

# Organizational growth in family-owned SMEs in German Mittelstand

The influence of intuition and tacit knowledge over generations on decision-making

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**A thesis submitted to The University of Gloucestershire in accordance with the requirements of the degree of Doctor of Business Administration in the Gloucestershire Business School.**

Doctor of Business Administration

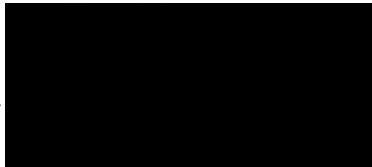
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## Author's Declaration

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I declare that the work in this thesis was carried out in accordance with the regulations of the University of Gloucestershire and is original except where indicated by specific reference in the text. No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas.

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# Abbreviations

AI	Artificial Intelligence
AR	Action Research
BDI	Bundesverband der deutschen Industrie e.V.
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CI	Categorical Imperative
CRM	Customer Relationship Management
CSQ	Case Study, Qualitative
DBA	Doctor of Business Administration
DNA	Company DNA: Common speech for internal values and rules
EBIT	Earnings before interest and tax
EBSCO	World leading information agent (not an Abbreviation)
EMO	Exposition Mondiale de la Machine Outil (European Machine Tool Exhibition)
ERP	Enterprise Resource Planning
EU	European Union
GM	German Mittelstand
GM-SME	Family-owned SME out of German Mittelstand and research context
GmbH	Gesellschaft mit beschränkter Haftung (English: limited Company)
HR	Human Ressource
IFM	Institut für den Mittelstand (English: Institute for German Mittelstand)
IT	Information Technology

KM	Knowledge Management
KMU	Klein-und Mittelständige Unternehmen (English: SME)
KPI	Key Performance Indicator
KVP	Kontinuierlicher Verbesserungs Prozess (English language CIP: Continuous Improvement Process)
LR	Literature Review
LSE	Large Scale Enterprise
MBA	Master of Business Administration
MD	Managing Director
MMSS	Marketing Management Support System
MR	Marketing research
OKR	Objectives and Key Results
PhD	Doctor of Philosophy
PLC	Programable Logic Controller
RD1	Research application form of University of Gloucestershire
RO	Research Objective
SDMP	Strategic Decision-Making Process
SME	Small and Medium Sized Enterprises
STS-Model	Successor-Transition-GM-SME-Model
USP	Unique Selling Point
VDMA	Verein Deutscher Maschinen- und Anlagenbauer
VDWF	Verein Deutscher Werkzeug- und Formenbauer
WIKI	Hypertext System, Content Management System
QM	Quality Management

# Abstract

The aim of this research is to explore the management of success in SMEs especially in the machine tool, mold and die making sector in the German Mittelstand. The context of this thesis is in the spark of “the engine of the German economy”<sup>1</sup> so to speak, where the ignition for innovation and international economic success originates. In Germany, the Mittelstand accounts for 3.7 million family-owned small and medium sized enterprises (SMEs), employing 31 million people and accounts for 35% of all corporate revenues.

This research aims to explain and offer a tailored growth model for German Mittelstand (GM) SME owners based on insights into economic and organizational decision-making and to make a future planning possible: This is realized by the adaptation of existing growth models to GM-SME current situation and demands. As such, this thesis analyzes the most important process in this significant sector of the GM-SME environment, the intuitive decision-making of the owner-manager in family-owned SME to achieve growth for their own enterprise. The research concentrates on three main spheres of interest, decision-making (sphere 1), intuition and tacit knowledge (sphere 2) and the influence factors of organizational growth in GM-SME (sphere 3).

The main driver of successful intuitive decisions in GM-SME was explored and described in detail by closing three major gaps in literature by analyzing seven in depth interviews with the owner-manager of successful GM-SME in the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> generation of successful entrepreneurs.

By analyzing challenges for GM-SME, the crisis and growth phases were compared to existing models, which did not accord with the reality described by the interviewees. A crisis for a GM-SME can occur when the owner manager has a low “tacit-skill” level, when owner managers overrun their active managing time and hand over the business too late to their successor, therefore a structured plan is needed. A new tailored growth model takes these parameters into account and is developed within the framework of this thesis, the STS-Model.

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<sup>1</sup> A citation from Financial Times 2018 about the German Mittelstand, see page 23.

By challenging the stage models of growth from Greiner (1972 updated 1998), Churchill (1983), and others, this thesis proposes the STS-Model for this important part of the German economy. The rich results of this research pave the way for developing a new model for company growth for mature and successful family-owned GM-SME. These companies can be both successful, through the maturity of their management, without adopting the stage model of growth which Greiner (1972) and Churchill (1983) developed. The research also provides a deep insight into the use and the creation of tacit knowledge applied by the owner-manager in decision-making and for motivating communication with the GM-SME employees.

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---

<sup>2</sup> The ALS are groups of 4 to 6 persons out of different professional disciplines out of the same DBA course or semester. They stay for a longer period together and work on the doctoral topics together.

# 1 The Research Aim

The following pages outline the environment, the importance, and the actuality of this research to make the reader aware of the industrial, technological, and ethical background to the sectors in which the research takes place. The aim of this research is to explore the management of success in mature machine tool, mold and die making companies, in the context, the German Mittelstand (GM).

But before we move to the research context and the industrial environment an illustrative case is used, based on the experience of my professional career, to explain how the idea for this research came about. Later in methodology chapter 3 this illustrative case will be used to decide on the best research strategy.

## 1.1 An Illustrative Case - GM-SME

At the beginning of the 21<sup>st</sup> century I was working for a GM small and medium-sized enterprise in the mold and tool making sector. The company was 25 years old, had 210 employees, and realized an annual turnover of roughly € 40 million. in a world-wide market niche for mold equipment and tailormade systems.

The products are divided into customized engineered systems and a catalogue selling parts for these applications. The sales force personnel were 100% technological high-level people, and the unique selling points were the know-how of the people in the application and the research and development department. This service area covered more than 50% of the company's employees and showed a pronounced customer orientation.

The founder and owner of the company is a famous captain of German industry. He supported a technical idea from his engineering experience in an injection molding team 30 years ago. This revolutionary technological idea in the production side of a large-scale enterprise (LSE) helped the molding team in the new independent company to become the market leader in its technological market niche for a decade.

This company had created a market niche with this new product and could be spun off from the group and operate as an independent company in a growing market. In the following 30 years the

turnover in this new market segment developed from a few million Euro per year to a size of several billion Euro worldwide. In these 30 years, after the founder left the new company, three managing directors ran this company just as if it were their own, like an owner-manager.

The current managing director (MD) has supervised all technical and marketing issues during the last 25 years. This company has grown from a micro-small and medium-sized enterprise (SME) to a medium sized SME. The company was designed around the MD's competences and his words were the law.

The leading MD was a brilliant technician, a hard leader, a hard worker, and a micro manager. Some employees were totally inspired by his brilliance, some others were happy that he takes each decision for them, and others do not like the intensive advice. Every day the technical and sales force meet in the early morning with the MD and must report all important issues in sales, inquiries, and technological challenges in and around the company. The MD made every decision, no matter how important or insignificant it was. All decisions of the MD were intuitive decisions. This was possible based on his experience and technological abilities and on the number of decisions taken.

For the three industry sectors in the research field, it could be stated that this is not a single case in German world leading injection molding, machine tool and press tool technology industry (Hass, 1997). The question emerging for this research currently was:

“What would have happened with this company in the last 2 decades if the MD had decided, 10 or 15 years ago, to pass over his responsibility, his know-how and a major part of his tacit knowledge to a motivated team or a similar brilliant person beside him?”

As described above, the market that the company has created with its invention has grown to several billion euros and this company has only been able to tap into a small part of the market with a € 40 million annual turnover. Just a few comparative values from the market this company created and that they compete in. The two largest competitors that later entered the market employ over 2,500 people and realized over € 500 million in sales per year.

The following questions are important to answer in relation to the research objective:

- Did the MD prevent the company from growing?
- Did the lack of decision-making structures hinder the company's growth?



- Was the MD the wrong man for the phase the company was in after the first half or first decade, like Greiner showed in his paper “The five phases of organizational growth” (Greiner, 1998)?
- What is the role of tacit knowledge for successful intuitive decisions?

The purpose of this sample case is to start the thesis with my thoughts and observation and to model the research strategy in subsection 3.4.6.

To make the sample GM-SME more real, an organizational chart was designed, suitable for the described case adapted to the internal processes.

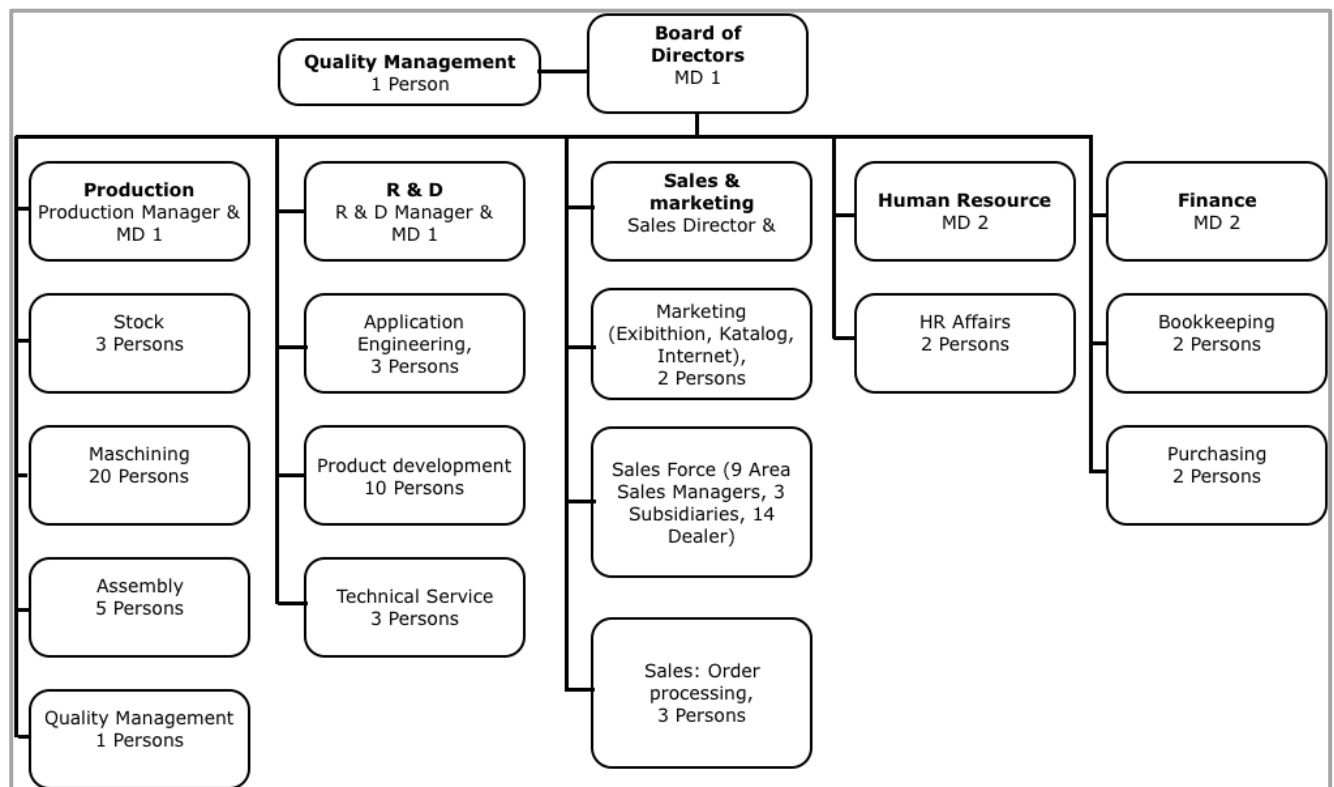


Figure 1.0: Fictive organizational chart of sample case, selected issue

## 1.2 Industrial environment

It has been noted that SMEs “... are the backbone of Europe's economy. They represent 99% of all businesses in the EU [European Union] and 95% of these companies are family owned. In the past five years, they have created around 85% of new jobs and provided two-thirds of the total private sector employment in the EU. The European Commission considers SMEs and

*entrepreneurship as key to ensuring economic growth, innovation, job creation, and social integration in the EU...” (Commission, 2012).*

As mentioned above, SMEs are the engine of the European economy (Commission, 2005). SMEs in Germany have a significant impact on the strength of the economy. Whilst a significant number of these businesses are in the service sector and rely on their service innovation and being close to the customer, there are a significant number, particularly in Germany that are engineers and innovative. These businesses are collectively known as the German Mittelstand. To assure clear understanding about the German SMEs in this research, it is necessary to distinguish the German Mittelstand from family enterprises and SMEs as mentioned above. The SME definition follows the specification of Ifm Bonn (Institut für den Mittelstand), see Table 1.1 below.

<b>Enterprise size</b>	<b>Number of employees</b>	<b>Annual turnover €</b>
micro	max. 9	max. 2 million
small	max. 49	max. 10 million
Medium	max. 499	max. 50 million
(KMU) all together	less than 500	max. 50 million

*Table 1.1: Definition of SME in size and turnover, Source IFM Bonn (Institut für den Mittelstand)*

SMEs in Germany are noted for innovation, flexibility, product excellence and management abilities (BMW, 2013). In Germany, the importance of SMEs (KMU in German language) is defined by IFM Bonn, in which the German Mittelstand will be gathered, and this association categorize SMEs into family owned, small and medium sized but not into family driven. This is because companies that are bigger than an SME are part of the German Mittelstand<sup>3</sup>.

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<sup>3</sup> The term German Mittelstand, family business, family guided companies are used as synonyms in German literature, this was defined by the IFM Bonn (compare attachment, definition of SME and German Mittelstand)

The industrial Mittelstand has been the backbone of the German economy for the last 100 years, as indicated by Financial Times 20.3.2018:

*“Family-owned businesses that drive economy Germany’s Mittelstand — which means “medium estate” — is made up of about 3.7m small and medium-sized family-owned and usually unlisted companies. They are “the engine of the German economy”, according to publicly owned lender KfW, employing close to 31m people and accounting for 35 per cent of corporate revenues, generating 70 per cent of jobs and providing nine out of 10 apprenticeships for young people. While more than four-fifths of those companies earn just up to €1m in annual revenues and have less than five employees, many larger Mittelstand companies are global market leaders in niche products. The typical Mittelstand company has been family-owned for several generations and takes a long-term view of its business rather than aiming for short-term profit maximization. The companies usually have strong balance sheets, little debt and stay clear of international capital markets.” (Storbeck, 2018)*

A large and powerful industrial organization in Germany is the VDMA<sup>4</sup>, this association represents the interests of a sufficiently large number of innovative companies out of the German Mittelstand and many SMEs. The companies in the VDMA and related associations, like VDWF, are the innovation leaders in their worldwide niches. These associations do not represent most of the companies the Financial Times mentioned. The larger SME will be represented by these associations and the smaller ones will not apply for membership given associated costs.

As displayed in figure 1.1 above, the distinction between SME, as a part of all Mittelstand enterprises, has several structural parameters to be specified for the research activity, i.e., industry sector, ownership, size of the company.

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<sup>4</sup> Verband Deutscher Maschinen und Anlagenbauer: VDMA (Verband Deutscher Maschinen- und Anlagenbau, Mechanical Engineering Industry Association) represents more than 3,300 mostly medium-sized companies in the capital goods industry, making it the largest industry association in Europe. (Source: Homepage VDMA, 28.6.2021)

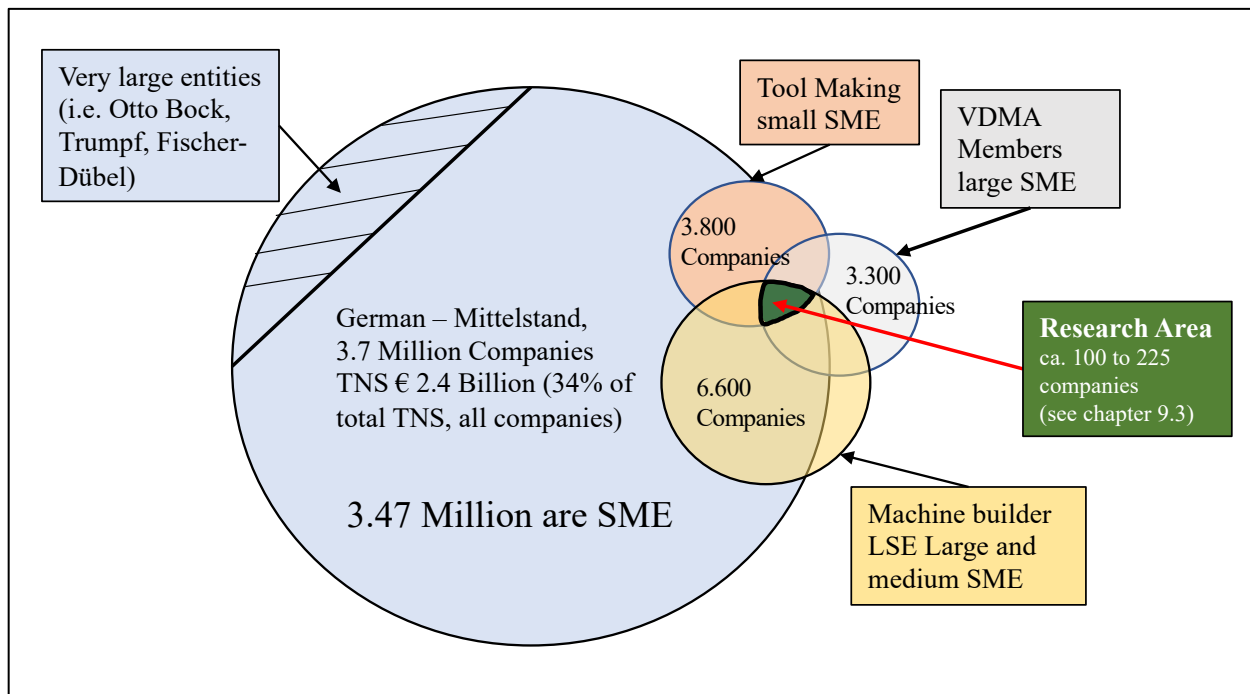


Figure 1.1: Visualization research context in relation to German industrial structure (source VDMA, BDI, ifm, VDW)

For this reason, the following literature review addresses the relationship between German Mittelstand, SME in general and the industrial sectors (machine tool, VDMA members, tool maker) and the small differences that exist. In the literature review this will be realized by analyzing the definitions from associations, professional journals, and information from personal experience. A meaningful extract was gathered as follows and tailored to the demands of this thesis.

First: The official definition of the IFM the institute for Mittelstand in Bonn: (source <https://www.ifm-bonn.org/en/definitions/overview>) see figure 1.2. A significant factor is the relationship between ownership and management. If the owner manages the company the following criteria are important:

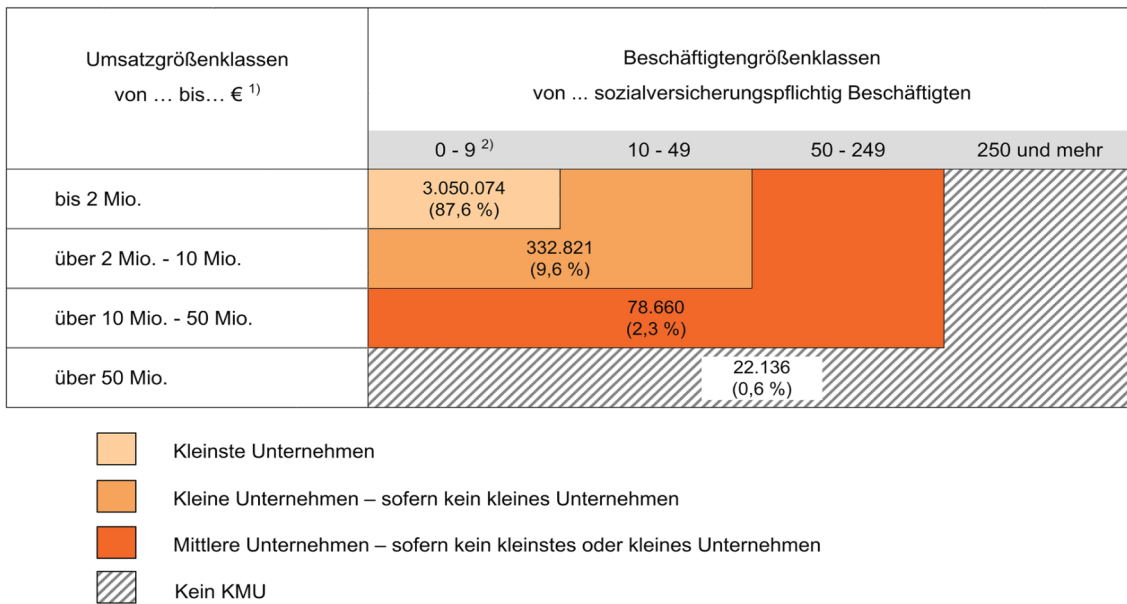
- the owner manager exercises significant personal influence,
- the owner manager bears the entrepreneurial risk, and
- the company secures his/her personal income and livelihood.

Through this German-Mittelstand companies are able to avoid ‘principal-agent’ problems that arise when ownership and management are separated, e.g., in listed corporations (owned by many shareholders and directed by paid managers).

Second, we analyze the SME definition in figures from same source:

## Unternehmensbestand 2018 in Deutschland

### - Anzahl und Anteil in Prozent



KMU-Definition gemäß EU-Kommission.

1) Umsatz für Organkreismitglieder geschätzt.

2) Einschließlich Unternehmen ohne Beschäftigte, aber mit steuerbarem Umsatz aus Lieferungen und Leistungen.

Quelle: Statistisches Bundesamt: Unternehmensregister (Auswertungstichtag 30.09.2019); Berechnungen des IfM Bonn.

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Figure 1.2: Number of Enterprises in Germany 2018, source (Institut für Mittelstand, IFM, 2021)

And third we examine the 3.4 million SMEs in Germany, and their strength (IFM, 2021):

1. Long term view, not next quarter, but next generation
2. Market leaders in niche markets
3. Strong balance sheet
4. Reliable employees
5. Innovation culture
6. Quick decisions and flexible realization
7. Craftsmanship and hands-on mentality

The German Mittelstand (a part of SME cluster) is an important part of the German industry portfolio, they are partly SME, and partly LSE (Large Scale Enterprise) but they are mainly family owned for predominately over more than 2 generations. The data is impressive and shows strong and responsible managers, growing enterprises, own risk taking, and adjust their own company for next generation of leaders, their children's, and grandchildren's business.

In a 2018 study of BDI<sup>5</sup> it is shown that owner-managed family businesses in Germany account for 47 percent of the total turnover of all companies in Germany and 50 percent of total employment. So, this a very important part of Germany's economy, people, culture, and international power in technologically competitive business sectors. The innovation and the specific structure of German Mittelstand enterprises in SME size will be the sector of interest for this doctoral thesis.

### 1.2.1 Research field selection:

To select the right field in this array of GM-SME also the literature review and the experience brought to the study figured out the most interesting field, Germany's mechanical and plant engineering sector. VDMA characterize the German mechanical and plant engineering sector as significantly represented by SMEs producing highly complex outputs. This activity is economically significant, despite their smaller size (98 percent of companies have less than 250 employees) these companies employ around 3 million people in Germany (VDMA, 2021).

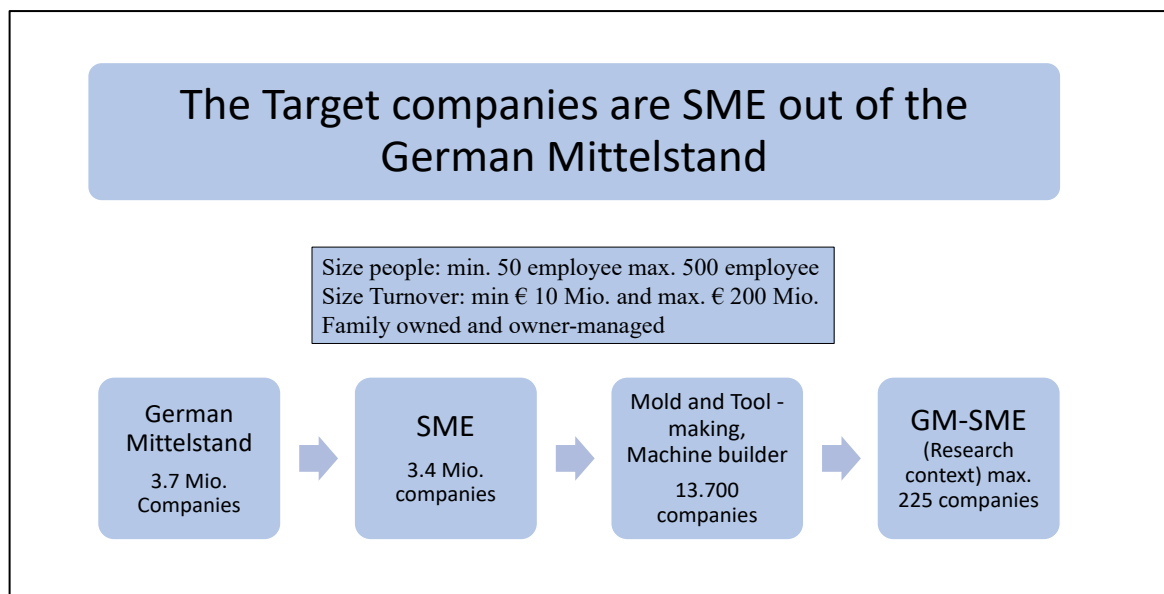


Figure 1.3: Display the relationship between German Mittelstand, SME and VDMA Members

After establishing the relationship between successful SME with a strong family-owned background and the alignment with the researcher's personal experience in the field of interest,

<sup>5</sup> Association of German industrial Enterprises, so called: BDI The Voice of German Industry

the research field was defined. Hence, based on the main relation between intuition, decision, and corporate success it shows a field which should be analyzed by a literature review, the qualification of the literature review results and a few first pilot interviews to get a first idea of the gap in literature and a possible contribution to knowledge.

### **1.3 Research environment (context)**

As discussed later this research uses the case study methodology. The context in a case study describes the field where the research take place, in the following subsections will show the frame and the limitation in means of the industrial section and the target sector, the result is gathered figure 1.1 (named as the research area).

#### **1.3.1 Industry sector (GM-SME)**

The sector identified above (family owned and family managed German-Mittelstand-SME-Machinery and plant engineering in Germany), here called GM-SME offers several technological disciplines, to which belong the following:

- Tool making and Mold making
  - Machinery (automation, production technology)
  - Electrical and other drives, processing units
- Diverse production machinery
  - Presses, robot, machine tool

#### **1.3.2 GM-SME main structure**

From the sector above then the topic of the thesis and the main interest require a structured list of criteria for the selection of the right interview partners.

These are the criteria; (means if one does not present this, they are not the right interview partner):

- Family owned
- Owner managed, or manager managed for more than one decade.
- Min. 50 to max. 600 employees

- Turnover over € 10 m. under € 200 m.
  - 15 years of growing (people or turnover or EBIT or market share)
- Corporations conduct intuitive decisions and are aware of this.

To identify a phenomenon in the context I start to go back in my career and ask myself what I would like to know more about? The main question is: Which style of decision-making allows these companies to remain competitive?

After starting with the title of gut decisions in SME and the relation to corporate growth, many related and relevant parameters were developed out of the literature, the discussion with business partner and my supervisor, afterward the central questions come up:

- How does the owner manager conduct intuitive decisions which grow the company and how is this transmitted intergenerationally?
- Does the growth of these companies in this context fit to available theories for growth i.e., Greiner (1972), Penrose (2009), Churchill (1983), Flamholtz (2015) or general literature like Peter Drucker, Maynard Keynes, Igor Ansoff?
- What is the relation between these factors in GM-SME if there is any?
  - o Strategic decision-making
  - o Tacit knowledge of the owner-manager
  - o Intuition
  - o Company growth

## 1.4 Research Objective (RO)

RO: To explore the relationship between SDMP (strategic decision-making process), tacit knowledge of the owner/manager, intuition, and corporate growth in SME.

- Sub RO 1: To explore the relevance of Greiner's Model (Evolution and revolution as organizations grow, 1972) for GM-SMEs in the research context.
- Sub RO 2: Compare the interview results and the relevance of SUB-RO 1 with the Models of Churchill and Lewis (Churchill, 1983) and show the differences.
- Sub RO 3: Analyze the evolution of tacit knowledge in SME and the relevance of the owner-manager's family and propose a new model for this evolution see figure 4.11.



Contribution to knowledge: The thesis will contribute to knowledge by analyzing the procedure and the managers (tools, abilities, attributes, other)<sup>6</sup> of GM-SME and how they grow in a highly competitive environment over decades and generations, led by intuitive acting owner-managers. To do so it will be required to work out decision structures in GM-SME including environmental receptors and communication in the company over several hierarchical levels. Thus, the conclusion will show how GM-SME owners can transfer tacit knowledge from one generation to the next and show up a new model for organizational growth of GM-SME in the thesis context and international markets.

This thesis will attempt to close several gaps (decision-making in GM-SME, intuition, and tacit knowledge in GM-SME, is Greiner's model applicable to the GM-SME development) in literature by describing the conjunction (interface or link) between tacit knowledge, intuitive decisions and company growth in GM-SME and the influence of a transfer of tacit knowledge over generations on this conjunction, as shown in figure 2.12.

The gap's in literature could be more detailed described by the view on the function of intuitive decisions in family-owned companies long staying in managing responsibility. Furthermore, the influence of owner-managers tacit knowledge and intuitive decision and the growth of the company brings us to the question of usable models for GM-SME growth.

The model of Greiner (1972), Churchill (1983) was used to demonstrate the relevance and to prove the usability of their growth model to GM-SME, which is displayed in figure 2.7, 2.9 and at least in comparison in table 4.41.

## **1.5 Definitions**

### **1.5.1 Success**

1. In connection to the customer a company creates value at a relevant cost.
2. A company's success is directly related to its strategic decision-making process (Dean and Sharfman, 1996, p. 389).

This process is influenced by both organizational factors, such as procedural (rational,

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<sup>6</sup> Attributes: self-esteem, experience, values, society, network, reflection, education cultural heritage from family

intuitive), political (organizational issues), environmental (uncertain, complex, competitive, munificence) factors, and the personality of the decision maker (smart, proactive, energetic, emotional factors, such as anxiety about taking risks) (Baum and Wally, 2003; Elbanna and Child, 2007; Matzler, Bailom, and Mooradian, 2007; Rajagopalan, Rasheed, and Datta, 1993). These factors are therefore of interest to this study, see contribution to knowledge.

