices I have made. I will then discuss how this dissertation contributes to both the literature on firm growth and to business history. In the introduction I drew on both fields and sought to place my analysis within them. Finally, I will discuss the relevance of my study to the field of entrepreneurship studies as well as studies of internationalization. Through my analysis of Fiberline, I have drawn on literature from both fields; I believe there is new insight provided for both. After the discussion of these issues in this chapter, I will end my dissertation with a short concluding chapter mainly rounding up my analysis and its results.

The case of Fiberline and the theoretical choices I have made

As just mentioned the object of my dissertation is to discuss the connection between the process of firm growth and the firm's self-conception and image of context. As I formulated my research strategy, I argued that self-conception can be compared to the concept of meaning construction as presented in the cultural theory of Geertz. Based on a discussion of the use of narrative methods in business history, I further argued that firms use narratives as tools for constructing meaning. Therefore, a basic assumption of this

project is that focusing on the firm's use of narratives can help render visible the firm's self-conception and image of context.

Penrose's discussion of the concepts of self-conception and image of context form a mechanism by which firms act. As such these concepts function as the key to explaining what Penrose calls the subjectivity of productive opportunities, which makes firms exploit their resources in particular ways and grow by certain paths. Yet to Penrose, the concepts of self-conception and image of context are inaccessible. They are, she claims, an extremely personal aspect of the growth of individual firms because they are dependent on the ingenuity and preferences of the firm's entrepreneur(s).¹ Therefore, she doesn't explore these aspects of growth further, neither theoretically nor empirically. I have argued, however, that by considering construction of meaning along those lines suggested by Geertz, the subjective elements that Penrose points to may be treated not as unknowable, personal fads of the entrepreneur, but as shared cultural expressions of the firm.

In my introduction I posed a number of research question that were to guide me as I set out to discuss the influence of Fiberline's self-conception and image of context on the company's growth over the 25 year period of the analysis. Central in these questions were the matter of how the company yielded service from their resources, what productive opportunities they pursued, how they diversified, and what was their market focus. In discussing these questions through the analysis, I have provided a number of examples of how the company's self-conception and image of context influenced Fiberline's decisions and actions and thereby its growth.

The concept of growth

The concept of growth has been central in this dissertation, and I have repeatedly described growth as a process of development. In the opening of *The Theory of the*

Growth of the Firm, Penrose discusses the concept and notes that in regular discourse it is used with two different connotations:

It sometimes denotes merely increase in amount; for example, when one speaks of 'growth' in output, exports, sales. At other times, however, it is used in its primary meaning implying an increase in size or an improvement in quality as a result of a *process* of development.²

In economic theory, Penrose further argues, only the first of the two connotations is used. Traditional economic analysis examines

... the advantages and disadvantages of *being* a particular size and explains movement from one size to another in terms of the net advantage of different sizes. Growth becomes merely an adjustment to the size appropriate to given conditions; there is no notion of an *internal* process of *development* leading to cumulative movements in any one direction.³

In this project growth has been treated as a process of development in the sense suggested by Penrose. Focus has been on the method and direction of growth in Fiberline. Penrose, however, also discuss the firm's rate of growth. She mainly describes rate of growth as an aspect of the firm's available managerial resources, which at any point in time set a limit on the expansion that may be planned and undertaken by the firm.⁴ Therefore, she is also skeptical about attempts to measure growth rate. Penrose does actually offer an entire chapter in *The Theory of the Growth of the Firm* to discussing how growth rate over time may be measured. She is, however, so critical to the endeavor, makes so many special assumptions and has so many reservations, that it seems clear that this is not the intended use of the theory she suggests. One suspects that Penrose mostly takes up the discussion because it is a much-debated issue of firm growth in economic theory and therefore difficult not to address in the context in which she has formulated her theory.

My analysis offers no considerations of Fiberline's rate of growth and no attempt at speculating whether Fiberline could have grown (in Penrose's first sense of the concept) more or less had Henrik Thorning made different decisions or acted differently. That lies outside the scope of my analysis, as does any attempt to formulate tools to measure or predict the firm's rate of growth. I have, as noted above, focused on the method and direction of Fiberline's growth.

The growth of Fiberline

Over the span of years discussed in my analysis, two overall conclusions may be drawn from my analysis of the growth of Fiberline. One is that Fiberline maintained a clear focus on its technological base and was quite reluctant to diversify outside. This led them to become specialists in a single process or technology. Even before the company's founding, Henrik Thorning had a very clear vision for Fiberline, one closely connected to the process of pultrusion. This meant that the core of the company's self-conception was the production process and product. Self-conception was constructed and expressed through the company's basic narrative, which was reinforced by the first experiences of the start-up. This product and process focused self-conception influenced the services yielded from the resources of the company and led to the accumulation of still new resources of production and product development. The basic self-conception of the company, as well as Henrik Thorning leadership, meant that as the organization grew the research and development department came to enjoy a special position in the company. Also, this particular self-conception influenced the productive opportunities perceived by the company and made the company more inclined to act on opportunities that would enable it to further develop technological abilities. This mechanism is really at the core of the argument: over the course of years the mechanism made Fiberline highly specialized, as the company stuck to its technological base and didn't enter into product diversification.

The second overall conclusion to be drawn from my analysis of Fiberline's growth is that while the company was reluctant to diversify outside its technological base, it was more than willing to diversify its market area, maintaining a very broad market focus. The reason for this is found in the company's initial experiences in the early 1980s. Fiberline had experienced a situation in which the company was threatened in its survival; it turned out to be very difficult for the distributor, Dukadan, to sell the profiles Fiberline produced. This left Fiberline in a critical state. The company was slow to react, because the focus of the start-up had been mainly on developing the product and the production. On top of this, the largest customer of the company withdrew its business, around half of the turnover, and moved it to a competitor. In this crisis Fiberline reacted with a new focus on sales, developing a new narrative used to make sense of the situation. This narrative explained why it was difficult to sell the product, although to Fiberline it continued to be an extraordinary product. Within that narrative of sale, an image of a very broad international market was formulated. The company based this image on the experiences of failing on the Danish market and losing the largest customer but also on the original idea of the product as a potential re-newer of industrial production to compete with steel and aluminum in every industry. Over the years until the middle of the 1990s, this image of context led Fiberline to pursue market opportunities at very broad markets; at the same time a large and complex sales organization was established. This was, however, difficult to control for Fiberline: the company lacked the resources to control the sales subsidiaries it, somewhat by coincidence, had established in the late 1990s in Germany and England. Also it became more and more difficult to overview the profitability of production for the myriad profiles sold for many different industries. By 1993 the board was already discussing these problems, and over the following years they were repeatedly addressed. Attempts were made to formulate specific focus areas in sales. These were made, however, with reference to the general potential of the product. Since these were

conceived by Fiberline as almost endless, the market focus continued to be as broad and difficult to control as before. Each strategy discussion from the middle of the 1990s until and including the one in 2004 was motivated by the need to decide how sales should be focused and organized. But, as the broad market focus was a consequence of the company's image of context, and as the fear of dependency on large customers was deep rooted in the company's experience, it remained a difficult task for Fiberline. Despite this fact, the company also knew that a focused market effort and a simpler sales organization would benefit its ability to control business and make it more profitable.

These two developmental paths of Fiberline, the determined focus on a single area of specialization and the broad market focus, were both connected to the company's self-conception and image of context. Put roughly, it may be concluded that over the first 25 years of its existence, Fiberline developed to become highly specialized generalists.

Penrose describes the growth of the company as a path dependent process unique to every firm. Therefore, she suggests that firm growth is best studied at company level and through historical analysis. Fiberline's behavior in keeping to a single technological base and in continuing to focus on broad markets shows the path-dependencies of their development. It seems clear that had the company's growth been studied only over a couple of years, it would have seemed quite different. The effect of self-conception and image of context on the firm's growth would have been difficult to track down.

Resistance to change and pressure to change

Looking at the growth of Fiberline and considering the use of narratives over time, it is striking that Fiberline was rather rigid in its self-conception and image of context. Over the 25 years covered by my analysis, the company never really seemed to have much doubt in either. As mentioned earlier, Carr is interested in the construction of narratives, and he notes that sometimes the story is changed to accommodate the events and at other

times the events are changed, as action is taken to accommodate the story.⁵ From this perspective Fiberline seems, through the 25 years covered in my analysis, mostly to have struggled to change events to accommodate its narratives. The company had been rather headstrong in acting, or so it would seem.

That Fiberline's self-conception and image of context have been so resistant to change, however, does not indicate that the development of other companies would be marked by an equal consistency in their use of narratives over time. Nor does it imply that the self-conception and image of context of Fiberline that I analyzed until 2004 has necessarily remained unchanged since or will continue so in future. My analysis is not intended as an example of Stinchcombe's concept of organizational imprinting, in which the institutional setting of the founding of the company, its earliest experiences and the entrepreneurial character of the founder, is imprinted in the company's DNA as an inescapable past.⁶

There may be many explanations why Fiberline's narratives were resistant to change throughout the period I have described. Clearly it is connected to Henrik Thorning's leadership. As discussed earlier, throughout the analysis I have frequently used Fiberline synonymously with Henrik Thorning. At one point in the chapter concerning the financial behavior of the company, I even noted that "Fiberline really is Henrik Thorning." The last 10 years of the analysis covers a period in which Fiberline had a well-established organization with a group of middle managers who were given individual responsibilities. Still, it was Henrik Thorning as owner and managing director who had the final say in all major decisions. Furthermore, it should not be overlooked that though Fiberline had its share of crisis and difficulties, it is still a company that at least since the middle of the 1990s has grown steadily within parameters like the ones mentioned earlier when discussing growth rate: sales, output, profit. It may be argued that there isn't much reason

to suspect either the self-conception or the image of context of Fiberline to have been under much pressure to change.

In the last two chapters of the analysis, I discussed Fiberline's market position and development in terms Penrose uses to describe specialization, diversification, and market focus. I pointed to several ways in which the position and development of Fiberline could be seen as fragile. Such observations, it should be noted, are not the same as claiming that the company's experience has been one of constant crisis or uncertainty.

Yet, this situation may have changed in the years after 2004, which I haven't covered in my analysis. The years from 2004 until today have been turbulent, and much has changed in and around Fiberline. After 2007 Fiberline, like so many other companies in the period, suffered falling demand. The company also experienced growing pressure from its largest customer, driving down prices and pushing Fiberline to invest in and start production of certain products in China.⁷ Furthermore, Fiberline moved in 2007. They combined the two old production sites into a new, very ambitious and large factory. The timing of these events surely might have been more fortunate for the company. In the financial year 2007/08, Fiberline barely broke even, and over the years that followed they suffered heavy losses.⁸ One could safely say that in that period Fiberline experienced difficulties the likes of which they had not seen since the early 1980s.

In 2007 Fiberline carried out a new strategy process. The main result of that process was a reorganization of the sales department and a new sales strategy focused on 4 target industries. The catchphrase used throughout the process to describe the change intended was "From entrepreneurial inventor to market driven producer,"⁹ which was a clear restatement of Ole Tandrup's 14 year old formulation from the 1993 strategy quoted in the prior chapter. During this process, several market areas were abandoned as Fiberline decided to focus on the four industries considered most important and most prosperous to

the company. Considering the points I have made throughout my analysis and particularly concerning market focus, it seems that Fiberline was acting differently than before; it may be that the strategy of 2007 marked both a change in the company's self-conception and image of context. Perhaps some of the frailty Penrose noted to be connected to a position like Fiberline's - highly specialized with a focus on innovation as well as an unfocused market strategy – had now become clearer to Fiberline.

In 2005 Dorthe and Henrik Thorning's eldest son Peter Thorning began working in Fiberline, first as an area sales manager and later as production manager. In 2011 Henrik Thorning passed the position as managing director on to Peter Thorning. Ownership of Fiberline was gradually given to all of Dorthe and Henrik Thorning's three children. Today, Henrik Thorning still handles a few customers and also takes part in different projects in research and development and quality control.

Over the summer of 2014, I was invited to follow the latest strategy development process at Fiberline. It was the first, I believe, that has been carried out under the sole leadership of Peter Thorning. The discussions in the leadership group during this process reveal an even more determined market focus than in 2007. The aim of the process is to define the industries that have the best sales and profit potential and where the potential for creating synergy in developing and documenting new products is best. Today this approach is based not on a broad idea of potentially serving every industry, but on the pool of industries that Fiberline currently serves and has experience working in.¹⁰ Surely, much seems to be changing in the way Fiberline acts, and the stable and enduring narratives that were the center of my analysis may be changing too.

The role of the entrepreneur

As already noted the stability of the narratives used by the company over the first long period of its development seems reasonably connected to Henrik Thorning's leadership

and the connection between him and the company's self-conception and image of context. As discussed the reason why Penrose was reluctant to investigate these concepts further in her work was that she considered both to be personal matters in the sense that both self-conception and image of context were connected to the character of the firm's entrepreneur(s). As also discussed in the introduction, this point was my very argument for drawing on the cultural theory of Geertz: he captures how the individual actor makes sense of existence by a process based on a continuous interplay between the interpretation of a specific situation and the context surrounding it. Geertz establishes both meaning and action as shared or social phenomena.¹¹ The social nature of both meaning and action, as argued, has very practical analytical consequences; it moves the study of meaning and actions away from the mental sphere, which is at best very difficult to access, and into a shared sphere, where it can be studied. Geertz makes it clear that meaning creation is not a psychological but a cultural process.

In describing and analyzing Henrik Thorning's actions, and in seeking to connect these actions to the narratives used in the company, I focused specifically on this social process of meaning creating. Henrik Thorning didn't act in a vacuum but always in context, which I have sought to capture. My analysis is not an attempt to portray Henrik Thorning's person, nor have I attempted to connect any decisions of his to personal fads. I have made no attempts to sketch Henrik Thorning's character but have focused, instead, on his actions, their context and the narratives used. I will argue that my analysis does offer a suggestion for moving the study of self-conception and image of context away from the private, psychological sphere and into a shared social space.

Granted, Henrik Thorning, without a doubt, played a very important role in my history of Fiberline. I have often talked about "Fiberline" making decisions or acting in situations where it was not the company as such but Henrik Thorning who actually made the

decision or acted. This, I will argue, exemplifies the importance ascribed to the role of the entrepreneur in the start-up firm as a constructor of convincing stories, as Hjorth point out. This role becomes quite clear in the case of Fiberline and Henrik Thorning. As discussed previously, this image of the entrepreneur is anchored in larger shared narratives about the entrepreneur and the proper way to act as one.

Through my analysis I have not only shown how Penrose's idea of self-conception and context has been important for the growth of Fiberline and for the decisions made and not made. I have also demonstrated empirically at the micro level that a start-up company does not grow according to a predetermined plan or strategy, but in a constant interaction with its context; technology, customers, competitors etc. These are results that couldn't have been made by large cross-sectional quantitative analysis of specific variables across many companies. My results contribute to furthering our knowledge of start-up companies and to our understanding of the contribution of research literature in the fields of entrepreneurship, firm growth and internationalization. In the following sections I will discuss my contribution to these three literatures in turn. Also I will discuss my study in reference to the field of business history which is my home field as it were.

How does the dissertation contribute to the study of firm growth and path dependency?

The object of my analysis has been to discuss the growth process of Fiberline which I have followed over a period of 25 years. In the introduction I discussed the existing studies of growth of which three general observations may be done. The first is that growth is most often studied over a short span of years – typically 1, 3, or 5 years, which at least to me was quite surprising. Secondly, these studies are mostly quantitative and of the kind that Penrose describes as typical in economic theory. Growth is treated primarily as an increase in size measured by one or the other parameter that allows for

quantification, like assets, turnover, or profit. Thirdly, extensive reviews of the literature on growth show that so far it hasn't been possible to isolate variables that have a consistent effect on firm growth across studies. Compared to the overwhelming number of studies of this kind, the number of studies treating growth as a process are few. As mentioned, Davidsson, Achtenhagen and Naldi note that "... a mere mapping out of the phenomenon would constitute worthwhile contributions."¹²

It may be argued that my analysis does exactly that. Through the microscopic method I have used, my study maps out the process of growth in Fiberline. My analysis offers a detailed description of the growth process of a single firm over a long span of years. Seen as such it is a contribution to the study of growth, a contribution that offers the beginning of an explanation why it has been very difficult to isolate variables with a consistent effect on firm growth. My study shows that the Fiberline's growth was an unplanned process, heavily influenced by its context as well as by resources, knowledge, and experience unique to the company.

In the introduction I also discussed the general influence of Penrose's work. I noted that it is mostly used in strategic management with the aim of pinning down what makes a resource unique and therefore a source of competitive advantage. My study may contribute to a (re)introduction of Penrose's theory of growth into the field it was formulated as a part of, namely growth studies. As discussed, a few others, for example Pettus, Connell, and McGovern and McLean, have attempted the same introduction by using Penrose's theory to analyze firm growth as a process.

In Pettus's study, he discusses path-dependency and notes that most seem to agree that resources are developed in a complex path-dependent process as suggested by Penrose. However, so far there is no explanation of the phenomenon. As mentioned Pettus then sets out to formulate tools that may help predict growth paths over time, testing his method on

a sample of 59 companies. My analysis of Fiberline is also concerned with path-dependency but at a micro-level. It offers an example of how resources are developed through a path-dependent process (something Penrose also did in her Hercules study) and connects it to the firm's self-conception and image of context. The point is to show that both are basic elements of the way resources are exploited and by extension the way path dependency is created. I agree with Pettus that the concept of path-dependency lacks description, precision, and definition. Also I agree that the work of Penrose is a good place to start looking for a theoretical discussion of the process and an explanation that goes beyond concluding that history matters. But I do not agree with Pettus that tools to predict growth patterns and separate them into different stages will help explain the process of path-dependency. Penrose was certainly critical of such attempts to measure and quantify firm growth.

I have provided detailed examples of the connection between the exploitation of resources and the development of path-dependency in Fiberline, which as I have just argued is in itself a contribution to the study of firm growth. Whether or not I also offer an explanation of the path-dependency of firms that goes beyond focusing on resources by connecting their exploitation to the company's self-conception and image of context depends on the strength of my argument and the example I have provided for the influence of self-conception and image of context on Fiberline's growth. I would, however, hope that my project may contribute to the study of growth by introducing concepts of self-conception and image of context and a new, closer reading of Penrose.