### **1.5.2 Decision-making**

Definition of a strategic decision adopted for this study:

A strategic decision in a GM-SME is enclosing investments in production facilities, product development, founding subsidiaries and similar activities of entrepreneurial significance. This needs significant resources in personnel and money to implement the decision substance.

In subsection 2.4.2 several definitions from different viewpoints are gathered and discussed. The focus is on decisions taken at the management level. Thus, all the decisions we are looking for are strategic ones.

### **1.5.3 Intuition in decision-making**

*“...When it comes to making strategic decisions, the small firm managers in this study tended to ignore the information gathered and the analyzes performed, relying instead on their intuition...”* (Brouthers, Andriessen, and Nicolaes, 1998, p. 136).

In subsection 2.5.2 an overview after reviewing the literature was gathered, several definitions of intuitive decision-making are proffered.

An intuitive decision is a nonconscious, holistic process in which judgments are made with no awareness of the main rules of knowledge in this field and the decision maker feels they have made the decision like this, without the ability to tell why. This is mainly used in unknow fields or in unclear data, or in time pressure situations. This definition acknowledges the one provided by (Dane and Pratt, 2007) *“Intuition has long been viewed as involving a form of information processing that differs from rational, or analytical, processes.”* The decision maker uses this effect, the involving form of information processing, unconscious more like a general feeling of processing information like an intuitive processor.

## **Tacit knowledge influence**

A clear connection between intuitive decisions, tacit knowledge and experience can be assumed in this work and explored in detail.

### **1.5.4 Growth Model for GM-SME**

To come into the position to connect decision-making, intuition, tacit knowledge, and the abilities of an owner-manager in the context it is mandatory to create a measurement point for the result of this process. In order to measure the success of the decision-making process, it is necessary to find a way of evaluating the result.

Therefore, an applicable model must be found and adopted to the context and the companies in the case study.

The selection of Greiner's model from 1972 is based on the results of the first literature review in the early phase of this research. A first look at relevant models showed Greiner's basic model and the following models of other authors offer a promising means to connect the three spheres (decision-making, intuition, and growth) in this thesis.

## **1.6 Document outline**

This first chapter frames the context and the industrial environment of the research and is directly connected to the literature review in following chapter two. By setting the target for the relevant literature, the theoretical field, defining the research objective and defining the main research targets.

In the literature review, will be outlined how the relevant literature describes the three main spheres of the research and analyze these in the research context. The literature review also takes into consideration how the research will be conducted to allow the research to be close to the topic and could as a result, add their own know-how.

Methodology chapter three outlines the method, methodology and the philosophical position of the research. It also shows in detail the frame for the research context, the single case itself and the realization in with several embedded cases. In the methodology chapter the framework for the interview analysis and the detailed settings are outlined.

Findings chapter four provides a detailed analysis of the interviews conducted, a proof saturation of the interviews and provides how the research objectives will be achieved, show how the gap's in literature will be closed and the RO's are achieved.

Discussion chapter 5 uses the interview analysis to interpret the findings in chapter four and set these into relation to the literature review, relevant data and discuss the research result.

Also, in chapter five the findings are addressed to the research aim, to the research objectives, highlight the contribution to knowledge and challenge the model of Greiner (1972) and Churchill (1983). Furthermore, chapter five shows the implication of the research in its limitations.

In conclusion chapter six the findings and the discussion viewpoint will be summarized and led over to "initial questions" driving the research, see Chapter One. Also, in Chapter Six suggestions for further research will be addressed. Finally, I give a personal view on my doctoral journey, my new insights, and experiences.

# 2 Literature review

## 2.1 Introduction

This section shows the basic aim, the subject and the main goals of the literature review and is divided in three main subsections:

- Choosing the scale and scope: the included and excluded aspects of the review are detailed figure 3.4 where the relation between phenomenon, context, and embedded cases are displayed.
  - Concept and themes: details the connection of the current literature connected to this research (Hart, 2001, pp. 6, 9), general literature about SME's, decision-making, intuition, tacit knowledge and growth.
- Conclusion: consisting of main literature per theme and result (relate to the aim and goals) and to describe the gap in literature and assign them to the RO (Jesson, Matheson, and Lacey, 2011, p. 93 ff.).

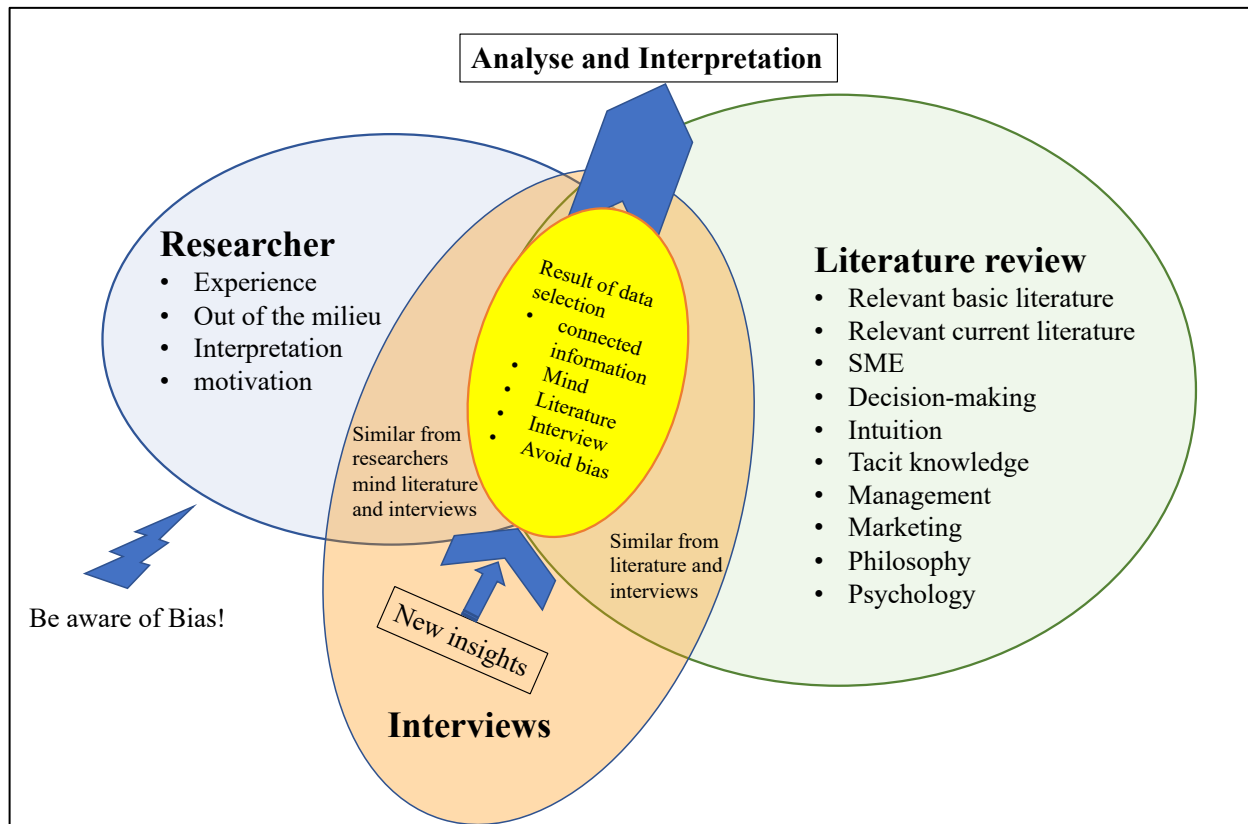


Figure 2.0: Overview data collection for analysis and interpretation in the literature review and Methodology

By having an overall view on the research and the function of data mining, three sources are used, the literature out of the relevant area, the mind and experience of the researcher and the information and insights out of the in-depth interviews, see figure 2.0 above.

This literature review targets the topics, scope and scale which was outlined in chapter 1. After the analysis of the relevant literature, I will show and discuss the connections, the gap in literature, the open ends and the contribution to knowledge will be stated.

Starting from the concepts adopted in the aim of the research, this literature review analyzes qualitative and quantitative data about SME in the mentioned local regions in the context. Research and analysis of the status of knowledge in marketing research together with the up-to-date knowledge about SME from different viewpoints will also be conducted. The literature review started with an internet search using key words and topics from the context areas. The details of this search are given in Appendix 9.5.

In the following four subsections the results of the iteratives analyzing process of the relevant literature will be set in relation to the research objectives, the research aims and hence, to the three spheres of interest in the context.

## **2.2 Scale and Scope**

### **Scope**

This literature research displays a general view on SME in the context and explores in detail the status of (sphere one) decision-making, (sphere two) intuition and (sphere three) company growth in relation to SME on academic research level. The base for this exploration is the relationship between companies as supplier (SME) and customer (company), in a B-to-B relationship.

The explored insights will be rated, these are based on the possibilities and demands of a family owned German Mittelstand Small-Middle-Sized-Enterprise (later named GM-SME). The research is focused on industry located in south Germany, in Switzerland, in the north of Italy, and in the northwest of Austria. The companies acting in the branches of machine tool, plastic injection molding, sheet metal tooling and PLC for electronic industry, as explained in chapter one.

The main language in the analyzed literature is English a few German language sources were used for industrial sector specific data. The time frame of the literature review is adopted to the periods of main research in the theoretic field of the three spheres:

**Decision-making:**

Basic literature 1930 until 1980

Recent and worldwide view based 1990 -2022

**Intuition, tacit knowledge:**

Basic literature 1920 until 1960

Recent and new work based: 2000 until 2022

**Growth and growth model:**

Basic literature 1972, a view source earlier than 1972 and latest until 2000

Recent and based on Greiner's model 1972 until 2022

As displayed in appendix subsection 9.5 in table 9.4, many search engines were used and an uncounted number of reports, books, journals, and web-based information was scanned in the last 10 years. Based on the volume of available literature a 3-step selection process was established and is shown explicitly in appendix subsection 9.6 in table 9.5. To select the right source several search terms were used and optimized in an iterative process. The result was analyzed by reading the abstract, then reading the relevant chapter and if the source was deemed important, the total text was analyzed. The main results were implemented in the thesis as a citation.

The aim was to focus the literature review on GM-SME, but there is no specific category for this company structure available. Therefore, SME and German Mittelstand separately was in the focus, and it will assume that the findings are valid for GM-SME as well. This will be proved in the discussion chapter five, by comparing the result of the literature review and the result of interviewed GM-SME.

**Scale**

The scale for this literature review is determined by the requirements of the framework conditions of the research context and the research objective described in chapter one. The scale

itself is widely explained in the section scope above by the factors time and language. The 220+ cited authors gathered in section nine bibliography and account for the analyzed and the basic literature in the context of the research. For a better overview of the main sources, the general literature is gathered in a separate table before each subsection in the literature review.

Hence, in the sphere decision, intuition and growth, the literature of different time phases will be researched to start with the theory and current relevant models in each sphere and end with the latest relevant literature to work out the existing gap in the research context properly.

The literature review is middle sized counts around seventeen thousand words on ca. fifty-six pages and will include seventy-one citations out of journals, books, reports, mainly out of peer reviewed and considerable cited academic sources.

### **2.3 SME in General, Strategy, Leadership, and Marketing**

In a corporation, LSE, SME, or GM-SME often the function and basic decision areas are similar, Porter (1998) gathered this view in his value chain (Figure 2.1). For this research it is necessary to bridge the gap between the standard view on a corporation and the view of the companies in the context, the GM-SME. It is often considered that there is less functional separation within a SME due to its smaller size and informality (Flamholtz, 1990, pp. 109, 125).

Hence, we must compare the literature in the context to the phenomenon without excluding important information and not overloading the research itself. Thus, we concentrate in this subsection on two central functions in a corporation which are mainly responsible for success and growth. These are marketing and innovation (Maciariello, 2009). Furthermore, we must take into consideration that this corporate function is one where decision and intuition have a major impact on growth. Therefore, the marketing activities in connection with the technology development is



used to get a picture of the literature about SME in general, by using the view on the 4P<sup>7</sup> to interconnect customer demand, cost, product, and sales.

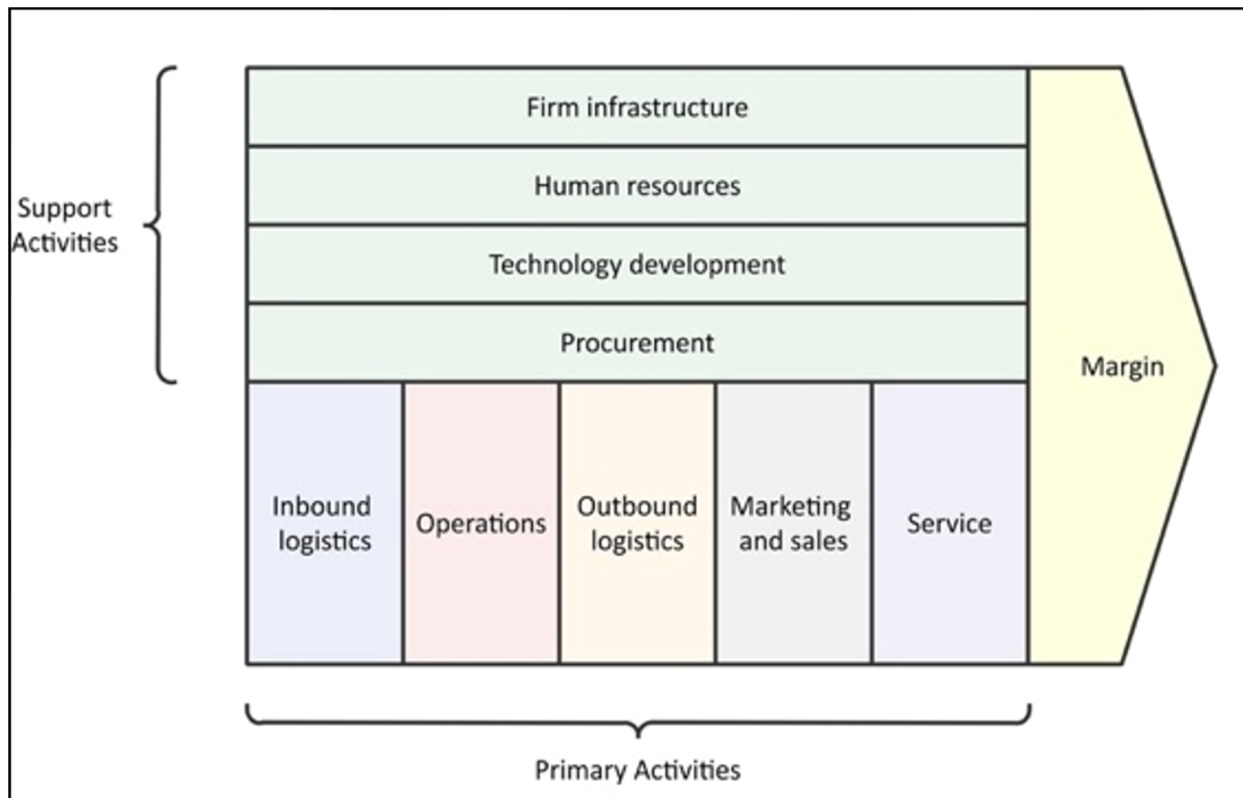


Figure 2.1: Value Chain (Porter, 1998, pp. 37, 46)

To be market-oriented means to deliver superior customer value, to adapt to the market means to produce a greater value and grow (Bown, 2009, p. 31). Many SME perform without any structured marketing activity, but they are successful, in terms of revenues and growth. Market knowledge is acquired via communication channels in an unstructured manner, e.g., networking, core customer and competitor observation.

Furthermore, gut feeling, the intuition and tacit knowledge of the leaders guide the SMEs to new products and new markets (Carson, 1995; Copley, 2008; Hass, 1997; O'Dwyer, Gilmore, and Carson, 2009a). A corporate strategy may exist only in managements mind, and often the managers do not have the ability to elucidate to someone else (Mintzberg, Ahlstrand, and Lampel, 2009; Polanyi and Sen, 2010). In the growth phase of a business, the relationship to customers,

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<sup>7</sup> 4P: Price (to be competitive), Product (to fulfill customer demand), Place (sales and transport), Promotion (find new customers) (Hollensen, 2007, p. 10)

markets, and people in the enterprise becomes more complex. At this time the lead entrepreneur has to change his role within the enterprise (Carson, 1995, p. 167).

A basis for growth is the ability to change. *“When managers realize that their managerial style is no longer appropriate, they may even have to take themselves out of leadership positions”*

(Flamholtz and Randle, 2015; Greiner, 1998; Lewis, 1983). This transition process is critical, not only because of the manager’s personality but also because of the intuitive action and the nature of the tacit parts of knowledge in management’s mind. Even if they want to transfer their experiences it becomes difficult, as it was acquired through experience and not easily expressible in words (Polanyi and Sen, 2010). To explain the mechanisms in SME’s decision-making we must look deeper in intuition, tacit knowledge, and successful growth. In the following subsection I will also compare the way of doing business between LSEs (large scale enterprises) and SMEs.

### 2.3.1 Representative Literature

Commonalities	Representative Literature	Comment
Leadership	(O'Dwyer, Gilmore, and Carson, 2009b)	Show SME specific data
Networking	(Bown, 2009; Carson and Maclaran, 1995; Michele O'Dwyer, 2010; Per-Anders Havnes, 2001)	The importance of networking in SME
Management	(Ansoff, 1987; Drucker and Maciariello, 2008; Mintzberg, Ahlstrand, and Lampel, 2012)	Management literature which fits to SME
Marketing	(Hollensen, 2007; O'Dwyer et al., 2009b; Porter, 2008)	Marketing in general and specific for SME
Organization	(Greiner, 1972; Hass, 1997; Jaworski, 1993)	A point of view for SME organization

Table 2.1: Representative literature for GM-SME in General and specific

### 2.3.2 Marketing

Marketing is the activity of connecting with customers. It is defined by the Chartered Institute of marketing as “...*the management process for identifying, anticipating and satisfying customer requirement profitably...*” (Crouch and Housden, 2003, p. 8). A marketing plan describes, inter alia, the corporate strategy for future business, brand value and customer retention. Marketing research supplies decision makers with information to understand the demands of their customers (Churchill and Iacobucci, 2010). Most market research in LSEs is conducted in a structured manner.

A marketing research project begins with the exact definition of a specific marketing problem, by describing the product, the price for the product and the strategy to promote and sell the product.

For example, there exists a market for product A, so the question arises how we must change product B to enlarge our market share, also here the marketer must understand the function of the local market or of the market abroad. More important is this action in markets in other regions (Hollensen, 2010, p. 175; 2015).

If the knowledge about the market is scant, explorative marketing research will be conducted. Explorative research dives deep into the topic and includes a desk research (Aaker, 2011, pp. 324 - 327), interviews, pilot-projects, experiments, and direct customer contact. For longer time periods, the data will be collected through a CRM or ERP system (Hollensen, 2015, p. 414).

Most marketing research projects are conducted in descriptive design. This design is more a quantitative research and follow straight plans. It is also called statistical research, because the results describe gender, number of people, religion, preferences, attitudes etc. Typical applications are panels, telephone interviews, mailing and questionnaires (Berekoven, Eckert, and Ellenrieder, 2009; Jobber, 2010; Poser, 2006; Weis and Steinmetz, 2008).

Iacobucci describes a third main research type, called the ‘causal design’. This kind of marketing research determines for example the impact of the product or price changes on customer behavior (Churchill and Iacobucci, 2010). The market research results must be analyzed, interpreted, and reported into the marketing plan of the company. The same toolbox is used for all major industrial sectors, whether in machine tool firms, in political parties, in social organizations, food retailers or lifestyle companies (Kotler, Keller, and Bliemel, 2007, pp. 219, 163). It is easy to

create surplus data in the marketing research process. But it is also important to find a research structure which creates usable results (McDonald and Wilson, 2011).

As mentioned, a main difference is the available resources, i.e., LSE invest two percent of their turnover in marketing research, 80% of this value is invested in their own resources. For example, a company like Procter & Gamble orders every year up to four external marketing reports. While SME will work with a much lower budget (Kotler et al., 2007, pp. 127, 158). This tends to mean that market research in their context is conducted in a much more ad-hoc manner.

### ***2.3.2.1 SME Marketing***

SMEs are considered to mainly use the following market information sources: the owner-managers network, observation of competitors, key customers know-how, founders, and families experience. The resource constraints in SME, especially in knowledge and personnel in the considered German branches needs a constant efforts in innovation and recruiting (O'Dwyer et al., 2009a). Various research projects have been undertaken to clarify the marketing action of SME and the impact of missing organizational structures, limited resources, and ad hoc marketing. A marketing plan and a structured strategic path typically uses the „4 P“ (Hollensen, 2010, p. 10): (1) Product, (2) Price, (3) Promotion and (4) Place - as a management guideline are not very common in SME. Rather, marketing is an intuitive and more owner specific exercise (Nwankwo, 2011).

In SME the management functions like marketing research, leadership and knowledge management are handled in various ways. Owner-manager often ignore the importance of marketing due to budget reasons (Gilmore A., 2001; O'Dwyer et al., 2009a), or there is no separate function for marketing in the company. As O'Dwyer (O'Dwyer et al., 2009a) pointed out, SME marketing depends on the skills and abilities of owner-managers and managers in a leading function. If a sound business strategy is established by an SME, then many SME do conduct corporate strategic planning due to the knowledge of the managers or due to past success (Hass, 1997; Pichler, 2000).

This mentioned constraint of SME could lead them in the same way in niche markets to attainments for building competitive advantages due to the special skill of owner-managers (Carson, Gilmore, and O'Donnell, 1996; O'Donnell A., 2002). SME use different approaches to overcome such challenges i.e. flexible design, unique product quality, core customer focus

(O'Dwyer et al., 2009a). Furthermore, the SME could create competitive advantage from partnerships and personnel networks by overcoming the limitations set by size and resources (Per-Anders Havnes, 2001).

It was reported that personal contacts and networks (built on trust and the experiences in the network) are used mainly to start marketing activities. In that way selling becomes a more personal issue (Hill and Wright, 2000) of the owner or the leading person in the small company. In such positive cases, when the owner is a marketer, the marketing model of LSE offers an inappropriate set of methods and models (Copley, 2010). In a regional context SME tend to have customer-oriented networks which enable the SME to provide a unique service quality and speed of developing customized solutions (Vanhaverbeke, 2001).

For international and global business, the lack of resources and know-how is more substantial for SME than in home markets (Knight, 2000). This leads SME to the creation of strategic alliances to overcome the barriers to exporting abroad over wider geographic areas. Furthermore, cultural threats, governmental regulations and language problems could cause problems for successful business (O'Dwyer, Gilmore, and Carson, 2011, p. 471; Rugman, 2009).

### **Differences between Standard and SME Marketing**

After this excursion in the standards in marketing and the SME-specific way of doing it, the following conclusion shows the main differences.

As mentioned above the toolbox in marketing is quite similar for SME and LSE but there are many important differences between a SME and a global acting LSE, not only in resources. In the international view the ability of a SME to follow up social, cultural, or religious factors in the world market is more difficult or impossible. An international enterprise has access to native employees while a SME has to hire local specialists or send its own people to understand the needs of the potential customers (Hollensen, 2010, p. 12).

An obvious strength of SMEs is the close contact with core customers. A joint development or a pilot project in core customer applications provides security in a new market or in a new technology. This kind of customer research makes big a difference between a LSE and a SME in the process of product development, pricing, and service (Drucker and Maciariello, 2008, p. 213).

A main difference is the ability to conduct market research and to follow up on the results. SME have to be market oriented to be competitive and able to create future business (Carson, 1995, p.

146; Porter, 2004, p. 115). The methods by which SMEs conduct marketing can be explained neither shortly, nor in a general manner. However, SME use mainly the following market information sources: owners network, observation of competitors, using key customers know-how, and the owners experience (O'Dwyer et al., 2009b). Thus, the growth of the company is highly related to the skills of the owner (Per-Anders Havnes, 2001) and this is one of the main hurdles for SME that owners often do not have a clue which strategy they wish to pursue (O'Donnell A., 2002; O'Dwyer et al., 2009a). Carson (Carson, 1995) mentioned intuitive marketing predominates SME out of all industry sectors and is limited to the knowledge and experience of the owner.

Hence, the marketing planning is narrowed to own business niches. Shaw (Shaw and Merrick, 2005) asks for the payback of marketing and describes the negative impact of managers sitting in their armchair and making intuitive decisions which jeopardize the company success. Van Bruggen (Grover and Vriens, 2006; Wierenga and Bruggen, 2000) points out, that managers not only use data-based analytical reasoning for their decisions, but also use their tacit knowledge, which van Bruggen equates with intuitive marketing. To use the ability of intuitive marketing as a strength, it is important to understand how it works, if not it is like Carson mentioned in this context, it hinders the SME to grow “... *it has become as much a barrier to real growth...*” (Carson, 1995, p. 154).

### **Owner-manager**

The SME will not very often have the chance to get in direct touch with the end-user. Most of the considered SME are not able to directly generate the demand for their products direct with the end-user. Hence, marketing will usually be done via indirect end-customer contact through dealers, TIER two, or TIER three supplier contacts.

Marketing research is a difficult and an almost impossible task for new products in new markets because of an unpredictable application which was not expected in the marketing plan (Drucker and Maciariello, 2008). In a company founding process or an expansion project in new markets, SME managers conduct marketing research in a more hands on manner (Gilmore A., 2001; Hill and Wright, 2000), via their network or families network.

To be able to forecast future demand or conduct a marketing research SME managers initialize networks with core customers, with other suppliers, membership in associations like VDMA or

VDWF (German associations for machine tool and tool making) and they may even network with competitors (Copley, 2004; O'Dwyer et al., 2011).

### **Influence of leader's personality and communication skills on success**

Market orientation and managerial implications consider the influence by managerial attitude, education, risk aversion and the ability to communicate on the corporate market orientation the market orientation differs from organization to organization and according to the leader's variability of communication.

Furthermore, Kohli and Jaworski (1990) figured out that the communication of top management in the organizations plays a crucial role in the shaping of values in organizations and the ability to create market intelligence. A direct dependency between business performance, profitability, market orientation and job satisfaction, "esprit de corps" and the commitment of the employees to the corporation was identified. The commitment of the employees could have, via the market orientation, a positive impact on the corporation in intensive competition and in market turbulence (Kohli and Jaworski, 1990).

In the first phase of corporate development market orientation is on a high level, due to the inventing, leading and managerial all-rounder of the founders. In following development phases, the generalist behavior should be changed into a specialist approach to avoid negative motivation of managers in charge.

Leaders in SME or entrepreneurial corporation maintain close personal contact to key persons and conducts an intensive control of all relevant business processes to reformulate specific targets in the company (Mintzberg et al., 2009), "...and execute an unique strategy for their firm.." Greiner and Cummings (2009, p. 41).

It was also found that there was an increase in delegation in international orientated firms and they "*implemented an organizational structure in the firm in line with larger firms to be able to grow.*" (Andersson and Tell, 2009, pp. 592-593). The necessity to travel in this type of firm engendered a need to delegate.

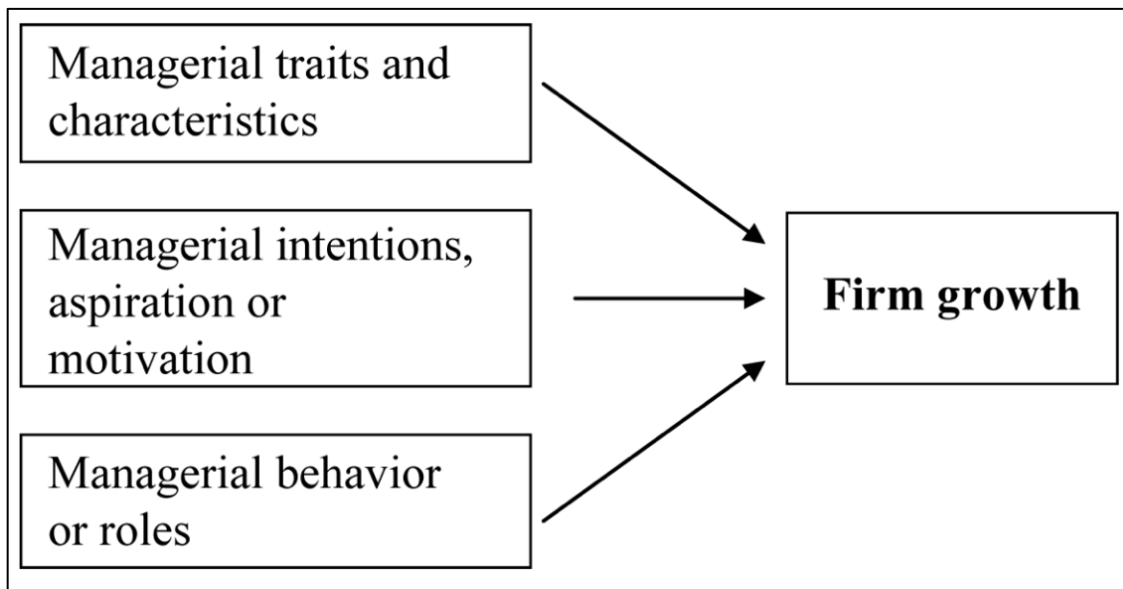


Figure 2.2: Managers influence, conceptual model on growth in small firms (Andersson and Tell, 2009, p. 591)

### 2.3.3 Concluding remarks on SMEs in general

In many SMEs the founder, owner or manager is responsible for all executive positions, and they decide every day important issues, they are able to take this responsibility because of their experience, power, and intuition (Bown, 2009; Carson, 1995; Gilmore A., 2001; O'Dwyer et al., 2011). They do not tend to spend an adequate amount of money in marketing research (Carson, 1995, p. 146 ff.; Hass, 1997). The lack of know-how in IT based data mining mitigates against a successful internal marketing research operation Hollensen (2010).

These are the main differences in decision-making, know-how and resources between LSE and SME. A powerful strength of SME is their flexibility, the team spirit of their organizations and the close contact of the owner with employees and customers. The SME way of internal communication between management and employees opens new ways to shaping values in organizations and the ability of the SME to create productive knowledge.

## 2.4 Sphere 1 - Decision-Making in SME

In this section the result of the literature review which is related to the decision-making process in SME gives a brief insight into the research level of decision-making in general. This following summary intends to show the relevant topics for SME and maybe for GM-SME. In the literature review many papers, books and articles were analyzed, but not all were used to create this



overview. Further reading and selection criteria is documented in the attachment under 9.4 “Analysis of literature based on Strategic Decision-Making Process”.

Decision-making, strategic decision-making or formalized strategic decision-making process are, by default, based on a rational view of this activity. This has been challenged, by introducing the role of emotion and intuition (Simon, 1997, p. 247), and by the inability of many to develop a long term vision. Anderson (1988) shows by analyzing political decisions these achieve best results through spontaneous coordination and mutual adjustment, and also referencing to (Lindblom, 1963) and his incremental political decision making process, by those entrusted with various interests, institutions, and functions (Anderson, 1988, p. 449). This always leads to the question: What is the result of a single decision in a SME?

#### 2.4.1 Representative Literature: decision-making

Commonalities	Representative Literature	Comment
Process	(Dane and Pratt, 2007; Dean and Sharfman, 1993a, 1993b; Elbanna, 2006; Harrison, 1996, 2000; Weick, 2009)	Main literature in business decision process, focus on LSE
Importance	(Burke and Miller, 1999)	Show the importance of a structured decision-making process
Family	(Baum and Wally, 2003)	Show the importance of inter family decision making
Intuition	(Brouthers et al., 1998; Burke and Miller, 1999; Dane and Pratt, 2007)	Show the connection between decision making an intuition, as well in the next subsection, intuition.

Table 2.2: Representative literature for decision-making

In a historic paper, Dean and Sharfman (1993) analyzed procedural rationality in decision making and considered this needed to be further researched. Intuition in relation to decision-making, a digression to the next sphere. Sinclair defines intuition as “... *direct knowing that results from*

*non-conscious, holistic information processing, which draws on cognition and affect...”*  
(Sinclair, Ashkanasy, and Chattopadhyay, 2010).

In addition, *“Self-awareness of affective cues had a positive impact on intuitive decision-making. It seems that when decision makers are in touch with their emotions, they have also an easier access to intuitive processing because of its strong affective component”* (Heier and Epstein, 1996; Sinclair et al., 2010, p. 393). These factors have been incorporated in a decision-making model, see figure 2.3.

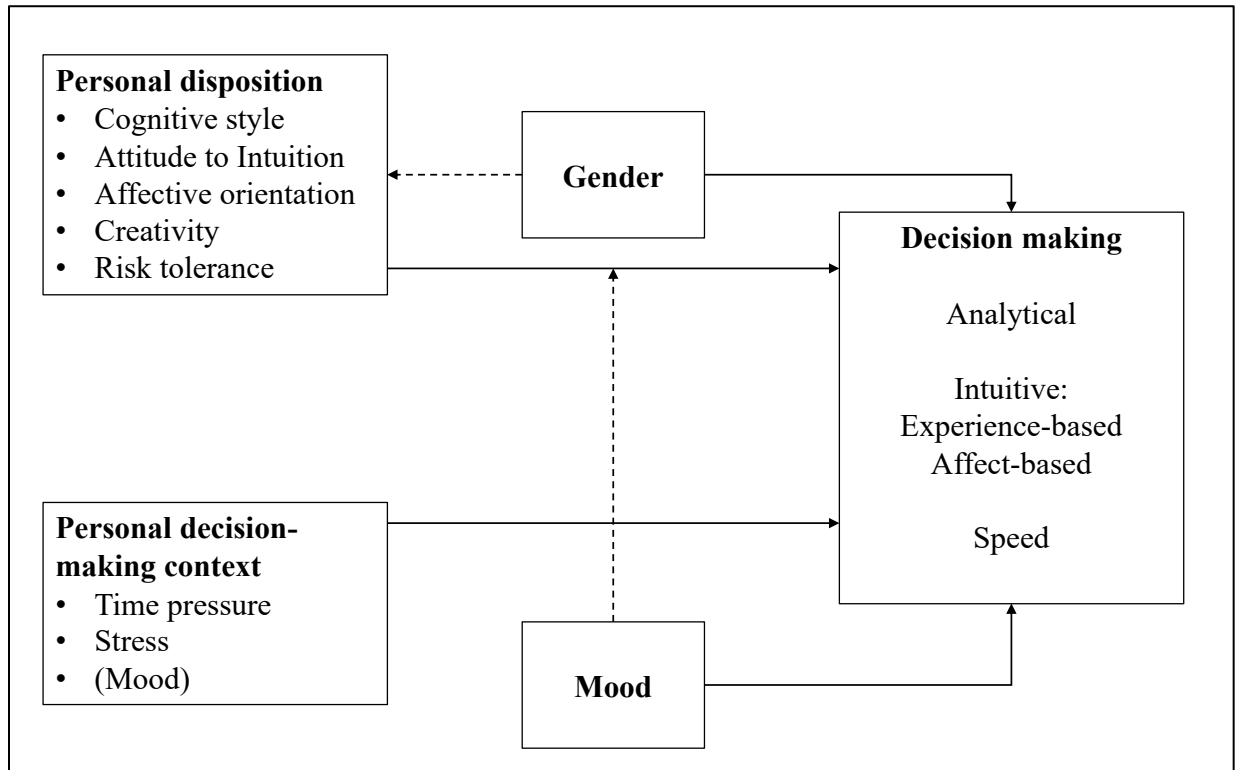


Figure 2.3: Decision -Making Model (Sinclair, 2020a, p. 142)

The process of making strategic decisions has emerged as one of the most important themes of strategy research over the last 60 years and was intensified after detailed studies in the early 1990s (Dean and Sharfman, 1993b; Papadakis, 2006). Musso and Francioni analyzed the characteristics in particular the influence of intuition for strategic marketing decisions in terms of market entry mode, international segmentation and positioning of Italian SME (Musso and Francioni, 2012, p. 286).

In the strategic decision-making process in SME many influential factors must be taken into consideration such as the personality of the decision maker, influences from outside, such as:

family, stakeholders, friends, politicians, and others. Further the drivers could be rational, intuitive, and politically forced. In the following subsection the decision process from a more theoretical view is the focus.

### **Decision-making Process**

From the above discussion it seems that a form of process is essential in decision-making. This process occurs in essentially two modes. Often in intuitive decision-making the decision is taken first based on intuition which is followed by a study of its feasibility. What needs to be done to make it operational. In more strategic decision-making there is a process of evaluation of the options before the choice. Collecting of information, and the suitability of the options considered are done before the decision is maybe also conducted intuitive or rational.

For the more formal process Harrison (2000) points out that a strategic decision is one that addresses a strategic gap. He described six main steps of preparing a managerial strategic decision (Harrison, 2000, p. 48).

For other researchers the above stages change in some characteristics, but the general flow is aligned with that of Harrison. Rationality has a central role in the strategic decision-making process (Elbanna, 2006). The view here is that the rational decision-making process creates the best decision possible under most circumstances. As mentioned above, also Harrison stated that an intensive preparation and an evaluation of alternatives characterizes a well-prepared strategic decision.

It is not known how many SMEs adopt the above mentioned six step processes or a similar one, the company will use a high degree of rationality and formalization, which would be the basic constructs of strategic decision-making in a small business environment.

### **Politics in decision-making**

All processes are influenced by human characteristics and politics. The individuals involved may be inside or outside the organization, but they will affect the outcome of the decision process by using their 'power'. This can bring a consensus and mobilize forces to implement decisions (Mintzberg, Raisinghani, and Théorêt, 1976, pp. 262-264), or not. These interactions of interests, conflict and power, promote the view that the strategic decision-making is characterized as political in nature (Wilson, Branicki, Sullivan-Taylor, and Wilson, 2010).

## **Decision-making speed**

SME are characterized by their flexibility, providing a high-tech solution and very good quality. The flexibility arises from various theoretical, practical, and managerial abilities. One of them is the ability to take fast and correct decisions. This also appears to be a competitive advantage in international business.

A study of Baum and Wally (2003) takes an intensive look into the strategic decision speed which extends and refines extant theory about this topic. The main factor identified here is the rapidity of change in the industrial environment within which the firm operates.

It is difficult to separate the understanding of decision making without incorporating a discussion of the extent to which it is or is not intuitive. Therefore, the next section outlines the positive and negative aspects of intuitive decision making (*Baum and Wally, 2003*).

## **Pros and Cons for intuitive decision-making**

### **Cons for intuitive decisions:**

(Al Jassism, Gallea, and Alzayer, 2014, p. 233) analyze the SDMP in IT and electronic sector SMEs their conclusion is that for an SME intuition is not significant to SDMP, but may affect individual decision making and suggest further research in other sectors and come to a notable statement on intuition. This raises interesting points about decision making mechanisms in particular industries that may be either fast-moving or have products that need a lower level of strategic decisions (Elbanna and Child, 2007).

A similar argument is advanced by Bonabeau (2003), where he hints at the danger of intuitive decision-making, saying that we should avoid intuition because sometimes it is dangerous: It may be that there is insufficient “*time [or] mental capacity to carefully analyze all the facets of a complex situation... [for which] technology may hold the key*” The ability to articulate choices seems to be inherent in this kind of decision making which needs conscious thought to analyze (Bonabeau, 2003, p. 119). He further argues in support of a form of scenario planning where information technology, or probably increasingly artificial intelligence, might provide a range of choices, where the decision becomes choosing the best one (if any).

Brouthers (1998) also argues in favor of more analysis, which he feels can be more forward looking than intuition that relies on accumulated experience The issues here seem to be

connected to two issues, how quickly are decisions taken and separately, the speed of new product creation. It may be that these investigations privilege the IT industry as the prima facie industry for new product development, passing over innovative choices made in other industries. This will become part of the research investigation (Brouthers et al., 1998, p. 137).

### **Pros for intuitive decisions**

As discussed above, many examples for not using intuition to decide strategic issues were found in the literature review but also there were examples for making intuition usable under certain circumstances. The following citation is from two main papers that objectively and essentially explain this field of strategic decision-making. Burke and Miller (1999), discuss the essence of intuition as “*sixth sense, a paranormal power, a gut instinct, an evaluative affect, an innate personality trait, and an accumulation of experience.*” Whilst appreciating that some may have paranormal powers, this does not seem to be relevant in the generality of management decision. Also, where there might be some individual traits that promote this kind of decision making, it does seem that the accumulation of experience does form some part of this process. Experience is still considered valuable in several fields. This often has an element of implicit learning. In the end it seems that (Burke and Miller, 1999, pp. 92, 97) rediscover the tripartite categorizing of decisions into either rational, affective or emotional, or through activity (Burke and Miller, 1999, pp. 92, 97).

### **Intuitive decision-making and bias**

Kahneman (2009) considers two approaches to intuitive judgments: those that arise from experience and manifest skill, an alternative perspective highlights those “... *that arise from simplifying heuristics, not from specific experience...*”. Whether either of these is exclusive to any individual is a significant debate, and they might occur in tandem as the wealth of experience needs to be refined into accessible protocols (Kahneman and Klein, 2009, p. 519).

To go deeper in the role of intuition in the decision-making process a detailed view in the seventeen points list was made by Dane and Pratt (2007), see table 2.4. They selected the main statements and authors over intuition in the last fifty years. This information fits sphere one and sphere two in this thesis, so also here is an external integration of reviewed information. The data will be used later in the assessment of the interview results, a basic evaluation will be conducted in table 2.3 in the next section (Dane and Pratt, 2007).

#### **2.4.2 Concluding remarks, Literature review of decision-making in SME**

What is decision-making in SME? The following approach will be adopted here:

The decision-making process in SME could be defined as an entrepreneurial capability of understanding the relevant economic, political, environmental parameters and abstract these data to recognize the influence on the own business. The decision-maker is aware of alternatives to choose the best way for the own company to be successful in terms of financial, personnel a social responsibility. Thus, to make good decisions for their company, their employees, and the social environment. Furthermore, the ability to validate the results of a decision, after realization, a long time later. Then be able to realize the right time for a correction of the first decision or take a second important decision to replace or revise the first one.

In the literature was no specific hint to GM-SME in or out of the research context, but it could be assumed, that the main points for strategic decision-making are also appropriate for SME. The literature review highlights the relevance of structured decision-making and gives several indications of how to realize this. An example is described by Harrison (2000), this must be proven for relevance to GM-SME during the interview phase.

Furthermore, the literature shows a strong link between decision-making and intuition in different forms. A good strategic decision is made through establishing a decision-making process, avoiding bias, politics, mood, and preferences. Decision speed and quality were identified as an important outcome relevant to the decision makers and depending on their abilities, education, family, and experience. To sum up, it could be stated that all these factors and methods in decision-making could have a positive or a negative impact on the appropriateness of the decision.

As noted in in the previous chapter „in general to SME “, the available literature doesn’t focus on special sectors branches or countries, so there is no specific literature for the GM-SME field. With regards to the relationship between decision-making, intuition, and growth I found only the obvious statement: Successful decisions make the organization (enterprise) grow or allow the SME to survive, maybe it is not more. Hopefully the following chapters bring a clear position for this relation.

## 2.5 Intuition -Sphere 2-

After a deep look into decision-making and finding how this relates to intuition in the decision-making process in SME, the second sphere -intuition- will be researched in this section to bring this closer to the third sphere -growth.

Therefore, I would like to start this section with citations from the Nobel-Price holder Herbert A. Simon (1987), which give a good introduction into the topic of intuition in relation to decision-making, growth, the intuitive skills of managers and the use of these skills. He sees managers information as being organized in terms of “recognizable chunks” (Simon, 1987, p. 61). Management occurs across a range of skills that will include both *"analytic" and "intuitive" approaches to problems*.

*“...The effective manager does not have the luxury of choosing between "analytic" and "intuitive" approaches to problems. Behaving like a manager means having command of the whole range of management skills and applying them as they become appropriate...”* (Simon, 1987, p. 63).

Furthermore, a statement from Simon (1936) to intuition and its common understanding is still valid, cited out of Barnard (1971). Recognizing that all of this is a mental process of some form, intuition is used for decisions that are considered “unexplainable”. It seems here that the arguments are not about whether decisions have some mental element, but the extent to which they are articulated. Being able to articulate the rationale for a decision means some form of mental analysis takes place (Barnard, 1971, p. 331).

### 2.5.1 Representative Literature Intuition

Commonalities	Representative Literature	Comment
Intuition	(Collins, 2010; Dane and Pratt, 2007; Dreyfus and Dreyfus, 2005; Gill, 2000; Polanyi, 1966; Polanyi and Sen, 2010; Simon, 1987; Simon, Egidi, and Marris, 2008)	Skills, experience, speed of decisions, mindfulness

Commonalities	Representative Literature	Comment
Tacit knowledge	(Baumard, 1999; Burke and Miller, 1999; Collins, 2010; Neuweg, 2015; Nonaka, 2008; Polanyi, 1959, 1966; Ryle, 2009; Schilcher, 2006)	Basic research, connection to decision-making
Knowledge creation in SME	(Neuweg, 2019; Nonaka, 2008)	
Tacit knowledge over generations	(Bubolz, 2001; Davis and Englis, 1998; Miller and Le Breton-Miller, 2006)	Show many basic information

Table 2.3: Representative literature Intuition

Three main kinds of strategic decision-making process are identified in the literature in the previous chapter: the analytic, the intuitive and that based on a ‘variable’ mechanism. As mentioned, there is a direct connection between sphere one (decision-making) and sphere two (intuition), as follows:

- First: It is believed that managers who collect information and use analytical techniques made decisions that were more effective than those who did not. It is also considered that danger stems from intuitive decisions in complicated situations (Bonabeau, 2003; Dean and Sharfman, 1996).
- Second: It is said, “*Analytics can never trump the intuition of a thoughtful executive...*” (Matzler et al., 2007). Intuition is becoming increasingly important and is viewed as a powerful tool for helping managers to make fast and accurate decisions. Organizations may need fast strategic decision-making processes, in competitive situations, to achieve growth and profit. Managers may need tools to assist them in generating intuitive insights and verifying intuition when it occurs (Baum and Wally, 2003; Dane and Pratt, 2007; Sauter, 1999).
- Third: Further debate concerning rationality and intuition suggests that organizations may use a variable style of decision-making and use a combination of both rational and intuitive approaches (Simon, 1987, p. 63). Jonas Salk, the developer of the polio vaccine, has suggested that organizations able to combine intuition and reasoning, may respond in an evolutionary way to problems (Khatri and Ng, 2000, p. 58).



### 2.5.2 Definitions of Intuition

As mentioned in subsection 2.4, decision-making, the cluster for intuition and the definition gathered by Dane and Pratt (2007) offers a diverse and deep insight into this connection between intuition and decision-making. This categorization will be used in what follows to comment on the relevance of each definition.

1. *That psychological function transmitting perceptions in an unconscious way:* (Jung, 1933, pp. 567 - 568), (short and clear)
2. *An immediate awareness by the subject, of some particular entity, without such aid from the senses or from reason as would account for that awareness* (Wild, 1938, p. 226), (similar to the last explanation)
3. *The act of grasping the meaning, significance, or structure of a problem without explicit reliance on the analytic apparatus of one's craft* (Bruner, 1962, p. 102), (This is a quite good skill, capture the nature of problems, fast and efficient)
4. *The process of reaching a conclusion on the basis of little information, normally reached on the basis of significantly more information* (Westcott, 1963, p. 595), (a good description, but which does not take the know-how of the decision maker into consideration)
5. *Immediate apprehension* (Rorty, 1967, p. 204), (Yes, supported by a great deal of experience)
6. *A preliminary perception of coherence (pattern, meaning, structure) that is at first not consciously represented but that nevertheless guides thought and inquiry toward a hunch or hypothesis about the nature of the coherence in question* (Bowers, 1990, p. 74), (maybe not the SME way)
7. *A feeling of knowing with certitude on the basis of inadequate information and without conscious awareness of rational thinking* (Shirley, 1996, p. 564), (If there is a unclear situation, no SME manager will decide in this situation)
8. *Acts of recognition* (Simon, 1996, p. 89), (not sure what Mr. Simon means, maybe similar to point 5 in this table)
9. *A nonconscious, holistic processing mode in which judgments are made with no awareness of the rules of knowledge used for inference and which can feel right, despite one's inability to articulate the reason* (Shapiro and Spence, 1997, p. 64), (shows the usage of tacit knowledge)
10. *A cognitive conclusion based on a decision maker's previous experiences and emotional inputs* (Burke and Miller, 1999, p. 92), (that's the SME way)

11. *A tacit form of knowledge that orients decision-making in a promising direction* (PolICASTRO, 1999, p. 89), (if tacit knowledge is promising in decision-making, it is successful in the end)
12. *The subjective experience of a mostly non conscious process fast, logical, and inaccessible to consciousness—that, depending on exposure to the domain or problem space, is capable of accurately extracting probabilistic contingencies* (Lieberman, 2000, p. 111), (could work for SME)
13. *A perceptual process, constructed through a mainly subconscious act of linking disparate elements of information* (Raidl, 2000, p. 219), (This fits to the tacit component in SME management)
14. *Thoughts that are reached with little apparent effort, and typically without conscious awareness; they involve little or no conscious deliberation* (Hogarth, 2001, p. 14), (This is not the GM-SME way, more effort than is apparent)
15. *The capacity for direct, immediate knowledge prior to rational analysis* (Myers, 2002, pp. 128 -129), (a fitting description for the SME way)
16. *Thoughts and preferences that come to mind quickly and without much reflection* (D. Kahneman, 2003, p. 697), (in SME management there will be deep reflection)
17. *The working of the experiential system: Epstein* (personal communication, 2004), (If that means that experimental system work, then this is a SME way)

*Table 2.4: Definition of intuition over 80 years, Source: (Dane and Pratt, 2007, p. 35)*

### **Main insights into intuitive judgment, relevant citations**

The importance of mindfulness and wary use of intuition can help the speed of decision making by removing the need for an analytical phase of information gathering before the decision is made. Mindfulness can be associated with heightened awareness by the manager, rather the process of environmental scanning that is the basis for intellectual decisions. This more individual approach can promote agility in fast moving organizations (Dane and Pratt, 2007, p. 49). It also can respond more effectively to “...*unanticipated events, and the unexpected outcomes of planned activities...*” (Schulman, 2004, p. 42). This is not all positive, there is a recognition that the mindfulness approach could be seen as a hesitation and a cover-up for the incapability for acting (Heidegger, 2006, p. 39).

For education or training to be able to conduct intuitive decisions in a GM-SME, an executive apprenticeship could be the way to create a successful environment in the corporation. In this

way the training moves from intellective instruction to absorption in the business milieu. Within the business “...*having experts working together with novices may be critical to this issue ...*” producing domain relevant expertise. It is mentioned in the paragraph before the topic “family business” and we will also find this way of knowledge transfer in this paper again in this chapter (Collins, 1982).

**Acquired skills for intuitive judgment are maybe critical:**

Advantages or disadvantages were discussed above, but to resume the issue it is worth including also a very recent statement against intuitive decisions. This is based on “Industry 4.0 and Big Data”, maybe artificial intelligence will be able to replace some of managers’ intuitive advantages. There is occurring a mechanization of awareness “...*for the second machine age we’re in now... [using] pattern-matching abilities...*” (McAfee and Brynjolfsson, 2012).

**The following three citations show the advantages of skilled intuitive action:**

Valid environments<sup>8</sup> support skilled intuition:

*“Validity and uncertainty are not incompatible. Some environments are both highly valid and substantially uncertain. Poker and warfare are examples. The best moves in such situations reliably increase the potential for success (Kahneman and Klein, 2009, p. 524). Additional to this point Kahneman also comments that “...skilled decision makers often do better when they trust their intuitions than when they engage in detailed analysis...” (Daniel Kahneman, 2003).*

Furthermore, resilience and recovery are related to improvisation “...*on-the-spot surfacing, criticizing, restructuring, and testing of intuitive understandings of experienced phenomena...*” (Schön, 1995, p. 241).

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<sup>8</sup> Valid environments mean, the decision maker is skilled and make an intuitive decision in their know-how segment or supported by valid research and decide intuitively out of several possibilities.

### 2.5.3 Tacit Knowledge – a part of intuition in sphere 2

Whilst perusing the literature on intuition it becomes obvious that tacit knowledge has a large impact on intuitive judgement. Hence, this subsection is on sphere two and gets its own section which focuses on the influence of the tacit knowledge of a GM-SME owner-manager.

There have been many researchers in the last 100 years working on intuition and tacit knowledge, the most important researcher, with his book from 1966, is Michael Polanyi, cited<sup>9</sup> in nearly 38.000 papers, reports, and books:

His following sentence explains the importance of tacit knowledge in many fields of interest.

*“I shall reconsider human knowledge by starting from the fact that we can know more than we can tell.”* (Polanyi, 1966, p. 4)

There is no tacit knowledge without explicit knowledge. Explicit knowledge is codable and could be transmitted in a systematic language, tacit knowledge could not be transmitted in a formalized language. Polanyi argues that tacit knowledge demonstrates the lack of pertinence of Gestalt psychology, while Gestalt psychology argues that all images are contained in nature, which means that people create knowledge via their engagement in the creation of structures and organizations of their own experiences.

Also, Bastick (1982) expresses in his book “How we think and act” the relation of emotions and empathic projections between intuition and the Gestalt<sup>10</sup> concept of direct perception which is the possibility of shaping and integrating knowledge often with the tacit power (Polanyi and Sen, 2010, p. 6) (Bastick, 1982, p. 180).

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9 In google scholar an amount of 37.694 citation for Michael Polanyi’s book “The tacit dimension” was shown in June 2022. I did not find a more relevant source to tacit knowledge and only a view in the main literature to intuition which did not mention this book.

10 Explained by Max Wertheimer 1922: The fundamental "formula" of Gestalt theory might be expressed in this way ["Man könnte das Grundproblem der Gestalttheorie etwa so zu formulieren suchen: Es gibt Zusammenhänge, bei denen nicht, was im Ganzen geschieht, sich daraus herleitet, wie die einzelnen Stücke sind und sich zusammensetzen, sondern umgekehrt, wo - im prägnanten Fall - sich das, was an einem Teil dieses Ganzen geschieht, bestimmt von inneren Strukturgesetzen dieses seines Ganzen.]. There are holes, the behavior of which is not determined by that of their individual elements, but where the part-processes are themselves determined by the intrinsic nature of the whole. It is the hope of Gestalt theory to determine the nature of such wholes.(Wertheimer, 1999, p. 2)

A small theoretical insight in the work of Polanyi and current view of the tacit dimension.

*“However, I am looking at Gestalt, on the contrary, as the outcome of an active shaping of experience performed in the pursuit of knowledge. This shaping or integration I hold to be the great indispensable tacit power by which a knowledge is discovered and, once discovered, is held to be true...”* (Polanyi and Sen, 2010, p. 6).

It is important to have a deeper look in the Gestalt theoretical approach of Polanyi, because his first contact to European philosophy takes place in later years of his research in tacit knowledge, and he used many elements out of the “Gestalt” theory.

To make an example: If there are changing elements in identical “Gestalt” in human consciousness this must have a leveling in layers, to follow the “Geschichtetheit” from “Gestalten”. This is indeed the core of Polanyi’s theory of consciousness.

In the subsidiary background consciousness are the elements lodged, the ‘proximal term’, focally conscious becomes Gestalt, the “distal term”, maybe the first step to usable knowledge, implicit knowledge and maybe to explicit knowledge.

The distal term is nothing else here, it is the proximal term, just seen differently. It is the ability to understand details in terms of wholeness, seeing certain things in one way or another, i.e., being able to interpret. This means, this ability becomes the most important intellectual ability of man, and it is crucial for insight, knowledge, competence, expertise. Thus, the items will not find into “Gestalt” on their own, the human himself with their consciousness and epistemological start point will be able to shape the “Gestalt” for further use. This shaping will allow *“...a correspondence between the structure of understanding and the structure of the understood, the complex entity...”* (Neuweg, 2019, p. 135).

A second source to the connection to Gestalt psychology is mentioned from Dörfler:

*“...[Intuiting]even takes into account what we could call ‘invisible parts’ inaccessible to deliberate step-by-step reasoning which can also involve the totality of the intuitor...”* (Dörfler and Bas, 2020; Sinclair, 2020b, p. 296). Practical implications of the above discourse into the drivers of tacit knowledge and Gestalt philosophy will follow.

Before I apply this insight into this research and into the world of GM-SME managers, I would like to emphasize the importance of Polanyi’s statement, the possibility to abstract the Gestalt

theory in the segmentation of single parts of knowledge into a “Gestalt” composed of one single experience, learnings, and observations. For the GM-SME decision maker does that mean, growing tacit knowledge and intuitive judgement and the one single decision which makes the GM-SME grow is based on the “Geschichtetheit” in their consciousness.

Each kind of knowledge develops over time, everyone creates their own personal knowledge in their own way. Knowledge is closer to action than information or data (Baumard, 1999; Polanyi, 1966), which means we are able to do more than other persons could learn from us, ever. The impressive example of Polanyi in relation to riding a bike makes this obvious. We cannot explain how we do it, but we are able to ride the bike.

If there is tacit knowledge in the mind of GM-SME leaders and this could not made explicit by them, the company could work only successful by using this tacit knowledge and the collective tacit knowledge in the workforce and of the stakeholders in the process. The teams understand the leaders without making leaders relational tacit knowledge explicit. One example is the view on the ability to state easy and clear in communication and understanding each other, what is next and what is important.

An example, literature: “*Tacit knowledge drives languages make speakers fluent...*” (Collins, 2010, p. 2). From my own experience this is like the Swabian language; Swabian people need less words to define or explain a fact than people speaking other German dialects. This means in SME terms of tacit knowledge ontology, tacit knowledge is codified during a longer period by the owner-manager, but this tacit knowledge could only be transferred if the gap between the demonstrable and the explicable could be closed by intelligent participation of employees. An example, the owner is able to transfer a large part of acquired tacit knowledge to people who are mentally or personally close (i.e. relatives, beloved ones, same value personas, assistant) (Nonaka and Takeuchi, 1995).

The expression (often heard but never understood in total) -learning or knowing by doing- achieves new dimensions. Knowing by doing develops a better understanding because it opens the view on other people’s tacit knowledge. The more profound level of knowledge and the virtually ability eliminates the gap between knowing and doing (Pfeffer and Sutton, 2000, p. 251).

As outlined above, GM-SMEs do not act in a different manner to LSE, but the approach could differ substantially in the details. In LSE many people or external organizations generate the relevant data and present these data to the management, in this way the market know-how becomes more explicit to the people in charge. In a SME only a few people are involved in the marketing research process. Given this and due to the ‘owner-manager phenomenon’ the important company marketing know-how becomes more tacit knowledge.

With regards to the sales focus of GM-SME, here in the targeted sectors with high tech focus, the technical knowledge (customer requirement, own products) is dominant in the sales force and in the management. There is a relationship in this field of high-tech products between intuition, experience, own direct contacts, and tacit knowledge (Hill, 2001b, p. 213; Mintzberg et al., 2009, p. 150).

What makes it easy for a GM-SME manager to decide intuitively:

*“...Intuiting is tacit in the sense that intuitor’s can describe the outcome, but not the way they arrived at it. Although intuitor’s are often good at defending their intuitive judgments or insights, there is no evidence that the justification has anything to do with the way the intuiting was used...”* (Dörfler and Bas, 2020, p. 296; Sinclair, 2020b).

Tacit market knowledge or general speaking, tacit knowledge in organizations means, on the one hand, not to achieve higher profits by keeping secrets with codifiable knowledge to create a competitive advantage. It is necessary to create a structure for analyzing the competitors to achieve a competitive advantage and bring this advantage into the relation to Porter’s five forces (Porter, 2004, pp. 32, 115ff).

On the other hand, it means not to create a loss in balance sheet by taking decisions within larger groups after organizing knowledge more explicitly (Baumard, 1999). Managers should not control knowledge but should support knowledge creation. To foster a knowledge creation climate and support the so-called “Enabling Knowledge Creation” which could be used to establish a competitive advantages (Krogh, Ichijo, and Nonaka, 2000). Furthermore, Nonaka and Takeuchi (1995) pointed out that tacit knowledge could be made explicit with, for example, the “Honda City” example shows how to make tacit knowledge explicit (Nonaka and Takeuchi, 1995, pp. 11 - 19), in this case the transition works by means of metaphor and analogies, from personal to corporate knowledge and with ambiguity and redundancy.

During the research process several approaches were perceived, learning organizations (Senge, 1994), expert groups for creating focused knowledge (Davenport and Prusak, 2000), introduce CRM or ERP systems and company WIKIs. But none of these systems was fast, easy, and efficient enough for a powerful SME in a change process from a start up to an established company.