The concept of path-dependency is also much discussed in organization studies—a field which has even been said to experience a historical turn, in which the organization's past is theorized. In a 2004 article Clark and Rowlinson discuss the treatment of history in organization studies. The object of the article is to question “whether even as organisation

studies has become more historical, the treatment of history could be said to correspond to an historical turn.”¹³ From this skeptical standpoint they review the perception of history in organizational economics, organizational sociology, and organizational culture, all constituting major discourses of the field.¹⁴ A historic turn, they argue, is not just the consideration of more historical facts. As every piece of knowledge (historic or other) is based on interpretation, a historic turn rather calls for a consideration of the relationship between the past and history as well a consideration of the understanding and use of the past by the actor (in the present).¹⁵ To the business historian who may dream of conversing with organizational studies, Clark and Rowlinson note that: “Our review should serve as a warning for business historians to be wary of the apparent accommodation of history in organisation studies.” Their point is that as the concept of history in organization studies is most often that of the totality of past human actions, business history risks being reduced to a large box of past reality.¹⁶

One way of theorizing the past in organization studies would be the development of the concept of path-dependency which entails a consideration of the understanding and use of the past by the actor, as Clark and Rowlinson suggest. I would argue that Penrose offers a way of theorizing path-dependency that is sensitive to the use of the past by the actor and that I provide an example of this in my study. By considering the influence of self-conception and image of context on the actions of the firm, its exploitation of resources and the development of path-dependency, it would be possible to offer a way of working with the organization’s past. This would be compatible to the interpretative tradition of some parts of organization studies, yet would unfold the concepts of past and history in more detail than has so far been the case. As Clark and Rowlinson note, there might be business historians out there dreaming of conversing with organization studies. However, there are also interesting discussions to be had within business history, and in the following I will consider how I might contribute to these.

How does the dissertation contribute to the study of business history?

Penrose's Hercules study was published in *Business History Review* in 1960. To commemorate the 50 years anniversary of this guest appearance of a "superstar" in a core journal of the field of business history, Pitelis wrote an article featured in 2011 in the same journal discussing the contribution of Penrose to the field of business history. He opens by noting that *The Theory of the Growth of the Firm* is one of the most cited books in the field of business history.¹⁷ Yet through the discussion in the article, this statement is left without further elaboration or reference; instead, Pitelis points to and discusses many other fields in which the work of Penrose has been widely applied. Returning to the matter of history, however, Pitelis discusses Penrose's research methods and points out that they are first and foremost historical. He formulates this as the theory-history nexus of Penros's work. Given the purpose of the article and the bold statement in the introduction concerning the influence of Penrose in the field of business history, Pitelis then reaches the rather surprising conclusion that historical analysis using this nexus has been given scant attention.¹⁸

This last point might have been a better place of departure, as Pitelis set out to discuss the influence of Penrose's work in the field of business history. To me, at least, it is baffling that Penrose, despite the fact that her work deals with the past of firms, both empirically and theoretically, is mostly overlooked in the field of business history. My dissertation serves as an example of how Penrose might be used for historical studies of firm development and as a step toward introducing the historical method suggested by Penrose into the field of business history. Further research or discussion might then take up the question of why the field of business history has been so indifferent to the work of Penrose, although it clearly offers so much to the historical study of firms.

Also, the discussion offered by Penrose on the development of path dependency in the firm (discussed in the prior section) should be of interest to historians as it maps out that process in detail. As argued, the microscopic analysis mapping out the construction of path-dependency in Fiberline constitute a contribution to growth studies, and the same may be argued in relation to the field of business history.

In my analysis the construction of path-dependency and the process of growth in general have been linked to Fiberline's self-conception and image of context, introducing interpretative theory into the study of firm growth processes. As discussed in the introduction, interpretative cultural theory and methods are now being introduced into business history. My project contributes to the field as part of this introduction and as a demonstration of the possibilities of applying such theory and methods on still new questions. As I have mentioned several times now, in her discussion of the company's self-conception and image of context, Penrose notes that these concepts comprise the basis on which companies act and makes decisions. The strength of drawing on theory of sense making or meaning creation, applying methods like narrative analysis, is that it may facilitate the understanding of fundamental mechanisms of action and decision within the firm.

Finally, before leaving the field of business history, it should be added that the Penrosian framework offered in this study may also contribute to the historical study of entrepreneurship, now much debated in the field of business history. Drawing on a discussion of the contribution of Schumpeter, pointing out that his methods were historical, Jones and Wadhvani plea for a reintroduction of his work into business history. This might, they argue, contribute to the historical study of entrepreneurship. Using the work of Schumpeter to study entrepreneurship historically will undoubtedly offer insights into many interesting aspects of this phenomenon. Penrose, with her focus on the

development of the individual firm and the discussion of entrepreneurial resources and their use in the company, offers still other insights as I have demonstrated by my study.

In the following section I will further discuss the concept of entrepreneurship. As noted, I have drawn on several studies of entrepreneurship through my analysis and discussed Penrose's use of the concept in detail. Both entrepreneurship studies as well as the field of internationalization are, I will argue, closely connected to processes of growth. It is my impression that my study may offer insight to both fields. Therefore, I will first discuss entrepreneurship studies in the following before turning finally to the field of internationalization. As I haven't discussed either of these fields earlier, as I had with growth studies and business history, I will begin by a short discussion of each of the two fields in general.

How does the dissertation contribute to the study of entrepreneurship?

Over the last 30 years the field of entrepreneurship has grown considerably—almost explosively since the 1990s.¹⁹ It is a common assumption in the field that this is due to the various effects of globalization, which has resulted in a growing political and general interest in entrepreneurship from the 1970s and onwards, boosting academic interest in the phenomenon and securing steady funding for research.²⁰ Fundamental to the political interest is an assumption that small entrepreneurial companies are of growing importance for securing continued (or renewed) economic growth.²¹ This belief, as well as a search for ways to spur more entrepreneurial activity, has fed streams of research drawing on economics and behavioral science (especially psychology) respectively.²² But today the field is drawing inspiration from many other fields as well. A recent bibliometric analysis of published articles on entrepreneurship shows that most contributors to the field use theory from other fields and are themselves often visitors from these other fields, e.g. management or organizational theory.²³

The enormous growth of the field as well as the many different approaches used to study the phenomenon has led to a degree of fragmentation in the field. Shane and Venkataraman believed this fragmentation was diminishing the theoretical development and academic achievement of the field. They wanted to formulate a definition of entrepreneurship studies wide enough to include many different approaches yet precise enough to function in attempts to synthesize the field:

We define the field of entrepreneurship as the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited ... Consequently, the field involves the study of sources of opportunities; the processes of discovery, evaluation, and exploitation of opportunities; and the set of individuals who discover, evaluate, and exploit them.²⁴

In Shane and Venkataraman's definition of the field, two major streams of research are echoed. One sets out to discuss and explain the *function* of entrepreneurship either in the market or more generally in society, drawing mostly on either economic theory or sociology. The other is preoccupied with understanding how entrepreneurship *unfolds*, which is either understood as a result of individual initiative or as a process.

The first stream of research, aiming at explaining the function of entrepreneurship in society and/or the economy, is also the most significant research interest when business historians study entrepreneurship. Jones and Wadhvani conclude that "The historical study of entrepreneurship has been particularly concerned with understanding the process of structural change and development within economies."²⁵ This field has been heavily influenced by Schumpeter, who saw entrepreneurship as the key to economic development and stressed the importance of studying it historically (as already mentioned).

Schumpeter's theory also inspired sociologically oriented studies in business history, for instance seeking to explain differences in economic performance of nations by studying the supply and character of entrepreneurs in these.²⁶ Though the focus varies somewhat in these studies, the point is much the same, namely to understand the role of entrepreneurship in economic growth. More recent research in business history has been interested in similar questions concerning the effects of culture and other institutions on entrepreneurial performance. These newer studies often draw on historical institutionalism and offer interesting insight into the role of entrepreneurship in a broad institutional setting.²⁷

The stream of research focusing on how entrepreneurship unfolds also found inspiration in Schumpeter and his early writings, which focused on the personal traits and motivation of the entrepreneur.²⁸ Earlier, I gave an example of Schumpeter's description of this focus. Such descriptions of the entrepreneurial nature spurred interest, and a number of studies mostly applying psychology or social psychology sought to define them and explain what motivates the entrepreneur.²⁹ In her review of the entrepreneurship literature, Ericson concludes that "... a substantial body of small business research attests to the qualities of just one person who scans for opportunities and exploits opportunities that others miss."³⁰

These two classical approaches to entrepreneurship, however, have also been challenged by newer studies. Some of these treat entrepreneurship as an organizational process much closer to Penrose's thinking about entrepreneurship and closer to the way I have used and discussed the concept in my analysis.

The entrepreneurial process, new firms and Penrose

In his seminal 1988 article "“Who is an Entrepreneur?” Is the Wrong Question,” Gartner challenged the focus on the character of the entrepreneur by claiming that

entrepreneurship is not defined by a single person, but rather by the process of building an organization.³¹ “Entrepreneurship is about organizing,” he also claims.³² This processual take on entrepreneurship has since been explored in a number of studies drawing on theory from many different fields, e.g. behavioral science, organizational and management theory, and recently also anthropology.³³ The notion that entrepreneurship is a process of organizing fits well with Penrose’s theory of growth; when discussing process theory, she emphasizes that innovations should be treated as purposive attempts of men to do something—to organize.³⁴

The Theory of the Growth of the Firm is one of the most cited books in the field of entrepreneurship.³⁵ However, as in the strategic management literature, Penrose’s work is mostly used to define what resources are necessary, in this case for a start-up company, to become successful. The processual perspective in Penrose’s work on the other hand is less discussed in the field of entrepreneurship. Furthermore, most studies in the field focus on the very early start-up phase and do not discuss the firm’s further development as part of the entrepreneurial process.³⁶ As discussed earlier, Penrose’s description of the firm’s entrepreneurial resources and her point that they are put to service in conceiving of and pursuing productive opportunities indicate that the concept of entrepreneurship is central to firm action and by extension to the growth of the firm, not only in the start-up phase but continuously. This way of thinking about entrepreneurship as a form of firm resource is quite different from Schumpeter’s discussions about entrepreneurial character.

My dissertation is a micro level analysis of the entrepreneurial process analyzed by a penrosian framework. In my analysis, especially in the chapter discussing productive opportunities, I have given examples of how Fiberline put its entrepreneurial resources to service in pursuing productive opportunities, for example when developing the new system of structural profiles. The study is an example of how entrepreneurship can be

analyzed as a process by offering a new and closer reading of Penrose's work. This reading doesn't put the nature of the resources of the firm at the center of analysis but focuses instead on the conception of productive opportunity and the exploitation of resources, both closely linked to the firm's entrepreneurial resources. This, I would argue, is a new perspective on entrepreneurship as a process.

My analysis also provides an example of how the entrepreneurial process can be described using interpretative theory and method. Interpretative approaches to entrepreneurship, however, are more developed in the field than Penrosian process thinking.

Narratives in entrepreneurship studies

Hjort and Steyaert begin their introduction to the 2004 anthology *Narrative and Discursive Approaches in Entrepreneurship* by noting that—though the influence of the linguistic turn has been great in organization studies—it has taken some time to reach entrepreneurship studies, where it has yet to unfold and still “lacks the breadth and depth” these approaches could bring to the study.³⁷ The point of the contributions of the book is to demonstrate different ways of working with narrative or discursive approaches in the study of entrepreneurship to catalyze the introduction of this line of thought in the field. The articles, a couple of which I have discussed in my analysis, consider many different aspects of entrepreneurship: for example, entrepreneurial vision, group dynamics, entrepreneurial identity, and legitimacy building.³⁸

In defining entrepreneurship, Hjort and Steyaert note that:

...we prefer to refer to entrepreneurship as forms of social creativity... Entrepreneurship is a societal force: it changes our daily practices and the way we live; it invents futures in populating histories of the present, here and now. In such processes, entrepreneurial processes,

the present and the future is organized in stories and conversations, the primary form for knowledge used in everyday practices.³⁹

This way of perceiving entrepreneurship clearly draws on the same form of interpretative reasoning as the sensemaking perspective suggested by Weick or as Geertz's cultural theory. As noted earlier, a distinctive aspect of Geertz's concept of meaning creation is the social setting in which it is constructed. In the quote above, entrepreneurship is described in the same manner as a shared and negotiated process, in which the conception of the present and future (sensemaking or meaning creation) is decisive for action. This process is clearly connected not only to the start-up of the company but also to the firm's general development.

The call of Hjort and Steyaert for development in this area of entrepreneurship theory inspired Gartner. He notes that, though his seminal 1988 article mentioned above has mostly been used to argue for a processual take on entrepreneurship, the primary point of his article was to draw attention to the "great diversity of individuals involved in entrepreneurial activities, and by implication, the insight that it is unlikely that scholars will be able [to] identify a particular entrepreneurial 'type'."⁴⁰ Engaging in more in-depth analysis he came to appreciate what he calls the 'critical mess' of entrepreneurship. But Gartner was frustrated that the field of entrepreneurship didn't offer methods for analyzing this mess and therefore also failed to offer insight into "the intention/action/circumstance condition (IACC) in entrepreneurship."⁴¹ This, he notes, is the complex setting in which entrepreneurship plays out, but the field in general still prefers to define parameters and variables to look for general patterns. Gartner concludes that

Generalizable principles – 'on average' – are offered in these studies, but the nuances of particular entrepreneurial situations, the nuances that actually characterize how individuals go about thinking through,

over time, the complications of utilizing their capabilities and resources as they are both informed by, and seek to change their circumstances, is ‘averaged’ away.⁴²

This prosaic nature of entrepreneurship, as Steyart would have it,⁴³ can be captured and expressed through narrative approaches as mirrored in the Hjorth and Steyart quote above. As already discussed the same methods and approaches have been introduced into Business History using similar arguments.

Since the introduction of narrative theory and approaches into the field of entrepreneurship, interest has been growing, and still new aspects of narrativity are included in the study. A 2007 special issue of *Journal of Business Venturing* demonstrates this by letting a number of authors discuss the same narrative about the start-up of a toy store. Apart from offering examples of how narrative methods can be used in the study of entrepreneurship, it also discusses how researchers and teachers in the field use and produce their own narratives, a sign I suppose of such theory and practice becoming more established in the field.⁴⁴

The articles in the 2004 anthology on narrative and discursive approaches, the 2007 special issue of *Journal of Business Venturing*, as well as the 2010 first issue of *ENTER: Entrepreneurial Narrative Theory Ethnomethodology and Reflexivity*, all picture entrepreneurship as a process driven by the meaning creation of the actors and expressed in some form of narrative structures.⁴⁵ I hope that my project may be taken as a contribution to this new stream of narrative studies of entrepreneurship. One contribution is that my analysis is an empirically example that entrepreneurship is clearly not about start-up alone, but is a form of resource – which Hjort and Steyaert call social creativity as in the quote above. Also my use of Penrose’s theory-history nexus, to use the concept of Pitelis, can be a way of introducing the concept of path-dependency and a concrete way to analyze it empirically into entrepreneurship studies. The connection between the past and

the present—as captured also in the quote of Hjort and Steyaert—is only now being debated in the field of entrepreneurship as part of an older debate of the concept of opportunity, which I will discuss in the following section.

Opportunity and historical reasoning in the process of entrepreneurship

In the field of entrepreneurship, the notion of opportunity has been discussed from many different perspectives. These discussions often focused on the question whether “opportunities exist as an objective reality, existing before the entrepreneurial process starts and awaiting discovery by an alert individual, or whether they are socially constructed.”⁴⁶ Shane and Venkataraman’s much debated definition of entrepreneurship quoted earlier has been important for moving the concept of opportunity to the center of attention. They claim that the core of the field is the study of the sources of opportunity, which they describe as processes of discovery, evaluation, and exploitation.⁴⁷ In this debate, as a result of the beginning narrative turn of the field discussed in the section above, there are recent examples of historical insight being applied in the study concerning how opportunities (productive or otherwise) are constructed by the company and placed into narratives.

When critiquing the “discovery view” of opportunity as expressed by Shane and Venkataraman, Dimov has argued that it entails a narrative of the entrepreneur as a “prescient progenitor following a hidden but linear path.” This narrative makes opportunity an “elusive construct,” because it brings to the fore the tension between past and present in the concept.⁴⁸ As Dimov explains, only by looking at an opportunity from a point where it has already unfolded can it be described or constructed as a process of discovery, recognition, and identification.⁴⁹ Therefore, Dimov concludes that although the concept of opportunity is theoretically interesting it is “empirically elusive;” it exists at one point in time, but can only be recognized as an opportunity at a later point.⁵⁰ Dimov

suggests an approach aimed at making sense of how entrepreneurs actually perceive opportunity and act; by consequence of the nature of the phenomenon, this approach may be done historically.⁵¹ This is very close to Penrose's discussion of productive opportunities and self-conception, as well as to her argument for applying historical methods.

Dimov's critique of the understanding of opportunity in entrepreneurship studies has excited interest in business history for two reasons, one being rather pragmatic the other theoretical. To an historian, the notion that opportunities (and by that the process of entrepreneurship) can best (or only) be studied backwards is of course intriguing. As noted by Mason and Harvey, "There is a lack of contemporary datasets that can track the real-time thoughts and actions of entrepreneurs whilst they are starting a business. However, this is not a constraint for historians..."⁵² Thus, this take on opportunity provides business historians with an argument for bringing historical studies to the center of entrepreneurship studies.

On a theoretical level the tension between past and present as coined by Dimov is interesting also in a business history setting, because it draws on ideas of construction of meaning. Dimov specifically mentions both sensemaking and narrative approaches as ways to study the entrepreneurial process. The fact that his ideas have been applied in business history marks an incipient interest in reconsidering both the concept of history and the role of interpretation in this field. Popp and Holt offer an example of this in their article on *The Presence of Entrepreneurial Opportunity* in which they tell a story of the start-up of a merchant house in Calcutta in the seventeenth century. Following Dimov's argument, they focus on how entrepreneurs actually act. They demonstrate the creation of powerful constructs about the present in the start-up situation. These are strong enough to overcome the radical uncertainty of the situation and spur action; therefore, the

opportunity of doing business in Calcutta at that point in time was not discovered but constructed by the merchant.⁵³ They conclude: “What we argue is not simply that entrepreneurial processes exist in interplay with historical contexts but that we need to see them in relation to the unfolding of time as a *making present*.”⁵⁴

In my analysis I used Hjort’s analysis of Iago’s role in Othello to conclude that in Fiberline’s start-up Henrik Thorning used the basic narrative of the company, formulating the vision for Fiberline, to convince others as well as himself that Fiberline was a good idea. I also noted that his prior experience and knowledge were decisive in making his argument convincing. The process of making present as described by Popp and Holt might also have been used to discuss the start-up of Fiberline and how Henrik Thorning came to see an opportunity in pultrusion in a particular context and time. In such a discussion, the influence of Henrik Thorning’s prior knowledge and experience may have been drawn in to explain how Henrik Thorning created a construct about the present, making him able to overcome the uncertainty of the start-up situation.

Certainly the field of entrepreneurship has offered me many ways of thinking about this concept, as well as the concept of opportunity that have inspired me in my study of Fiberline. Reading my analysis in this context, it could be seen as a contribution to a new stream of research on entrepreneurship drawing on interpretative theory. Mine is, as far as I know, amongst the first to describe the construction and exploitation of opportunities in a firm over a long period showing at a micro level how the firm develops habits of conceiving particular forms of opportunities.

How does the dissertation contribute to the study of internationalization?

In this final part of my discussion I will turn to studies of internationalization. In my analysis I have drawn on several studies of internationalization. In general, it may be said that if considered to be a process many points may be made about internationalization,

which may also be done in a study on growth drawing on insight from this field. As with the field of entrepreneurship, I will begin by discussing the internationalization literature in a few more general terms, which I haven't done so earlier. Following this my main discussion will be of the so called Uppsala model of internationalization and its development over more than 3 decades. I see the relevance of my study in connection to this model.

In her review of the internationalization literature, McGaughey notes that sometimes the literature distinguishes between an economic- and a process-view on internationalization. However, as some work drawing on economic theory actually applies a process perspective, she prefers to distinguish between economic and behavioral streams of literature.⁵⁵ I will discuss the literature drawing on economic theory very shortly before turning to process studies originally inspired by behavioral theory, specifically in the Uppsala model. Following this section, I will discuss newer streams of literature focusing on the rapid internationalization of young companies labeled born global firms or international new ventures and often described by the concept of international entrepreneurship. I will discuss this stream of literature because it often entails a critique of the Uppsala model and as such should be considered.

Why do firms engage in international interaction?

Generally the literature on internationalization applying economic theory has focused on explaining foreign direct investments (FDI) rather than other forms of international interaction, such as exporting or licensing.⁵⁶ Buckley and Casson, for example, proposed to explain FDI as a way of reducing transaction cost by internalization, whereas Dunning proposed an eclectic theory drawing on the earlier work of Hymer as well as Buckley and Casson. Dunning referred the decision to engage in FDI to ownership- or location-specific

advantages and internalization.⁵⁷ Naldi, in her extensive review, labeled these theories drawing on economic reasoning “The ‘why’ literature of internationalization.”⁵⁸

In 1997, Madhok introduced dynamic capabilities (the firm’s ability to leverage knowledge and experience) as a rationale for considering internalization and argued that such capabilities are as important as minimizing transaction costs. Even more so, he argued, because opportunities to develop the firm’s dynamic capabilities through internalization not only facilitate competitive advantage at a specific point in time, but also in future.⁵⁹ Both the resource-based view and the dynamic capability perspectives have been influential in the internationalization literature; however, as in Madhok’s perspective, focus has often been on positioning the firm in the market by using resources or capabilities to create (sustained) competitive advantage.⁶⁰ Therefore, Naldi includes these studies in the “Why” literature on internationalization, although the theoretical framework behind both perspectives has also been used to engage in studies of internationalization as a process. Earlier, I discussed how the field of strategic management has drawn on Penrose to develop the resource-based view of the firm (and later the dynamic capability perspective). Focus has been on facilitating competitive advantage and the possibilities for positioning the firm in the market. The resource-based view, as well as dynamic capabilities perspectives, has been used in much the same way in the internationalization literature.

The Uppsala model and the process of internationalization

McGaughey defines firm internationalization as “increasing involvement in international operations over time.”⁶¹ From this perspective internationalization is essentially a process and should be studied as such. Naldi labels processual studies of internationalization the “how” literature consisting of three different models: the Uppsala model, the network

model, and the innovation model.⁶² I will only discuss the Uppsala process as I find it most relevant for my study.

Johanson and Vahlne were decisive in introducing studies of the internationalization process based on behavioral theory and drawing on Cyert and March. Johanson and Vahlne focus on the firm as the unit of analysis, emphasizing the decision-making process and applying a bounded rationality perspective.⁶³ In their 1977 article, Johanson and Vahlne described internationalization as an incremental process:

We do not believe that [internationalization] is the result of a strategy for optimum allocation of resources to different countries where alternative ways of exploiting foreign markets are compared and evaluated. We see it rather as the consequence of a process of incremental adjustments to changing conditions of the firm and its environment.⁶⁴

This incremental process, Johanson and Vahlne argue, is fuelled by a dynamic interrelation between learning and the decisions of the company. The firm develops by learning from the experience of operating in foreign markets. This newly gained knowledge might spur so-called commitment decisions made to strengthen the company's position on the foreign markets, which then leads to new knowledge. This accumulative process, Johanson and Vahlne conclude, results in a pendulum motion between stability and change. By extension, the internationalization process will typically fall in stages.⁶⁵ This argument has continued to be at the core of the Uppsala model of internationalization through many revisions and extensions by both Johanson and Vahlne, as well as a number of other internationalization scholars over the last 35 years.⁶⁶

Often, however, the Uppsala model of internationalization is pictured as a rather rigid stage model (a point for which it is often criticized). This is because Johanson and Vahlne in their seminal article draw inspiration from an earlier study by Johanson and

Wiedersheim-Paul. This study identifies four stages of the internationalizations process, based on a study of four Swedish exporting companies: Stage 1 with no regular export activities, stage 2 with export via independent representatives (distributors or agents), stage 3 with establishment of international subsidiaries, and stage 4 with international production units being established.⁶⁷ Johanson and Wiedersheim-Paul name these stages the establishment chain and note that the companies in the study start exporting once they have secured a solid domestic market. It is also concluded that internationalization is often a slow process that follows the same pattern, one new international market (country) at a time, and frequently starting in markets that are close to the domestic market.⁶⁸ Yet the specific stages described by Johanson and Wiedersheim-Paul are not elaborated by Johanson and Vahlne in the 1977 article. Their point was rather to theorize the cumulative process of gathering and exploiting experiential knowledge as the driver of the internationalization process. Though Johanson and Vahlne speculate that this process falls in phases of stability or change, no predetermined stages are part of their framework. Their main point is that the development is incremental. The same point is raised by Madsen and Servais, who in a discussion of the field note that though the born global literature often claims to disprove the stage model of Johanson and Vahlne, “A falsification of the surface manifestations is, however not necessarily the same thing as a falsification of the reasoning behind the traditional models.”⁶⁹

Johanson and Vahlne draw on Penrose in defining knowledge and conclude that especially experiential knowledge is important because it is difficult to come by and impossible to duplicate. This is the same argument used in the strategic management literature to formulate the sources of competitive advantage in the firm, but Johanson and Vahlne further conclude that

An important aspect of experiential knowledge is that it provides the framework for perceiving and formulating opportunities. On the basis of objective market knowledge it is possible to formulate only theoretical opportunities; experiential knowledge makes it possible to perceive “concrete” opportunities – to have a “feeling” about how they fit into the present and future activities.⁷⁰

Though perhaps not very elegantly stated, this expresses some of the subjective sense of a productive opportunity described by Penrose. I would argue that Johanson and Vahlne’s description of how experiential knowledge is used in the development of the firm might just as well have been described as an example of entrepreneurial resources being put into service following Penrose’s line of thought. As discussed, Penrose’s aim is to formulate a general theory of growth. That is to say, the mechanisms described are assumed to govern the growth of any company at any point in time and in any context.⁷¹ In line with this Penrose notes:

There are differences between national and international firms but the differences are not to require a theoretical distinction between the two types of organizations, only a recognition that national boundaries make an empirical difference to their opportunities and costs.⁷²

The study of internationalization in a Penrosian sense is an investigation of such empirical differences and the effect these might have for the productive opportunities the firm recognizes.

Johanson and Vahlne have continued to discuss their original 1977 model of internationalization drawing on new contributions to the field. In a 2010 article coauthored with Schweizer, they describe internationalization as an entrepreneurial process, reaffirming and clarifying their original argument that internationalization is driven by experience and learning in the firm as is development and growth in general.⁷³ In this way they have moved still closer to Penrose’s argument that the difference between

internationalization and general development is circumstantial—that is a matter of context, or the context the firm perceives.

The object of the Schweizer, Johanson and Vahlne article is to explain how the internationalization process unfolds at a micro level—how decisions are made on the basis of internal and external knowledge and experience in what they describe as an entrepreneurial process. In this endeavor, they draw on two specific concepts in the entrepreneurship literature: opportunity and effectuation.⁷⁴ I have already discussed the concept of opportunity and argued that, in the context of my study, it should be perceived as a construct in line with Penrose's description of entrepreneurial resources and productive opportunity. I have also discussed the first internationalization of Fiberline using the concept of effectuation and drawing on Schweizer, Johanson and Vahlne.

The point of effectuation is that in situations of uncertainty the entrepreneur will make decisions based not on rational calculation but on what knowledge he has, using the resources available in the situation and with no clear goal besides handling the situation.⁷⁵ Andersson, who has also discussed effectuation in working with international entrepreneurship, notes that

Sarasvathy refers to Weick (1979) who argues that the environment does not directly affect an organization. Decision-makers interpret the organizations' environments and due to earlier experience have developed different cognitive schemas and come up with different interpretations and decisions.⁷⁶

It is through the same understanding of effectuation that Schweizer, Vahlne and Johanson have moved closer to the subjective points made by Penrose. As such, the framework offered by the newer and elaborated Uppsala model of internationalization is informed by interpretative ideas compatible with the theoretical concepts informing my analysis.

The concept of the establishment chain and the stage model of internationalization that Johanson and Vahlne draw inspiration from in their original article have been questioned by newer studies. The Uppsala model is often discarded entirely on that basis. However, I would argue that the general point—that firm internationalization happens through an incremental process of exploiting knowledge and experience—still has validity. The stages and speed of the process in the firm is (to paraphrase Penrose) a matter of empirical difference in their opportunities and costs. The concept of effectuation lends explanatory power to the Uppsala model at a micro level. I agree with Schweizer, Vahlne and Johanson who, when drawing on this concept, conclude that

... entrepreneurs attempt to exercise control over what can be done with available resources ... rather than decide what ought to be done given a set of preconditions about what happens next... Such a view of rationality corresponds better with the often unintentional internationalization of a company as the result of managerial or entrepreneurial efforts ... we claim that the contexts in which entrepreneurs, managers, or other decision makers operate are better described as situations where there is no predictability, possibility of setting goals, or independent environment.⁷⁷

My study exemplifies the internationalization process as described here by Schweizer, Vahlne and Johanson, and in this it will constitute a contribution to the field of internationalization. The analysis of Fiberline shows that the internationalization of this company did not follow any specific plan; it was a more or less chaotic development in which the company drew on the experience it got along the way and used the resources it possessed. Fiberline's internationalization then seems to be mostly a result of effectuation. Furthermore, the analysis of Fiberline stretches over a long span of years and shows that effectuation logics is not just a start-up phenomenon. In the case of Fiberline effectuation is a lasting method of internationalization stretching beyond the difficult start-up period of

extremely limited resources. This is a new insight into the process of internationalization to be taken from my study.

Born Globals, International New Ventures, and International Entrepreneurship

As mentioned the study of born global firms, international new ventures, or international entrepreneurship is critical to the Uppsala model of internationalization. Therefore, I will briefly consider these streams of literature before ending this chapter with a discussion of studies of internationalization in the field of business history.

From around the middle of the 1990s, a new focus on small, young, and international companies became prevalent in the study of firm internationalization. The basic assumption behind this is that the globalization of our days makes for fundamentally different patterns of firm internationalization calling for new theory on the field. This theorization has been done using different concepts. Yet, I will argue that first the study of born global firms, the focus on international new ventures, and now the interest in international entrepreneurship are all basically part of the same stream of literature in internationalization studies, and I will discuss them as such.

In their comprehensive review of the field, Jones, et. al., show it to have a phenomenological focus; researchers in the young field have mostly been interested in describing the object of their interest.⁷⁸ Oviatt and McDougall's 1994 article, one of the most quoted in the field, is a good example of this, as the object of the article is to map out the phenomenon and seek to define it.⁷⁹ They named the young and rapidly internationalizing companies International New Ventures and defined them as follows:

We define an international new venture as a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries. The distinguishing feature of these start-ups is that their origins are international, as demonstrated by observable and significant

commitments of resources (e.g., material, people, financing, time) in more than one nation.⁸⁰

A point often made in the literature is that the internationalization of young, small companies is done by use of limited resources. Cavusgil & Knight describes this as a distinctive feature of Born Global firms; it is a point often drawn upon to show that the focus of classical internationalization theory on large companies no longer is enough to explain the internationalization of firms. Also, the nature of company resources is significant in Oviatt and McDougal's framework. Their conclusion is that international new ventures often have the advantage of unique resources (often in form of knowledge) that can give a competitive advantage at international markets. This idea has led to much research on the resources of Born Global companies. However, focus in these studies has mostly been on competitive advantages and the market positioning of the firms—and less on the process of putting resources to service.⁸¹

More recently scholars have found inspiration for studying internationalization of small, new companies in the entrepreneurship literature, now seen as a field in its own right: international entrepreneurship. So far this has mostly led to studies concerning the significance of the entrepreneur for the performance of these companies. For example, focus has been on the entrepreneur's prior knowledge and experience, a perspective that has been coupled with the strong resource focus of earlier studies of international new ventures.⁸² Yet, it holds for these newer studies of international entrepreneurship, as well as for the earlier on international new ventures, that the process of internationalization as it unfolds in the company has not been given much attention.

McGaughey, however, offers an interesting example in her study of a cluster of small international New Zealand based companies. The study is process oriented, her perspective focused on how the experience of the internationalization of companies is

narrated by actors within those companies. The study draws on interpretative theory, which is now finding its way to the study of internationalization.⁸³ An early example of this is Rasmussen, Madsen & Evangelista's study of Danish and Australian born global firms, which seeks to explain the foundation of their case companies by looking at the sensemaking of the founder and his use of networks. It offers interesting conclusions about the founder of the companies, showing that they are less coordinated than is usually assumed.⁸⁴

An interesting aspect of McGaughey's study is that it is longitudinal in the sense that she asked her informants to tell about their experience of internationalization in the past and in the present at the beginning of her study. She then returned and recorded new narratives later and used all three sets of narratives to map out the process of internationalization in the case companies.⁸⁵ Therefore, she answers a call in the field of international entrepreneurship for longitudinal and in-depth studies focused on process. The call is often repeated, but so far not many studies have been made.⁸⁶

Jones and Coviello note that there is "... a dearth of literature capturing the time-based dynamics of various behaviours and processes pertinent to entrepreneurial internationalization."⁸⁷ Their aim is to formulate a general theory of entrepreneurial internationalization that takes both behavior and time into consideration. As they further note: "Time is ... fundamental to internationalisation research in that each firm has a history composed of internationalization events occurring at specific points in time."⁸⁸ Jones and Coviello formulate and discuss variables that may be applied for quantitative research on firm internationalization. Although they consider different constructs of time, they primarily consider it a matter of sequence, more of a methodological concern than a theoretical construct.

Generally, the born global and new international venture literature focuses on other issues than in-depth, interpretative studies of the process of internationalization (over time). The literature on international entrepreneurship has mainly been interested in the performance and positioning of young, small, and international firms. Focus has been on the influence of the entrepreneur, the exploitation of resources, and the role of networks.⁸⁹ However, studies like McGaughey's or Schwitzer, Vahlne and Johanson's offer evidence of other perspectives being introduced into the field, which might open it to new processual and interpretative takes on (early or small firm) internationalization.⁹⁰

I have already discussed the work of Schweizer, Vahlne and Johanson and the Uppsala model in general. I have argued why I see this body of work as relevant to the study of the internationalization process as it describes a basic mechanism driving the development. Though both the born global and the international new venture literature offer many discussions of the Uppsala model, this issue has been left largely unaddressed in the critique.⁹¹ The context of starting up and doing international business today is obviously very different from earlier, say in the 70s when Johanson and Vahlne made their first contribution to the field. But I do not agree with the basic assumption of the born global and international new venture literature that this change in circumstance in and of itself calls for new theory on the process of internationalization. My study of Fiberline, describing its process of internationalization in detail exemplifies the influence of the basic mechanism of internationalization as described by Schweizer, Vahlne and Johanson. It shows the importance of the entrepreneur's perception of self and context leading to the use of effectuation logic in internationalization decisions. As such my dissertation contributes to the study of internationalization by questioning the theoretical distinction between basically different forms of internationalization upheld in the born global and international new ventures literature. To paraphrase Penrose the difference in

internationalization paths (between fast and slow development for example) is empirical and a matter of context.

Business History and Internationalization

As a final topic in this chapter, I will shortly consider the concept of internationalization in business history. Jeremy and Tweedale, in their review article, note that international business history particularly gained traction in the 1980s, when Mira Wilkins and Geoffrey Jones, for example, introduced new perspectives to the study. Jeremy and Tweedale conclude that

The new champions of business history were less likely to be interested in company history narrowly defined, but took their cue from models created by Chandler, with the emphasis very much on the evolution of business structures, managers, and entrepreneurship ... Some were influenced by Douglass North; others found congenial Michael Porter's analysis of competitive advantage and clustering.⁹²

The quote highlights a preference in business history of studying internationalization mostly at the industry level, with a focus on why firms internationalize and with less focus on the process as such. Jones and Khanna also demonstrate this focus in their 2006 proposal to reintroduce business history into international business studies. They draw up four suggestions for how business history could facilitate the development of internationalization theory. Their first point is that history holds a reservoir of empirical material that is well suited to doing time-series studies and that may also aid economic theory in this effort. As a second point they note that historical studies may facilitate a comparison of the development of different organizational types over time. Thirdly, they suggest that through historical studies the concept of path-dependency may be unfolded and that by drawing on Penrose's concept of resources, the reasons for international market entrance and causal links between this and performance might be elaborated. Fourthly, they suggest that the study of FDI may benefit from analysis covering longer

than usual periods.⁹³ None of the four suggestions invites the researcher to elaborate how internationalization unfolds in the company.

There are of course many examples of studies focusing on one company in business history – it might even be called a classical genre of the field – and many of these describe international or multinational companies. However, examples from business history of focusing particularly on internationalization as a development process are rare. The work of Wilkins stands out. She notes that internationalization is “... a process developing over time out of the requirements of the innovative business enterprise.”⁹⁴ Wilkins draws inspiration from Penrose to theorize the strategic options of the multinational company based on its available resources. Through a study of the development of large American multinationals, she then formulates a three-stage development model of the internationalization process and analyzes the extent to which the model can predict internationalization dynamics in various sectors. Buckley notes that Wilkins anticipates the (early) Uppsala model.⁹⁵

I have just argued that I find the Uppsala model of internationalization relevant to the study of firm internationalization over time and noted that the strength of the model is that it points to a fundamental mechanism of the growth of the firm. Therefore, and because the Uppsala model holds potential to describe the path-dependency that might also be part of internationalization processes, I would argue that the field of business history shouldn't settle with Wilkins hinting at or anticipating the Uppsala model. Rather, it should be used directly in historical studies of internationalization, where it can offer new perspectives on the internationalization process of the firm through an in-depth focus of how that process unfolds. I have already argued that my study of Fiberline with its in-depth focus illustrates the chaos of such unfolding processes. As such, it may contribute to an introduction of this line of thought and of Schweizer, Johanson and Vahlne's revisited Uppsala model

into the field of business history. In this way, it might be particularly useful in the new interpretative and narrative studies that are now becoming part of the field.