Here we are back at the starting point of this journey. One of the most frequently mentioned SME weaknesses is the lack of skilled personnel or limited resources generally (Carson and Gilmore, 1997). A computerized system is not the only way to make tacit knowledge explicit. The first step is the understanding of the knowledge creation, knowledge transporting and then clustering the knowledge of the leading persons in a SME. Structured corporate knowledge, whether it is marketing, technical, production or customer specific, will create a competitive advantage. Much research is focused on LSE threats in this field, but the fact that knowledge creates a competitive advantage and leads to a corporate market orientation, both for SME and LSE.

Neuweg (2015) explains that it should be pointed out, the use of the term tacit knowledge transcends the realm of action. This is apparent when we distinguish between three different types of tacit knowledge. Tacit knowing-how, which *comprises all dispositions to judge or act*. Tacit knowing-that which is based on our '*knowledge taken for granted*', and the *accumulated knowledge inherent within us* and the tacit roots of explicit knowledge incorporating our semantic and pragmatic readings of written texts (Neuweg, 2015, p. 92).

Three different theoretical approaches to the concept of tacit knowledge can be identified as follows:

- Relationships, and the way of enabling the knowledge transition processes based on trust and individual strength, emotions and feelings of the protagonists: then tacit knowledge may be transferred into explicit knowledge between two individuals (Nonaka and Takeuchi, 1995)
- (Tsoukas; Haridimos, 2003, p. 613) contests Nonaka's view, and states that tacit and explicit knowledge are mutually constituted. Tacit knowledge is acquired on its own, it is not made from explicit knowledge. Explicit knowledge is always grounded in a tacit component. Tacit and explicit knowledge are two sides of the same coin; they cannot interact, they cannot be converted from one to the other.



- (Collins, 2010) distinguishes tacit knowledge into three categories (relational, somatic, and collective), and explains that only collective knowledge may not be made explicit because it is acquired via practice and depends on the ability of the nature of the human who acquires the knowledge.

There is another voice affirming the possibility to convert tacit into explicit knowledge, to show another perspective (Hadjimichael and Tsoukas, 2019, p. 40). Japanese view on getting tacit knowledge from generation to generation and from worker to worker, by using *genba*<sup>11</sup>. In Japanese companies, training on the job is a common style of transferring tacit knowledge (Isomura and Kobayashi, 2020, p. 179; Sinclair, 2020b).

There may also be digital “tacit knowledge” in the inferential appreciation of big data to enhance innovation and hence productivity and growth (Kabir and Carayannis, 2013, pp. 59, 60). The ability to share tacit knowledge should be an asset to an organization (Mohajan, 2016, p. 12), and this transfer of knowledge, particularly in relation to new recruits, is positively connected to firm growth (Eckardt, 2014, p. vii).

#### **2.5.4 Knowledge Creation in SMEs**

The process of reviewing the literature to find a relevant gap in literature referring to an issue I consider as relevant is a chance to create wider and deeper knowledge for me. And I also realize that, if I am able to connect my experience and my knowledge with existing data, thus additional knowledge could be created.

What is this knowledge about, how could this knowledge be made accessible to others? The key lies in the area of the consciousness where the knowledge is located and the creation in the mind of the knowing person and the ability to tell others (Jesson et al., 2011, p. 16), (see figure 2.4). One of the issues to be explored in this research is whether managerial decision-making, particularly in smaller organizations, has a tacit dimension. The standard view is that the pursuit

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<sup>11</sup> Genba or Gemba is a Japanese term from Lean management that literally means 'the real place' or 'the place of doing'. In business terms, it refers to 'the place where value is added'.

In a production system that is based on lean manufacturing criteria, Genba means that all problems are to be monitored and optimised at the place where they occur (i.e. at the 'Genba').(item-Industrietechnik-GmbH, 2022)

of firm growth is a rational pursuit of economic gain. It can be the case that this is more intuitive and nuanced than expected.

In the book of Polanyi (1966) learning to ride a bicycle was expanded by Collins (Collins, 2010, p. 133) via a hint to Dreyfus 5-stage model (Dreyfus, Dreyfus, and Athanasiou, 1986, p. 16 to 50), see figure 2.4. Dreyfus challenges the expertise, he argues as follows “...that expertise in general, and medical expertise in particular, cannot be captured in rule-based expert systems...” (Dreyfus and Dreyfus, 2005, p. 779). They highlight three issues that stand out as especially important for his 5-stage model:

“(1) To what extent can expertise be captured in rule-based expert systems? (2) How should the learner and the expert (who is always a learner) relate to mistakes when they do occur to learn from them? (3) How are reflection and deliberation related to expert performance”

“...Significantly here the focus is on the ability to learn and consequently develop skillful behavior. This can either be through instruction or by learning from our mistakes...” The Dreyfus five-stage model was presented in 1980 details how expertise and knowledge are acquired and how only the expert and the master can make intuitive decisions. They also propose a relationship between skill level and the mental functions required at each level.

TABLE 1

<div style="text-align: center;">Skill Level</div> <div style="text-align: center;">Mental Function</div>	NOVICE	COMPETENT	PROFICIENT	EXPERT	MASTER
Recollection	Non-situational	Situational	Situational	Situational	Situational
Recognition	Decomposed	Decomposed	Holistic	Holistic	Holistic
Decision	Analytical	Analytical	Analytical	Intuitive	Intuitive
Awareness	Monitoring	Monitoring	Monitoring	Monitoring	Absorbed

Figure 2.4: The way of a novice to expert (Dreyfus and Dreyfus, 1980, p. 15)

This model, although based on a method of instruction, is useful as it shows the development of functionality in what is considered to mastery. The move from analytical to intuitive decisions, is then followed by standing in the mode of absorbed awareness. Some 25 years later Dreyfus concludes the 4<sup>th</sup> and the 5<sup>th</sup> stage in the above model and believe that the difficulty in getting

experts to articulate the stages in decision making is that the expert is not following any rules, or if there are protocols, they are not able to be identified or articulated.

The question remains ‘what is the position within an SME?’. As Dreyfus describes, experts and masters do not follow any rules they use intuition, so this could be assumed, hopefully this research will show this also for GM-SME. In many cases the GM-SME owner is managing the corporation with gut feeling and intuition in the founding and during the growing phase of the company. In this time marketing knowledge grows in their mind and is also based on experience from the past. Some of this knowledge becomes tacit. To turn this into corporate explicit knowledge, the founder has to change role within the enterprise (Carson, 1995). The leading founder must hand over to their successors and make this tacit knowledge explicit as far as possible.

As Mintzberg describes, the corporate strategy often exists only in the mind of the leader and often he did not have the ability to tell this to someone else (Mintzberg et al., 2009), (Polanyi and Sen, 2010). Furthermore, it must be noted that this process is highly critical because of the nature of the tacit parts of knowledge in the owner’s mind. Even if the owner wants to transfer their experiences it becomes difficult. Maybe the “learning by doing” expression could help in this case (“... *it is acquired through experience and not easily expressible in words...*”) (Polanyi, 1966).

Nonaka and Takeuchi (1995) make clear that the relationship to the successor and the way of conducting the knowledge transition process has to base on the trust and individual strength, emotions and feelings of the protagonists (Nonaka and Takeuchi, 1995, p. 85). During my research I use the observations I made in my professional life to select information and cluster this new fact in my mind. Possibly some of this information and findings become tacit as shown in the following figure (see Figure 2.5).

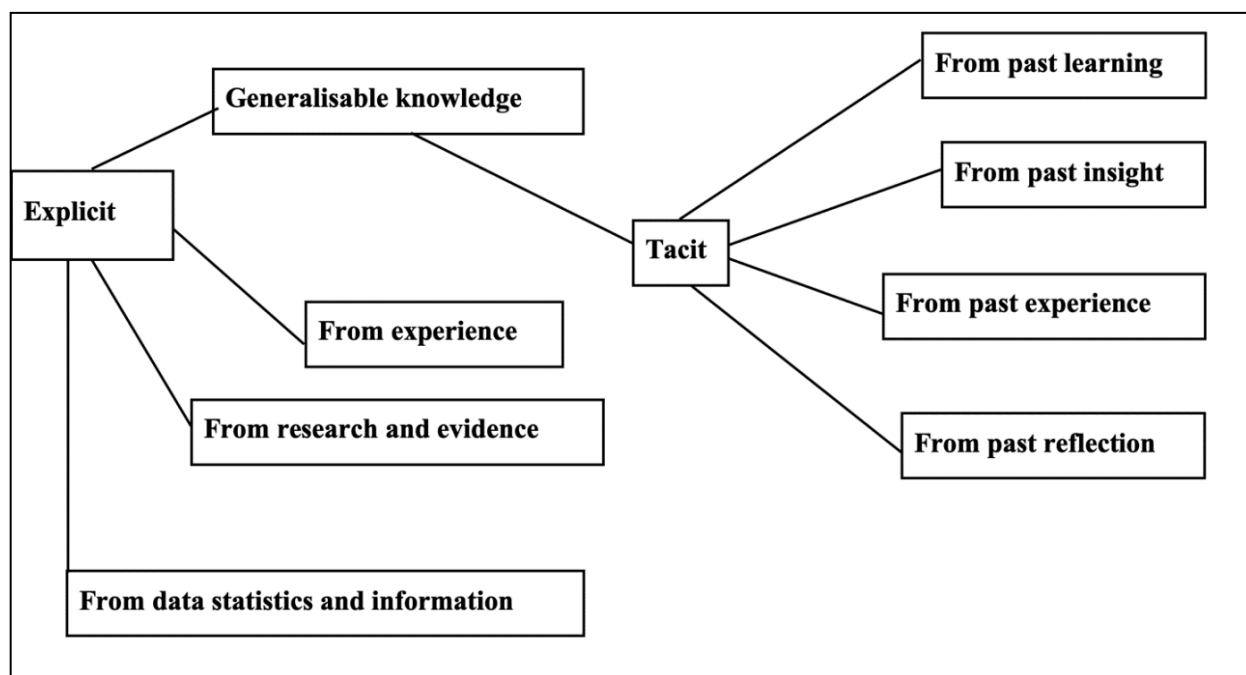


Figure 2.5. Relation of explicit to tacit knowledge (Jesson et al., 2011, p. 17)

Some words to my experience with tacit knowledge and my doctoral journey for this research:

It is difficult to be detailed and always a challenge to work without any kind of bias, to be totally objective, to recognize things as they are. We always interpret, assume, predict, or use our experience to judge or better evaluate what we see, we give the thing we know now a “Gestalt” in our active consciousness.

This is my experience during this doctoral journey and especially during the literature review. To compensate for this weakness, I would like to know about the origin of bias, realize the source from which bias came from, this will help me to stay honest in what I am writing and what I take out of the literature (Bolton, 2010, p. 17).

To get a deep understanding as to what is the topic about, what is behind the RO’s how is the feeling start writing from the known (experience based) area into unknown field of knowledge and regions of the topic. This makes the work on my thesis effective and interesting. This leads me to the differences between hermeneutics, the interpretivist stance and Gestalt philosophy.

The key to my understanding is the difference between “verstehen” and “erklären” to the scientific truth, and it is dependent on reality. After following up the differences between these two main directions during my doctoral journey, the “verstehen” way of creating a contribution to knowledge is the right way for my research.

After a phase of analyzing my observation, this function must be given a working name “stealth Synectic” could fit the bill.

The literature shows some aspects of this, it is described as follows:

Firstly: after reading, hearing facts (a sending situation) or information about a specific topic, the receiver loses this new information immediately out of their mind, it looks like that on the first sight. Meanwhile other information will be collected from new impressions during international traveling for example.

Secondly, after an unpredictable time, when the information must be used again or read again these facts connect with the new knowledge and create new insights. These new insights are usable now, changeable, and developable.

I read a lot about the techniques of Synectic (Gordon, 1961) and the practical use of Synectic in creative technologies. There could be a connection here to this research, tacit knowledge, and the transfer of experiences over generations. It may be plausible to research a little more about this technique and the variants, to find a way of controlling the ability to create knowledge or take it as a combination with findings in tacit knowledge, new adaptation, and new insights.

#### **2.5.5 Family ownership in GM-SME, tacit knowledge transformation**

Later in this chapter it will be argued that the literature review shows that GM- SME, especially when more than two generations are in charge, the ability to decide intuitively is more pronounced than in younger SME or in LSE. We will also find out that the willingness to take a risk in “second generations plus” GM-SME is more present, because of family support and creative forward-thinking and entrepreneurship. As well, Greiner (1983) stated in his consulting guide: family businesses have a long run view and keep the best interest of the family in focus (Greiner and Metzger, 1983, pp. 302-303).

Especially in German industry we find a high-grade well-educated workforce: they graduate from the so called “Berufsausbildungsprogramm”. After three years of intensive practical training and in necessary theoretical aspects, parallel classes, the young people start an apprenticeship in the workshop with the “Meister”. A similar form of education takes place in the management of family owned and managed companies, the so-called executive apprenticeship. Intensive

executive apprenticeship programs transfer knowledge across the generations of family executives, quite like *genba* in Japan as shown above.

It has been observed that this experiential learning has taken place in such firms as Michelin, Motorola and Bechtel Group (Miller and Le Breton-Miller, 2005). It is noted that there is also interpersonal trust involved, and that allows those with significant experience to admit their own mistakes (Bubolz, 2001).

The succession planning of GM-SME gives a valuable hint to support the observation obtained from this research. Davis and Englis (1998) made this relevant discovery, they reported: Through using a discussion of levels (i.e., individual, group, organizational, and resources), in effectuating planning, they became less effective over generations, and learning through mimetic behavior became more salient (Davis and Englis, 1998).

The successors search is identified as an important issue amongst and between family members often about which family member becomes selected, or the recruitment of external contributors. This highlights the effects of specific family influences, such as family culture, family dynamics, family functionality, and the degree of communication and sharing of information within the family. Furthermore, it was stated, that, some factors that drive the extensiveness of the succession planning process were found to be unique to dedicated generations, while other factors were common to all generations (Davis and Englis, 1998).

#### ***2.5.5.1 Tacit knowledge over generations***

It seems to be that tacit knowledge could be kept inside the family business over generations, this is supported by the above-described executive apprenticeship. There are more factors supporting this strength, the following three examples, stewardship, onboarding by a veteran and a strong corporate culture (Miller and Le Breton-Miller, 2005), show this.

Stewardship here is seen as the process of long-term caretaking, often on behalf of others. Integral to this is to be able to refresh and develop knowledge capture within the firm, demonstrating a duty of care. Onboarding by a veteran, keeps the existing experienced management in place to almost suffuse the holistic experience over a longer time scale.

This will reduce the effect of a new incumbent to execute change, but with the benefit of knowledge transfer. A strong corporate culture, although it can be said to be resistant to change,

does allow the knowledge sequestered in the company to be retained. This is achieved through the provision of training, benefits, and salaries, producing the consequent outcomes such as low turnover (Miller and Le Breton-Miller, 2005).

### **Stewardship:**

*“...Stewardship may take the form of preserving tacit knowledge. Tacit organizational knowledge is skill or know-how that resides in individuals and working groups and is not easily codified or communicated...” (Knott, Bryce, & Posen, 2003; Naphiet & Ghoshal, 1998). To preserve such knowledge and support a new generation of leaders, intentionally multigenerational FCBs are apt to invest more than other firms in executive apprenticeships, building a strong top team, and fostering a resilient corporate culture....”(Miller and Le Breton-Miller, 2005)*

### **Onboarding by a veteran:**

*“...Generationally attentive FCBs will be especially interested in preserving a stable and loyal top management team to help the new family leader take over. The old CEO, for example, may stay on as chairperson, making sure that when the new leader comes on board he or she will be supported by several capable veterans (Ward, 2004)...”(Miller and Le Breton-Miller, 2005).*

### **Strong corporate culture:**

*“...Another way family help pass the baton is by fostering a strong, value-driven corporate culture (Barney & Hansen, 1994; Habbershon & Williams, 1999). This ensures that a loyal set of talented employees will be available to keep the firm strong. Veteran FCBs such as Hallmark, Timken, L.L. Bean, S.C. Johnson, W.L. Gore, and many others are known for their profound investments in employee training, minimum layoff policies, employee participation programs, painstaking staff selection, generous benefits, and minuscule turnover statistics (Miller and Le Breton-Miller, 2005)*

## **2.5.6 Summary and Conclusion to Intuition and tacit knowledge -sphere 2-**

We have seen in the analyzed literature (basic and current) a strong connection between intuition, tacit knowledge, and decision-making in many fields of interest. The following summary shows the relevant information for the research out of the literature review in condensed format. The

conclusion shows the gap in literature for intuition and tacit knowledge which must be closed by the interviews.

### Summary

- The relationship between experience, personal skills to intuitive decisions was clear and well described.
- A link between tacit knowledge and personal skills to heritage (family history and education) was also perceptible. Furthermore, the connection of the novice to the expert level (Dreyfuss five stage model) and German Ausbildungssystem (Meister, Geselle, Lehrling) and the Japanese GENBA was also identifiable.
- The way of knowledge creation in SME so called “learning by doing” was detected and allows a connection to the more general view of the basic literature which was gathered and analyzed in this chapter.
- The relation to mindfulness, the resilience of organization in connection to intuitive decisions was clearly described but not connected to SME or GM-SME.
- The use of intuition in behavior and decision-making was strongly connected to time pressure.
- Many other factors which influencing intuition were filtered out of the basic and current literature, such as: mood, emotions, gender, religion, and culture values. These factors were not followed up due to limitation and scope of this thesis.
- The connection between organization and intuition is clear and well described in many relevant books, papers, and journals.
- Tacit knowledge could be transferred from one person to another, when specific parameters will be available.
- Tacit knowledge and the ability to make intuitive decisions is build up during owner-managers live by i.e., experience, learning by doing, connection, attention (compare Gestalt theory)

### Conclusion

By applying the summary to SME characteristics, the following five assertions could be extracted from the literature review for this chapter.



1. Intuition is used by skilled people for important decisions in exceptional and standard situations.
2. The result of intuitive judgment is described as successful if the user of intuition has a high level of know-how, mindfulness, and experience.
3. There are many situational effects which support the use of intuitive judgement (organization, urgency, unexpected situation i.e.)
4. Tacit knowledge is the driver for many of the positive effects of intuition and is transferable over generations by using focused action, education programs and successor planning.
5. The belief in the quality of intuitive decisions could be in the DNA of a SME and transferred over generations.

The connection between decision-making, intuition and growth is described in the literature in a general way; this result could be applied to SME (in general) but not to GM-SME in any way. Hence, this shows a gap in basic and current literature in the context for this research. It could be assumed that the above-mentioned connection could be proven and indicated by interviews with relevant decision makers out of the research context.

## **2.6 Growth of a Firm -Sphere 3**

In the growing phase of an SME, operative leadership is the main procedure. If the corporation is in this early stage the professional abilities, like unique technical or production know-how, of the entrepreneur are a primary importance (Ansoff, 1987; Greiner, 1998; Mintzberg et al., 2009). Furthermore, employees in small organizations have many jobs; with confused overlap roles therefore, decisions at operation level could be also confused (Slack, Chambers, and Johnston, 2010, p. 8). As this research is about the entailments of growth in a smaller firm we need to ask: What is growth and how is it defined for the use in this research? Below I will suggest some relevant and feasible descriptions.

The report of Kaldor cited in the book of Greiner, Semmler and Gong (2005), by comparing the German and the US-American economy under different viewpoints, shows examples under education and economic growth (Greiner, Semmler, and Gong, 2005, pp. 53-80). These focus on how growth is measured in the economy, including production, capital, and productivity.

Dobbs (Dobbs and Hamilton, 2007, p. 304) summarize the SME growth measures as growth in assets, market share, output, profitability or numbers employed, and none have universal acceptance. Multiple growth measures, like those above, are identified in physical or monetary outputs, but very often not the knowledge contained within the business. This is seen as a factor of production, and in the case of embedded knowledge, a non-tradeable asset.

Peter Drucker (2008) is more practical in his view on corporate growth: “...*A company does not have to grow; a company must become better and better all the time...*”. The purpose and the success of a company is when the company gets new customers. A company must be profitable to make a social contribution. (Drucker and Maciariello, 2008, pp. 158-178)

Also, Keynes (2008) emphasize the importance of the customer focus in his book: The General Theory of Employment, Interest and Money in the chapter 5 -Expectations as determining output and employment: “... *All production is for the purpose of ultimately satisfying a consumer...*” and clear the focus of an entrepreneur his planning for growth and also necessary employment (Keynes, 2008, p. 35).

To conclude the brief overview about growth in general, Penrose (2009) also considered multiple perspectives of what a firm is, among which are an administrative organization and a collection of resources (Penrose, 2009, p. 8).

Flamholtz (2015) on the other hand offers, with his six-level model for organizational growth (see figure 2.5.1), a handbook for corporate growth, he mentioned:

*“...Under this growth model, the challenge of building an organization is to create the appropriate combination of these six key variables or building blocks for the stage of growth an organization is currently in. If the organization is able to achieve the necessary design and changes in structure, systems, and management focus before it reaches a particular stage (as indicated by its size), it will not experience problems or problems will be minimized. However, this happens very seldom....”* (Flamholtz and Randle, 2007, p. 3)

This six-level model shows the key strategic actions for successful development of a corporation. His view is based on 40 year of scanning companies out of the Fortune 500 (Flamholtz and Randle, 2015, p. 7).

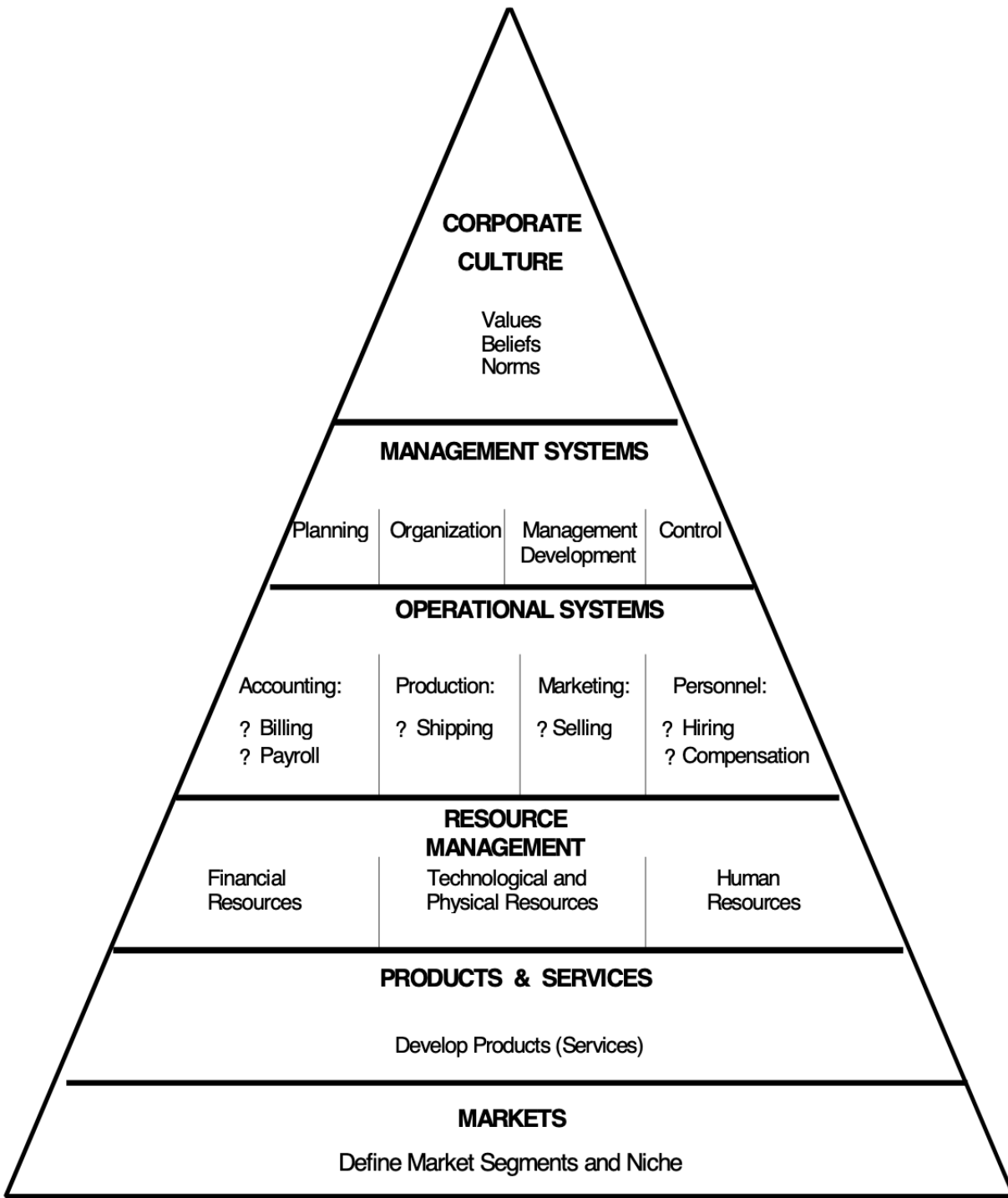


Figure 2.5.1: The Pyramid of Organizational Development (Flamholtz and Randle, 2007)

Flamholtz (2015) added a level under Markets, the business foundation, which has three basic tasks: business definition, strategic mission, and core strategy. This shows once more that his model and his focus on the “growing pains” targets large entities (Flamholtz and Randle, 2015, pp. 15-18). But he also points out that the founder or CEO must realize that the abilities leading

to past successes do not guarantee future success and conclude the position by stating “...The CEO’s existential dilemma: What do I do now? ...” and offer a strategy for management and leadership (Flamholtz and Randle, 2015, pp. 10-14 and 216 ff.).

For the stages of organizational growth, Flamholtz (2007); Flamholtz and Randle, (2007) took a different approach compared to Greiner (1972), identifying the dimensions; Critical development area and Sales volume, and the important factors in each growth stage; see figure 2.5.2 below.

<b>Growth Stage</b>	<b>Critical Development Areas</b>	<b>Approximate Organizational Size (\$ in Millions of Sales)</b>
I. New Venture	Markets and Products	Less than \$1 million
II. Expansion	Resources and Operational Systems	\$1 to \$10 million
III. Professionalization	Management Systems	\$10 to \$100 million
IV. Consolidation	Corporate Culture	\$100 to \$500 million
V. Diversification	Markets and Products	\$500 million to \$1 billion
VI. Integration	Resources, Operational Systems, Management Systems, Culture	\$1 billion +
VII. Decline	All Six Tasks	Any size organization

Figure 2.5.2: Classification of the stages of growth (Flamholtz and Randle, 2007, p. 4)

Within this research context, the classification for the GM-SME based on figure 2.5.2 will be in the stage III. and IV. and stay there for a longer period. As mentioned above, the model and the strategic advice of Flamholtz focusing on LSE and do not offer a base for further use in this research.

#### **2.6.1.1 Representative Literature growth of a firm**

Commonalities	Representative Literature	Comment
Growth model	(Churchill, 1983; Greiner, 1972; Greiner, 1998)	The three papers of Greiner (1972 and 1998) Churchill (1983) build the frame for the comparison of the available growth model to the GM-SME reality.
Growth of a Firm	(Greiner, 1972; Penrose, 2009) (Flamholtz and Randle, 2015)	These two sources clear the definition of growth and growing organizations. The paper of Flamholtz developed a

Commonalities	Representative Literature	Comment
		model for organizational growth by six key “building blocks”.
Growth of SME	(Churchill, 1983; Dobbs and Hamilton, 2007)	These latest models set the base for the prove of the model for GM-SME.

Table 2.4: Representative literature growth of a firm

### The difference between Large and Small Firms

Penrose gathers the main differences and includes the most information which was mentioned before in the general overview on SME, see subsection 2.3.

*“...There is considerable evidence that small firms, because of their size alone, are restricted by their environment to certain types of opportunity where the prospects of continued expansion are extremely limited... They are considered to operate in a niche, often one that is defendable. Furthermore, the environment becomes a picture, rather than a collection of facts. This is an element of holistic thinking as indicated in the discussion above. Presumably, this image is one where individual elements can be identified to provide opportunities or moments of focus.* (Penrose, 2009, pp. 189-199)

And this summary of Penrose’s focusing on SME research shows us once more how important the role and the way of deciding and managing of the GM-SME owner-manager is.

In the change to a larger structure the skills in leadership, organization and management become more relevant. This means that during the different stages of corporate development the firm needs different management skills.

Similar thoughts from another perspective is expounded in Greiner’s “Evolution and revolution as organizations grow *“...as the size of an organization increases, problems of coordination and communication arise ..”* (Greiner, 1972)

Communication is a question of ability and organization, Kohli and Jaworski figured out in 1990 that the communication of top management in an organization plays a crucial role in the shaping of values in organizations and the ability to create market intelligence. The particular interest of Kohli and Jaworski is team spirit, the management skills to communicate and their impact on the

profitability of a corporation (Kohli and Jaworski, 1990). This means, substantial expansion of companies always involves the acquisition of new personnel and education of the old, a lifelong learning is a basic must for the management and it is just as important for the executives on 2<sup>nd</sup> hierarchy (Copley, 2004; 2008, p. 108; Penrose, 2009, p. 46).

## **2.7 Growth model**

In research objective Sub RO 1 and 2 the task for challenging the use of existing growth models for GM-SME is set; therefore, the following two paragraphs gather the relevant information from Greiner's basic model and the specific SME model from Churchill and Lewis for the possible adaptation to the research context of GM-SME. This information will be used later in discussion chapter five in this paper.

### **2.7.1 Greiner's Model: Evolution, and revolution, as Organizations Grow**

One of the major targets of this thesis is to examine "company growth models" in relation to decision-making. It is therefore essential to consider the view of Greiner (1972) from a SME's viewpoint. Greiner starts with an article in 1972 in the Harvard Business review, which he updated in 1998 (Greiner, 1998).

In the early days Greiner's research was conducted in organizational development and change, as we can see in figure 2.6. Later he integrates the challenge of growth, crisis, evolution, and revolution which will be the main source to his growth model.