11. Conclusion

The object of my dissertation has been to discuss the role of self-conception and image of the context in the growth of Fiberline over 25 years, from the company's founding till around 2004. In her theory of the growth of the firm, Penrose suggests these two concepts as decisive for the growth process, because they determine the company's actions. I have argued that I view self-conception basically as meaning creation and narratives as tools for constructing meaning. Therefore, focusing on the firm's use of narratives can help explain the change and growth of firms, because this usage lays bare the grounds on which organizations act and make decisions. Penrose describes how the firm's self-conception and image of context influence the productive opportunities that the firm perceives and acts upon and its exploitation of resources, as well as its decisions and actions in diversifying and specializing. Therefore, I raised a number of research question focusing specifically on these aspects of Fiberline's growth as I sought to capture the influence of self-conception and image of context by analyzing the company's use of narratives. The research questions were as follows:

What narratives does Fiberline use and what self-conception and image of context is constructed by their use? How do they influence the company's decisions? How can the company's use of narratives be said to have influenced its growth? This last question was split into three more specific sub-questions: How did Fiberline's use of narratives influence what services were yielded from the company's resources? How did it influence the productive opportunities that were pursued? And how did Fiberline's use of narratives influence the company's choices concerning diversification and market focus?

In the first chapter of the analysis, I discussed how a basic narrative of Fiberline was constructed. When Henrik Thorning founded Fiberline in 1979, he had a clear idea about

the company he wanted to create and by what means it would become a success. He formulated these ideas in a basic narrative of the company from its very start-up. Henrik Thorning used this basic narrative to formulate the self-conception of Fiberline as well as an image of its environment. Fiberline's basic narrative centered on the product, the production process, and the potential of the reinforced plastic material. This basic narrative also established Henrik Thorning as the founder of the company and promoted the notion of his motivations as driven by an explorative spirit rather than profit. In formulating the basic narrative, Henrik Thorning drew meaning from larger, shared narratives, for example about the character of the entrepreneur. This was a matter of establishing the company as proper and moral to the surrounding world but also in the company's conception of itself.

Penrose notes that in the prospective firm the relevant product-markets and the particular productive activities chosen are guided by the "inherited" resources available for service in the start-up. Henrik Thorning's prior knowledge and experience became part of the prospective firm's inherited resources. Whatever available services Fiberline had in its start-up had to be drawn from these. Therefore, Henrik Throning's prior knowledge and experience were discussed in the second chapter of the analysis, because they constitute an important part of the context in which the basic narrative was constructed. Henrik Thorning's knowledge of the plastic industry, for example, was useful in constructing the basic narrative, because it made the idea of Fiberline and the risk of starting up seem sensible.

In the third chapter of the analysis, I discussed how Fiberline's use of narratives influenced the services that were yielded from the company's resources during its start-up phase. Henrik Thorning's knowledge and experience were important in this development, but his entrepreneurial resources built up through his former work were also put to

service. The task of developing the production to a level where it could run steadily and efficiently was difficult and demanded much in the way of thinking in new combinations and ideas. Through a difficult process of trial and error in starting up production, Fiberline eventually became skilled at producing profiles; thus, the company gained new available resources that could be put to service in developing the production further. In this way Fiberline started accumulating new available resources through the process described by Penrose. In dealing with the challenges of starting-up production, Fiberline strengthened the basic narrative and the conception that they could make pultrusion work and that both the product and production process were something special. This was, for example, clear from Jens Johansen's history about the feeling of conquest as production started working, or from the celebration of the first company birthday.

In the fourth chapter of the analysis, I returned to the first of the research questions concerning the narratives Fiberline use and the self-conception and image of context that was constructed by their use. The object of the chapter was to discuss how Fiberline started focusing on sales to counter a difficult situation in which its existence was threatened when sales didn't pick up in the hands of the distributor, Dukadan. In this situation a new narrative of how the profiles should be sold was constructed. The function of the narrative was to enable Fiberline to account for the company's reaction and changing focus in this difficult situation. The new narrative of sale was centered on three elements of selling the profiles: the technological superiority of Fiberline's products, the need for constant attention to and guidance of customers, and a focus on international markets. Each element of the new narrative was connected to the basic narrative, which meant that the meaning created by the new narrative didn't disrupt the company's original conception of self—although it allowed for the focus to change from production and development to sale when this was needed to survive through the crisis of the first years.

In the fifth chapter of the analysis, I discussed Fiberline's financing behavior through the first half of the 1980s, when the company experienced many difficulties securing capital: seeking to exploit what resources they already had to the fullest and balancing the risk in supplying external capital. This is connected to the broad research question of how the company's use of narratives can be said to have influenced its growth. I have argued that the basic narrative of Fiberline was decisive for the firm's financial behavior. Henrik Thorning proved willing to run considerable risk yet at the same time didn't seem much burdened by uncertainty. Both these elements of Fiberline's financial behavior may be explained by the self-conception of the firm established in the basic narrative. An important element in this was the conception that Henrik Thorning was the owner and leader of the company; the risk taken in borrowing from banks through the first years was based on this concept. This behavior, however, was also based on the conception expressed in the basic narrative about the product's potential. Fiberline rejected offers from interested investors and as such turned down opportunities of developing production and product further, even though the technological superiority of both was an important part of the company's self-conception. In this sense the narratives used by Fiberline may be said to have influenced the growth of the company. In a related point, Fiberline's attitude toward investors also reveals that, ultimately, Henrik Thorning's ownership and control of the company were more important than its immediate development.

In the sixth chapter of the analysis I discussed a number of different productive opportunities that Fiberline conceived of and acted upon in the years from the mid-1980s to the late-1990s. My point in the discussion was to show how the narratives in use, formulating the company's sense of self and context, had a decisive influence in this process. The narratives sometimes worked to constrain and at other times to generate action, thereby influencing the company's diversification and growth. Of the productive opportunities discussed, those Fiberline seemed most keen to act upon were those that

would enable them to develop their technological base. This was so because Fiberline's technological base, the process of pultrusion, was the essential idea behind the company—and key to the company's self-conception. Therefore, Fiberline specialized in a very narrow range of basic areas of production and kept to a narrow range of products.

In the seventh and final chapter of the analysis, I discussed how Fiberline's use of narratives influenced the company's choices concerning market focus. While Fiberline was reluctant to diversify outside its technological base, the company was willing to diversify its market area, maintaining a very broad market focus. In this endeavor, the company drew on the image of context expressed in the narrative of sale. Within that narrative of sale, an image of a very broad international market had been formulated, based on the experiences of failing in the Danish market and of losing the largest customer (as discussed in the fourth chapter of the analysis). However, the broad market focus was also based on the original idea of the product as a potential re-newer of industrial production that could compete with steel and aluminum in every industry. Over the years until the middle of the 1990s, this image of context led Fiberline to pursue market opportunities at very broad markets; at the same time a large and complex sales organization was also established. This, however, was difficult to control for Fiberline. However, as the broad market focus was a consequence of the company's image of context, and as the fear of dependency on large customers was deep rooted in the company's experience, it remained a difficult task for Fiberline to focus. Still, the company knew that a focused market effort and a simpler sales organization would benefit its ability to control business and make it more profitable.

Penrose describes the growth of the company as a path dependence process unique to every firm. Therefore, she suggests that firm growth is best studied at company level and through historical analysis. Fiberline's behavior in keeping to a single technological base

and in continuing to focus on broad markets illustrates the path-dependencies of the company's development. These two growth paths of Fiberline, the determined focus on a single area of specialization and the broad market focus, were both connected to the company's self-conception and image of context. Stated broadly, it may be concluded that over the first 25 years of its existence Fiberline grew to become highly specialized generalists.

In my introduction I discussed the subjective elements of *The Theory of the Growth of the Firm* and quoted Penrose for concluding that

... a theory purporting to explain the process of growth of firms can be useful on two levels. It can be useful even if it only presents a logical model yielding conclusions which seem to correspond to actual events that can be 'observed' in the growth of actual firms. But it will be even better if it helps us to understand the actions behind these events. For this, if we assume that firms act for a purpose, we must find an acceptable assumption as to why they act.¹

The point of Penrose's discussion of the concepts of self-conception and image of context is that they form a mechanism by which firms act. As such, these concepts are the key to explaining what Penrose calls the subjectivity of productive opportunities, which makes firms exploit their resources in particular ways and grow by certain paths. Yet, to Penrose the concepts of self-conception and image of context are inaccessible because they are, she claims, an extremely personal aspect of the growth of the individual firm. I have argued, however, that by considering construction of meaning along the lines suggested by Geertz, the subjective elements that Penrose points to, self-conception and image of context, may be treated and studied not as unknowable, personal fads of the entrepreneur, but as shared cultural expressions of the firm. What my study offers is a new and closer reading of Penrose's theory of firm growth confronting the subjective elements she pointed to but didn't pursue further.

Appendix 1 page 231-236 has been excluded from the published thesis.

This is per agreement with Fiberline Composites to protect sensitive data.

Appendix 2: Composites and profiles

Here I will shortly describe what composites are and what a profile is. Also I will explain for what purposes a profile in reinforced plastic like those Fiberline produce can be used and I will tell more about the materials used by Fiberline in production; fibers, matrix and fillers. The text in this appendix is drawing solely on information given by Fiberline mostly on their webpage.¹

Reinforced plastic is a composite material. Composites consist of two or more different materials, neither of which are well suited for construction purposes on their own, but which in combination result in a strong and rigid material. Composites have been known and used for thousands of years. Straw mixed with clay for building clay huts in the Stone Age is one example.² The concrete of ancient Rome is another.³ Today steel-reinforced concrete is one of the most used composites. In combinations of this type, tensile force is absorbed by the steel reinforcement, while the concrete absorbs the compressive load.⁴

Plastics reinforced with various forms of fiber are another type of composites used by modern society. Reinforced plastics can be divided roughly into two groups: synthetic materials reinforced with short fibers, and synthetic materials reinforced with long (continual) fibers. Composites that are reinforced with short fibers are used primarily for injection moulding or extruded plastic products. Composites reinforced with long or continual fibers are often used in large structures such as ships, pressure tanks, aircrafts, and wind turbine wings. In fiber-reinforced plastic materials the properties of the fibers are used to resist tensile and compressive loads, while the plastic, called the matrix material, transfers shear.⁵

When using reinforced plastic materials instead of traditional materials such as steel or aluminum for example, there are normally significant reductions in weight due, in part, to

the specific properties of the individual components and low dead weight, and partly because it is possible to produce composites for specific purposes. Because it is a combination of materials, a composite product can be combined and designed to fit specific load-bearing capacities, while providing a number of advantages in comparison to traditional materials, such as resistance to chemicals, as well as electrical and thermal insulating properties.⁶

What is a profile and what can it be used for?

A profile has a fixed geometry, is produced in some form of continuous process and can be cut up in to desired lengths. Profiles can be made in many different materials with different properties and can be used for many purposes. As just described reinforced plastic can be tailored to exhibit properties which makes it suitable for substituting more traditional materials like steel, aluminum, concrete or wood. Today Fiberline produces profiles for three focus markets which can demonstrate some of the versatility of profiles in reinforced plastic.



Profiles in different geometries

Fiberline produce profiles for windows and facades in which the properties of the reinforced plastic material is exploited to make frames and sills meet heightened requirements for insulating without compromising design flexibility. Frames made by reinforced plastic can for example be made so thin that they are almost invisible in the finished build. Also large profiles can be used for cladding facades and Fiberline for

example produces a translucent profile for this. For cladding facades high stiffness and low weight gives design possibilities not offered by conventional materials.⁷

Profiles in reinforced plastic can also be used for many other purposes in construction to provide an alternative to concrete, steel, aluminum and wood which is another focus area for Fiberline called structural profiles. They produce beams, brackets, tubes, decking systems and grating for this which are mostly standard profiles produced to stock.⁸

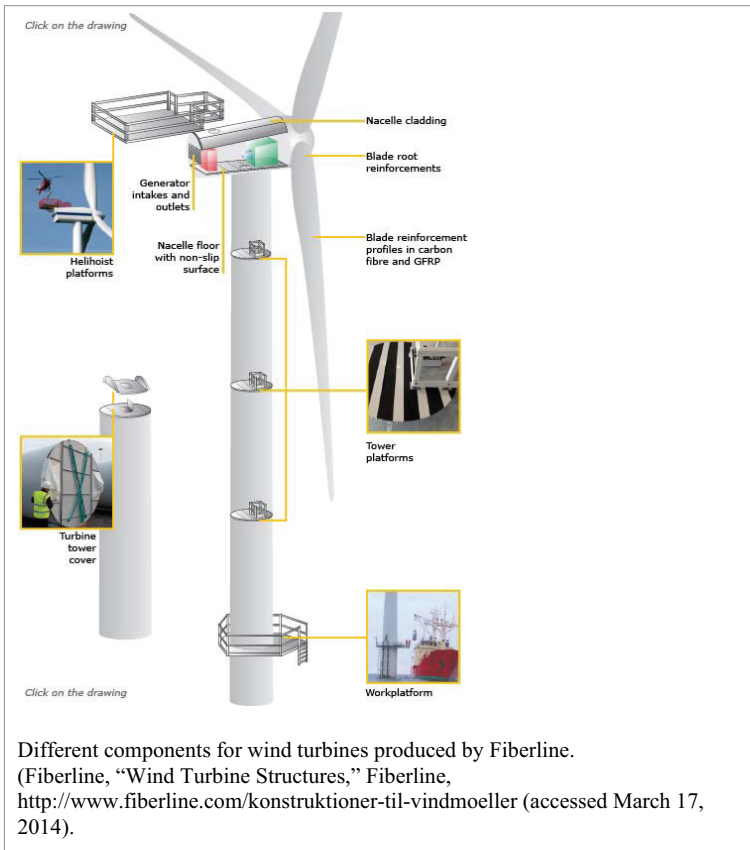
Another focus is the wind turbine industry for which Fiberline manufactures profiles for reinforcing the blade. Here the consistent longitudinal strength of the profiles is exploited and complex materials used to maximize strength. Also they produce blade root reinforcements. Here the high bushing pull-out strength of the profiles and the fact that bushings can be placed closer together makes a reduced blade root diameter possible compared to conventional solutions. Apart from this a number of different structures for the wind turbine is produced in reinforced plastic profiles for example helicopter hoist platforms used for dropping off maintenance personnel. The strength of the profiles is an advantage as well as the fact that the materials are corrosion free which is a clear strength in the often tough environment of especially off shore wind turbines.⁹

Fibers

The choice of reinforcement is important for the properties of the profile, including mechanical properties such as strength and stiffness. Carbon fiber is sometimes used but glass fiber is the most common. Glass fiber refers to the actual fibers, used in the composites whereas fiberglass refers to the finished composite. The orientation of the reinforcement is also of great importance to the properties of finished products as regards load-carrying capacity. Fiberline use a combination of various types of roving and different types of complex weaves and mats of fiber. Structural profiles used for construction are for example often subjected to loads that are transversal to the length of

the profile and these profiles must often be capable of resisting pull-out loads from bolts etc. Therefore not only smooth unidirectional fiber roving is used, but also roving in which some of the fibers are oriented transversely. In addition, mats and weaves with different fiber orientations are used. Mats and weaves with fiber orientations of between 45° and 90° contribute primarily to improving bolt pull-out strength and mechanical properties in the transverse direction. The combination of fiber roving and mats can be tailored to the requirements of the specific profile based on the needs of the customer. The pultrusion process necessitates that a certain number of the fibers are oriented in the direction of pultrusion, but the reinforcement can otherwise be structured in innumerable ways.¹⁰

If a profile is to be located in a corrosive environment a “surfacing veil” is used. This can be thin fiber glass matting, thin thermoplastic polyester matting or acrylic matting which is placed on the entire profile surface to protect the glass fibers against corrosion and subsequent deterioration of the mechanical properties of the profile.¹¹



Types of roving



Unidirectional



Spun



Mock

Types of mat



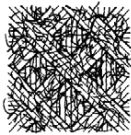
Continuous mat
random fibre orientation



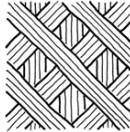
Weave



Complex mat



Bidirectional complex mat
weave + random fibre orientation



Multi-ax mat

Fibers (Fiberline, "Reinforcement," Fiberline, <http://www.fiberline.com/armring>, (accessed March 17, 2014).

Matrix

The role of the matrix in a composite profile is to bind the reinforcement together and keep the reinforcement correctly positioned in relation to the cross section which gives the optimal utilization of the mechanical properties. The type of matrix also determines properties such as corrosion resistance, electrical insulation properties, and fire and temperature resistance.