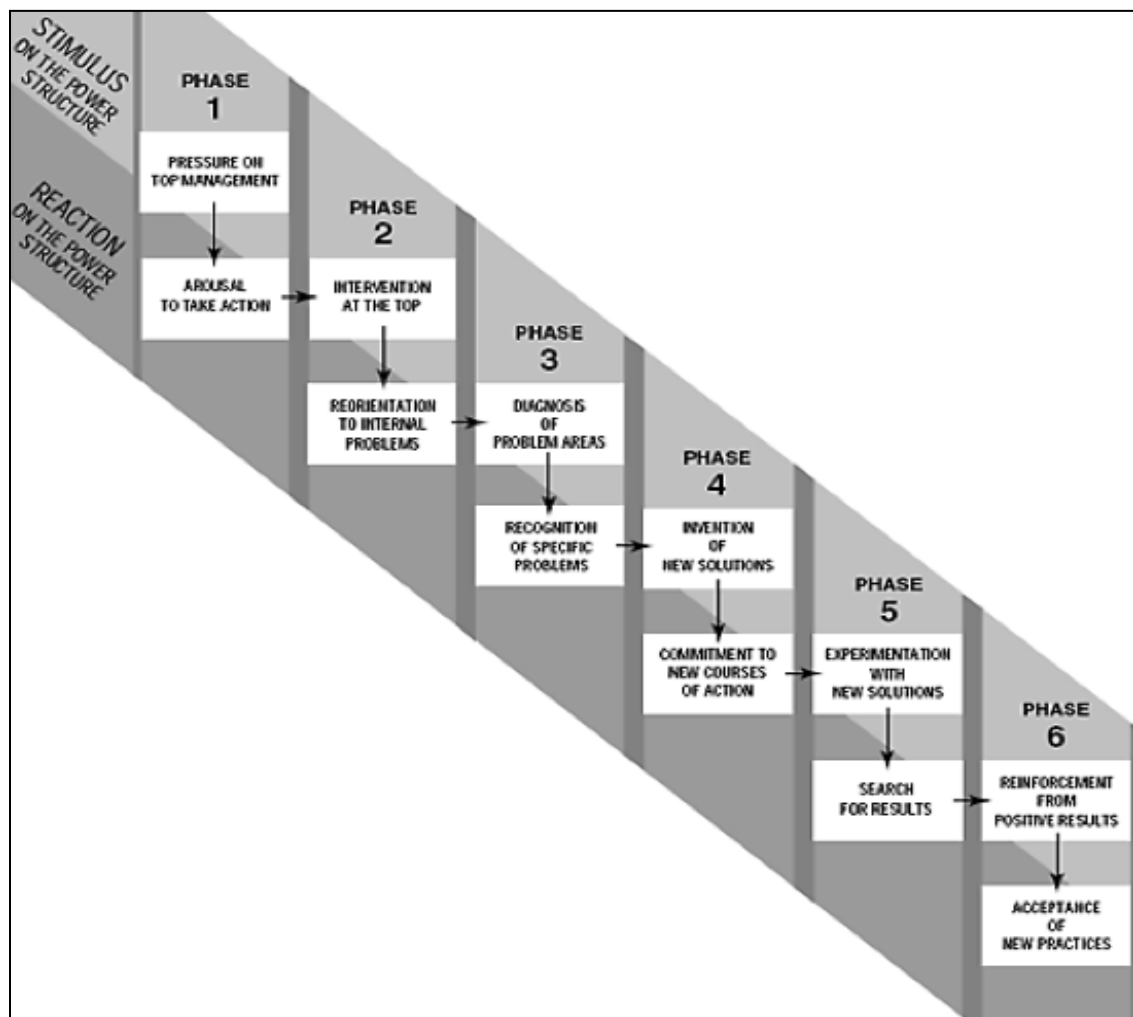


Figure 2.6: Dynamics of Successful organizational change (Greiner, 1967)

**Firstly:** Greiner's research focuses on growth and crisis phases in the organization, and he mainly handles data from large entities. He starts with examples out of Fortune 500<sup>12</sup> and focuses on companies which have had a considerable turnover over the last 50 years. These companies are active in the aerospace industry, automotive, information technology and so forth.

**Secondly:** Greiner's research focuses on organizational growth not on turnover and EBIT. For the analysis of the growth phases the five key dimensions was used:

<sup>12</sup> The Fortune 500 is an annual list compiled and published by Fortune magazine that ranks 500 of the largest United States corporations by total revenue for their respective fiscal years. The list includes publicly held companies, along with privately held companies for which revenues are publicly available. The concept of the Fortune 500 was created by Edgar P. Smith, a Fortune editor, and the first list was published in 1955.

- **an organization's age**, arising problems in management (leadership, rigid, outdated, difficult to change).
- **and size**, arising problems: in coordination, communication, new organizational functions, hierarchy, again management issues.
- **its stages of evolution**, should have long growth and no changes necessary (in this period management could be stable or must be stable, only small corrections are required), this period is four (4) to eight (8) years long (for this research: SME stay for much longer in this period because they manage phase one and two much better as large entities, will be later used again)
- **stage of revolution** -> When management changes style, is unable to implement organizational change and give up past practices with these changes new management lay the roots for the next crisis, as mentioned before "*... the behavior of individuals is determined primarily by past events and experiences, rather than by what lies ahead...*"
- **growth rate of its industry** -> Whereas evolutionary periods tend to be relatively short in fast-growing industries, much longer evolutionary periods occur in mature or slow-growing industries (for this research: markets of the companies in focus, they mainly supply long time stable customers in slow growing industries)
  - when profits come easy, phases revolution come later, by contrast, when the market environment is poor, revolutions seem to be much more severe and difficult to resolve (Greiner, 1972)

Therefore, we take out of this analysis of the five key dimensions: Time moves more slowly in the markets of German machine tool industry and tool making. The pattern presented in as an outcome of the desk research and seems to be typical for companies in industries with moderate growth over a long period; companies in faster growing industries tend to experience all five phases more rapidly, whereas those in slower-growing industries encounter only two or three phases over many years.

#### ***2.7.1.1 Analysis of the evolutionary stages of growth***

The stages of growth create changes in the operational levels of the firm. These are identified as creativity, direction, delegation, coordination, and collaboration.



## **Creativity**

- a) Communication among employees is frequent and informal.
- b) Long hours of work are rewarded by modest salaries and the promise of ownership benefits.
- c) Decisions and motivation are highly sensitive to marketplace feedback; management acts as customers react.

Crisis: leadership (strong managers are needed)

*“...Each management style in each phase provokes the crisis for the next phase, however if you leave a phase and a style it's not possible to go back...”*

## **Direction**

- a) A functional organizational structure is introduced to separate manufacturing from marketing activities, and job assignments become increasingly specialized.
- b) Accounting systems for inventory and purchasing are introduced.
- c) Incentives, budgets, and work standards are adopted.
- d) Communication becomes more formal and impersonal as a hierarchy of titles and positions grows.
- e) The new manager and his or her key supervisors assume most of the responsibility for instituting direction; lower-level supervisors are treated more as functional specialists than as autonomous decision-making managers.

Crisis: autonomy (lower-level managers cannot make decisions) so *“...For each phase, managers are limited in what they can do if growth is to occur. For example, a company experiencing an autonomy crisis in Phase 2 cannot return to directive management for a solution; it must adopt a new style – delegation – in order to move forward...”*

## **Delegation**

- a) Much greater responsibility is given to the managers of plants and market territories.
- b) Profit centers and bonuses are used to motivate employees.
- c) Top-level executives at headquarters limit themselves to managing by exception based on periodic reports from the field.
- d) Management often concentrates on acquiring outside enterprises that can be lined up with other decentralized units.

- e) Communication from the top is infrequent and usually occurs by correspondence, telephone, or brief visits to field locations.

Crisis: control (top management is losing control, and would like to get it back)

Comment: In SME the owner does not share responsibility, often they establish a control and regulative system referenced to their abilities, not sure if this stops growth.

### **Coordination:**

- a) Decentralized units are merged into product groups.
- b) Formal planning procedures are established and intensively reviewed.
- c) Numerous staff members are hired and located at headquarters to initiate companywide programs of control and review for line managers.
- d) Capital expenditures are carefully weighed and parceled out across the organization.
- e) Each product group is treated as an investment center where return on invested capital is an important criterion used in allocating funds.
- f) Certain technical functions, such as data processing, are centralized at headquarters, while daily operating decisions remain decentralized.
- g) Stock options and companywide profit sharing are used to encourage employees to identify with the organization.

Crisis: red-tape (organization is too large and complex to be managed by formal programs (line managers complain about staff and staff complain about management)) procedure taking precedence over problem solving.

### **Collaboration**

- a) The focus is on solving problems quickly through team action.
- b) Teams are combined across functions to handle specific tasks.
- c) Staff experts at headquarters are reduced in number, reassigned, and combined into interdisciplinary teams that consult with, not direct, field units.
- d) A matrix-type structure is frequently used to assemble the right teams for the appropriate problems.
- e) Formal control systems are simplified and combined into single multi- purpose systems.
- f) Conferences of key managers are held frequently to focus on major problems.

- g) Educational programs are used to train managers in behavioral skills for achieving better teamwork and conflict resolution.
- h) Real-time information systems are integrated into daily decision-making processes.
- i) Economic rewards are geared more to team performance than to individual achievement.

Experimenting with new practices is encouraged throughout the organization.

Crisis: In Greiner's paper the name is "?" question mark...., Greiner gives further hints as to where the next crisis is likely to occur: *"... center around the psychological saturation of employees who grow emotionally and physically exhausted from the intensity of teamwork and the heavy pressure for innovative solutions..."* (Greiner, 1972, p. 44)

The crisis should be resolved through programs for revitalizing the workforce (part time work, sabbatical, reflective structures and so forth) this could be a possible scenario for the future. In the last ten (10) years a change in management and leadership into an agile organization was started (own experience). Maybe Greiner thought about this kind of smart revolution in leadership and work life balance in the late 1980s.

The management should also be involved in the smart revolution, with job rotation also for managers, relaxing periods, more flexible working hours, doing also basic jobs in sales, to come back to customer contacts and so forth. We must consider that Greiner was not able to fully anticipate the influence of the internet and information technology, considering it to be useful in this regard.

Greiner (1998) commented on his 1972 paper like this:

*"...My speculation that "psychological saturation" is not the issue in Phase 5, and that extra-organizational solutions might be the issue for Phase 6 if at all..."* (Greiner, 1998, p. 9).

Alternatively, others call for a following phase of collaboration (Andreatta, 2018) sees the whole model as a 'crystal ball' seeing into the future.

Therefore, there will be an evolution phase after the 5<sup>th</sup> one and there will be a revolution phase) crisis, for sure. But what should the owner of an SME with the ability to grow do in the five phases? Implication for managers is depicted in the following Figure 2.7.

Greiner summarizes his results with two suggestions for the use of his model.

- 1) *“...Managers often fail to realize that organizational solutions create problems for the future (i.e., a decision to delegate eventually causes a problem of control). Historical actions are very much determinants of what happens to the company at a much later date...”*
  - a. *“...An awareness of this effect should help managers to evaluate company problems with greater historical understanding instead of "pinning the blame" on a current development. Better yet, managers should be in a position to predict future problems, and thereby to prepare solutions and coping strategies before a revolution gets out of hand...”*
- 2) *“...A management that is aware of the problems ahead could well decide not to grow. Top managers may, for instance, prefer to retain the informal practices of a small company, knowing that this way of life is inherent in the organization's limited size, not in their congenial personalities.*
  - a. *If they choose to grow, they may do themselves out of a job and a way of life they enjoy...”*
- 3) *And what about the managements of very large organizations? Can they find new solutions for continued phases of evolution?...” (Greiner, 1972, pp. 45, 46)*

## ORGANIZATIONAL PRACTICES IN THE FIVE PHASES OF GROWTH

CATEGORY	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5
Management Focus	Make and sell	Efficiency of operations	Expansion of market	Consolidation of organization	Problem solving and innovation
Organizational Structure	Informal	Centralized and functional	Decentralized and geographical	Line staff and product groups	Matrix of teams
Top-Management Style	Individualistic and entrepreneurial	Directive	Delegative	Watchdog	Participative
Control System	Market results	Standards and cost centers	Reports and profit centers	Plans and investment centers	Mutual goal setting
Management Reward Emphasis	Ownership	Salary and merit increases	Individual bonus	Profit sharing and stock options	Team bonus

*Figure 2.7: Organizational Practices in the Evolution and revolution as organizations grow (Greiner, 1972)*

### 2.7.2 Organizational growth models for SME, Churchill, and Lewis 1983

In Churchill (1983) established an article based on Greiner's view from 1972, "The five stages of small businesses growth".

In this research paper Greiner's model was adapted to small business and the a questionnaire was worked out to fill a model which is described in the following paragraph (Churchill, 1983). Five stages of development for small businesses, to move from one stage to the other, the following factors are crucial, see Figure 2.8.

1. **Existence:** get customers, ability to supply, more than one key customer, money to pay the invoices, basic strategies, no organization, or a small organization.
2. **Survival:** achieve break even, cash flow is ok, generate positive EBIT, major goal is still survival of the corporation.

3. **Success:** Decision by owner -> expand or stay small, owner maybe step out of operative business, hire external managers, choose franchise structures, found subsidiaries, invest in financial growth.
4. **Take off:** key problems -> how to grow rapidly and how to finance this growth (cash), delegation (owner could do or not), pivotal period: grow or sell (depends on owners' ability to delegate and take help from experienced managers or run into an equilibrium status).

**Resource Maturity:** Control financial aspects of past growth, retain advantages of a small size professionalize the company by strategic planning, ERP, cost system, finance planning, owner and business are separated then it can come to ossification lack of decision-making, lack of innovation, lack of flexibility.

**Key Management factors:**

The management need to consider the quality of the resources that are available to the company as it grows. The four that relate to the company are as follows:

1. Financial resources, including cash and borrowing power.
2. Personnel resources, relating to numbers, depth, and quality of people, particularly at the management and staffing levels.
3. Systems resources, in terms of the degree of sophistication of both information and planning and control systems.
4. Business resources, including customer relations, market share, supplier relations, manufacturing and distribution processes, technology, and reputation, all of which give the company a position in its industry and market.



Also, significant here are the factors that relate to the owner. They need to consider what their aims and abilities are in continuing to develop the business. Four are identified and they are as follows:

- 1) Owner's goals for themselves and for the business.
- 2) Owner's operational abilities in doing important jobs such as marketing, inventing, producing, and managing distribution.
- 3) Owner's managerial ability and willingness to delegate responsibility and to manage the activities of others.
- 4) Owner's strategic abilities for looking beyond the present and matching the strengths and weaknesses of the company with his or her goals.

Churchill (1983) summarizes his findings with the following statements:

*"...This scheme can be used to evaluate all sorts of small business situations, even those that at first glance appear to be exceptions. Take the case of franchises. These enterprises begin the Existence Stage with a number of differences from most start-up situations. ...*

*A company's development stage determines the managerial factors that must be dealt with. Its plans help determine which factors will eventually have to be faced. Knowing its development stage and future plans enables managers, consultants, and investors to make more informed choices and to prepare themselves and their companies for later challenges. While each enterprise is unique in many ways, all face similar problems and all are subject to great changes...." (Churchill, 1983, p. 11)*

Further papers from Eggers and Churchill (1994), show an update of the Churchill model four (4) years later. They consider that there are stages of small firm growth, but there is variability and individuality in particular firms. They propose a renaming of this theory from stages of growth to phases of management.

In essence this transfers the analysis from the manifestation of growth in any firm to the managerial level. It then sees it as a model for management awareness and consequent skills development. (Naumes, Naumes, and Merenda, 2007, p. 71) publish the following report, based on only 4 companies out of 3 sectors and in a small location New York (very limited in scale).



Scott and Bruce (1987) challenged the model of Churchill (1983) and use as a base the model of Greiner. Their observation was that the stage model of business growth was an indicator of “*what strategies appear suitable. It is, however, only a tool*”. This observation is not unique but illustrates the extant value of the model. It does seem to have its applicability in being a consultant’s tool to make recommendations on the choices for management. The proposals from Eggers and Churchill (1994), appear to move in the same direction in proposing that it’s use value is in scenario discussion and planning actions. In conclusion to this discussion it the difficulty is whether it is just that or becomes an accepted typology of how firms grow (Eggers and Churchill, 1994, p. 14; Scott and Bruce, 1987, p. 51).

	Stage 1. Inception	Stage 2. Survival	Stage 3. Growth	Stage 4. Expansion	Stage 5. Maturity
Stage of industry	Emerging, fragmented	Emerging, fragmented	Growth, some larger competitors, new entries	Growth, shakeout	Growth/shakeout or mature/declining
Key issues	Obtaining customers, economic production	Revenues and expenses	Managed growth, ensuring resources	Financing growth, maintaining control	Expense control, productivity, niche marketing if industry declining
Top management role	Direct supervision	Supervised supervision	Delegation, co-ordination	Decentralization	Decentralization
Management style	Entrepreneurial, individualistic	Entrepreneurial, administrative	Entrepreneurial, co-ordinate	Professional, administrative	Watchdog
Organization structure	Unstructured	Simple	Functional, centralized	Functional, decentralized	Decentralized functional/product
Product and market research	None	Little	Some new product development	New product innovation, market research	Production innovation
Systems and controls	Simple bookkeeping, eyeball control	Simple bookkeeping, personal control	Accounting systems, simple control reports	Budgeting systems, monthly sales and production reports, delegated control	Formal control systems, management by objectives
Major source of finance	Owners, friends and relatives, suppliers leasing	Owners, suppliers, banks	Banks, new partners, retained earnings	Retained earnings, new partners, secured long-term debt	Retained earnings, long-term debt
Cash generation	Negative	Negative/breakeven	Positive but reinvested	Positive with small dividend	Cash generator, higher dividend
Major investments	Plant and equipment	Working capital	Working capital, extended plant	New operating units	Maintenance of plant and market position
Product-market	Single line and limited channels and market	Single line and market but increasing scale and channels	Broadened but limited line, single market, multiple channels	Extended range, increased markets and channels	Contained lines, multiple markets and channels

Figure 2.10: The model of Scott and Bruce, a Variant of Greiner’s and Churchills model (see figure 2.7 and 2.9) (Scott and Bruce, 1987, p. 48)

What could be stated after reading a large amount of literature on “small business growth” and literature relevant to Greiner’s theory is that it was not taken into consideration yet, that it is possible that a founded SME could be still a SME after 150 years and still be successful.

Growth does not always occur (Feindt, Jeffcoate, and Chappell, 2002; Spilling, 2001; Zook, Allen, and Smith, 2000), is not stable, and the cohort of high-growth firms changes (Dobbs and Hamilton, 2007, p. 315).

Turnover is growing, the number of employees is growing and organization is changing or growing, but this does not fit to Greiner's theory, based on the above statement (Dobbs), as Zook maintains, "...*not every company grow in a way...*" (Zook et al., 2000; Zook and Rogers, 2001)

Ward (1997) reports, most family business don't grow they survive by avoiding inter-family conflict and kept the managerial control in one person and have significantly been in sectors that avoid high levels of technological and competitive pressure. This seems to exemplify the view that long term survival depends on residing within a business niche (Ward, 1997). And (Denison, Lief, and Ward, 2004, p. 68) in a further paper ask: "*How is that culture best transmitted through the generations?*".

A practical and local research in Turkey with one large scale company was conducted and concludes that a more cyclical model seems more appropriate than a linear one. Each phase could be relived in the lifespan of the company over a period of thirty-one (31) years (Hotamisli, Ibicioglu, and Karayel, 2009, p. 259).

### **2.7.3 Conclusion, -sphere 3- Growth of a firm**

I would like to conclude this chapter with a citation from Greiner's review in 1998 of his 1972 paper. He admits that it is not a cookie cutter or panacea (Greiner, 1998, p. 9). The model is thus not an 'iron law' that governs firm development, but maybe it does not resemble the 'crystal ball' suggested earlier. It seems to be a cataloguing of experiential data from Greiner and others, that is probably in itself intuitive. The growth of a firm is gathered in this chapter from a dedicated viewpoint, from the viewpoint of an owner of a German SME in a competitive environment of high-tech products. And this paragraph uses a viewpoint of a GM-SME manager as well, his company is in 3<sup>rd</sup> generation, is an international hidden champion and located in the Swabian province (south Germany).

Furthermore, I tried to extract from the literature the most obvious view of the gap in literature in this important research area. However, the theoretical information fits together, at the end of the day a company must make profit be a large one or be a small one. The distinction between a

family-owned SME in south Germany and a machine tool company in Detroit is maybe the time the owner takes for reaching his goal. I discovered so far that, in the big picture, the “Five phases of Growth” could be adapted (with limitations) from large scale companies to small and medium sized companies. We also realized that we have slow and fast-growing markets, and this is valid for large and small entities. Some researchers make adaptations to SME others use the model of Greiner to specific industrial sectors and countries.

Since Greiner published his “Evolution and Revolution as Organizations Grow” in 1972 (Greiner, 1972) this was the second time he published about this topic, an early publishing in 1967 shows the first ideas to this paper in 1972 (Greiner, 1967). And the article from 1972 was republished in 1998 with some changes and amendments made by Greiner. In the intervening 26 years many references and analyses were published based on Greiner’s view, a new research field was established. As mentioned before this literature review displays the most relevant articles based on Greiner’s article from 1972, but none of them challenge the basic theory of Greiner for mature and growing SME or GM-SME.

The information gathered in this subsection of the literature review shows that the research in the growth sector offers a possibility to adapt the growth model of Greiner (1972) or also in combination Churchill (1983) to the GM-SME in the research context. Especially the respective summary to the usage of their model must be proved. This has not been done yet, so there is a gap in literature and Sub RO one and two are relevant to close this gap.

## **2.8 Conclusion literature review**

This literature review explores four fields of interest and make a delves into three connected spheres (decision-making, intuition, and growth) of corporate development in family owned German Mittelstand “Small and Medium Sized Enterprises” and opens a new window into this important industrial sector. As shown in subsection 2.2 many SME perform without any structured marketing activity, but they are successful, in terms of revenues and growth (Gilmore A., 2001, p. 1). Market knowledge is acquired via communication channels in an unstructured manner, e.g., networking, core customer and competitor observation. Furthermore, often the gut feeling, intuitive and tacit knowledge of leaders, guides SMEs to new products and new markets (Carson, 1995; Copley, 2008; Hass, 1997; O'Dwyer et al., 2009b). A corporate strategy may exist

tacitly, only in managements' mind, and perhaps the managers do not have the ability to project this to others (Mintzberg et al., 2009; Polanyi and Sen, 2010).

In any growth phase of a business, relationships to customers, markets and people in the enterprise become more complex. At this time the lead entrepreneur has to change their role within the enterprise (Carson, 1995, p. 167). A basis for growth is the ability to change. “...*When managers realize, that their managerial style is no longer appropriate, they may even have to take themselves out of leadership positions...*” (Greiner, 1972; Lewis, 1983). This transition process is critical, not only because of the manager's personality but also because of the intuitive action and the nature of the tacit parts of knowledge in management's mind. Even if they want to transfer their experiences it becomes difficult, as it was acquired through practice, and may not be easily expressible in words (Polanyi and Sen, 2010). This shows a relation between the model of Greiner (1972, Churchill (1983) and the intuitive and tacit path of SME.

Furthermore, the topics decision-making, and tacit knowledge could be challenged from a SME perspective, even the view on family owned and managed GM-SME could be taken into consideration in some cases. In the literature review in this chapter many relevant insights were elaborated such as the positive and the negative judgement on intuitive decision-making, the interconnection between tacit knowledge and knowledge management. Additionally, the research shows more information to the understanding for the selection of a successor in a family business and shows the importance also with a view of a large corporation. Especially notable is the theme of transportable tacit knowledge over generations, this phenomenon must be challenged in the interview phase in chapter four and analyzed in discussion chapter five.

The gap in literature was outlined as a preliminary outcome after assessing the available literature. The outlined gap could be confirmed and expanded. The level of family involvement under table 3.9 in chapter four indicates an additional gap in literature. Furthermore, the literature review shows that none of the existing models of organizational growth could be adopted to the GM-SME, see subsection 2.7.3. Hence, the literature review shows the following gaps in existing and relevant literature.

The relation between decision-making, intuition, tacit knowledge, and the grade of family involvement into the function of organizational growth in GM-SME. Additionally, the available growth models do not apply to the uniqueness of GM-SME and must be challenged after analyzing the interviews. These models must be adapted to the reality of the companies in the

context. This will not only close a gap in literature but will be a significant contribution to knowledge in this context. This thesis target to close these four gaps, which also displayed in figure 2.12:

- GAP 1: The influence on networking, leadership, and marketing by the owner family on the success of GM-SME is not described in the literature.
- GAP 2: Decision-making specifically in GM-SME in the research context is not described.
- GAP 3: The family's influence on the owner-manager's decisions, and to which extent tacit knowledge may impact intuitive decisions is not described.
- GAP 4: No current growth model, based on Greiner's could be applied on the growth development of GM-SME in the research context.

The relationship between the three spheres and the four identified gaps are shown in figure 2.12.

The following chapters will concentrate on the task of closing these gaps.

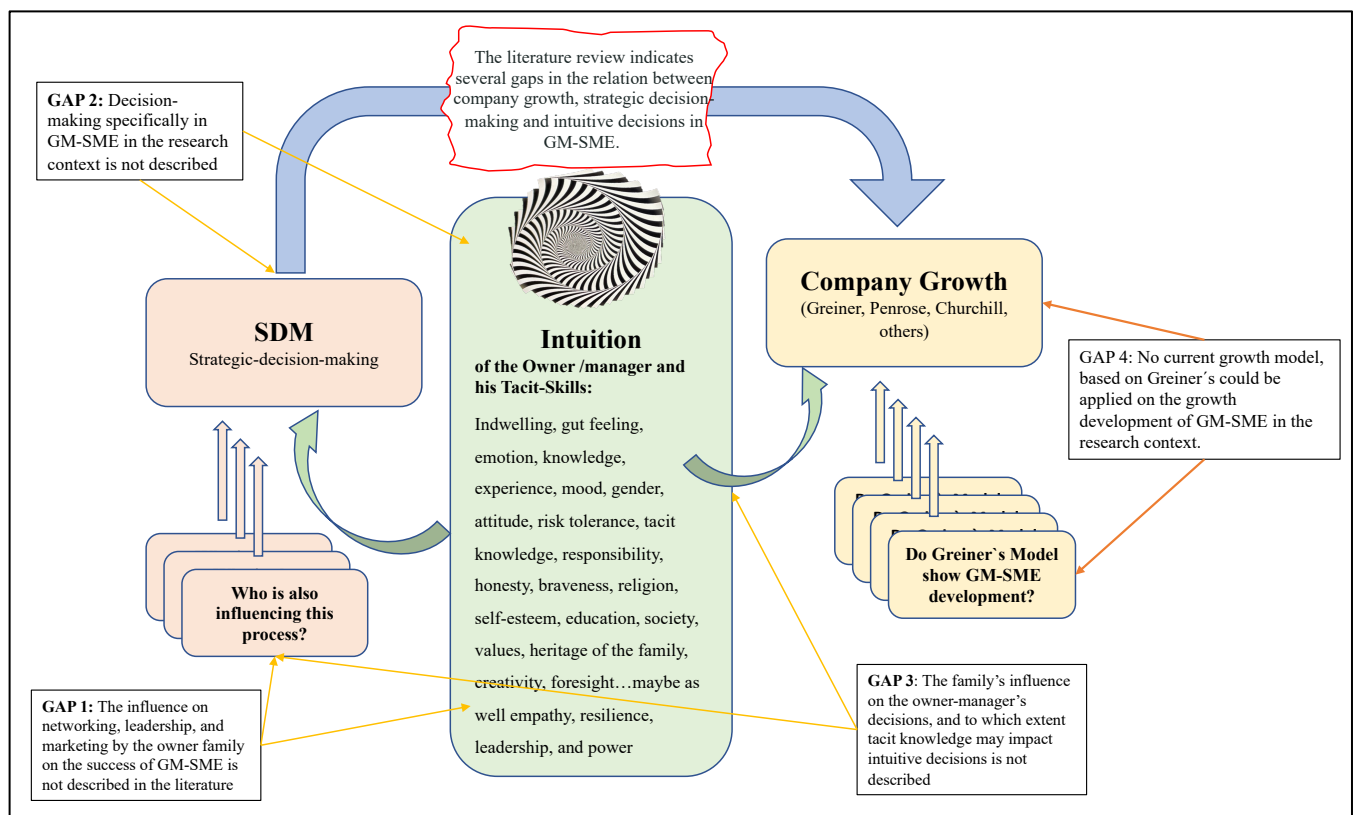


Figure 2.12: Visualization of the factors identified in literature in relevance to research objective and the identified gaps in literature.

# 3 Methodology

## 3.1 Approach, Philosophical Position, Strategy, Techniques and Procedures

To conduct research means to make decisions about a methodological approach and a philosophical commitment to make the topic researchable. The philosophical commitments relate to the research questions or better with the nature of the “phenomenon” where the investigation must be conducted. Especially in management research, the mode of engagement, the nature of human behavior, neutrality of enquiry, influence on the researched subjects or organizations are often critical issues which must be considered in the selection process of research philosophy (Gill, Johnson, and Clark, 2010).

Having indicated the three spheres of the research subject and the four gaps in current knowledge, this current chapter will outline the research methods and procedures adopted to pursue the research. This methodology chapter starts from a general consideration of Saunders (2016) (Saunders, Lewis, and Thornhill, 2016, pages 4, 160, 605) and takes further information from other sources into consideration (Bryman and Bell, 2015; Gill et al., 2010). These readings will be used to develop a research methodology, shows the theory how the research will be undertaken, dives more deeply into the varieties of strategy by analyzing in detail the pros and cons in relation to the aim of the research, figure 3.1 show the focus and the logic structure of this chapter.

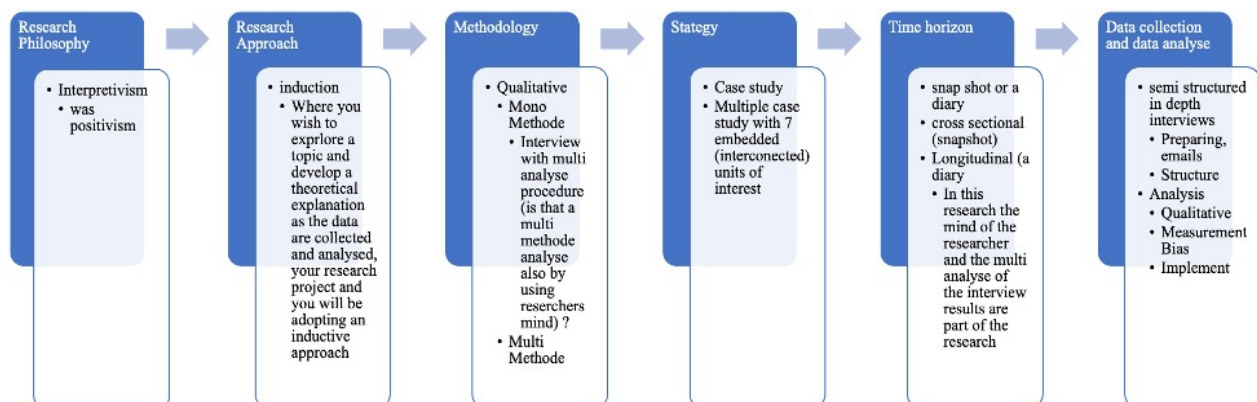


Figure 3.1: Focus in chapter 3, how this chapter looks like (as landscape view in appendix, chapter 9)

This chapter’s principal task is to deduce from the scientific toolbox how to fulfil the research objectives (see section 1.4), achieve a contribution to knowledge, close the detected gap in

literature, and decide what are the right methods and positions to get the most valuable output. The structure of the chapter follows these paths:

- Decide on the research approach (inductive, deductive, abductive)
- Find the best fit philosophical position (positivism, realism, pragmatism or interpretivism)
- Select the research strategy (case study, grounded theory, experiment, ethnography.)
- Set up a time horizon for the research (do the right thing at the right time, a snapshot (or several snap shots) or a longitudinal view on the phenomenon))
- Pair all theoretical basics (philosophy, approach, strategy) with the right way of collecting and analyzing data.
- Describe in detail the method, techniques, and procedures, because of the importance for the result of the research.