Three types of plastic are most commonly used as matrix: Polyester, epoxy and phenol. Polyester is the most frequently used as it produces a composite with good all-round properties. Unsaturated polyester can be divided into three main groups: orthopolyester, isopolyester and vinylester. Compared with orthopolyester, isopolyester increases impact resistance, provides greater flexibility, and increases resistance to temperatures. It also increases corrosion resistance. Vinylester has even better corrosion resistance and thermal properties. Also vinylester provides a composite with better impact resistance and improved fatigue properties. Epoxy is another plastic material which is used primarily for carbon-reinforced profiles, giving composites better fatigue and mechanical properties. Epoxy is more resistant to thermal influences and has better electrical properties. Phenol is used as a matrix when there are requirements to high fire resistance, temperature resistance, low smoke generation, and flame retardation when subjected to fire.¹²

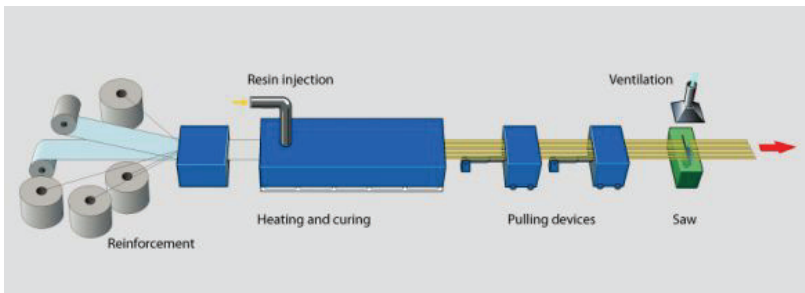
Additives are agents which are added to the matrix. They can be divided into three fundamental groups: price-reducing, process-related and function-related additives. No matter their purpose additives will influence the corrosion resistance of profiles, as well as their properties. Process-related additives are substances that have an effect on the pultrusion process and on the properties and appearance of a cured profile. For example additives are used to avoid excessive shrinkage during curing of profiles, to prevent formation of cracks in the surface, to increase profile resistance to corrosion and

improving fatigue properties. Function-related additives have a beneficial effect for the use of a finished profile. One example is pigments added for colour. Fire retardants are another example. Price-reducing additives is used to fill out the form of a profile, which enables a reduction of more expensive reinforcement and matrix materials in the profile. This reduces the price of the finished profiles accordingly. However profiles have poorer mechanical properties when the amount of reinforcement is reduced and most types of price-reducing additives also result in lower corrosion resistance and diminished resistance to most chemicals.¹³

Appendix 3: The pultrusion process

I will give a short description of the pultrusion process as it is done in Fiberline today based on information from the web page of Fiberline.¹

Pultrusion takes place by continual reinforced material being pulled through a guide (tool) where the fibers are placed precisely in relation to the profile cross section. The fibers are then led through processing equipment where they are impregnated with the matrix material. The combined mixture of fibers and matrix is pulled on through the heating equipment where the profile is cured in its final geometry. The fully cured profile is then pulled forward to a saw which cuts the profiles into defined lengths.



The process of pultrusion

The actual combination of reinforcement in a profile: the type and number of continual fibers, as well as the type and dimensions of complex weaves and mats are arranged in a way that facilitates visual control when the fibers and mats are positioned in a profile. Precise positioning of fibers and mats is very important to the properties and qualities of the finished product.²

When the reinforcement is pulled into the processing equipment, the matrix is added by injection. Pultrusion by injection is advantageous in controlling and checking the reinforcement; it speeds changing from one profile to another, and eases matrix changes during a process. The degree of impregnation of the fibers is another decisive factor for the properties of the finished product.³

After the fibers are impregnated with the injected matrix the final curing takes place in the last section of the processing equipment. A profile is thus fully cured and stable in form when it leaves the processing equipment. The pulling power overcomes friction in the processing equipment and is the driving force in the process. It is provided by pullers placed outside the processing equipment. During the last phase of the process, the profiles are shortened by a saw mounted to move at the same speed as the profile being pulled out of the equipment, which ensures a continual process.⁴

Appendix 4: Methods for producing reinforced plastic

Method of production	Production efficiency	Investment cost	Environmental impact
Lay-up by hand	1	1	1
Spray-up	2	2	1
Embossing	3	6	5
Filament winding	2	5	2
Injection molding	2	3	5
Autoclaving	1	4	6
Pultrudering	6	6	6

Fiberline, *Meet the owners*, Power Point Presentation, 2004.

In his time at Jotun Henrik Thorning had made a comparison of the different methods of producing reinforced plastic at the time. Today he has summed up the main points in this

framework that Fiberline uses when introducing new employees to the company and explaining the idea of the production to them. As Henrik Thorning tells it basically explains why he saw options in the method. In the 1970s when he made the original evaluation the assessment of pultrusion was based on a loose estimate as the injection method that Henrik Thorning was interested in wasn't yet developed fully.

For more details on different methods of production, as they are done today, see CompositesWorld, "Fabrication methods," CompositesWorld, 1 January 2014, <http://www.compositesworld.com/articles/fabrication-methods> (accessed 12 April 2014). Most, but not all the methods evaluated by Henrik Thorning are discussed on the site.

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Notes

1. Introduction

1. 25 år i profil, unpublished company history, 2004, Fiberline, 9.
2. 25 år i profil.
3. Edith Penrose, *The Theory of The Growth of The Firm*, 4th ed. (Oxford: Oxford University Press, 2009), 3-5.
4. Penrose, *The Theory of the Growth of the Firm*, 60.
5. *Ibid.*, 22.
6. Edith T. Penrose, "The Growth of the Firm - A Case Study: The Hercules Powder Company," *Business History Review* 34, no. 1 (Spring, 1960): 3.
7. Penrose, *The Theory of the Growth of the Firm*, 43.
8. Penrose, *The Theory of the Growth of the Firm*, 237. Penrose's description of firm development as an evolutionary process is not to be understood as a biological analogy. She is critical towards the extensive use of biological metaphors in economics, because it reduces the significance of the purposive actor, and she notes that "To treat the growth of the firm as the unfolding of its generic nature is downright obscurantism. To treat innovations as chance mutations not only obscures their significance but leaves them essentially unexplained, while to treat them directly as purposive attempts of men to do something makes them far more understandable. Edith T. Penrose, "Biological Analogies in the theory of the firm," *American Economic Review* 42, no. 5 (1962): 819.
9. Edith T. Penrose, "History, the social sciences and economic theory with special reference to multinational enterprise", in *Multinational Enterprise in Historical Perspective*, ed. A. Teichova, M. Levy-Leboyer and H. Nussbaum (Cambridge: Cambridge University Press, 1989), 11.
10. Penrose notes that it was her intention to include the case study in *The Theory of the Growth of the Firm*, but that it was omitted in order to keep down the size of the book. Penrose, "The Growth of the Firm - A Case Study," 2. The omission of the case study article seems a shame however, as it exemplifies the use, Penrose saw for her growth theory. Apart from demonstrating the research method she intended the case study also shows theory to be a guiding tool helping the researcher to grasp reality. She later noted that "theory is needed precisely because reality is so complicated." Penrose, *History, the social sciences and economic theory*, 11, quoted in P. Penrose and C. Pitelis, "Edith Elura Tilton Penrose: life, contribution and influence." in *The Growth of the Firm: The Legacy of Edith Penrose*, ed.

Christos Pitelis (Oxford: Oxford University Press, 2002), 29. The same points and quote are found in Pitelis' introduction to the fourth edition of *The Theory of The Growth of the Firm*. Christos N. Pitelis, "Introduction," in *The Theory of The Growth of the Firm*, Edith Penrose (Oxford: Oxford University Press, 2009) ix-xlvii.

11. In the management of the firm Penrose distinguishes between managerial and entrepreneurial resources from which services can be drawn. She notes that "Entrepreneurial services are those contributions to the operations of a firm which relate to the introduction and acceptance on behalf of the firm of new ideas, particularly with respect to products, locations, and significant changes in technology ... Entrepreneurial services are contrasted with the managerial services, which relates to the execution of entrepreneurial ideas and proposals and to the supervision of existing operations." Penrose, *The Theory of the Growth of the Firm*, 28-29.

12. Penrose, "The Growth of the Firm - A Case Study," 1-23.

13. Ibid., 19.

14. Ibid.

15. Penrose, "The Theory of the Growth of the Firm," 28-29.

16. Penrose, "The Growth of the Firm - A Case Study," 3.

17. Ibid., 23.

18. Penrose, *The Theory of the Growth of the Firm*, 4.

19. Ibid, 30.

20. Ibid.

21. Penrose, *The Theory of the Growth of the Firm*, 23.

22. Ibid. 38.

23. Nicolai J. Foss, Peter G. Klein, Yasemin Y. Kor and Joseph T. Mahoney, "Entrepreneurship, subjectivism, and the resource-based view: Toward a new synthesis," *Strategic Entrepreneurship Journal* 2, (2008): 156. See also Yasemin Kor, Joseph Mahoy and Steven Michael, "Resources, Capabilities and Entrepreneurial Perceptions," *Journal of Management Studies* 44, no. 7 (November 2007): 1187-1212; Karl E. Weick, *Sensemaking in Organizations* (Sage, 1995).

24. Clifford Geertz, "Thick Description: Toward an Interpretive Theory of Culture," in *The Interpretation of Cultures: Selected Essays*, ed. Clifford Geertz (New York: Basic Books, 1973), 4-29; Weick, *Sensemaking in Organizations*.

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25. For references to extensive literature reviews see Alexander McKelvie and Johan Wiklund, "Advancing firm growth research: a focus on growth mode instead of growth rate," in *New perspectives on firm growth*, ed. Per Davidsson and Johan Wiklund (Cheltenham: Edward Elgar Publishing, 2013), 141.
26. N.J. Foss, "Edith Penrose, economics and strategic management," in *The Growth of the Firm: The Legacy of Edith Penrose*, ed. Christos Pitelis (Oxford, Oxford University Press, 2002), 147-164; Foss et al., "Entrepreneurship, subjectivism, and the resource-based view," 73-94.
27. McKelvie and Wiklund, "Advancing firm growth research," 139-175; Tom McGovern and Tom McLean, "The growth and development of Clarke Chapman from 1864 to 1914," *Business History* 55, no. 3 (2013): 448-478.
28. McKelvie and Wiklund, "Advancing firm growth research," 144; F. Delmar, P. Davidsson and W. Gartner, "Arriving at the high-growth firm," *Journal of Business Venturing* 18, (2003): 189-216.
29. Dean Shepard and Johan Wiklund, "Are We Comparing Apples With Apples or Apples With Oranges? Appropriateness of Knowledge Accumulation Across Growth Studies," *Entrepreneurship Theory and Practice* (January 2009): 105-123.
30. McKelvie and Wiklund, "Advancing firm growth research," 143.
31. A. Coad, "Firm Growth: A survey," *Papers on Economics and Evolution* (March, 2007): 59, quoted in McKelvie & Wiklund, "Advancing firm growth research," 141.
32. Per Davidsson, Leona Achtenhagen and Lucia Naldi, "Towards an integrative framework for future research on small firm growth," in *New perspectives on firm growth*, ed. Per Davidsson and Johan Wiklund (Cheltenham: Edward Elgar Publishing, 2013), 181.
33. Penrose, *The Theory of the Growth of the Firm*, 1-2.
34. McKelvie and Wiklund, "Advancing firm growth research," 153.
35. *Ibid.*, 144. See also F. Delmar, P. Davidsson and W. Gartner, "Arriving at the high-growth firm," 189-216.
36. Christos N. Pitelis, "Globalization, Development, and History in the Work of Edith Penrose," *Business History Review* 85, no. 1 (Spring 2011): 65-84. In the conclusion Pitelis clearly states that historical analysis using what he describes as Penrose's theory-history nexus has been given scant attention (p 83). On the other hand the bold statement in Pitelis' introduction that *The Theory of the Growth of the Firm* is one of the most cited books in the field of business history (p 66) is left without further elaboration or reference.

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37. Mike W. Peng, "The resource-based view and international business," *Journal of Management* 27 (2001): 803-829.
38. Geoffrey Jones and Tarun Khanna, "Bringing history (back) into international business," *Journal of International Business Studies* 37 (2006): 453-468. One of the points of Jones and Khanna is to show the benefits that international business scholars can draw from using historical analysis and a Penrosian framework. However they don't really give any examples from the field of business history.
39. Micheal L. Pettus, "The resource-based view as a developmental growth process: Evidence from the deregulated trucking industry," *Academy of Management Journal* 44, no. 4 (August 2001): 878.
40. Pettus, "The resource-based view as a developmental growth process," 878.
41. Pettus, "The resource-based view as a developmental growth process," 881 and 883. The companies accounted for 70% of the growth in the industry in the period. He draws on financial reports for information on growth in revenues, employees and assets and further uses the management statements of the reports to analyzing strategic decisions of the companies.
42. Pettus, "The resource-based view as a developmental growth process," 888.
43. Ibid. 886.
44. McGovern and McLean, "The growth and development of Clarke Chapman," 448.
45. Ibid. 468-469. The same point has been made by Foss and his colleagues. Foss et al., "Entrepreneurship, subjectivism, and the resource-based view," 83.
46. McGovern and McLean, "The growth and development of Clarke Chapman," 463-464.
47. Ibid. 467-468.
48. Ibid. 450. Though McGovern and McLean actually mention environmental image as an important aspect of a Penrosian framework.
49. Carol Matheson Connell, "Entrepreneurial Enterprise and 'Image' in the Nineteenth-century Trading Firm: Shaping the Legal Environment for Business," *Business History* 48, no. 2 (April 2006): 193-219.
50. Having already discussed the strong arguments Penrose gives for doing historical research of firm growth processes this to me seems a baffling fact worthy of both further study and discussion.
51. Mona Ericson, *A Narrative Approach to Business Growth* (Cheltenham: Edward Elgar, 2010).
52. Ericson, *A Narrative Approach to Business Growth*, 39-42.

53. Ibid. 44-47.

54. See for example Joanne Martin, *Organizational culture: mapping the terrain* (California: Sage, 2002).

55. See for example Gerry Johnson, *Strategy as practice: Research directions and resources* (Cambridge: Cambridge University Press, 2007).

56. See for example Barbara Czarniawska, *Narratives in Social Science Research* (London, 2004); David Boje, *Storytelling Organizations* (London, 2008).

57. Kenneth Lipartito, "Business Culture," in *The Oxford Handbook of Business History*, ed. Geoffrey Jones and Jonathan Zeitlin (Oxford: Oxford University Press, 2008), 603-717; Michael Rowlinson and Stephen Procter, "Organizational Culture and Business History," *Organization Studies* 20, no. 3 (1999), 369-396; Hans Landström, *Pioneers in Entrepreneurship and Small Business Research* (Boston: Springer, 2005).

58. Rowlinson and Procter, "Organizational Culture and Business History," 388.

59. Ibid., 384.

60. Kenneth Lipartito, "Culture and the Practice of Business History," *Business and Economic History* 24, no. 2 (Winter 1995): 1-41.

61. Ibid. 2.

62. Rowlinson and Procter, "Organizational Culture and Business History," 370-371. See also Joanne Martin, *Organizational culture*.

63. Rowlinson and Procter, "Organizational Culture and Business History," 388-390.

64. Ibid., 389. They are quoting Andrew Godley and Oliver M. Westall, "Business history and business culture: an introduction," in *Business History and business Culture*, ed. Andrew Godley and Oliver M. Westall (Manchester: Manchester University Press, 1996), 5.

65. Lipartito, "Business Culture," 603-717.

66. Per H. Hansen, "Business History: A Cultural and Narrative Approach," *Business History Review* 86, Issue 4 (Winter 2012): 696-697.

67. Hansen, "Business History," 697.

68. Per H. Hansen, "Organizational Culture and Organizational Change: A Narrative Analysis of the Transformation of Savings Banks in Denmark, 1965-1990," *Enterprise and Society* 8, no. 4 (2007):924.

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69. Hansen, "Business History," 695; Geoffrey Roberts, *The History and Narrative Reader*, (London, 2001).
70. Hansen, "Business History," 701.
71. Brita Lundström, *Grundat 1876: Historie och företagsidentitet inom Ericsson*, (Stockholm, 2006).
72. Jeffrey R. Fear, *Organizing Control: August Thyssen and the Construction of German Corporate Management*, Cambridge, Mass: Ebrary, 2005.
73. Robert F. Freeland, *The Struggle for Control of the Modern Corporation: Organizational Change at General Motors, 1924-1970*, Cambridge, 2001.
74. Hansen, "Organizational Culture and Organizational Change, 924. Building on an ethnographic study and drawing on the discussion of narratives and organizational dynamics in organization theory Geiger and Antonacopoulou makes much the same point, by showing how blind spots and inertia is bound to the use of narratives in a process of organizational change. Daniel Geiger and Elena Antonacopoulou, "Narratives and Organizational Dynamics: Exploring Blind Spots and Organizational Inertia," *The Journal of Applied Behavioral Science* 45, no. 3 (September 2009): 411-436.
75. Per H. Hansen, "Networks, Narratives, and New Markets: The Rise and Decline of Danish Modern Furniture Design, 1930-1970," *Business History Review* 80, no. 3 (Autumn 2006): 449-83; Per H. Hansen, *Da Danske Møbler Blev Moderne: Historien Om Dansk Møbeldesigns Storhedstid*, København, 2006.
76. Mads Mordhorst, "Arla and Danish national identity – business history as cultural history," *Business History* 56, (January 2014): 116-133; Mads, Mordhorst, "The Co-Operative Movement in Denmark, between National Identity and Globalization" (paper presented at "Corporate Images - Images of the Corporation", European Business History Conference, Frankfurt am Main, Tyskland, 1-3. Sept. 2005).
77. Mitchel Y. Abolafia, "Making Sense of Recession: Toward an Interpretive Theory Economic Action," in *The Economic Sociology of Capitalism*, ed. Victor Nee and Richard Swedberg (Princeton, 2005), 204-227; Mitchel Y. Abolafia, "Narrative Construction as Sensemaking: How a Central Bank Thinks," *Organization Studies* 31, no. 3 (2010): 349-67; Per H. Hansen, "Making Sense of Financial Crisis and Scandal: A Danish Bank Failure in the First Era of Finance Capitalism," *Enterprise and Society* 13, no. 3 (2011): 672-706.

2. Analytical strategy

1. Geertz, "Thick Description," 5.
2. Kenneth Lipartito, *Connecting the Cultural and the Material in Business History*, Presidential address given at the Business History Conference 2013, Oxford University Press, 2013, 687.

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3. Penrose, *The Theory of the Growth of the Firm*, 23.
 4. Geertz, "Thick Description," 6-7.
 5. Barbara Czarniawska, *A Theory of Organizing* (Cheltenham, 2008).
 6. Geertz, "Thick Description," 23. Also in his definition of culture Geertz uses the general and collective term *man(kind)* rather than individual actor.
 7. Jakob Krause-Jensen, "Clifford Geertz: Thick Description. New York 1973," in *Antropologiske Mesterværker*, ed. Høiris Ole (Århus: , 2007), 249.
 8. Jakob Krause-Jensen, "Clifford Geertz," 249.
 9. Geertz, "Thick Description," 11.
 10. Ibid.
 11. William H. Sewell Jr., "Geertz, Cultural Systems, and History: From Synchrony to Transformation," in *The Fate of "Culture": Geertz and beyond*, ed. Sherry B. Ortner (Berkeley: University of California Press, 1999), 35-54; Liv Egholm, "Mikrohistorie," *Den Jyske Historiker* 85 (1999): 20-46.
 12. Sewell Jr., "Geertz, Cultural Systems, and History," 35-54; Egholm, "Mikrohistorie," 20-46.
 13. Geertz, "Thick Description," 7-9. Here Geertz presents an example of a sheep raid taken from his own field studies in Morocco, where a very detailed history of a single event is used to discuss changing power structures among the Moroccans and the challenges this offered the French in a period of declining colonial power. See also Natalie Zemon Davis, "Clifford Geertz on Time and Change," in *Clifford Geertz by His Colleagues*, ed. Richard A. Shweder and Byron Good (The University of Chicago Press, 2003), 39.
 14. Sewell Jr., "Geertz, Cultural Systems, and History," 41-42.
 15. Zemon Davis, "Clifford Geertz on Time and Change," 41-42. See also Clifford Geertz, *After the Fact: Two Countries Four Decades One Anthropologist* (Cambridge. Mass.: Harvard University Press, 1995).
 16. Zemon Davis, "Clifford Geertz on Time and Change," 39; Egholm, *Mikrohistorie*, 20-46.
 17. Geertz, *After the Fact: Two Countries Four Decades One Anthropologist*, 2. Coad's conclusion about the chaotic findings in growth studies comes to mind. McKelvie & Wiklund, "Advancing firm growth research," 141.

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18. Geertz, "Thick Description," 5.
 19. Ibid.
 20. Ibid.
 21. Ibid. 17.
 22. Geertz, "Thick Description," 9-10
 23. Zemon Davis, "Clifford Geertz on Time and Change," 41-42.
 24. David Carr, "Narrative and the Real World: An argument for continuity," *History and Theory* 25, No. 2 (May, 1986): 117-131.
 25. Hansen, "Business History," 696-697.
 26. Anna Linda Musacchio Adorasio, *Storytelling in Organization: From Theory to Empirical Research* (London: Palgrave Macmillian, 2009), 150.
 27. Between Fiberline, the institute at Copenhagen Business School to which I am affiliated and myself a written agreement has been made stating that I am free to use Fiberline's archival material as well as the interviews I have conducted there as I see fit and that Fiberline have no ownership of my work. However should Fiberline wish to they have the right to be kept anonymous in any publication drawing on material from their archive or interviews conducted in the company.
 28. Geertz, "Thick Description," 23.
 29. Ibid., 28.
 30. Christopher Kobrak and Andrea Schneider, "Varieties in business history: Subject and methods for the twenty-first century," *Business History* 53, no. 3 (June 2011): 401-424.
 31. Musacchio Adorasio, *Storytelling in Organization*, 150.
 32. Mordhorst, "Arla and Danish national identity."
 33. Penrose, "History, the social sciences and economic theory," 11.
 34. Penrose argues that a precondition for her theory is an unregulated market and as such she doesn't consider other contextual factors. The Hercules case is built on the same precondition and apart from mentioning that the company was founded when a larger company was broken into three by action of the federal court only market context is considered. Penrose, "The Theory of the Firm – A case Study," 4.

35. McGovern and McLean, "The Growth and development of Clarke Chapman," 467-468.

36. Geertz, *After the Fact*, 57.

3. Founding a company and formulating a basic narrative

1. Dorthe Thorning and Henrik Thorning, interview by author, Fiberline, May 25, 2012.

2. The introduction of new plastic materials like polyester and epoxy resin to the Danish market made the production of composite plastic materials possible from around the middle of the 1940s. Povl A. Hansen and Göran Serin, *Plast, Fra galanterivarer til "high-tech": Om innovationsudviklingen i plastindustrien* (Viborg: Akademisk Forlad, 1989), 84.

3. Joe Bailey and Robert J. McNish, "Pultrusion – Past, Present and Future," *35th Annual Technical Conference 1980 Reinforced Plastics*, Composite Institute, The Society of the Plastic Industry, Inc. (USA, 1980), section 4-B, 1-2.

4. Bailey and McNish, *Pultrusion*, 1-2; Minutes of Board Meeting, Fiberline, June 1980. A few English companies were producing simple profiles by pultrusion as well as an estimated 40 American companies in 1976. However the American companies didn't export much, and also these companies were generally focused on a single industry offering a narrow selection of products.

5. Penrose, *The Theory of the Growth of the Firm*, 73.

6. The money had to be repaid over a 4 year period at an 8% interest. Sunnmørsbanken A/S, Amortiseringsplan, April 2, 1979, Fiberline, Middelfart. The average exchange rate of the Norwegian Krone to the Danish Krone was 96.29 in 1979. Norges Bank, "Valutakurser," Norges Bank, <http://www.norges-bank.no/no/prisstabilitet/valutakurser/> (accessed December 1, 2013).

7. Peder Irgens, interview by author, Kolding, December 18, 2012; Henrik Thorning, interview by author, December 19, 2012.

8. Notes from conversation with Henrik Thorning and Dorthe Thorning, November 8, 2012.

9. 25 År i Profil, 4.

10. Thorning, interview, December 19, 2012.

11. Jan Madsen and Morten Hother Sørensen, *S.C. Sørensen. Fra købmandskab til finansspekulation*, (Børsen Bøger, 1994), 140-143.

12. "Registreringsanmeldelser," *Statstidende*, (September, 1979), 13.

13. Aktivbanken A/S, "Vedr. Fiberline A/S under stiftelse," December 12, 1978, Fiberline. FIH is Short for the name of a larger Danish bank called Finansieringsinstituttet for Industri og Håndværk A/S which

was then focusing on financing companies, mostly in the industry. FIH Erhvervsbank, "Historie," FIH Erhvervsbank, (accessed April 12, 2014).

14. "Bankfusionen var nødvendig," *Horsens Folkeblad*, October 15, 1970.

15. Thorning, interview, May 25, 2012.

16. Henrik Thorning's father owned a large farm outside Kolding and Dorthe Thornings father was the managing director of one of the largest companies in Kolding at that time. Thorning, interview, May 25, 2012.

17. "Registreringsanmeldelser," 13.

18. "Aktieselskabsloven af 1973 med kommentarer af Bent Græsvænge, Viggo Larsen og Axel Roelsen," (København: GEC Gad, 1972), 112.

19. Thorning, interview, May 25, 2012.

20. Ibid.

21. The meeting of the board on January 30th 1980 is an example of this. Minutes, January, 1980.

22. Penrose, *The Theory of the Growth of the Firm*, 34.

23. Daniel Hjorth, "Lessons from Iago: Narrating the event of Entrepreneurship," *Journal of Business Venturing* 22 (2007): 712-732.

24. Jotun Group, *Norpol Polyestere*, product information/marketing material, 1978, Jotun Group, Norway; Thorning, interview, November 6, 2012.

25. Bailey and McNish, "Pultrusion – Past, Present and Future," 1-2.

26. Ibid.

27. Henrik Thorning, Interview by author, November 6, 2012; Jotun Group, *Norpol Polyestere*; "Sådan er vores arbejdsplads: Danmarks første fabrik for plastprofiler er blevet til i Nr. Bjert," *Jydske Vestkysten – Kolding*, February 10, 1980, 6

28. Irgens, interview.

29. Thorning, interview, November 6, 2012.

30. Fiberline, *Pultrusion*, Fiberline, <http://www.fiberline.com/komposit/pultrusion/pultrusion>, (accessed January 14, 2013).

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31. "Pultrusion," *Plast Panorama Scandinavia* 32 (March 1982): 16.
32. "Pultrusion," *Plast Panorama Scandinavia* 32 (March 1982): 16-17; "Ny armeret plastprofil er stærkere og mere korrosionsbestandigt," *Plast Panorama Scandinavia* 32 (April 1982): 31.
33. Thorning, interview, November 6, 2012.
34. "Ny virksomhed fandt niche og fik succes." *Jydske Tidende*, November 1, 1981
35. 25 år I Profil, 2.
36. Joseph A. Schumpeter, *The Theory of Economic Development* (Cambridge: Harvard University Press, 1912 (1961)).
Quoted after Ronald S. Burt, "The Network Entrepreneur," in *Entrepreneurship: The Social Science View*, ed. Richard Swedberg (Oxford: Oxford University Press, 2000), 301.
37. Robert Smith and Alistair R. Anderson, "The devil is in the e-tale: form and structure in the entrepreneurial narrative," in *Narrative and Discursive Approaches in Entrepreneurship: A Second Movements in Entrepreneurship Book*, ed. Daniel Hjorth and Chris Steyaert (Cheltenham: Edward Elgar, 2004), 125–143.
38. Smith and Anderson, "The devil is in the e-tale," 142.
39. Ibid.
40. These are observations made in a western or capitalist context and allowing for differences in this broad cultural setting. The massive growth in entrepreneurship studies over the last 30 years is often ascribed to a current focus on entrepreneurship as the driver of economic growth. As such entrepreneurship is seen as a positive force, the entrepreneur as a hero, and his actions as moral and righteous. Garvan Whelan and Colm O’Gorman, "The Schumpeterian and Universal Hero Myth in Stories of Irish Entrepreneurs," *The Irish Journal of Management* 28, no. 2 (2007): 79-107; Alistair R. Anderson and Lorraine Warren, "The entrepreneur as hero and jester: Enacting the entrepreneurial discourse," *International Small Business Journal* 29, no. 6 (December 2011): 589-609.
41. Smith and Anderson, "The devil is in the e-tale," 127.
42. Ibid., 142.
43. Henrik Thorning, interview by author, November 6, 2012.
44. Venkataraman, Sankaran, Saras D. Sarasvathy, Nicholas Dew and William R. Foster, "Of Narratives and Artifacts," *Academy of Management Review* 38, no. 1 (Jan 2013): 164.

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45. Dorthe Thorning and Henrik Thorning, Interview by author, August 2, 2011.
46. 25 år i Profil, 2.
47. "Fiberline A/S i Nr. Bjert: Ny virksomhed fandt niche og fik succes."
48. "Sådan er vores arbejdsplads: Danmarks første fabrik for plastprofiler er blevet til i Nr. Bjert." *Jydske Tidende*, November 1, 1981.
49. "Sådan er vores arbejdsplads: Danmarks første fabrik for plastprofiler er blevet til i Nr. Bjert."
50. "Fiberline A/S i Nr. Bjert: Ny virksomhed fandt niche og fik succes."
51. "Sådan er vores arbejdsplads: Danmarks første fabrik for plastprofiler er blevet til i Nr. Bjert." Producing steel requires much energy for heating.
52. Finn Ebbesen, "Det kan gøres: ny virksomhed slår sig igennem på kun et år," *Jydske Vestkysten – Kolding*, August 6, 1980.
53. *Plast Panorama - Jubilæumsskrift 25 År*, (Plastindustrien i Danmark Sektionen for Kompositmaterialer, 2003); Thorning, interview, November 6, 2012.
54. The figure shown here has been drawn up by me based on Henrik Thorning's description.
55. Henrik Thorning, *Meet the owners*, Fiberline, Middelfart, 2004.
56. "Sådan er vores arbejdsplads: Danmarks første fabrik for plastprofiler er blevet til i Nr. Bjert."
57. Nyborg, Tune, "Entusiasme og benhårdt arbejde: Interview med Jens Johansen, Fiberlines første værkfører," *25 år i profil*, unpublished company history, 2004, Fiberline, Middelfart, 11.
58. Ibid.
59. Henrik and Dorthe Thorning came up with the name early on. It refers to the process of production where lines of fibers are pulled through the machine. "A visualization of the process," Henrik Thorning says. As such the name of the company is in itself a narrative focused on production. Notes from conversation with Henrik Thorning, January 24, 2013.
60. The literature on International Entrepreneurship and in particular that on Born Global firms has discussed many different ways to define the birth of a company. The thought being that a clear and universal concept of birth will enable comparable and predictive analysis of the phenomenon. See for example Tamer S. Cavusgil and Gary Knight, *Born Global Firms: A New International Enterprise*,

(Business Expert Press, 2009). The actions of Fiberline however clearly shows a company's birthday to be a construct.

61. 25 År i Profil.

4. *The prior experience of Henrik Thorning and the context of the Start-up*

1. It should be noted however that the methods of grouping companies in Danish statistics leaves a number of companies in other groups than those connected to plastic, for example producers of reinforced plastic using glass fiber which are grouped with companies producing in glass. Because of this Hansen and Serin estimates that the plastic industry is probably much larger. Hansen and Serin, *Plast*, 162 & 169. See also Ole Grøndahl Hansen, ed., *Plasten og danskerne* (København: Plastindustrien, 2007); Kjeld Frederiksen, "Dansk plastindustri i 1982 – eksport skaber fremgang," *Plast Panorama Scandinavia* 32 (December 1982): 36-37.

2. Poul Villaume and Olaf Olsen, *Lavvækst og frontdannelser 1970-1985*, Gyldendal og Politikens Danmarkshistorie, Vol. 15 (Gyldendal, 2005): 167-172.

3. Grøndahl Hansen, ed., *Plasten og danskerne*.

4. "Dansk Plastindustri," *Plast Panorama Scandinavia* 29 (April 1979): 4-5. In Danish statistics at the time these had between 20 and 100 employees.

5. Hvad eksporterer plastindustrien? En oversigt over plastvareeksportens udvikling og sammensætning, småtryk no. 4, *Plast-sammenslutningen*, 1984, 34-36 and 43.

6. "Går plastforarbejdningen over til de plastkomponentforbrugende virksomheder?" *Plast Panorama Scandinavia* 29 (June 1979):14-15.

7. Davis Steward, "Plastindustrien i Vesteuropa," *Plast Panorama Scandinavia* 32 (June 1982): 25.

8. "Dansk Plastindustri," *Plast Panorama Scandinavia* 29 (April 1979): 4-9.

9. Maj Bach Madsen, "Styren-skader bliver svære at bevise," *Videnskab Dk*, March 14, 2011, <http://videnskab.dk/miljo-naturvidenskab/styren-skader-bliver-svaere-bevise> (Accessed May 22, 2014).

10. Madsen, "Styren-skader bliver svære at bevise."

11. Hans Gabellgaard, "Fra håndoplægning til industri," *Plast Panorama - Jubilæumsskrift 25 År*, (Plastindustrien i Danmark Sektionen for Kompisitmateriale, 2003): 23.

12. Gabellgaard, "Fra håndoplægning til industri."

13. Gabellgaard, "Fra håndoplægning til industri."

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14. Irgens interview.
 15. LM Wind Power, "LM to LM Wind Power," LM Wind Power, <http://www.lmwindpower.com/About-Us/History> (accessed December 14, 2012).
 16. *Fremsyn for kompositindustrien i Danmark*, Internal report Kompositindustriens bestyrelse, draft, May 27, 2005.
 17. *Plast Panorama - Jubilæumsskrift 25 År*, 2003.
 18. *Ibid.*
 19. Villaume and Olsen, *Lavvækst og frontdannelser 1970-1985*, 167-172.
 20. Irgens interview.
 21. *Plast Panorama - Jubilæumsskrift 25 År*, 2003.
 22. Irgens interview.
 23. Notes from conversation with Henrik Thorning, January 3, 2013.
 24. *Plast Panorama - Jubilæumsskrift 25 År*, 2003.
 25. Henrik Thorning didn't just participate in travel activities and other events in the section, he also became active as the chairman of the section from 1989-1995. *Plast Panorama - Jubilæumsskrift 25 År*, 2003.
 26. *Plast Panorama - Jubilæumsskrift 25 År*, 2003.
 27. "Fiberline A/S i Nr. Bjert: Ny virksomhed fandt niche og fik succes."
 28. Ebbesen, "Det kan gøres: ny virksomhed slår sig igennem på kun et år."
 29. "Sådan er vores arbejdsplads: Danmarks første fabrik for plastprofiler er blevet til i Nr. Bjert."
 30. 25 år i Profil, 2.
 31. *Ibid.*, 41 & 44.
 32. Notes from conversation with Henrik Thorning, March 18, 2014.
 33. Anders Hallen Pedersen was born in 1941 and died in 2009.

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34. Madsen and Hother Sørensen, *S.C. Sørensen*, 137 and 142.
35. Hansen and Serin, *Plast*, 162-171.
36. Madsen and Hother Sørensen, *S.C. Sørensen*, 142.
37. *Ibid.*, 142-143.
38. Thorning, Interview, December 19, 2012.
39. Irgens, interview.
40. Jotun International, "The Merger of 1972," Jotun International, <http://www.jotun.com> (accessed december 12, 2012); Jotun Denmark, "Hvem er Jotun Danmark?" Jotun Denmark, <http://www.jotun.dk> (accessed december 12, 2012).
41. Irgens, interview; Thorning, interview, December 19, 2012.
42. *Ibid.*
43. Gabellgaard, "Fra håndoplægning til industri," 23.
44. Jotun Group, *Norpol Polyestre*; Irgens, interview; Thorning, interview, December 19, 2012.
45. Many different forms of fiber can be used for producing reinforced plastic. The most commonly used is glass fiber and often composites made with these are simply called fiberglass. So to clarify: *Fiberglass* refers to reinforced plastic material made by using glass fiber, while *glass fiber* refers to fiber made from glass. Oxford University Press, "Oxford English Dictionary," <http://www.oed.com> (accessed December 12, 2012).
46. Thorning, interview, December 19, 2012.
47. Povl A. Hansen and Göran Serin, "Videnoverførelse og produktudvikling i dansk konstruktionsplastindustri," *Plast Panorama Scandinavia*, (October, 1988).
48. Hansen and Serin, "Videnoverførelse og produktudvikling i dansk konstruktionsplastindustri."
49. Hansen and Serin, "Videnoverførelse og produktudvikling i dansk konstruktionsplastindustri." See also Hansen and Serin, *Plast*.
50. Hansen and Serin, "Videnoverførelse og produktudvikling i dansk konstruktionsplastindustri."
51. *Ibid.*

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52. Hansen and Serin, "Videnoverførelse og produktudvikling i dansk konstruktionsplastindustri."
 53. Smith and Anderson, "The devil is in the e-tale," 127.
 54. Penrose, *The Theory of the Growth of the Firm*, 73.
 55. *Ibid.*, 28-29.

5. Putting resources to service and strengthening the basic narrative in the start-up process

1. Notes from conversation with Henrik Thorning, January 24, 2013.
2. Nyborg, Interview with Jens Johansen, 11.
3. Notes from conversation with Henrik Thorning, January 24, 2013.
4. Nyborg, Interview with Jens Johansen, 11.
5. *Ibid.*
6. Minutes, August, 1979, 2.
7. *Ibid.*
8. Minutes, August, 1979, 2.
9. *Ibid.*
10. Minutes, September, 1980, 2.
11. Nyborg, Interview with Jens Johansen, 11.
12. Minutes, January, 1981, 2. An idler is a roller that when in contact with a moving belt or the like transmits no power but serves to support it or guide it. Oxford English Dictionary, <http://www.oed.com.esc-web.lib.cbs.dk/view/Entry/91075?redirectedFrom=idlers+#eid>.
13. Nyborg, Interview with Jens Johansen, 11.
14. *Ibid.*

15. Minutes, January, 1980, 2.

16. Minutes, January, 1980, 2. There were restrictions on the use of the building, making it necessary to invest in sound isolation if the production hours were to be extended. These limitations led to discussions about whether more investments should be made at the current site in Nørre Bjert, which was a discussion that would be repeated many times until Fiberline finally moved in 2007.