Additionally, a side view on issues which could influence the outcome or the analysis of the research, for example: saturation, bias, and my personal approach will be conducted in the conclusion to this chapter.

To support and illustrate the decision for the selected methodology, a sample case, which I know will be used as a theoretical cross check, see chapter three under point 3.4.

In Adaption to the book “Start with why” of Simon Sinek, the method chapter also takes some of the elements of the golden circle philosophy into consideration (Sinek, 2011, pp. 102-104):

### **Why (Clarity)**

To find out why the leaders do what they do we have to understand their “why” and how they inspire their employees and how they decide how they decide. This ‘why’ can seem difficult to address, given that the topic of this research is intuitive decisions, which do not always have an articulated process.

### **How (discipline)**

When the why (the decision is made and fully understood by the team) is clear, then the how could be processed by existing know-how in today’s organization. Understanding ‘how’ gives security by hiring people, finding partners and know-how to drive the business.

### What (consistency)

To be authentic with your “why”, everything you do and what you believe must be authentic.

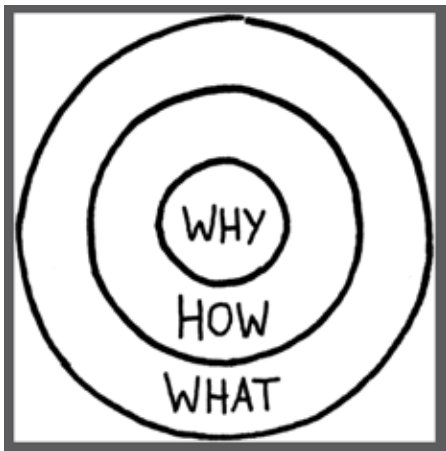


Figure 3.2: The golden circle source (*Start with why*, Sinek, 2011, p. 58)

### 3.2 Research approach (induction, deduction, or abduction)

The research objective requires an observation, an interpretation, or a description and must open a view beyond that which is already present, to provide new perspectives on the topic, to decide on the following. Initially, it would seem appropriate to ask:

- Which general logic will the research follow from a deductive, an inductive or an abductive research approach?

To analyze the variants, a table is created to show the main and specific functions of each research approach to reach the research objective in the best manner:

	Deduction	Induction	Abduction
Logic	In a deductive inference, when the premise is true, the conclusion from the evidence must also be true	In an inductive inference, known premises are used to generate untested conclusions	In an abductive inference, known premises are used to generate testable conclusions
Generality	Moving from the general to the specific	Moving from the specific to the general	Interacting from the interactions between the specific and the general



	Deduction	Induction	Abduction
Use of data	Data collection is used to evaluate propositions or hypotheses related to an existing theory	Data collection is used to explore a phenomenon, identify themes and patterns, and create a conceptual framework	Data collection is used to explore a phenomenon, identify themes and patterns, and create a conceptual framework and test this through subsequent data collection and so fourth
Theory	Theory falsification or verification	Theory generation and building	Theory building or modification, incorporating existing theory where appropriate, to build new theory or modify existing theory

*Table 3.1: Research approach, source, Saunders (Saunders et al., 2016)*

Which research approach is the best to close the gap in literature, contribute to knowledge and get out the most valuable insight into the three factors in our research context (see figure 2.12, chapter two) and research objective in combination with the hermeneutic and the selected research strategy? An inductive approach can generate untested conclusions; it is adjusted from the specific to the general, collects data to explore a phenomenon in a specific context and is cut out to build a theory.

In comparison, the deductive approach is made to test an existing theory and analyze data or situation from a general view to the specific, which is in our case the wrong direction. An abductive approach is quite similar to the inductive approach with some important differences, as the interaction with general and the specific and the phenomenon will be explored by data collection. What could be relevant during the research is, the phenomenon could change in some parameters and the possibility to use an existing theory and modify these could be relevant on behalf of the planed challenging of Greiner's Theory (five phases of organizational growth) in respect of the growth of GM-SME in the research context. This theory will not be used here to deduce outcomes, but in seeking to determine the applicability of this theory, there will be an investigation to see if the theory applies in the chosen locale.

To sum up, the inductive approach with elements of an abductive approach will be the selected one, because an inductive approach follows the demand of the RO and the basic question of this research; what are the basic functions of successful practices of German-Mittelstand-SME (GM-SME) leaders?

### **3.3 Philosophical Position**

This approach to the question was generated from my over 20 years' experience in leading GM-SME positions. I thought that another way of development of company growth without the founder's intuition was possible. However, given that there are existing theories of SME growth which seemed to neglect an inductive view of decision-making, from what already exists in practice, then there was a fortiori case for challenging the existing theory as a basis for decision making in GM-SME positions.

#### **Discussion (selected views) of relevant philosophical positions**

Having discussed the approach to knowledge generation - epistemological strategies – there will be a consideration of the nature of the research objects. What is it that the research is looking at? Initially an approach to this study, based on the adopted ontology (the real world exists but cannot truly perceived) and being able to explore perceived existing reality in GM-SME management, a post-positivist position could be common to the research (Allmendinger, 2002, pp. 7, 15; Farthing, 2016, p. 24).

At first thought, a positivist position would seem close to the researcher's engineering background. But to be able to fulfil the research objective it is necessary to have a close relationship with the participants. Which is quite difficult out of a positivistic, thus objective position. The epistemological approach of the positivistic stance demands a minimization of participant interaction with the research and the researcher himself. Gill (2010) considered critically the positivist position, based on the assumptions of the nature of human behavior and the ability to remain neutral and impersonal. Also, the differences in the results of each approach, for example; the quantitative result "erklären" and the qualitative "verstehen" are important parameters to choose the right philosophical stance (Dilthey, Makkreel, and Rodi, 2010; Gadamer, 1972, pager 332 ff.; Gill et al., 2010, page 57, 59, 148-150; Poser, 2006, page 209-224; Schleiermacher, 1998).

Alternatively an interpretivist position could be chosen because it allows a close contact to the protagonist in comparison to the positivist position (Bryman and Bell, 2015). Also, the epistemological approach uses the context dependent construction of the interpretivist. This position allows the interpretation of the results in an inductive manner and is effective if the data needed to address the question cannot be defined beforehand.

In interpersonal interviews the relation between the participants is close, and interactive. The reason is to be able answer the research question and come closer to the “problem”; in this case, the tacit marketing knowledge for decision-making. As noted, this research rests initially on the accumulated personal experience in GM-SMEs in this sector, so the interviews will be richer and more dependent on mutual understanding of the issues. The analysis of the interview results plays a crucial role in the whole research. Hence, “verstehen” is a central point in the research which, leads to a hermeneutic orientation to look behind the obvious with an interpretative research philosophy (Heidegger, Macquarrie, and Robinson, 1967).

In management research, it is possible to consider critical theory, to consider the role of ideology and consider in whose interest’s decisions are being made (Alvesson and Sköldberg, 2000). The critical theorist’s position is brought to bear in relation to a modified form of “verstehen” in the investigation of the force of cultural forces, the so-called critical ethnography. A direct consequence of the epistemological ontological position of critical theory is the relation to organizational production and change.

To recap, the given research strategies are assigned to epistemological and ontological orientations, quantitative strategy to positivistic and objectivistic, qualitative strategy to interpretivist and constructivist orientation (Bryman and Bell, 2015). On the other hand, qualitative research is a field of inquiry in its own right and is associated as well with positivism in several past periods of development (Denzin and Lincoln, 2011, pp. 3, 14, 15, 20 ). Schwandt further stated in the handbook of qualitative research, to interpret human action a significant aim is to understand the consciousness of the actor (their own) and that of the others. So, we must interpret researchers and others action to come into the position to understand, in the meaning of “verstehen”, individuals act (Denzin and Lincoln, 1998, p. 191).

An Interpretivist position all in all:

- believes that it is necessary to understand differences between humans in our roles as social actors.
- understands the world from the point of view of the social actors, different interpretations are possible and thus are subjective.
- qualitative, non-quantitative questions.

## **Summary**

Based on the above view, the research will be conducted with an inductive approach, a qualitative methodology. To get the know-how and the experience of the researcher out of the context into the research result, the involvement in the data collection by interacting with the research subject, answering the main question and the RO, an interpretivist position has the best fit. In the following part of this chapter, it will be explained in detail how the parameters have influence on the value of the result of this research.

### **3.4 Research Method**

To achieve the research objective, reach the research aim and contribute to knowledge, it is necessary to be selective to the applied research methodology. To select the right research strategy, the main relevant research strategies have been analyzed and compared with a focus on the phenomenon and the relevant parameters (involvement of the researcher, sample size, research approach, expected procedure (interview), research environment).

After formulating the research objective, deciding on a research approach and the philosophical position, the next very important step is to reflect on method and figure out the best research strategy. Through reference to a number of research handbooks (Bryman and Bell, 2015; Byrne and Ragin, 2009; Reason and Bradbury, 2008; Saunders et al., 2016; Yin, 2014) the considered research strategies are the following: Action research, qualitative, quantitative, and multiple case study, grounded theory. Not considered strategies: narrative inquiry, ethnography, experiment, survey, archival research because of a perceived mismatch.

#### **3.4.1 Action Research**

The aim of action research is outlined by Kurt Lewin (Lewin, 1949) as an important contribution to change and better society and its institutions through resolving social problems. Thus, action research is related to real problems in organizations, subsequently take joint action (researcher and participant) to identify these problems and resolve them. Action research has become quite popular among management researchers to develop solutions to real organizational problems. The process of action research is emergent and iterative and due to the involvement of the researcher and the participants participating and collaborative (Gill et al., 2010; Saunders et al., 2016).

All parties work together in an iterative process on diagnosis and solution of the problem. This could be done by transporting experiments in the real world into a real corporation to get support from the people in charge. In such a process, the identification of the participants with the problem will bring new know-how, new thinking and new ways to solve organizational issues together with the team (Bryman and Bell, 2015).

The action research approach needs high involvement in pursuing the research, and good cooperation with the GM-SME with a high trust between researcher and management. The settings for the research must be made before the research process starts. The action research approach has, because of the closeness between researcher and participant, a good chance to get the expected information about phenomenon. The number of GM-SME to conduct action research is limited because of the time-consuming action on side. On the other hand, action research could produce insights into a GM-SME which cannot be seen by traditional methods, especially in complex internal situations (Neergaard and Uihøi, 2007).

#### **The first impression of this research strategy:**

By analyzing the research objectives and the targeted outcome of the research, action research strategy could not be used because of the small sample size or only one sample could be processed. Also, the aim of the research is to explore this particular phenomenon, not to seek to develop solutions through intervention in the area.

#### **3.4.2 Grounded theory**

As Charmaz (2014) notes, “...*Grounded theory ethnography gives priority to the studied phenomenon or process rather than the setting itself....*” (Charmaz, 2014). A recursive process, grounded theory compares data from the beginning of the research project and continuously analyzes it throughout, rather than waiting until all data are collected, to identify emerging relationships which “grounds” new theoretical interpretations within the data collected and analyzed (Bryant and Charmaz, 2007). By applying grounded theory ethnography to achieve this study’s research objective, some differences in the GM-SME company’s interview preparation will emerge. Some of these differences reflected expected problems in conducting and reconducting the interviews.

This research is planned to start with gathering data and to end by analyzing this and reflecting each separate interview and all the realized interconnections. In practice, grounded theory research is not as linear as the first view on this approach might suggest. A flash of insight or instantaneous realization of analytic connections can happen any time during the research process.

#### **The first impression of this research strategy:**

The grounded theory strategy was taken into consideration during the first thought about the research procedure. This research seeks to explore the current stage models of SME growth, and their applicability. Working with an existing theory is not appropriate for a grounded research strategy.

### **3.4.3 Case Study**

Using a case study is a common research strategy, particularly in business research (Bryman and Bell, 2015, p. 59; Eisenhardt and Graebner, 2007; Ghauri, 2004, p. 3). Organizations and industries have associated boundaries to them. Having a boundary is one aspect of a case study as the context can be delimited, the other being a phenomenon of interest. In a case study quantitative and qualitative methods could be used, as could mixed methods (Saunders et al., 2018). Different case study approaches are discussed in the following sections.

#### **3.4.3.1 Case Study, qualitative (CSQ)**

In a case study quantitative and qualitative methods could be used, also mixed methods are in use (Saunders et al., 2018). Qualitative research is looking for understanding (*verstehen*) and discovering knowledge by using this process. It is interpretative, it takes relationships between participants and their meaning into account to create new views on the phenomenon. Qualitative research provides an individual approach to the research and brings them close to the participant and his mind (Stake, 1995, p. 37). To explore, describe or to explain research data on a higher level, qualitative data could be used (Yin, 2014, p. 133). Most of the reviewed literature in the context of marketing and GM-SME was conducted in qualitative design.

The reason to use CSQ for most of the literature reviews, is the target to collect data about the behavior of individuals (Gilmore A., 2001). The flexibility in the selection of the candidates, the

unique characteristic of the involved participants, the penetration of internal logic of the research subject and qualitative methods are suitable for understanding decision-making processes (Carson and Gilmore, 1997; Gilmore A., 2001; O'Donnell A., 2002) in the research context. The studies of Hill use ethnography and in-depth interviews to minimize the distance between researcher and interviewee (Hill, 2001a; Hill and Wright, 2000). Stake on the other hand stated that qualitative researchers are noninterventionists, they try to see what happens if they are not there (Stake, 1995, p. 44). The situation should remain essentially unchanged.

### **The first impression of this research strategy:**

A qualitative research approach seems to be the most promising way to fulfil the RO. This strategy opens the possibility to get close enough to the participants to work out the tacit knowledge employed, and the mechanisms of knowledge used for the success of the GM-SME. Therefore, an additional view on some relevant issues will be analyzed for CSQ under the following four headlines.

#### **Ethical implications CSQ:**

In this type of study observing and analyzing organizational behaviors should not create considerable ethical issues for here. They need to be able to interview the participants in depth, ask questions about organizational outcomes, and by using his or her personal experience to get closer to the subject. In this situation confidentiality will have to be adhered to as there are several commercial issues. For the research topic considered there will not become involved in any social and inter-company relations, restricting the role to that of researcher.

#### **Social environment of participants CSQ:**

As mentioned before, in the conduct of research the lead should try to observe the social environment in the company, becoming neutral as possible to be able to get in touch with some personal issues of research participants. It is crucial to the understanding of the behavior and the social situation of GM-SME participants, but as mentioned, only to interpret the observed facts.

#### **Research Skills required in a CSQ:**

The researcher must be a skilled and experienced case study researcher. It is of high importance to start case study research with pilot research to gain experience, build relevant capabilities and a feeling for the pitfalls during a research work (Stake, 1995; Yin, 2014; Yin, 2018, p. 113).

Because of the character of this case study the research must be a silent observer with the ability to understand group and single persons behavior in working circumstances. For the interview session use the ability to create a distance between their personality and the research aim.

Avoiding bias in words, gestures, and behavior. An important skill is the ability to listen actively and respond or ask in a neutral but straight forward way (Al Jassism et al., 2014); (Saunders et al., 2016, p. 393).

#### **The first impression of this differentiation in a case study strategy:**

After analyzing on behalf of the topic and the three main streams (decision-making, growth, and intuition in GM-SME) the differences and clustering the advantages of methods in relation to the research target and, due to the RO, the context and the sample size, a qualitative approach will be the best choice.

#### **3.4.3.2 Case Study, quantitative**

The use of qualitative case study research strategy is often mentioned in the literature, the quantitative approach for case studies is discussed critically. Stake (1995) and Yin (2014), mention the possibility to combine both approaches the qualitative and the quantitative. They suggest using quantitative data to improve the outcome of the main qualitative approach. In this way more knowledge is discovered than by only one research method (Bryman and Bell, 2015; Gill et al., 2010; Saunders et al., 2016; Stake, 1995; Yin, 2014).

At first glance, a quantitative research approach will not be appropriate to the focus of the thesis and will not answer the research questions. But after thorough investigation of current literature on GM-SME, promising research documents were found with a quantitative design. In a panel study Havnes and Senneseth (2001) conducted an analysis of firm growth among SME in networks, this quantitative research analyzed data from a five-year observation period (Per-Anders Havnes, 2001). (Knight, 2000) analyses the relationship between corporate culture and marketing strategy with international acting SME. He used an iterative questionnaire structure (semi-structured questionnaire, assessed structured interview as a second step) to get in indirect contact with 800 companies of randomly chosen industrial sectors.



### **The first impression of this research strategy:**

To enrich the qualitative case study with quantitative elements could be a way to set up a larger sample size, for example, by using the result of the 30 pilot interviews and its smaller set of questions as a semi quantitative case study result in the main research stream.

#### **3.4.4 Multiple case study**

A multiple case study design is a common way in social science to elaborate a theory. These cases could also be deployed in an embedded structure. That means the overall case covers the main issues and research detail generated through the multiple embedded cases. The decision must be made if several cases are used in the study, or if only a single case. After analyzing the demands of the RO, a single case with embedded single units was selected, as shown in the following section.

To develop a theory, it seems to be adequate to use a larger number than the one we get by using a single case study design. This research design offers the chance to challenge, extend or to frame a theory. Single cases could investigate problems in detail and give confidence. On the other hand, a multiple case study could eliminate coincidental similarities between case and theory. Single case study and multiple case studies could be embedding several analysis sections or separate units (Huberman and Miles, 2002; Miles and Huberman, 1994).

Hence, it must be decided, do we have a single case with several embedded units, or do we have a multiple case with respectively a single case, or do we have a multiple case with embedded units (Yin, 2014). As mentioned previously, a qualitative design opens new issues related to the selection of the appropriate companies and show a more random way of choosing interview partners (Neergaard and Ulhøi, 2007).

#### **3.4.5 Choosing the most suitable case study design for the research.**

Yin (2014) showed the basic four types of case studies (see below) (Yin, 2014, page 46):

1. Single case design combined with a holistic view on a single unit of analysis (one context and one case)
2. Single case design with embedded units in one context and case

3. Multiple case design with a holistic view on a single unit of analysis and different context and same case
4. Multiple case design with an embedded view on multiple units of analysis and different context, same case, and multiple units of analysis

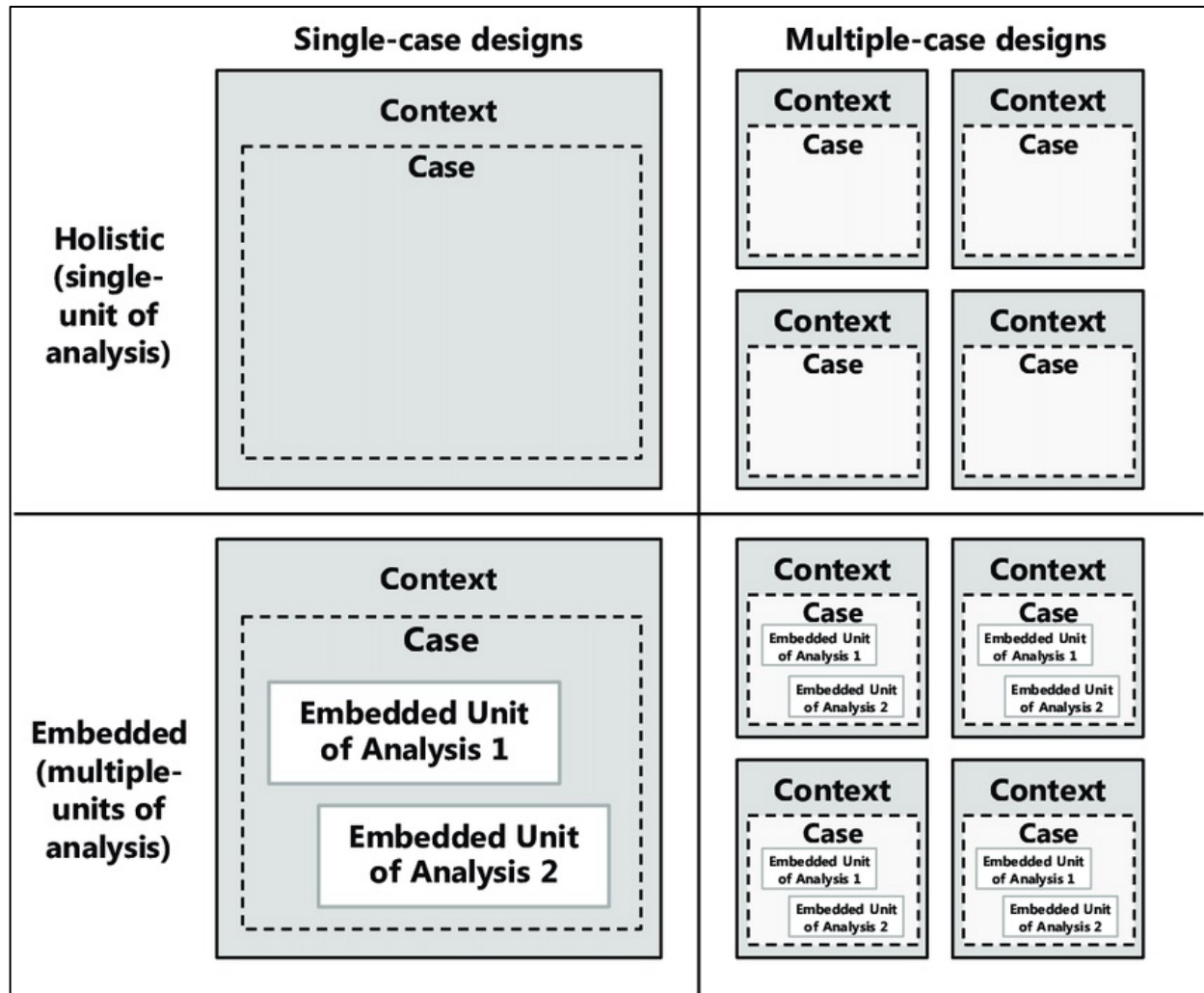


Figure 3.3: Basic types of Case study design, Source (Yin 2014, page 46 (Yin's source Cosmos Cooperation))

In implementing a case study, the level of analysis must be decided. Is the selection made on the basis of the individual firm or the industry. Is it best to have multiple cases and each with multiple units of interest, or do we have a single case with seven respectively fifteen units of interest, as described in this paragraph? For this stipulation the context, the case and the embedded unit of interest are detailed graphically (figure 3.4 below).

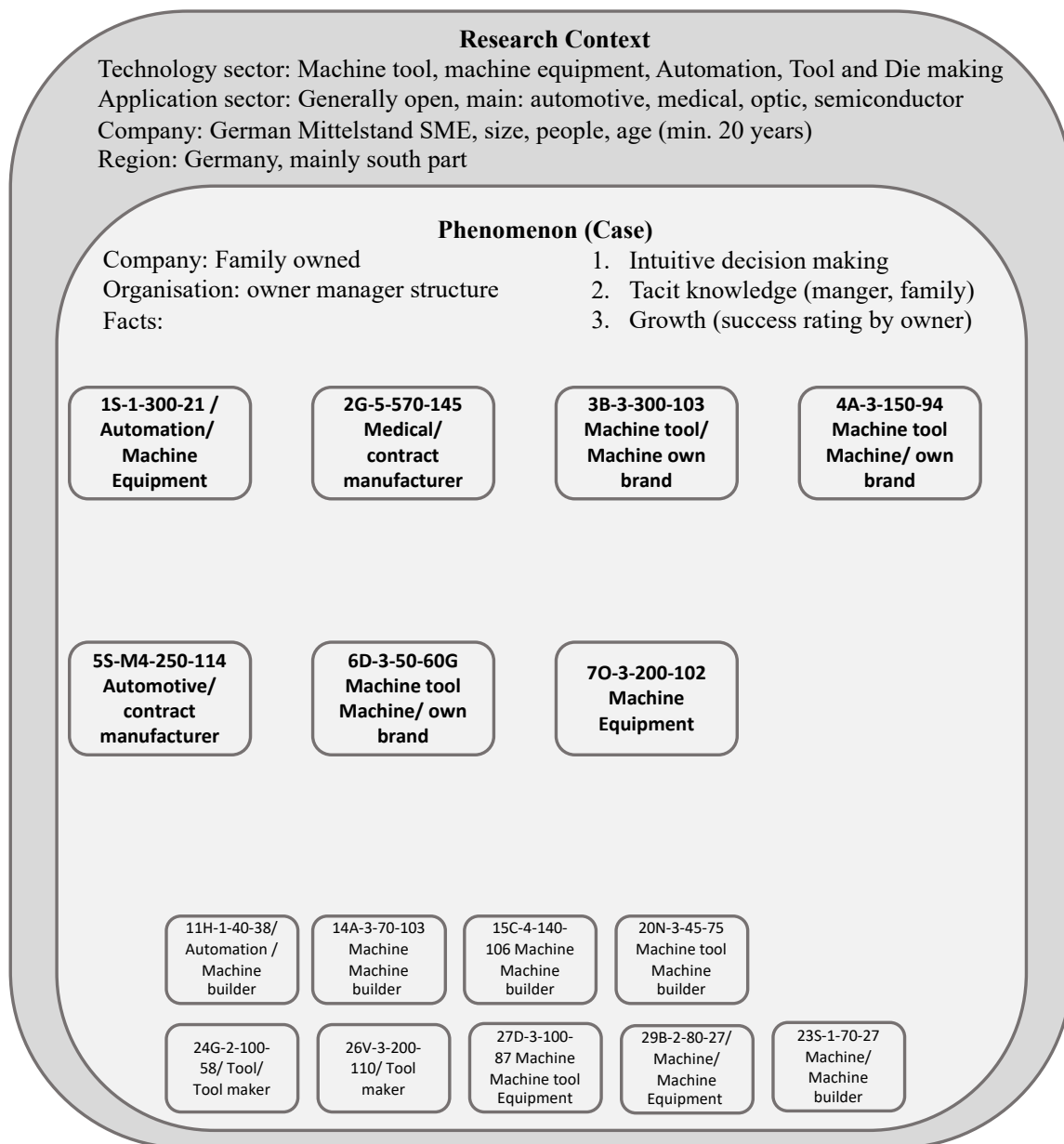


Figure 3.4: Relation between phenomenon, context, and embedded cases following (Yin 2014)

### The first impression of this research strategy variant:

The preliminary decision for the use of a case study research design, the decision to interview more than one GM-SME in the same context, in the same case and in one embedded unit of analysis (figure 3.3), does not speak for the use of a multiple case study design.

### 3.4.6 A theoretical sample case

To develop the research process, the above decision for a qualitative case study and the theoretical sample case, see chapter 1.1. For the GM-SME and play through the interview with the managing director. This theoretical sample case is constructed to consider all the factors that might be relevant in conducting the actual research. This would involve using professional experience and knowledge to determine whether the central questions of the study can be answered, or if the case study strategy does not fit in here.

As for action research and grounded theory strategy, a table of settings was elaborated with the target to get a clear distinction between action research and the two discussed case study methods. For this reason, the settings in the table show the direction of noninterventionists via participatory observation, which means the observer will be perceived but avoids to participate in any action of daily business, see table 3.2 below.

Criteria	Strategy	Method	Approach	Design
Main structure	Case Study	Qualitative	Inductive	Observation
Basic settings	single case, embedded diverse units (Yin, 2014, p. 46)	verstehen	create theory, understand what's up and explain what this means	participatory observation in the interview (Gill et al., 2010, p. 161 ff; Yin, 2014, p. 101 ff.)
Concrete action	Analyze the theoretical sample case and proof if the outcome answers the questions 2.7	Make a theoretical action between the interviewee and the interviewer	Analyze data, interpret these, and develop a theory to motivation in SME	diverse departments were observed before// Target: double check interview results
Philosophical Position: Interpretivist	Ontology: The social world could only perceive in real circumstances.	Researcher involvement and, interpretation	The report, the theory together follows the interpretivist stance, shows clear the result	Epistemology: Motivation will be generated in the change process.

Table 3.2: Settings for case study, qualitative method

The theoretical interview situation is set up and for this the main sources will be used in my memory to analyze the internal workaround, the workflow, the interviewed people, the historical research papers, Yin (2014) named these sources “The six sources of evidence”.

(1\_documentation, 2\_archival records, 3\_interviews, 4\_direct observations, 5\_participant observations, and 6\_physical artefacts)

Here, the main source of information will be the observation in different departments, to find evidence for tacit knowledge, documentation to understand the company organization, direct observation (from researcher experience) and the exploratory interview. The departments which are a part of the research are selected as follows, under the premise of a so-called single case (one firm) with an artificial context with diverse embedded units, following (Yin, 2014, page 101 ff.). These departments are selected to be a focus in the theoretical sample case, see figure 1.0, and are the following four departments: 1. Production, 2. Application Engineering, 3. Marketing and 4. Sales force.

The above-mentioned departments were observed to create the basis for a tailored questionnaire for each department and their activities in market orientation and growth. To create evidence for the findings out of the observation phase and the results out of the tailored questionnaire, a chain of evidence is maintained. The findings, interpretations, and notes will be stored in a case study database. After that, these data are put into relation with the research objectives (Yin, 2014, p. 123). The case study database should be organized in a secure computer system to avoid data loss and easy data sharing. i.e., owner, board of directors (Stake, 1995, p. 51). Maybe in this later stage some interviews, based on the findings out of the observation and the questionnaire, must be conducted.

To find out if the GM-SME, especially the observed departments, creates similar patterns to deal with the lack of marketing data. The gathered information must be analyzed to get understanding of the relation between social behavior of the employees and the behavior of the general manager.