17. Minutes, August, 1979, 3.

18. Minutes, March, 1980, 3.

19. Minutes, September, 1979, 1.

20. 25 år i Profil, 14.

21. Penrose, *The Theory of the Growth of the Firm*, 32.

22. As the name implies, the empire builder is mostly motivated by the idea of building a private kingdom. Though he may be focusing on a particular type of production, his main focus is rather on growth for the sake of growth. Therefore, Penrose notes, he will often be focused on growth through acquisition and have a keen eye for strategizing and for financial speculation. Penrose is primarily interested in the product-minded entrepreneur, which is in fine line with her aim of explaining growth of the production firm. Penrose, *The Theory of the Growth of the Firm*, 36.

23. Penrose, *The Theory of the Growth of the Firm*, 36.

24. None of them however used the new method of injecting the matrix material like Fiberline. They all used the known method of pulling the fibers through open baths.

25. Minutes, June, 1980, 4.

26. "Sådan er vores arbejdsplads: Danmarks første fabrik for plastprofiler er blevet til i Nr. Bjert"; Thorning and Thorning, Interview, august 2, 2011; See also Madsen and Hother Sørensen, *S.C. Sørensen*.

27. Eneforhandlingsaftale mellem Dukadan og Fiberline, April 1, 1982, Fiberline, Middelfart.

28. Madsen and Hother Sørensen, *S.C. Sørensen*, 142-143.

29. Minutes, August, 1979, 3.

30. Madsen & Hother Sørensen, *S.C. Sørensen*, 140-143.

31. Minutes, August, 1979, 3.

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32. Ibid.
 33. Minutes, September, 1979, 3.
 34. Thorning and Thorning, Interview, August 2, 2011.
 35. Minutes, September, 1979, 3.
 36. Ibid.
 37. Minutes, November, 1979, 1.
 38. Ibid. 2-3.
 39. Minutes, November, 1979, 3.
 40. Minutes, November, 1979, 4.
 41. Minutes, January, 1980, 3.
 42. Ibid.
 43. Minutes, March, 1980, 2.
 44. Minutes, January, 1980, 3-4.
 45. The financial year of Fiberline went from April to April and as they had started up in January 1979 the first year would run 15 months.
 46. Minutes, March, 1980, 3.
 47. Ibid.
 48. Minutes, March, 1980, 4.
 49. Ibid.
 50. Minutes, June, 1980, 2.
 51. Ibid.
 52. Salgsstrategi, March 28, 1982, Fiberline, Middelfart.

53. Elizabeth Garnsey, "The Growth of New Ventures: Analysis after Penrose," in *The Growth of the Firm: The Legacy of Edith Penrose*, ed. Christos Pitelis (Oxford: Oxford University Press, 2002), 102.

54. Hans Landström, Gouya Harirchi and Fredrik Åström, "Entrepreneurship: Exploring the Knowledge Base." *Research Policy* 41, no. 7 (2012): 1154-1181.

55. Garnsey, "The Growth of New Ventures," 104.

56. *Ibid.*, 105.

57. *Ibid.*, 106.

58. Garnsey, "The Growth of New Ventures," 103.

59. *Ibid.* 109. Perhaps this is the reason why Garnsey is lured into describing new firm development by the mathematical analogy of a sequence; equally far from Penrose's understanding of process or evolution as the biological analogies.

60. Dimo Dimov, "Grappling with the Unbearable Elusiveness of Entrepreneurial Opportunities," *Entrepreneurship Theory and Practice* 35 (January, 2011), 70. See also Andrew Popp and Robin Holt, "The Presence of Entrepreneurial Opportunity," *Business History* 55, vol. 1 (2013): 9-28.

61. Penrose, *The Theory of the Growth of the Firm*, 43.

6. *How should the profiles of Fiberline be sold?*

1. Thorning and Thorning, Interview, August 2, 2011.

2. Minutes, March, 1980, 3.

3. Minutes, April, 1981, 1-2.

4. Minutes, August, 1981.

5. Anders Hallen Pedersen, Letter for Fiberline, June 14, 1983, Fiberline, Middelfart.

6. Eneforhandlingsaftale mellem Dukadan og Fiberline, April 1, 1982.

7. Niels Jørgen Kovstrup was one of the new owners as he had suggested that Fiberline's debt to him was converted into shares. Notes from conversation with Henrik Thorning, April 1, 2014.

8. Overdragelsesaftale mellem SCI Holding og Henrik Thorning, March 31, 1982, Fiberline, Middelfart.

9. Signed agreement between the owners of Fiberline, June 12, 1982, Fiberline, Middelfart. Also all the original shares have been kept and are now in the archive.

10. Considering the very limited resources of Fiberline, this may sound strange. However Dorte and Henrik Thorning today explain that they knew Niels Jørgen Kovstrup through one of Dorte Thorning's relations and that an arrangement came in place through her. Niels Jørgen Kovstrup, who is an engineer, needed a job and was interested in Fiberline. He and Henrik Thorning agreed on a price for one year's work as a consultant and agreed that Fiberline would pay when they were able. As Niels Jørgen Kovstrup was married in to a wealthy family, he didn't mind waiting. Thorning and Thorning, Interview, August 2, 2011; Notes from conversation with Henrik Thorning, April 1, 2014.

11. Peder Irgins who still worked for Jotun was careful just to sit in on the meetings as an observer. Irgins, interview.

12. Minutes, February, 1983, 3 – 4.

13. Minutes, May, 1983, 4.

14. Minutes of extraordinary general meeting, June, 1983, Fiberline, Middelfart.

15. Minutes, July, 1983, 4.

16. Minutes, January, 1984, 4.

17. Villaume and Olsen, Lavvækst og frontdannelser 1970-1985, 252-282; Per Ulstrup Johansen and Mikael Trier, Danmarks økonomi siden 1980, København: Handelshøjskolens Forlag, 2011.

18. Kjeld Frederiksen, "Fra Plast-Sammenslutningens årsberetning," Danske Fabrikker af Maskiner og udstyr til plastindustrien, special edition of *Plast Panorama Scandinavia* 32 (April 1982): 37-41.

19. Frederiksen, "Fra Plast-sammenslutningens årsberetning," 37- 41; Kjeld Frederiksen, "Dansk plastindustri i 1982 – eksport skaber fremgang," *Plast Panorama Scandinavia* 32 (December 1982): 36-37; K. E. Jacobsen, "Plast-Sammenslutningens generalforsamling," *Plast Panorama Scandinavia* 33 (May 1983): 9-10.

20. "Industriministerens tale," *Plast Panorama Scandinavia* 33 (May 1983): 10.

21. Frederiksen, "Dansk plastindustri i 1982," 36-37.

22. For example Minutes, May, 1983, 2; Henrik Thorning, letter for Dukadan, June 6, 1983, Fiberline, Middelfart, 2; Anders Hallen Pedersen, letter for Fiberline, June 14, 1983, Fiberline, Middelfart, 1-2.

23. Eneforhandlingsaftale mellem Dukadan og Fiberline, April 1, 1982.

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24. Madsen and Hother Sørensen, *S.C. Sørensen*, 140-143
25. Minutes, September, 1980, 3.
26. Minutes, April, 1981, 2.
27. Ibid., 1.
28. Ibid., 2.
29. Minutes, August, 1981, 3.
30. This was possible because Niels Jørgen Kovstrup was willing to work without getting paid in other values than IOUs and therefore his services didn't burden the fragile finances of the company. Thorning and Thorning, Interview, August 2, 2011; Notes from conversation with Henrik Thorning, April 1, 2014.
31. Minutes, June, 1981, 2.
32. Minutes, August, 1981, 3.
33. Ibid.
34. Minutes, August, 1981, 3.
35. Minutes, January, 1982, 4.
36. Eneforhandlingsaftale mellem Dukadan og Fiberline, April 1, 1982.
37. Minutes, August, 1982, 1.
38. Salgsstrategi, March, 1982.
39. Minutes, August, 1982, 1.
40. Notes from conversation with Henrik Thorning, April 1, 2014.
41. Minutes, August, 1982, 1-2. The company called Gummimagg would later be called Maag Technic and become Fiberline's distributor in Switzerland.
42. Around this time Henrik and Dorte Thorning started writing extensive reports about the management of the company which was then given to the board ahead of each meeting.
43. Report from management, December, 1982, 2.

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44. Report from management, February, 1983, 2.
 45. Dimov, "Grappling with the Unbearable Elusiveness of Entrepreneurial Opportunities"; Popp and Holt, "The Presence of Entrepreneurial Opportunity." The debate was initially brought to the center of entrepreneurship studies by Shane and Venkataraman; Scott Shane and Sankaran Venkataraman, "The Promise of Entrepreneurship as a Field of Research," *Academy of Management Review* 25, (2000): 217-226.
 46. Roger Schweizer, Jan-Erik Vahlne and Jan Johanson, "Internationalization as an entrepreneurial process," *Journal of International Entrepreneurship* 8 (2010): 347.
 47. Schweizer, Vahlne and Johanson, "Internationalization as an entrepreneurial process," 347-349. See also Saras D. Sarasvathy, "Causation and effectuation: towards a theoretical shift from economic inevitability to entrepreneurial contingency," *Academy of management Review* 26, no. 2 (2001): 243-288.
 48. Schweizer, Vahlne and Johanson, "Internationalization as an entrepreneurial process," 368.
 49. David Carr, "Narrative and the Real World: An Argument for Continuity," 126.
 50. *Prospekt til investering i Fiberline LSK – Profiler A/S*, 1985, Fiberline, Middelfart, 2. The prospectus is written by Niels Jørgen Kovstrup after discussions in the board.
 51. *Prospekt*, 9.
 52. "Fiberline er lille men Europas førende i Profiler," *Børsen*, July 23, 1985, 6.
 53. "Fiberline er lille men Europas førende i Profiler."
 54. Ole Tandrup, *Strategiplan 1995/96*, Fiberline, Middelfart, August 12, 1993 (Background material).
 55. Minutes, December, 1982, 2.
 56. *Ibid.*, 3.
 57. Minutes, January, 1984, 4.
 58. Minutes, June, 1984, 3.
 59. *Ibid.*
 60. Report from management, March, 1985, 2.
 61. Report from management, September, 1983, 2.

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62. Salgsstrategi, March, 1982.
63. Prospekt; Financial reports 1980-87.
64. Penrose, *The Theory of the Growth of the Firm*, 74.
65. Ibid.
66. Ibid.
67. Joseph Schumpeter, "The Instability of Capitalism," *Economic Journal* 38 (1928): 379. Quoted in Penrose, *The Theory of the Growth of the Firm*, 74.
68. Penrose, *The Theory of the Growth of the Firm*, 32.
69. Report from management, June, 1984, 2-3.
70. Report from management, November, 1984, 1.
71. Minutes, November, 1984, 3.
72. Prospekt, 4.
73. Ibid., 5.
74. Prospekt, 11 (my emphasis).
75. Ibid., 14.
76. "Ny virksomhed fandt niche og fik succes."
77. "Fiberline er lille men Europas førende i Profiler."
78. Axel Pihl-Andersen, "Virksomhed i vækst: Profiler til Europa," *Børsen-Østjylland*, November 5, 1990, 11.
79. Pihl-Andersen, "Virksomhed i vækst."
80. Ibid.
81. Gabellgaard, "Fra Håndoplægning Til Industri," 16-17.
82. Penrose, *The Theory of the Growth of the Firm*, 75.

83. Ibid., 70-71.

7. The efforts of financing and opportunities for growth

1. Minutes, March, 1984, 3.

2. Kai Busch, Letter for the board of Fiberline, October 8, 1984.

3. Minutes, Fiberline, October, 1984, 4.

4. Report from management, November, 1984, 3.

5. Minutes, January, 1985.

6. Report from management, January, 1985.

7. Ibid., 3.

8. Report from management, July, 1985, 6.

9. Minutes, June, 1985.

10. Report from management, July, 1985, 6.

11. Report from management, October, 1985, 2.

12. Ibid.

13. Penrose, *The Theory of the Growth of the Firm*, 51.

14. Penrose, *The Theory of the Growth of the Firm*, 50; Foss et al. "Entrepreneurship, subjectivism, and the resource-based view," 78.

15. Penrose, *The Theory of the Growth of the Firm*, 55.

16. Ibid.

17. Penrose, *The Theory of the Growth of the Firm*, 56.

18. Financial report 1987/88.

19. Ibid.

20. Ole Tandrup, Strategiplan 1995/96, (Commented draft). Another, more recent, example of the same could be the build of the new factory in Middelfart in 2006/07.

21. For example Minutes of board meeting, Augyst 1981, January 1983, November 1984, May 1985 and March 1988.

22. Prospekt, 2.

23. Ibid.

24. Prospekt, 4.

25. Ibid.

26. Prospekt, 6.

27. Minutes, November, 1981.

28. Report from management, April, 1985, 2.

29. As discussed earlier McGovern and McLean in their study of growth observe the same influence of ownership on the growth of their case company Clarke Chapman.

30. See for example Joakim Winborg and Hans Landström, "Financial bootstrapping in small businesses: Examining small business managers' resource acquisition behaviors," *Journal of Business Venturing* 16 (2000): 235-254; Jay J. Ebben, "Bootstrapping and the financial condition of small firms," *International Journal of Entrepreneurial Behavior and Research* 15, no. 4 (2009): 346-363; Tom Vanacker, Sophie Manigart, Miguel Meuleman and Luc Sels, "A longitudinal study on the relationship between financial bootstrapping and new venture growth," *Entrepreneurial & Regional Development* 23, no. 9-10 (December 2011): 681-705.

31. Joakim Winborg, "Use of financial bootstrapping in new businesses: a question of last resort?" *Venture Capital* 11, no 1 (January 2009):72-74; Winborg and Landström, "Financial bootstrapping in small businesses," 235-254; Ebben, "Bootstrapping and the financial condition of small firms," 346-363; Vanacker, Manigart, Meuleman and Sels, "A longitudinal study on the relationship between financial bootstrapping and new venture growth," 681-705.

32. Winborg, "Use of financial bootstrapping in new businesses," 80-82.

33. Ted Baker and Reed E. Nelson, "Creating Something from Nothing: Resource Construction through Entrepreneurial Bricolage," *Administrative Science Quarterly* 50, no. 3 (2005): 329-366.

34. Ted Baker, "Resources in play: Bricolage in the Toy Store(y)," *Journal of Business Venturing* 22 (2007): 694-711.

8. *Productive opportunities and technological base*

1. Penrose, "The Theory of the Growth of the Firm," 28-29.
2. Ibid., 98.
3. Garnsey, "The Growth of New Ventures," 106.
4. Ulstrup Johansen and Trier, *Danmarks økonomi siden 1980*, 20-21.
5. "1984 – Et godt år for dansk plastindustri," *Plast Panorama Scandinavia* (January, 1985): 10.
6. "Fra Plast-sammenslutningens årsberetning 1985," *Plast Panorama Scandinavia* (1985): 8.
7. "En analyse af dansk plastindustri's økonomiske udviklingsforløb," *Plast Panorama Scandinavia* (1985): 49-50.
8. "Fra Plast-Sammenslutningens årsberetning 1985", 7.
9. A combination tool could be adapted to be used for many making a standard profiles in many different sizes and as such investments in a long line of tools could be avoided and the product range extended. The tool was however very difficult to run into production because it was not fixed in shape.
10. Statusrapport, Fiberline, November 9, 1987, 5.
11. Ibid.
12. Johansen and Trier, *Danmarks økonomi siden 1980*, 21.
13. "Økonomisk halvårsrapport fra Plastindustrien i Danmark 1989," *Plast Panorama Scandinavia*, (December 1989).
14. Ulstrup Johansen and Trier, *Danmarks økonomi siden 1980*, 97.
15. "Økonomisk halvårsrapport fra Plastindustrien i Danmark 1989," 12.
16. Minutes, June, 1987, 2; Report from management, August, 1987, 6.
17. Minutes, June, 1987; Report from management, August, 1987.
18. Report from management, March, 1989, 5.

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19. Henrik Thorning, Letter for the Board, June 8, 1988, Fiberline, Middelfart.
 20. Report from management, November, 1988, 3.
 21. Jens Lauersen, Letter concerning shareowner agreement, Maj 29, 1991.
 22. "Status og visioner for dansk plast-økonomi," *Plast Panorama Scandinavia*, (May 1990); "Hvor står plastindustrien?" *Plast Panorama Scandinavia*, (March 1991); "Plasindustrien placerer sig stadig blandt vækstindustriene," *Plast Panorama Scandinavia*, (December 1991).
 23. Strategiplan 1995/95, 1993.
 24. Notes from conversation with Stig Krogh Pedersen, June, 2014.
 25. "Vindmøllebranchen sætter igen rekord," *Plast Panorama Scandinavia*, (September 2002).
 26. Ibid.
 27. Notes from conversation with Stig Krogh Pedersen, June, 2014.
 28. See appendix 2 or <http://www.fiberline.com/wind-turbine-components-1> for more details.
 29. Ulstrup Johansen and Trier, *Danmarks økonomi siden 1980*, 20-21.
 30. "Kompositmarkedet vokser 10 procent pr. år," *Plast Panorama Scandinavia*, (March 1999).
 31. "Svag vækst og faldende indtjening," *Plast Panorama Scandinavia*, (June 2000).
 32. 25 år i Profil, 2.
 33. Nyborg, Interview with Jens Johansen, 11; *25 år i Profil*, 14.
 34. Penrose, *The Theory of the Growth of the Firm*, 97.
 35. Ibid.
 36. Ibid.
 37. Penrose, *The Theory of the Growth of the Firm*, 98.
 38. Report from management, September, 1983, 2
 39. Prospekt, 13.

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40. Strategiplan 1995/95, 1993, 7.
 41. Ibid, 8.
 42. Report from management, September, 1983, 2.
 43. Prospekt, 13.
 44. Prospekt, 13. My emphasis.
 45. Thorning, Interview, December 19, 2012.
 46. Prospekt, 13.
 47. Strategiplan 1995/95, 1993.
 48. Thorning, Interview, December 19, 2012; Report from management, September, 1990, 3.
 49. That is made in one piece entirely out of reinforced plastic.
 50. Report from management, August, 1993, 1.
 51. Minutes, August, 1993, 2. Original emphasis.
 52. Penrose, *The Theory of the Growth of the Firm*, 71-75.
 53. This wasn't altered by the construction of the new narrative of sale. It specified first that sales were import and second how and where the profiles should be sold, but as discussed it didn't question the basic idea of product and process of Fiberline.
 54. Anne Sørensen, "Fiberline A/S is the first Danish factory to use a new process for strong plastic profiles," *Ingeniøren*, 25 January, 1980.
 55. Henrik Thorning, "Fiberarmede phenolplastprofiler efter pultrusionsmetoden," *Plast Panorama Scandinavia*, July and August, 1994, 22.
 56. Minutes, March, 1993.
 57. Tandrup, Strategiplan 1995/96, 1993 (Commented draft).
 58. For example Tandrup, Strategiplan 1995/96, 1993 (Commented draft); Kai Busch, Letter for the board of Fiberline, Kolding, June 6, 1994.