Due to the hints of Stake (1995), this research tried to avoid too much involvement and influence of myself on the researched situation. Because the main interest are the results of the observation and the questions as mentioned above, (the six sources of evidence). But there is no action without influence, at least the necessary interviews create closer contact to the people in their social world. This must be considered in the data analysis process. Yin (Yin, 2014, p. 130) offered

four general strategies, for the above considered issue the strategy “relying on theoretical propositions” will give a guide for the analyzing of the outcomes. To know that, will optimize the use and matching of the results with the research aim, and to make up a theory for the increase of market orientation by sharing information in a motivating manner.

The above general setting for the theoretical sample case (subsection 1.1) is necessary to make the first check for the decision on the best research strategy. This is made by prior experience in this sector combined with their ability to simulate the interviews, by using a pilot questionnaire and a detailed understanding of the company in the theoretical sample case. Applying personal memory together with the simulation of the interviews yielded the following results. They were gathered in the answering of the questions from the theoretical sample and resumed to one sentence as follows:

- Did the MD prevent the company from growing?
  - Yes, the MD did prevent the company from growing, because he did not change the organization at the time of tremendous market expansion.
- Did the lack of decision-making structures hinder the company to growth?
  - No, decisions were conducted quickly and structured as is usual in GM-SME at this time, only the focus of future markets was not taken in consideration.
- Was the MD the wrong man for the phase the company was in? Are this SME in the first half or first decade of evolution, like Greiner show in his paper “The five phases of organizational growth”(Greiner, 1972)?
  - Yes, following to Greiner’s Model, a change in management was necessary in phase three, the expansion of the market (Greiner, 1988, p. 10). Here we see the difference between a real GM-SME and an SME as part of a much larger entity (LSE), like it is in this sample case. The MD is not acting like an owner-manager, he does not change his style of management because he wants to keep his power in the main structure of the SME and in the LSE parent company.
- What is the role of tacit knowledge for successful intuitive decisions?
  - In the phases of growth, the knowledge, and the ability to decide intuitively make the difference for market success. In later phases the intuitive decisions were only used for day-to-day business issues and was not a major strength of the company and their leaders.

A closer look at the approach and the results from the analysis in the sample case revealed the following strengths and weaknesses of the research strategy:

**Strength:**

- Given an existing familiarity with the market environment, a strong sensitization to the issues, and can interpret and check the statements of the interviewee. This leads to the following:
  - The questions can be tailored to fit the constraints of the company and bring clear and assessable results.
  - The intuitive decisions of the managing director could be understood by the researcher.
  - The development of MD's tacit knowledge and the source could be explicated (experience, special approaches to networkers, narcissism, self-confidence, training, communication skills, way of working (not sharing information))
  - The detailed expertise of the researcher was able to close gaps in the narrative and engender discussion on the points raised.

**Weaknesses:**

- There can be some divergence between ownership and management in these companies. Very often the managing director is not the owner of the company, so some decisions were not self-determined.
- Some companies are members of a group, and this affiliation generated some reporting lines that are not found in more independent GM-SMEs.
- The detailed experiences brought forward from the sample company will not directly be replicated during the research and must be considered in the interview preparation for the face-to-face interviews.

The theoretical simulation of an investigation can be considered to decide on the right research strategy. In the next paragraph the decision for the applied research strategy will be displayed, the above emerging useful aspects can be used.

### **3.5 Decision on research strategy**

After realizing the advantages and disadvantages in the above section the final decision could be made. The most case-oriented entrepreneurship research is qualitative, fits the interpretivist stance and become a wealthy research design for this inductive research. Furthermore, the following detailed relation could be established.

#### **3.5.1 Decision for this research: Case Study, Qualitative Method**

As described in chapter one, this research is looking for the relationship between tacit knowledge and intuitive decisions in the environment of a GM-SME. Additionally, the question arises; is there a connection between owner manager, their family, and tacit knowledge, are these intuitive decisions successful, and is company growth of GM-SME in a relation to tacit knowledge?

In addition to that, there is a deployment of an existing growth model to the research result. Consequently, to this target, we must check the research strategy on the following criteria:

- Do we realize the genesis of owner-managers tacit knowledge?
- Do we realize the involvement of the family and their influence on tacit knowledge of the owner-manager?
- Do we know enough about the background of intuitive decisions in GM-SME and the influence of existing tacit knowledge?
- Do we realize the stage in organizational development of the GM-SME?
- Do we know enough about the growth, the targets, and the values of the GM-SME?

Hence, to select the right research strategy with our sample case check, the above five questions and figure 1.1 leads us to table 3.3 which gathers the main parameters, shows the effects of the considered research strategies, and gives a rating to each criterion of interest mentioned above.



<b>Research Strategy</b>	<b>...genesis of owner-managers tacit knowledge...</b>	<b>...family and their influence on tacit knowledge...</b>	<b>...back-ground of intuitive decisions in GM-SME...</b>	<b>...organizational development of the GM-SME...</b>	<b>.... growth, the targets, and the values of the GM-SME...</b>
<b>Action Research</b>	for only one company applicable Rating: ---	for only one company applicable Rating: ---	for only one company applicable Rating: ---	for only one company applicable Rating: ---	for only one company applicable Rating: ---
<b>Grounded Theory</b>	rich data, but re-interviewing Rating: +	rich data, but re-interviewing Rating: +	rich data, but re-interviewing Rating: +	rich data, re-interviewing not applicable Rating: -	rich data, re-interviewing not applicable Rating: -
<b>Case study Qualitative</b>	Rich data, sample size variable Rating: ++	Rich data, sample size variable Rating: ++	Rich data, sample size variable Rating: ++	Rich data, sample size variable Rating: ++	Rich data, sample size variable Rating: ++
<b>Case study Quantitative</b>	Large sample size, no background data Rating: -	Large sample size, no background data Rating: -	Large sample size, no background data Rating: -	Large sample size, sufficient background data Rating: +	Large sample size, sufficient background data Rating: +
<b>Multiple Case Study</b>	Not applicable only one case in context Rating: --	Not applicable only one case in context Rating: --	Not applicable only one case in context Rating: --	Not applicable only one case in context Rating: --	Not applicable only one case in context Rating: --

*Table 3.3: Rating for the analyzed research strategies*

As shown in literature review, it was realized during the interviews and the analysis of the outcome of the interviews data, that a relation between the environment of the owner-manager and his or her personality creates a tacit knowledge which is used for intuitive decisions in the GM-SME context.

Firstly, the sample case and a rationality adopted was tested by me. This test is based on the theoretical sample case and offers in a single but experienced view a clear picture on the advantages of a case study and secondly offers a wider view on the context and the phenomenon

out of a practical case. Hence, to achieve a position in this research to close the gap and apply a valid growth model to this context, it is crucial to use a case study approach. Therefore, the information and the rating in table 3.3 gives additional insight into the basic parameters of this decision.

### **3.5.2 Sample Size**

In this research therefore an in-depth interview with defined companies was selected by specifying the research field (machine tool, mold and die making, SME, German Mittelstand, family owned and managed). These key indicators show a reference-based category of sampling strategy. Meanwhile, the preselection of the cases, described under 5.2 to 5.4, follows the criterion-based on sampling strategy and this is assigned in the category specific (Neergaard and Ulhøi, 2007; Pauwels and Matthyssens, 2004).

For this research the sample size must be taken into consideration, as reported in earlier chapters. The population of SME in the selected region is well desired by the associations in these areas, main organizations: VDMA, VDWF, IFM and BDI. In Germany 93,6% of all SME are family owned (IFM Bonn), and 83% of these are family managed, in detail the allocation in the research segment is:

- 24% from large (250 to 499 employees) SME are family managed
- 50% from medium (50 to 249 employees) SME are family managed
- 80% from small (10 to 49 employees) SME are family managed

*Source: (BDI-Publikations-Nr.: 0036Annika Jochum, 2015, page 5)*

The segment which this thesis is targeting in the mold and die maker are 3.800 companies (25% more than 50 employees and 1% more than 100 employees), in the machine tool segment are around 500 companies (details in attachment 9.4). As described in the attachment the total population in the targeted sector is between 200 and 300 companies (see figure 1.1 and appendix 9.3).

To decide on a suitable sample size for this qualitative research, the group is divided into adequate specific population, due to the homogenous population (family managed SME out of two linked sectors (mold and die making, machine tool)) the suggestion of Saunders (2016) would be a minimum sample size of 4 to 12 or 5 to 25, see following table 4.5 (Saunders et al., 2016, pp. 281 - 284).

Nature of study	Minimum sample size
Semi structure/in-depth Interviews	5 - 25
Ethnographic	35 -36
Grounded theory	20 - 35
Considering a homogenous population	4 -12
Considering a heterogenous population	12 -30

*Table 3.4: Minimum sample size for qualitative research, source (Saunders, Lewis et al. 2016)*

### **3.5.3 Saturation in case study**

After the research strategy is decided, and main settings are done, the sample size have to be defined. Sample size and saturation is widely noted as a principle in qualitative and quantitative research. To determine saturation it is taken as an indicator, that the collected data is sufficient and additional data could be negative for the result of the research (Saunders et al., 2018). Before the criteria for this inductive case study is described in detail, it must be clear what saturation in this research means, the relevant criteria will be indicated in the following article.

In 1967 Glaser and Strauss stated in their book “The discovery of grounded theory” that the question of when to stop data collection is based on the perception that little new material is being generated. Using this metaphor of collection, then the space for new material that can usefully be absorbed has now reached a limit. In some later papers shorter explanations could be found, which describe the point of saturation as reached if the data bring out no new codes or additional data will not lead to new topics or will emerge new themes (Given, 2016, p. 135; Guest, Bunce, and Johnson, 2006; Urquhart and Fernandez, 2013).

The above gathered criteria are mainly relevant for a grounded theory approach. More relevant are the indicators for this research which are related to case studies and interviews. When an interview brings out redundant answers and getting the same or similar answers in following interviews, this could be an indicator that a certain saturation level is reached. Especially if the data analysis shows the same result. This will be the time to take into consideration conducting no more additional interviews (Grady, 1998; Guest et al., 2006; Ritchie, Lewis, Lewis, Nicholls, and Ormston, 2013). The influence of a false decision in relation to saturation level will be negative and must be avoided. This requires a thoughtful approach in the assessment of the

saturation, because to stop too soon will mean important points might be missed, but also to be aware that more is not inherently better. An important point is the selection of indicators for fully sampled data and the occurrence of replication, as well in the preparation of the interview, for example companies' size, employees, technical sector or product are same (Morse and Field, 1995).

The conducted interviews, the coding, the transcribing, the analyzing, the classification, and the reflection of the generated data out of minimum 5 to 25 interviews enable her in getting inside her data (see table 3.5). The importance of saturation in a qualitative multiple case study makes it mandatory to consider the saturation level after each step in each research sequence. Figure 4.1, in the next chapter showed the step "prove saturation" this is part of the analyze process of the interviews. The first check will be conducted after the selection process of the interview partners during the pre-interviews during exhibitions and similar events. Conducting 30 pre-interviews including data collection via internet databases to assure the selection of the right interview partners, compared also with table 4.2.

#### **3.5.4 Triangulation in case study**

In the estimation of the saturation of research there are many factors of interest, some of them were indicated before in this section, but one point must be examined in more detail. Multiple external analysis methods concerning the same events and the validity of the process may be enhanced by multiple sources of data (Fusch, 2015).

**The method of data triangulation:** Triangulation, Source (Ritchie et al., 2013, page 43) is a process of judging the 'convergence' of both the data and the conclusions derived from them viewing the data from different -mental- positions. This method can offer a safer feeling in objectivity, truth, and validity. Four types of data triangulation for social research was described from Denzin (Denzin and Lincoln, 2011):

1. Suggested data triangulation for correlating people, time, and space.
2. Investigator triangulation for correlating the findings from multiple researchers in a study<sup>13</sup>.

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<sup>13</sup> For the method number two will be selected to realize the interconnection between the several embedded cases in the context.

3. Theory triangulation for using and correlating multiple theoretical strategies.
4. Methodological triangulation for correlating data from multiple data collection methods

As mentioned, here we use the second type for correlating the findings from the embedded units of interest. The planned triangulation process is in the proof, validation of the interconnection between the interviews, analysis, and the phenomenon (figure 3.6). This sketch is based on figure 3.3, which shows in an exemplary way how this could be used in the interpretation of the interviews and reflection in discussion chapter five.

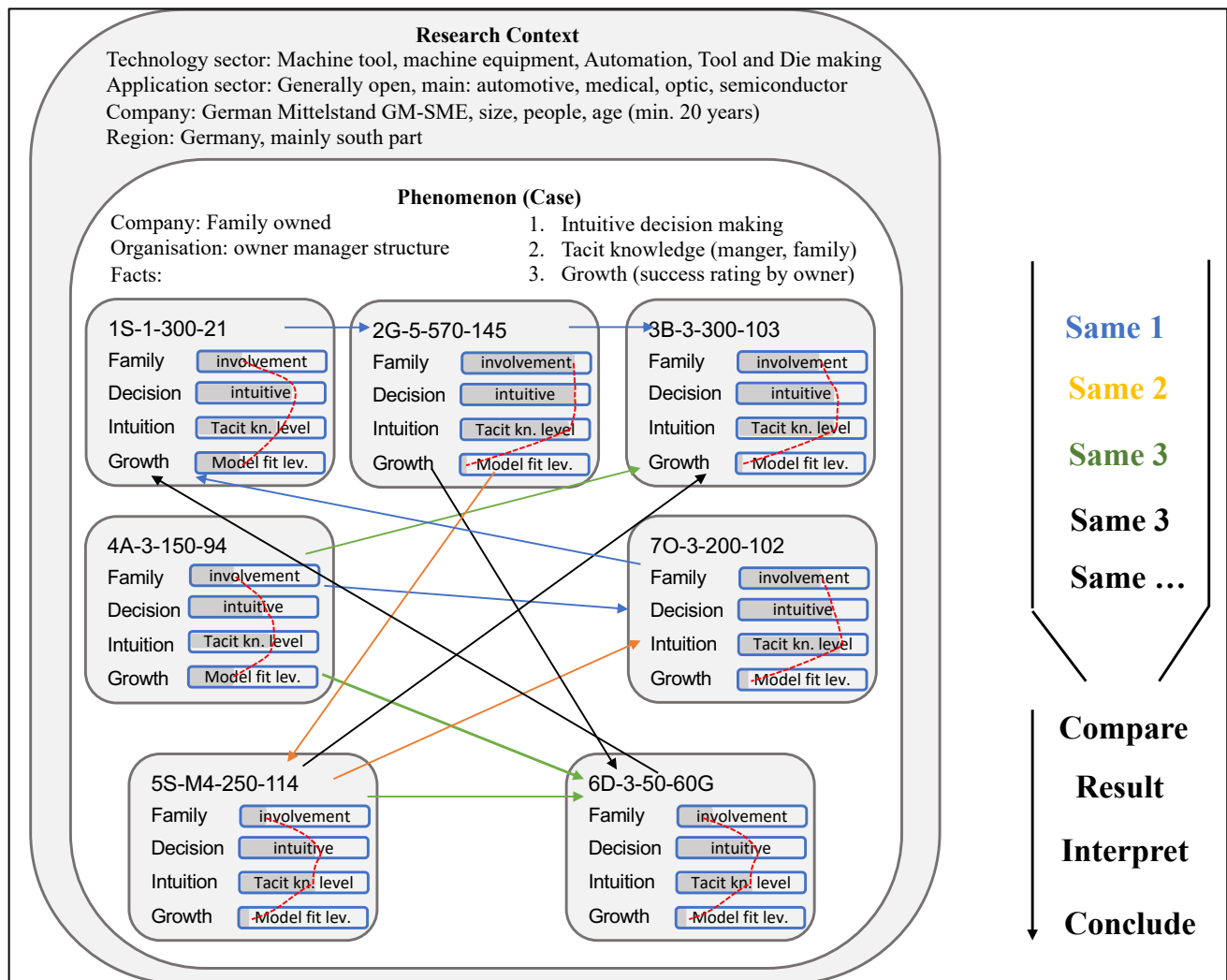


Figure 3.6: Planned triangulation process and a fictive result for the relation and interconnection between the embedded units of interest.

### **3.6 Method (techniques and procedures)**

In this real-life context, we define a case (German-Mittelstand, SME and Machinery and plant engineering, size, turnover) as being an industry cluster, as described in Section 1.2, and select several relevant German-Mittelstand-SME and conduct interviews with the owner-manager. The case study methodology was described earlier in subsection 3.3.3.

### **3.7 Research Procedure**

This study is exploratory and inductive, it seeks to examine and analyze relationships between manifestation. An advantage of exploratory research is that it is easier to develop theories with reduced methodological constraints, to achieve some new revelations. It was important to keep an open mind to prevent chances of missing potentially interesting variables, relationships, or hidden mechanisms. An open-minded structure in the multi case study design and an interview-based approach represent a way to address the research objectives, and generate theory regarding the extent of intuitive strategic decision-making in SMEs (Creswell and Creswell, 2018).

The nature of the research objective invites a methodological approach towards understanding “*verstehen*”: to make the logic behind human action intelligible and explicable (Denzin and Lincoln, 2011; Gill et al., 2010). The differences between the quantitative result “*erklären*” and the qualitative target “*verstehen*” are important parameters in determining an appropriate philosophical stance. A qualitative study looks for understanding and to discover knowledge. Hence, “*verstehen*” is a central point that leads to a hermeneutic orientation.

The research has to look behind the “obvious” with an interpretative research philosophy of strategic marketing decision-making processes in GM-SME, involving relationships and human interactions (Alvesson and Sköldbberg, 2000). Analysis of interviews by means of an iterative process of data reduction, coding of themes, and categorizing of research results are aimed to address the research questions and research objectives.

The number of embedded units of analysis will be limited to the moment when the interview result shows similar or same results to the previous. It is targeted to get rich data out of the interviews to analyze in the direction of the fields of interest.

Due to this target a continuous check of saturation level during analyzing the research results in mandatory. To keep the analysis of the qualitative data in my mind, during all stages of this procedure (selection of interviewee, pilot interview, in depth interview, meaning, language, conversation), and to achieve the designated research objective. Therefore, I must be able to interpret the data in a proper way (keep the gaps in mind, figure 2.12) and also keep in mind the main overview on the research framework to close the gap in literature, see as an example, my working model, figure 3.9.

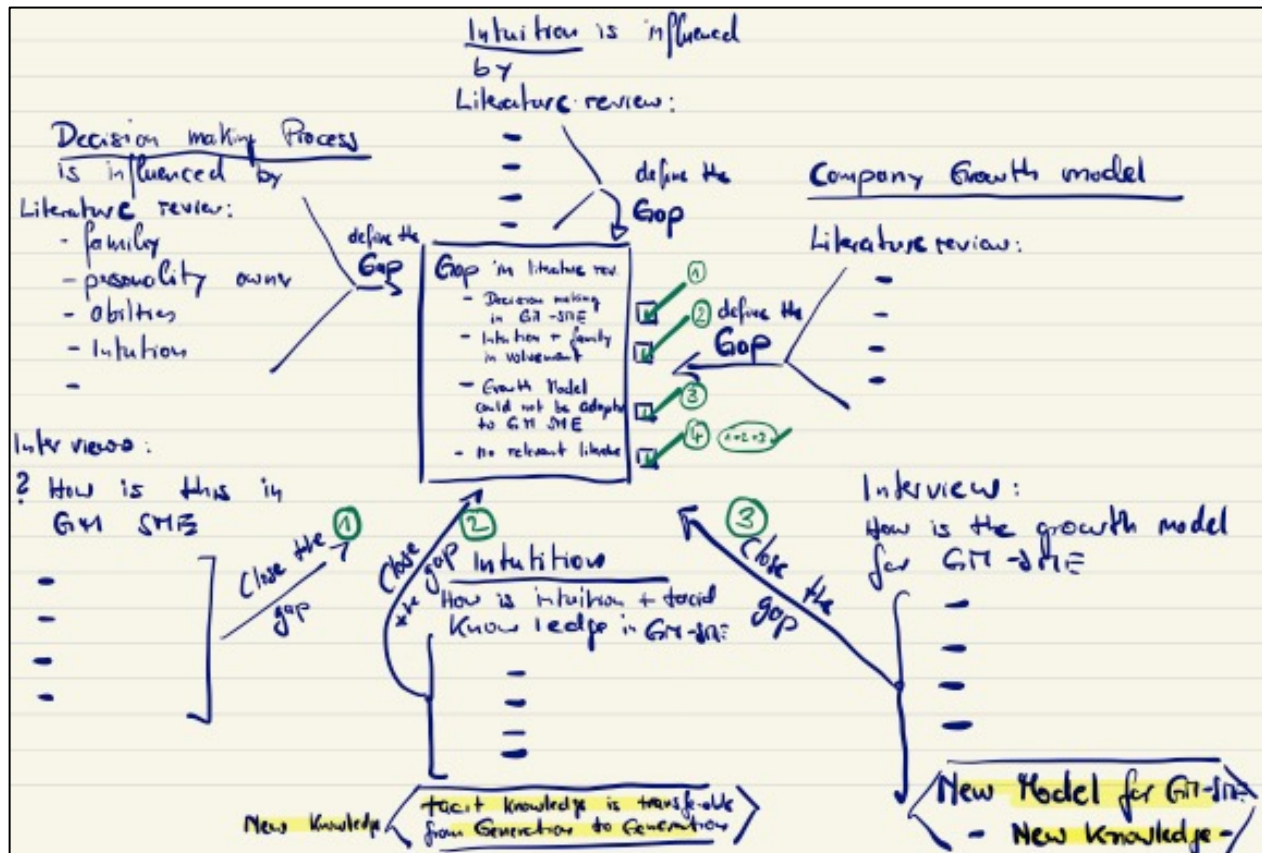


Figure 3.9: Working Model (process step 1) Research Framework to close the gap in literature

### 3.7.1 The interview architecture

It is noted here that interviews are retrospective “Interviewing gives us a window on the past” (Weiss, 1995, p. 13), and they tend to recall events and processes that have led to the current understanding. Target companies will be selected based on a purposive approach – centered on the following criteria: established companies, that are successful (surviving in their current market(s)); based in Germany; and that have a conventional structure (a board of directors, a

managing director/chief, CEO, GM-SME owner manager, who drives forward strategic decision making).

This selection was drawn from, association, branch list, exhibitions and business contacts; personal contacts were excluded to avoid undue influence on the interview result (Saunders et al., 2016). Data will be generated through personal interviews with GM-SME managers at exhibition events in the selected sectors. Fifteen GM-SME managers out of 30 companies in the targeted sector have agreed to semi-structured in-depth interviews, lasting 60-90 minutes, see following table 3.5.

Company Code/ Sector/ main Product	Pilot Interviewee	People	Launch of company	Result of pilot interview: fit to RO consent for Interview
1S-1-300-21 / Automation/ Machine equipment	Owner-manager, 1 <sup>st</sup> generation	300	2001	80% fit (1. gen) Yes
2G-5-570-145/ Medical / contract manufacturer	Owner-manager 5 <sup>th</sup> generation	570	1877	90 % fit (size) Yes
3B-3-300-103/ Machine tool / Machine builder own brand	Owner-manager 3 <sup>rd</sup> generation	293	1919	100% fit Yes
4A-3-150-94 / Machine tool/ Machine builder own brand	Owner-manager 3 <sup>rd</sup> generation	140	1928	100% fit Yes
5S-M4-250-114 GmbH / Automotive/ contract manufacturer	CEO 15 years	240	1908	80% fit (Manager) Yes
6D-3-50-60G/ Machine tool/ Machine builder own brand	Owner-manager, 3 <sup>rd</sup> generation	45	1965	100% fit Yes
7O-3-200-102/ Machine / Equipment	Owner-manager, 3 <sup>rd</sup> generation	200	1920	100% fit Yes
8I-3-750-58/ Machine / Machine builder	Owner-manager 2 <sup>nd</sup> generation	750	1964	90% fit (size) No



Company Code/ Sector/ main Product	Pilot Interviewee	People	Launch of company	Result of pilot interview: fit to RO consent for Interview
9R-2-70-42/ Machine tool / Machine builder	Owner-manager 2 <sup>nd</sup> generation	70	1980	50% fit (went bankrupt) No
10R-2-165-54/Food / Machine builder	Owner-manager 2 <sup>nd</sup> generation	165	1966	100% fit No
11H-1-40-38/ Automation / Machine builder	Owner-manager, 1 <sup>st</sup> generation	41	1984	80% fit (1 <sup>st</sup> gen.) Yes
12A-M-1150-111 Machine tool / Machine builder	CEO	1150	1911	50% fit (size, external manager) No
13A-5-220-132/ Machine / Machine Equipment	Owner-manager 5 <sup>th</sup> generation	220	1890	100% fit No
14A-3-70-103/ Machine/ Machine builder	Owner-manager 3 <sup>rd</sup> generation	70	1919	100% fit Yes
15C-4-140-106/ Machine / Machine builder	Owner-manager 3 <sup>rd</sup> generation	140	1916	100% fit Yes
16E-M-133-251/ Machine/ Machine builder	CEO	133	1771	50% fit (CEO, sold) No
17Z-7-300-155 / Automotive/ contract manufacturer	Owner-manager 7 <sup>th</sup> generation	309	1867	80% fit (sector) Maybe
18K-2-90-39/ Optic / contract manufacturer	Owner-manager, 2 <sup>nd</sup> generation	90	1983	100% fit Maybe
19M-1-45-42/ Machine Tool/ machine builder	Owner-manager, 1 <sup>st</sup> generation	45	1980	90% fit (1 <sup>st</sup> gen.) Maybe

Company Code/ Sector/ main Product	Pilot Interviewee	People	Launch of company	Result of pilot interview: fit to RO consent for Interview
20N-3-45-75/ Machine tool / Machine builder	CTO managed, owner 3 <sup>rd</sup>	45	1947	80% fit (CTO) Yes
R21-2-20-40/ Machine/ machine builder	Owner-manager 2 <sup>nd</sup> generation	19	1982	80% fit (size) No
22S-M-200-657/ Machine / Machine builder	CEO	176 (1500)	1365	50% fit (size, Manager) No
23S-1-70-27 Machine/ Machine builder	Owner-manager, 1 <sup>st</sup> generation	70	1995	80% fit (1st gen.) Yes
24G-2-100-58/ Tool/ Tool maker	Owner-manager 2 <sup>nd</sup> generation	100	1964	100% fit Yes
25S-3-200-130/ Tool maker	Owner-manager 3 <sup>rd</sup> generation	200	1892	100% fit Maybe
26V-3-200-110/ Tool maker	Owner-manager 2 <sup>nd</sup> and 3 <sup>rd</sup> generation	200	1912	100% fit Yes
27D-3-100-87/ Machine/ Machine tool Equipment	Owner-manager 3 <sup>rd</sup> generation	98	1935	100% fit Yes
28S-3-130-89/ Tool/ Tool maker and Production	Owner-manager 2 <sup>nd</sup> and 3 <sup>rd</sup> generation	130	1933	100% fit Maybe
29B-2-80-27/ Machine/ Machine Equipment	Owner-manager 2 <sup>nd</sup> generation	80	1995	100% fit Yes

Table 3.5: List of pilot interview partners, selection of in-depth interview partners, including triangulation.

### **3.7.2 In depth Interview**

After conducting desk research of more than 300 GM-SME, in the targeted sector, a pre interview process with more than 30 companies (see table 3.5) was conducted over a period of two years to filter the right interview partners for this research. The population between 200 and 300 potential family managed companies offers a large variety of products, markets, and persons, but overall, the structure of the in-depth interview partner is homogenous.

The in-depth, semi-structured interviews will follow a broad, pre-selected, structure (introducing, specifying, direct and indirect questions), thus providing a guide through each single interview with the GM-SME decision maker.

The selected interview structure fits the multi case study method, offers the flexibility to pick up new themes, ask more focused questions in a follow-up interview and enables active comparison from each result. The pilot interview during expeditions helped to create an interview questionnaire which requires a lot of interview skills. Thus, it will be possible to allocate important issues within the first interview and focus the next interviews to close conceptual gaps (Charmaz, 2006, p. 29). The interviews questions will address the following issues:

1. Subjective perception of own decisions
2. Organization of decisions, use of power, use of information
3. Execution and control of leadership
4. Reflection on selected decisions
5. Nature of process: use of intuition judgement, rational collection and analysis of data, political influences

It is noted that any interview is a mutually interactive process that will contain both expressed and intended meaning (Kvale and Brinkmann, 2009). If the interview reveals new thoughts (e.g., to use other sources, new insights), the interview structure will be adapted to include these points in subsequent interviews (Bryman and Bell, 2011; Denzin and Lincoln, 2011; Stake, 1995). There are no specific rules available when data adequacy or saturation occurs in qualitative research (Morse and Field, 1995). Mason (2010) provided broad guidelines that lead to the expectation that a sample size of 15 GM-SME managers is sufficient to reach data saturation (Mason, 2010).

The first conducted interviews open a wide field of information, in all sectors the research is looking for: intuitive decisions, tacit knowledge, and company growth. This rich data would be

able to feed a single case study itself. The research strategy is designed for a case study and the minimum number of embedded cases requires more than five separate companies. It was always in my, the interviewers mind to be aware of saturation and the first quite long interview gave the possibility to restructure the second interview, especially my prepared follow up questions were focused more strictly to the three spheres (decision-making, intuition, and growth).

After 3 interviews I realized that a first saturation level was reached. This is due to the relatively similar industrial sector the interviewed companies are acting in and the similar interviewee profile (owner-manager, single manager), this sets a low saturation level. This early saturation signs confirmed the argumentation of Fusch and Guest (Fusch, 2015; Guest et al., 2006).

The interviews have been audio-recorded, notes are taken during the interview and were analyzed to identify and interpret emerging, as well as existing, themes. The results will be clustered in tables, using double analyzing (Saunders et al., 2016). The audio recording results will be clustered into emergent categories of observed phenomena, to identify patterns, separate structures of behavior and as already mentioned the level of saturation (Gill et al., 2010, p. 176).

This is the base of an inductive approach with a single case study strategy and several embedded units of interest (Bryman and Bell, 2011, p. 46; Yin, 2014). Furthermore, concrete experiences and observations, before and during the planned research, will be reflected upon to develop theoretical ideas and form generalizations into an emerging theory. This is based on interpretation of the interviews during the analytic phase (Gill et al., 2010).

This single case study research design is supported by an interpretative process also during the interview and the validity check, to achieve the best results out of the interviews (Kvale and Brinkmann, 2009, p. 203). I also used creative handwritten correlations during and after the interview, (Bourdieu and Ferguson, 1999, p. 622) to enrich the data and analyzing possibilities of the interview result. The interviews were analyzed in an iterative process, see figure 4.1.