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59. Minutes, August 1992.
60. Report from management, March, 1995, 1.
61. Report from management, September, 1995, 1.
62. Report from management, April, 1996, 3.
63. Report from management, September, 1995, 1-2.
64. In fact he would generally focus less on sale and more on development of new products as the organization grew.
Notes from conversation with Stig Krogh Pedersen, June 2014.
65. Report from management, June, 1996, 1.
66. Report from management, December, 1995, 1.
67. Strategiplan 1995/95, 1993.
68. Lars Søndergård, "Banebrydende bro," *Plast Panorama Scandinavia*, (July and August 1997).
69. *Ibid.*, 6.
70. Lars Søndergård, "Banebrydende bro," 8.
71. Strategiplan 1998/99, February 17, 1997.
72. Report from management, February, 1997, 1.
73. Notes from conversation with Stig Krogh Pedersen, June, 2014.
74. Notes from conversation with Henrik Thorning, April 1, 2014; Notes from conversation with Stig Krogh Pedersen, June, 2014. See also <http://www.fiberline.com/structures/technical-data-and-standards/european-standard-en-13706/european-standard-en-13706>;
<http://www.fibrotec.es/PageEnglish/LITERATURE/European%20Standard%20EN%2013706.pdf>
75. Penrose, *The Theory of the Growth of the Firm*, 58-59.
76. As merger was never attempted and never seriously considered by Fiberline I won't venture in to further discussion of this concept.
77. Penrose, *The Theory of the Growth of the Firm*, 92.

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78. Penrose, *The Theory of the Growth of the Firm*, 94.
 79. Penrose, *The Theory of the Growth of the Firm*, 94, note 108.
 80. The ceremony exercised by Apple on the introduction of a new model and my own hunt for the newest iPhone comes to mind as a present example.
 81. Penrose, *The Theory of the Growth of the Firm*, 94.

9. Market focus and developing the sales organization

1. Penrose, *The Theory of the Growth of the Firm*, 97-98.
2. Lars Søndergård, "Henrik Thorning: Utrættelig iværksætter," *Plast Panorama Scandinavia*, (October, 2006),6; *Plast Panorama - Jubilæumsskrift 25 År*, 2003, 23.
3. Nick Dellow (ed.), *European composites directory and report 2002-2003: A guide to European manufacturers and suppliers of reinforced plastics*, Materials Technology Publications, Watford, England, 2002, 5.
4. Dellow, *European composites directory and report 2002-2003*, 3.
5. *Ibid.*, 8.
6. *Ibid.*, 11.
7. Dellow, *European composites directory and report 2002-2003*, 10.
8. *Ibid.*, 18.
9. *Ibid.*, 17-18.
10. *Ibid.*, 18-19.
11. Søndergård, "Henrik Thorning: Utrættelig iværksætter," *Plast Panorama Scandinavia*, (October, 2006),6.
12. Minutes, March 2000.
13. 25 år i Profil, 32.
14. *Ibid.*, 29.

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15. Ibid.
 16. Ibid.
 17. Penrose, *The Theory of the Growth of the Firm*, 99.
 18. Ibid., 101.
 19. Ibid., 99.
 20. Ibid.
 21. Ibid., 102.
 22. Ibid.
 23. Minutes of board meetings 1982-85; Prospekt 1985.
 24. Report from management, June, 1990, 4.
 25. Notes from conversation with Stig Krogh Pedersen, June 2014.
 26. Minutes, June 1992.
 27. Report from management, January, 1992, 2.
 28. Penrose, *The Theory of the Growth of the Firm*, 124. My emphasis.
 29. Prospekt, 4.
 30. Prospekt, 11 (my emphasis).
 31. Prospekt, 14.
 32. For example Report from management, October, 1999, 2; Report from, management, January, 2000; Minutes, June, 2000; Minutes, January, 2001.
 33. Minutes of board meeting, June 1991.
 34. Tandrup, Strategiplan 1995/96, 1993 (Background material), 13.
 35. Ibid., 8.

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36. Tandrup, Strategiplan 1995/96, 1993 (Background material) Appendix.
 37. Strategiplan 1995/96, 1993, 4.
 38. Ibid., 4-5.
 39. Busch, Letter for the board of Fiberline, 1994.
 40. Fiberline, Salgsstrategi mod år 2000, November 25, 1995; Notes from conversation with Stig Krogh Pedersen. Today Stig Krogh Pedersen says that Henrik Thorning would insist that an index of every field of industry in Denmark or Europe would be included as an appendix to every sales strategy of Fiberline, indicating the broad market potential of the profiles.
 41. Salgsstrategi mod år 2000, 1995, 2.
 42. Ibid, 2.
 43. Ibid.
 44. Salgsstrategi mod år 2000, 1995, 9.
 45. Ole Tandrup, Letter to the board of Fiberline, Kolding, April 29, 1996.
 46. Idégrundlag og målsætning 1999/2000, Strategiplan 1996, Fiberline, Middelfart, June 6, 1996, 3.
 47. Poul Rind Christensen, Letter for the board of Fiberline, June 17, 1998.
 48. Handlingsplan for salgs- og afsætningsfunktionen, July 1999, Fiberline, Middelfart, 4.
 49. For example Minutes, March 1999 and November 1999.
 50. Report from management, October, 2000,2.
 51. Handlingsplan for udviklingsafdeling ved Fiberline Composites A/S 1999-2000, 2.
 52. Handlingsplan for salgs- og afsætningsfunktionen, 8.
 53. Ibid., 8
 54. Ibid., 15.
 55. Ibid.
 56. Handlingsplan for salgs- og afsætningsfunktionen, 16.

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57. Strategiplan 2004-2009 for Fiberline Composites A/S, draft, April 2004, 9.
 58. Strategiplan 2004-2009 for Fiberline Composites A/S, draft for Henrik Thorning, April 2004, Appendix, 1.

10. Discussion

1. Penrose, *The Theory of the growth of the Firm*, 30.
2. Penrose, *The Theory of the growth of the Firm*, 1. Original emphasis.
3. Penrose, *The Theory of the growth of the Firm*, 1. Original emphasis.
4. Penrose, *The Theory of the growth of the Firm*, 40.
5. Carr, "Narrative and the Real World, 126.
6. Arthur L. Stinchcombe, "Social Structure and Organisations," In *Handbook of Organizations.*, ed. by James G. March, 153-193. Chicago: Rand McNally, 1965; Victoria Johnson, *Backstage at the Revolution: How the Royal Paris Opera Survived the End of the Old Regime*, (The University of Chicago Press, 2008).
7. Notes from conversation with Stig Krogh Pedersen.
8. Financial reports 2007-2013.
9. Strategiplan, 2007, Fiberline, Middelfart.
10. Notes from Strategy seminar, August 2014.
11. Geertz, "Thick Description," 23.
12. Davidsson, Achtenhagen and Naldi, "Towards an integrative framework for future research on small firm growth," 181.
13. Peter Clark and Michael Rowlinson, "The Treatment of History in Organisation Studies: Towards an 'Historic Turn'?" *Business History* 46, no. 3 (2004): 332.
14. Clark and Rowlinson, "The Treatment of History in Organisation Studies," 332.
15. Terrance G. Weatherbee, Gabrielle Durepos, Albert Mills and Jean Helms Mills, "Theorizing the Past: Critical engagements," *Management and Organizational History* 7, no. 3 (2012): 193-202.

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16. Clark and Rowlinson, "The Treatment of History in Organisation Studies," 332.
17. Pitelis, "Globalization, Development, and History in the Work of Edith Penrose," 66.
18. Ibid. 83.
19. See for example Shane and Venkataraman, "The Promise of Entrepreneurship as a Field of Research," 217-226; Arnold Cooper, "Entrepreneurship: The Past, the Present, the Future," in *Handbook of entrepreneurship research: An interdisciplinary survey and introduction*, ed. Zoltan J. Acs and David B. Audretsch (Dordrecht: Kluwer Academic Publishers Group, 2003), 21-34; Landström, *Pioneers in Entrepreneurship and Small Business Research*; Landström, Harirchi and Åström, "Entrepreneurship: Exploring the Knowledge Base," 1154-1181.
20. Landström, "Pioneers in Entrepreneurship," 4-5.
21. Ibid., 4.
22. Cooper, "Entrepreneurship," 24-25.
23. Landström, Harirchi and Åström, "Entrepreneurship."
24. Shane and Venkataraman, "The Promise of Entrepreneurship," 218.
25. Geoffrey Jones and Daniel Wadhvani, "Entrepreneurship," in *The Oxford Handbook of Business History*, ed. Geoffrey Jones and Jonathan Zeitlin (Oxford, England: Oxford University Press, 2008), 501.
26. Jones and Wadhvani, "Entrepreneurship," 505-507. The main stream of these studies is focused on American, British or French national culture and economic growth. A Danish example of the same form of reasoning is delivered by Peer Hull Christensen, who examines the connection between Danish national culture and a specific economic structure building on small companies cooperating in local networks. Peer Hull Kristensen, "Industrial Districts in West Jutland, Denmark," in *Industrial Districts and Local Economic Regeneration*, ed. F. Pyke and W. Sengenberger (Geneva: International Institute for Labour Studies, 1992), 122-175.
27. Jones and Wadhvani, "Entrepreneurship," 507-509. An example of this tradition often mentioned is Mark Casson, *Entrepreneurship and Business Culture: Studies in the Economics of Trust* (Aldershot: Edward Elgar, 1995).
28. Schumpeter, *The Theory of Economic Development*. Quoted after Ronald S. Burt, "The Network Entrepreneur," in *Entrepreneurship: The Social Science View*, ed. Richard Swedberg (Oxford: Oxford University Press, 2000), 301.
29. Cooper, "Entrepreneurship," 25.

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30. Ericson, A Narrative approach to Firm Growth, 26.
31. William B. Gartner, "Who is an Entrepreneur? Is the Wrong Question," *American Journal of Small Business* (Spring 1988): 11-32.
32. William B. Gartner, "Is there an elephant in entrepreneurship? Blind assumptions in theory development," *Entrepreneurship: Theory & Practice* 25, no. 4 (Summer 2001): 30.
33. Gartner, "Who is an Entrepreneur?"; Cooper, "Entrepreneurship."
34. Penrose, "Biological Analogies," 819.
35. In this case this statement is actually supported by a large bibliometric analysis of the field. Landström, Harirchi and Åström, "Entrepreneurship: Exploring the Knowledge Base."
36. Gartner, "Who is an Entrepreneur?"
37. Daniel Hjorth and Chris Steyaert, "Introduction," in *Narrative and Discursive Approaches in Entrepreneurship*, ed. Daniel Hjorth and Chris Steyaert (Cheltenham, UK: Edward Elgar, 2004), 3. A few examples of earlier works applying narrative methods to the study of entrepreneurship exist. Hjorth and Steyaert suggest Gartner's 1993 article "Words leads to deeds" as an early example. However, the 2004 edited volume on narrative and discursive approaches in the field is probably among the first to demonstrate the versatility of these methods the theoretical foundation of which is also discussed at length. William B. Gartner, "Words lead to deeds: Towards an organizational emergence vocabulary," *Journal of Business Venturing* 8, (1993): 231-239.
38. Hjorth and Steyaert, ed. *Narrative and Discursive Approaches in Entrepreneurship*.
39. Hjorth and Steyaert, "Introduction," 3-4.
40. William B. Gartner, "A new path to the waterfall: A Narrative on a use of entrepreneurial narrative," *International Small Business Journal* 28, no. 6 (2010): 9.
41. Gartner, "A new path to the waterfall," 6.
42. *Ibid.*, 11.
43. Chris Steyert, "The prosaics of entrepreneurship," in *Narrative and Discursive Approaches in Entrepreneurship*, ed. Daniel Hjorth and Chris Steyaert (Cheltenham, UK: Edward Elgar, 2004), 9.
44. William B. Gartner, ed. "Entrepreneurial Narrative, Greif Symposium on Emerging Organizations," special issue, *Journal of Business Venturing* 22, (2007).

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45. Gartner, ed., *Journal of Business Venturing* 22 (2007); Hjorth and Steyaert, ed., *Narrative and Discursive Approaches in Entrepreneurship*; William B. Gartner, ed., *ENTER: Entrepreneurial Narrative Theory Ethnomethodology and reflexivity, An Issue about The Republic of Tea*, (Clemson University Digital Press, 2010).
46. Colin Mason and Charles Harvey, "Entrepreneurship: Contexts, Opportunities and Processes," *Business History* 55, no. 1 (2013), 3.
47. Shane and Venkataraman, "The Promise of Entrepreneurship," 218.
48. Dimov, "Grappling with the Unbearable Elusiveness of Entrepreneurial Opportunities," 58.
49. Mason and Harvey, "Entrepreneurship: Contexts, Opportunities and Processes," 3. This is much like the point made by both Schumpeter and Penrose as already noted.
50. Dimov, "Grappling with the Unbearable Elusiveness of Entrepreneurial Opportunities," 59.
51. *Ibid.* 70.
52. Mason and Harvey, "Entrepreneurship: Contexts, Opportunities and Processes," 4.
53. Popp and Holt, "The Presence of Entrepreneurial Opportunity," 9-28. Popp and Holt's article is included in a special issue of *Business History* presenting a number of historical analyses all discussing the construct of opportunity and to a lesser or larger extent engaging with interpretive theory. The contributions focus on different aspects of entrepreneurship and firm development, like networks or institutional context. Mason, Colin and Harvey, Charles, ed. "Entrepreneurship: Contexts, Opportunities and Processes," Special issue, *Business History* 55, no. 1 (2013).
54. Popp and Holt, "The Presence of Entrepreneurial Opportunity," 24.
55. Sara L. McGaughey, *Narratives of Internationalisation: Legitimacy, Standards and Portfolio Entrepreneurs* (Cheltenham: Edward Elgar, 2007), 10. As an example of a process oriented perspective on internationalization derived from economic theory McGaughey mentions the product life-cycle theories of the 1960s.
56. Lucia Naldi, *Growth through Internationalization: A Knowledge Perspective on SMEs* (Jönköping: Jönköping International Business School, 2008), 39; Lawrence S. Welch and Reijo Luostarinen, "Internationalization: Evolution of a concept," *Journal of General Management* 14, no. 2 (Winter 1988): 34-55.
57. McGaughey, *Narratives of Internationalisation*, 9; Naldi, *Growth through Internationalization*, 38-41.
58. Naldi, *Growth through Internationalization*, 38 & 46.

59. Anoop, Madhok, "Cost, Value and Foreign Market Entry Mode: The Transaction and the Firm" *Strategic Management Journal* 18 (1997): 39-61. See also Naldi, *Growth through Internationalization*.

60. Ericson, A Narrative Approach to Business Growth, 21-25; Naldi, *Growth through Internationalization*, 43-45.

61. McGaughey, *Narratives of Internationalisation*, 3.

62. Naldi, *Growth through Internationalization*, 46-50. The same structure is found in most reviews, see for example also Otto Andersen, "On the Internationalization Process of Firms: A Critical Analysis," *Journal of International Business Studies* 24, no. 2 (1993): 209-231 or Benjamin M. Oviatt and Patricia McDougall, "Towards a theory of international new ventures," *Journal of International Business Studies* 25, no. 1 (1994): 45-64.

63. Jan Johanson and Jan-Erik Vahlne, "The Internationalization Process of the Firm – A Model of Knowledge Development and Increasing Foreign Market Commitments," *Journal of International Business Studies* 8, no. 1 (Spring-Summer, 1977): 23-32. See also Richard M. Cyert and James G. March, *Behavioral theory of the firm* (Englewood Cliffs: N.J., 1963).

64. Johanson and Vahlne, "The Internationalization Process of the Firm," 26.

65. *Ibid.*, 26-27.

66. Andersen, "On the Internationalization Process of Firms," 209-231; Roger Schweizer, Jan-Erik Vahlne and Jan Johanson, "Internationalization as an entrepreneurial process," *Journal of International Entrepreneurship* 8 (2010): 343-370.

67. Jan Johanson and Finn Wiedersheim-Paul, "The Internationalization of the firm – Four Swedish Cases," *Journal of Management Studies* 12, no. 3 (1975): 305-323; Andersen, "On the Internationalization Process of Firms," 209-231.

68. Johanson and Wiedersheim-Paul, "The Internationalization of the firm," 209-231.

69. Tage Koed Madsen and Per Servais, "The Internationalization of Born Globals: an Evolutionary Process?" *International Business Review* 6, no. 6 (1997): 568.

70. Johanson and Vahlne, "The Internationalization Process of the Firm," 28.

71. Penrose as noted limits her analysis to focus on production companies operating in deregulated industries. Penrose, *The Theory of the Growth of the Firm*, 5. This is not as I see it to limited the explanatory power of her analysis to such (if any deregulated production industries exist), but to create space for describing the general mechanisms of growth.

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72. Edith Penrose, "Multinational corporations," in *The New Palgrave: A Dictionary of Economics*, ed. J. Eatwell, M. Milgate and P. Newman (London: Macmillan, 1987), 563. See also Naldi, *Growth through Internationalization*, 35-36.
73. Schweizer, Vahlne and Johanson, "Internationalization as an entrepreneurial process," 343-370.
74. Ibid.
75. Schweizer, Vahlne and Johanson, "Internationalization as an entrepreneurial process," 347-349. See also Sarasvathy, "Causation and effectuation."
76. Svante Andersson, "International entrepreneurship, born globals and the theory of effectuation," *Journal of Small Business and Enterprise Development* 18, no. 3 (2011): 632.
77. Schweizer, Vahlne and Johanson, "Internationalization as an entrepreneurial process," 368.
78. Marian V. Jones, Nicole Coviello and Yee Kwan Tang, "International Entrepreneurship research (1989-2009): A domain ontology and thematic analysis," *Journal of business venturing* 26 (2011): 632-659. See also Nicole E. Coviello, Patricia P. McDougall and Benjamin M. Oviatt, "The emergence, advance and future of international entrepreneurship research: An introduction to the special forum," *Journal of Business Venturing* 26, no. 6 (November 2011): 625-631.
79. Oviatt and McDougall, "Toward a theory of international new ventures," 45-64. See also Zahra A. Shaker, "A theory of international new ventures: a decade of research," *Journal of International Business Studies* 36, no. 1 (Jan 2005): 20-28.
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