### ***3.7.2.1 Interview preparation***

The seven stages of research interview and twelve aspects from a phenomenological standpoint described from Brinkmann (Kvale and Brinkmann, 2009, pp. 23, 32 - 35) was used to prepare the qualitative in depth interviews (see chapter 4.1 (interview analysis)).

1. Thematising (guided by the research objective)
2. Designing the interview question, the set up and the structure of the talk (use the 3 main areas (the phenomenon) (1. Decision-making, 2. Intuition and tacit knowledge over generations, 3. Growth in GM-SME in comparison to the models of Greiner and Churchill et al.)
3. Interviewing (conduct interview and use every sequence to optimize the setup)
4. Transcribing (here a change was made, due to the results and the analyzing method, a triple sequence of rework interview notes was applied, as mentioned above)
5. Analyzing (will be in detail described in findings chapter 4)
6. Verifying (use the available tools to proof the interview results, create interconnection to verify, will be described in detail in findings chapter 4)
7. Reporting (deploy the analyze results, the interpretation of the interconnection and the research objective to proof validity of established models for GM-SME in the phenomenon)

These guidelines were taken into consideration to tailor the analyzing parameters after the interviewing sequence. The open multi case study research design and the interpretivist research position expect for the first interview a developmental approach and for the following interviews changes could be implemented.

To design the interviews, the results of the literature review, my own experiences and further reading were taken into consideration for the preparation of the interview. Furthermore, the usage of the last interviews reflections and the improvement of interview strategy, thereafter, helped to increase quality in the following interviews.

### ***3.7.2.2 Get the right interview partner***

To get relevant people into the interview, a strategy was set up to persuade the future interviewees to participate in this research. This is shown in figure 3.10, to illustrate the progress of the selection of the right interviewees. The relevant person, “the decision maker” in the German Mittelstand SME is usually the owner, founder, or a family member in the company and is usually not easily available.

To get in touch with these people for two hours, a single phone call or a mail invitation could lead to a dismissal for an interview by the managing directors or owners of GM-SME. Therefore, the first contact point should be at an exhibition where the managers usually will attend and have

spare time, typically this is during lunchtime or one or two hours before the end of the fair. The discussion with the owner-manager must secure the status of the owner, the company profile, do they decide intuitively to assure that the company matches the research criteria.

To select the right interview partners, a first contact interview was conducted with more than 25 managers during 3 major exhibitions, Euroblech Hanover (tool and mold making), EMO Hannover (machine tool) and GrindTec Augsburg (high end machine tool, regional Bavarian) over a period of 24 month. The following criteria were noted and structured in a list to select the target person and company.

- owner-manager, speaker of the management, CEO
- single corporation ((real SME) not subsidiary of a larger entity, or parent company of a large group)
- large enough (over 50 and under 500 employees)
- intuitive decisions are possible, or better take place
- discuss one intuitive decision and the outcome
- learn about the decision and communication structures of the company

To be prepared for a valuable discussion during the first contact phase at the exhibition with the owner-managers an interview structure for the second phase, the following in depth interviews were developed in advance. This “pilot interview plan” was based on the literature review and on the result of one pilot interview with a well-known personal contact, I conducted before.

This “pilot interview plan” was prepared in my research mind map (see figure 3.12) and was refined into an interview guideline based on research objectives. After these first contact interviews during the exhibitions, the answers and the discussion were analyzed and set into relevance to research objective.

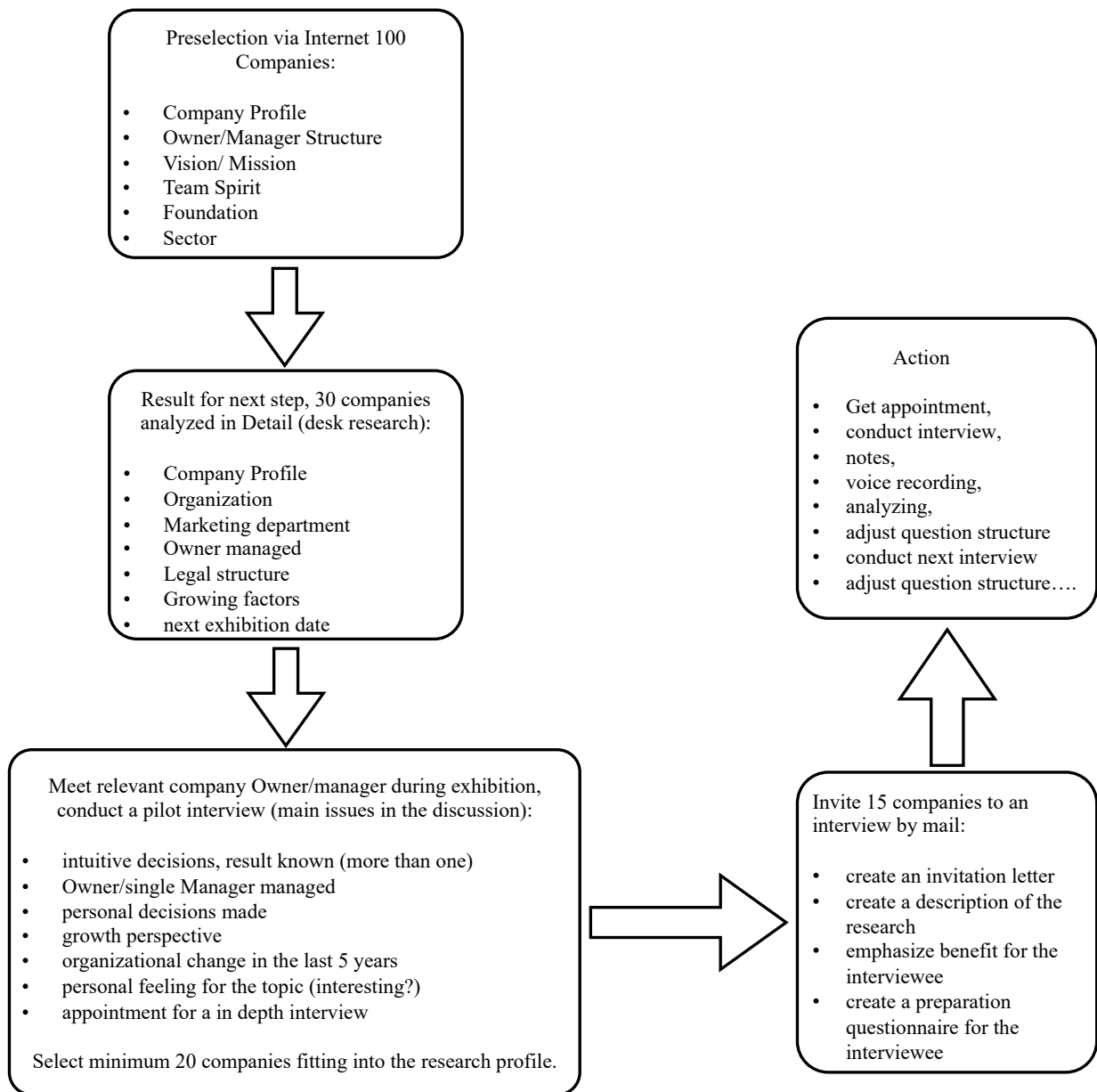


Figure 3.10: How to get the right interview partner;

As mentioned above, one major issue is how to convince the managing directors to conduct this two-hour in-depth interview. It was realized that these managers are not willing to invest time in an interview without being convinced of their own benefit. Because the understanding comes out of the industrial sector and shows during the first contact interview personal knowledge and valid insights into areas of decision-making, knowledge creation and marketing concepts, it was possible to commit only two persons directly for a in depth interview. For this purpose, a strategy for the invitation of the managers was developed.

### **3.7.2.3 *Invitation process***

1. Send an invitation, send a reminder, see appendix 9.7 (documents only in German language)
2. Call by phone the office manager of the CEO
3. Call CEO directly and convince him again to agree on an interview date
4. Conduct a second direct contact during an exhibition, with a relation to earlier activities

### **3.7.2.4 *Invitation Text***

It was realized during the pilot interview at exhibitions, that it will be difficult to convince an owner-manager to agree to an in-depth interview. Ergo, the text of the interview invitation has taken a crucial role in getting the appointment for this at least two hours of their time. In the invitation letter pointed out briefly the possible benefits for the managers. The benefits mentioned were the strength of the researcher in managing GM-SME sales forces worldwide and as well pointed out the ability to talk about topics out of normal day work, see appendix 9.7.

### **3.7.2.5 *Additional information***

1. Personal profile and professional career of the researcher.
2. Abstract and aim of the thesis.
3. Abstract of the interview questions (see appendix 9.7).

### **3.7.2.6 *Interview invitation letter (E-mail)***

In the developed invitation letter, the following questions were sent to the interviewees for preparation.

1. Invitation letter: should open attention.
2. Description of the thesis: should explain main topic from scientific side.
3. Professional profile of the researcher: should show professional abilities.
4. Preparation information for the interviewee, purpose: help during interview to follow the single question or to prepare own input.

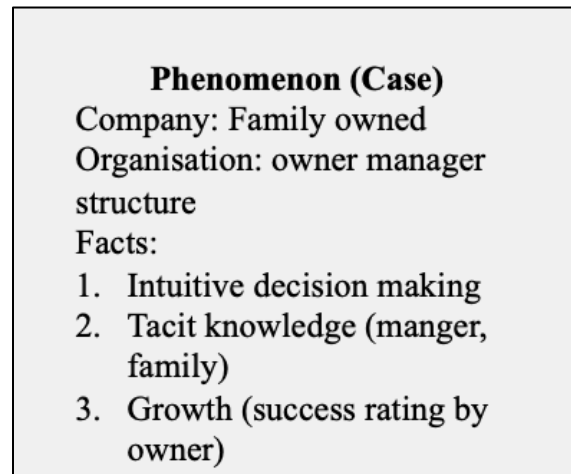
## **3.7.3 Interview layout in context and case**

The interview question and the sequence of the interview must be focused on the phenomenon in the context (see figure 3.4) means that we must cluster the questions to the context, the



phenomenon, the GM-SME, the interviewee himself (we know him from the pilot interview) and the sector in which the corporation has its main business.

For that reason, I clustered the phenomenon into the three spheres the research objective is focused on (see Figure 3.11, section of figure 3.4) decision-making, tacit knowledge, and growth (see RO (1.3), and figure 2.12).



*Figure 3.11: The case (phenomenon) in the context, the three phenomenon spheres*

The interviews will follow an inductive strategy and start with a single case study approach with several embedded units of interest in a narrow field of GM-SME business sector. To develop the first interview structure the research mind map (figure 3.12)<sup>14</sup> was used to find the right structure for the interview questions.

The interview question was divided into the three phenomenon spheres, the defined case (figure 3.4), the blue section for sphere number one, decision-making, the bright green section for sphere number two intuition and tacit knowledge, and the raspberry-colored section for sphere number three, company growth. Supported by the research mind map, the gap in literature and the research objective was developed and followed up later in the working model (figure 3.9). In the following subsection the development of the interview question is described.

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<sup>14</sup> The research mind map was used during the complete research to visualize in a graphic the connections and the flow of the know-how generations streams in the different disciplines.

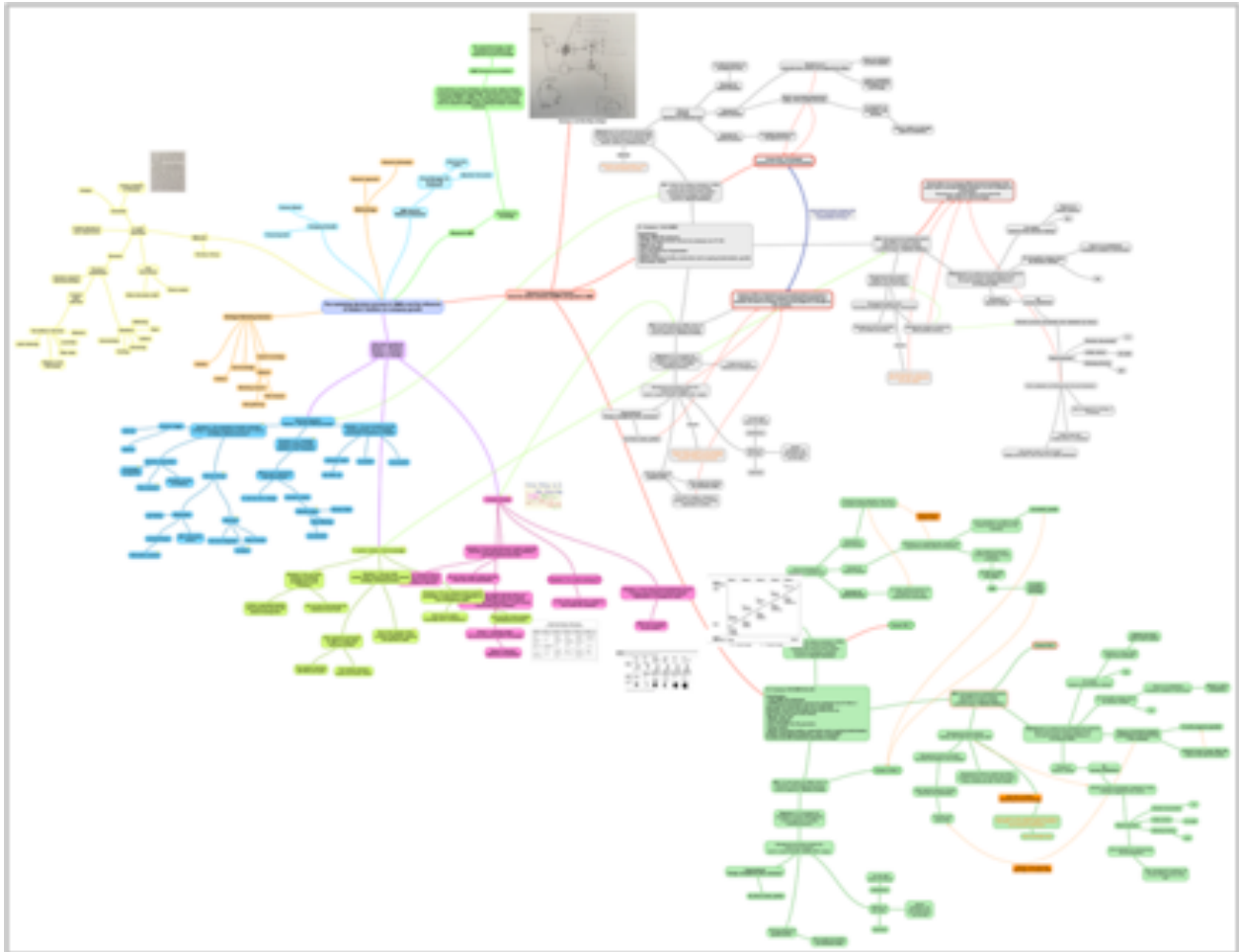


Figure 3.12: Research Mind Map, show structure of Thesis, to develop interview structure

### 3.7.4 Target and Questions for sphere one: Decision-making in corporation

In this section the research phenomenon sphere one follows up the strategic decision-making of GM-SME owner-manager. This section covers partly the RO and SUB-RO 3 (see chapter one). The following six questions were used as a guideline in the interview, sub questions and follow up questions were prepared; these sub questions and follow up questions are not shown and explained here to keep clarity in the thesis. In table 3.6 the questions and the field of interest for the research related to decision-making are concisely gathered.

No.	Interview Question	Field of interest
1	Do you remember the last strategic decision, which was intuitive?	we have come to know if there was intuitive decision, is the owner-manager aware of these intuitive decisions, and we will also know the outcome of the decision and the implementation with the following questions.
2	Was the result positive, do the corporation grow (more Employees, turnover, EBIT?)	As we learned in the literature review, an intuitive decision could be successful or not. Is the owner-manager aware of the result of his intuitive decision, are they also aware of the other influence factors of a decision? The success depends on the one side on the decision itself (right or wrong, good, or bad timing) on the other side on the implementation of the necessary action and processes to realize the requested result of the decision.
3	Is a strategic decision process established?	To double check is the decision is entirely intuitive or not, are other persons involved or is a decision process in place or do the GM-SME have a semi-intuitive decisions process in place. the question will show if there are processes established or is there only an information environment for the decision maker
4	Is the process structure strictly adhered?	If a semi-intuitive or a rational decision process is established, it must be checked if every decision follows this process or is this process for secondary issues after a decision is made or is this process more random in use.
5	Is the decision process itself established or management pushes it?	If processes are established, the decision is maybe not completely intuitive. This question verifies if the impulse for the decision to an important cooperate action is initiated by the owner-manager than it could be assumed that it is still an intuitive decision with a structural workaround for the decision maker or as well to initialize the execution of the decision following necessary activities.
6	Is an innovation team constituted, if yes what structure (department, experience)?	To round up the sequence, it needs to be reviewed who is driving the innovation in the company and how open is the owner-manager for internal ideas to start an important decision process. Furthermore, it is worth to know more about the spirit in the GM-SME

Table 3.6: Interview questions and field of interest sphere one: Decision-making in corporation

### 3.7.5 Target and Questions for sphere two: intuition in cooperation, tacit knowledge, owner-manager, family

In this section the research phenomenon of sphere two will be followed up: the genesis of tacit knowledge of GM-SME owner-manager, the influence of his family and the influence of the

company organization. This section covers partly the RO in general and SUB-RO 3 in detail (see chapter 1). The following seven questions were used as a guideline in the interview, sub questions and follow up questions were prepared and used as needed in the interview<sup>15</sup>.

In Table 3.7 the questions and the field of interest for the research of intuition and tacit knowledge are concisely gathered.

	Interview Question	Field of interest
1	Do you conduct market competitor research periodically?	To understand how the GM-SME is connected to their home market and realize which special source is being used for his own information, to figure out the market experience level of the owner-manager and his opinion to the necessity of competition research.
2	Will the team be informed about the results of such research?	To understand whether the company is communicated openly or not and do all employees have the chance to evaluate their own position and task in relation to the competition in their market.
3	Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?	To determine whether the owner-manager has his own access to relevant information that allows him to build up special knowledge and to develop the ability to make easily intuitive decisions. Also, to learn and to compare how this works in case of this company and their field of action and are there same patterns in the other GM-SME.
4	What do you personally know about your competitors?	To find out if there are still topics in question 1 to 3 which were not mentioned or not described clearly. e.g., if a competitor wants to buy a company send an offer or a conversation is planned, such examples will not be found in a competition search.

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<sup>15</sup> the mentioned sub and follow up questions are not shown and explained here to keep clarity in the thesis.

	Interview Question	Field of interest
5	Do your company have knowledge management organized?	<p>To find out whether entrepreneurial knowledge can also be found among employees and whether this is also recognized by owner-managers. Why is this important?</p> <p>In the last 20 years, there have been recurring projects to preserve and protect internal expertise in medium-sized companies, often it is the owners who have the special knowledge in their own hands, but also for this there are external constraints to secure the knowledge for the next generation. In family businesses, knowledge is preserved and passed on over generations, but the larger the organization, it may be necessary to protect it elsewhere. An important trigger was the introduction of the quality assurance system e.g., ISO 9001</p>
6	Are there single persons who have special know-how in your organization?	This is more a follow up question to question number 5, but at least it is quite interesting how the owner-manager organizes the know-how transition in practice
7	Have your company programs to get this know-how into a team?	To understand how special know-how is transferred from generation to generation and to learn how this is secured in employees' space if somebody leaves the company or get sick. Furthermore, it shows how the owner-managers feeling is for sensible intellectual property and how open now, and the predecessor's, deal with this important issue.

*Table 3.7: Interview questions and field of interest sphere two: tacit knowledge, owner-manager, family*

### **3.7.6 Target and Questions for sphere three: Growth of the cooperation**

In this section the research phenomenon of sphere three will be followed up: In this last sphere of questions, we like to find out the basic data to apply Greiner's model and the adoption of Churchill to the current situation of the company. This section covers partly the RO in general and SUB-RO 2 in detail (see chapter one). The following seven questions were used as a guideline in the interview and as noted earlier, sub questions and follow up questions were prepared and used as needed in the interview. In Table 3.9 the questions and the field of interest for the research in organizational growth are concisely gathered.

	Interview Question	Field of interest
1	Was an organizational change in your company in the last 5 years or is an organizational change planned?	To understand the current situation of the company and to be able to assess its current organizational status, we want to find out here whether there have been crises, or there will be crises, and this has caused internal changes or this is still imminent. This question is preparing to understand the status in Greiner's Evolution and revolution as organizations grow.
2	Should the management style be changed?	To determine whether there are deficits in the leadership style of the management or whether there were projects in which the right management skills were missing, we reflect here on Greiner's table on the skills of the management in the growth phases of a company
3	Do you have to replace a single know-how person in the next 2 years?	To get an idea about the view of the owner-manager to the important skills of his company we like to find out the drivers for success, as an example: usually the German high-tech companies have special know-how and special people, sometimes as well special processes, and machines in place.
4	Are your company able to bring out a new product in a new market?	It is important to determine whether in recent years the company has been able to bring a new product to the market that was successful, or whether it has lived on an extraordinary product for a very long time. It is also important to find out whether the owner-manager is thinking deeply about this.
5	Greiner's Theory: In which growth phase your company are?	With this question we want to find out to what extent the model of Greiner can be applied to this company, from the owner-manager's point of view. After this model and its approach to the development of a company were described, a discussion with the owner-manager the possible crises and growth phases can be discussed and evaluated. New insight could be created by using a model to look on the history and the future of the company.
6	What do you see when you step back and look on your company?	This question should give a free story telling possibility to the interviewee, should look back in history, before the start-up and reflect on his active time in management.
7	Better with you, or better with a new/other person in charge?	So last question to the interviewee sounds a little impolite, but we learned in Greiner's view, that the first crisis is the crisis of delegation. In some cases, the current manager is hindering the company to grow and to make sure that the interviewees reflect this, this a little special question is in the list.

*Table 3.8: Interview questions and field of interest sphere three: growth of the cooperation*

### 3.8 Level or Grade of family involvement

As discussed in chapter two, literature review, the family involvement and the several influence factors on tacit and explicit knowledge of the owner-manager coming from family and relevant will developed at a matrix to easily show the level and the grade of family involvement after the interview. Therefore, a table to display the result and a toolbox of evaluation criteria have been developed, as shown below in table 3.9.

Involvement of family / Level of	25%	50%	75%	100%
Ownership level				
Influence decision in GM-SME				
Advice function for owner-manager				
Active in GM-SME				
Tacit knowledge of owner-manager				
Growth of GM-SME				

Table 3.9: Level of family involvement, see chapter 2

Description of the criteria in detail:

- **Ownership level:** To which part is the family owner of shares (if not possible to find out during the interview, an estimation made based on the interview dates)?
- **Influence decision in GM-SME:** To which extent do the family influence decisions of the manager (25% a few, only consulting, 50% some, integrate in decision process, 75% on management level, 100% all decisions are family decision)?
- **Advice function for owner-manager:** To which level is the knowledge and the abilities of the owner-manager depending on direct or past advice from family members? The level is an assumption of the researcher.
- **Active in GM-SME:** Is one or more than one family member still active in the GM-SME, and to which grade and in which position (25% only one person in a low-level position, 50% only one person in a middle management position, 75% one or more persons in higher positions, 100% second managing director)?

- **Tacit knowledge of owner-manager:** To which level is the influence of the family strong enough to allow the owner-manager to set up their own tacit and explicit knowledge?
- **Growth of GM-SME:** To which level is the growth target or the expectation of GM-SME a value from the family (0% decision of the owner-manager, 25% values are set a long time ago, 50% family is still setting the growth targets under their value, owner-manager decides, 75% decision is made in a family meeting, 100% only family values count)

### 3.9 Structuring, coding, analyzing interviews

During the interview, intensive notes are taken and voice records of the discussion, with agreement of the interviewee. The interview questions follow the previously described structure including additional questions out of the interview context, but not more than one or two more questions per interview section (spheres). Afterwards the notes were enriched with additional notes after listening to the interview recording some days later. Each listening to the audio recorded interview, notes were taken in a different color, after a minimum of 3 months a second sequence of listening and note taking was conducted. Additional notes were added to the digital document, see picture 6.5, blue: live notes, red 2<sup>nd</sup> listening notes, green 3<sup>rd</sup> notes after listening again to the audio recording.



Figure 3.13: Shows in 3 colors the analyze steps of the audio recorded interviews, artificial diffuse (detailed Interview information are confidential)



After the first, second and sometimes the third listening of one interview, the results were registered additionally in the research mind map to support the evaluation and the inter-connections between the companies and between the three spheres reported before, see above figure 3.13. After the third analysis of the respective results, saturation was noticed, and no further listening was conducted. Then setting the results of the interview with company three (here shown as an example) to the research questions and objectives, using Mind-Map cut-out for better clustering of information, see figure 3.14, which is an extract from the Thesis-Mind-Map, figure 3.12 and show exemplary the graphical analyzed documentation.

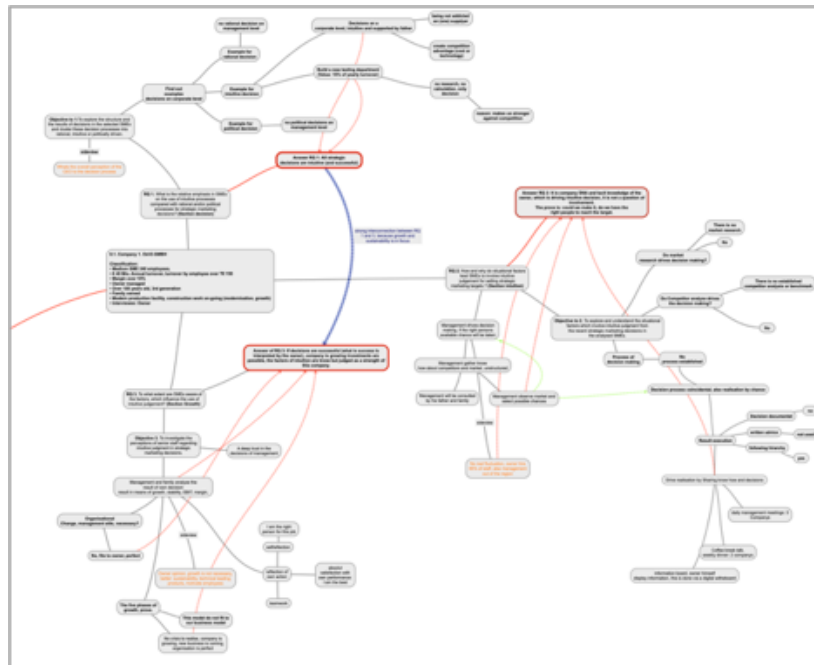


Figure 3.14: Thesis Mind Map 3.12, show section Interview company 70-3-200-102

In the following chapter the detailed assessment of the interview results is evidenced in detail. Meanwhile, I installed an iterative process to be sure that the relevant findings become obvious.

The structure of next chapter four findings is as follows:

1. The narrative description of the interview also includes perceptions of the researcher and notable issues.
2. Main figures of the interviewed company double checked (triangulation).
3. Interview answers corresponding to the questions.
4. Summary of the interview.
5. Decision on saturation.

# 4 Findings

The analysis of the interview results will follow the classification of the research and take into consideration that the approach adopted was an inductive, interpretative, qualitative, multi-level case study frame, recognizing the status of the researcher from the research context milieu<sup>16</sup>.

The inductive approach presupposes that we have some recurring phenomena that we can analyze repeatedly in several cases to build ideographic knowledge. To decide for the right modes of analysis these three main techniques were adopted:

**Meaning condensation:** (reduce content to the crucial points) This is done in this research by categorizing the answers into the three clusters in condensed and rephrased shape.

**Meaning interpretation:** Recognizing the need to go beyond the condensed text, develop and interpret the meaning, and bring this into contextualized statements in the research context, as well to reference to other interviews in the case. The results will be coded to reach a comparability with the other embedded cases of interest.

**Bricolage:** This technique offers the use of several modes of analysis and uses all available information and data from all interviews and the connected data and display these in variable forms including numbers, and visualizations to enrich the outcome.

Due to the fact, that meaning condensation, meaning interpretation and coding was used to connect the results and they were summarized in a mind map and scored, bricolage is a useful way to achieve and illustrate a result (Brinkmann and Kvale, 2018, p. 132).

Additionally, Miles and Huberman show ad hoc techniques of interview analysis and gather these in thirteen steps. This ad hoc technique was also taken into consideration for the analysis of the existing data, as described below (Brinkmann and Kvale, 2018, p. 133; Miles, Huberman, and Saldan\,a, 2019, p. 274; Weiss, 1995, p. 253ff).

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<sup>16</sup> Usage of the researcher's professional competence in machine tool and congeneric sectors, his experience in GM-SME management and his observations in his more than 30 years of professional life.

## 4.1 Validation and generalization of interview knowledge

To validate and to generalize the knowledge out of an interview or a set of interviews the objectivity, the reliability, and the validity of the results out of the conducted interviews must be proven to allow the use of the created interview knowledge. Therefore, the following table gathers the main facts of this research.

Criteria	Parameters	Realization
Objectivity	No bias, well crafted, nature of object researched is reflected, linguistic effects avoided, open for question from interviewee	Interviews out of the research context, same questions and different sub questions, selection of objects by pilot interviews and own decision to take part, the researcher is out of the milieu and speaks the specific language, the set of basic questions set the main path and is open for discussions and questions.
Reliability	Consistency and trustworthiness shown by reproducible by other interviewers, answer analyze follow strict rules to avoid misinterpretation	The results of each interview will be analyzed and compared to the others. Searching for irrelevance inconsistency and unnecessary information. With every interview and at end of the interview analysis process the single result compared with each other opens a valid prove of consistency and trustworthiness.
Validity	Is the reason for the research clear for the interviewee, are the statements true, correct, well grounded, convincing, and honest. Does the interview outcome indeed reflect the phenomena? Validity must be checked throughout the whole process: process is in order, credibility, plausibility, triangulation, prove for extreme information, follow up surprise.	<p><b>Correctness and truth:</b> Answers of the interviewee were used for interpretation in the research context as they are and in the meaning of the questions.</p> <p><b>Quality of process:</b> The interview was planned with the analyzing methods in mind and followed the seven stages of an interview inquiry (subsection 3.7).</p> <p><b>Check validity:</b> after each interview the plausibility was checked, the selection of the interviewees shows credibility, second and third follow up questions.</p> <p><b>Question the result:</b> Ask how these fits to the reality or compare to other results.</p> <p><b>Theorize:</b> Multiple steps in the interview workflow (selection, pilot interview, invitation with preparing information, in depth interview, comparing results, saturation check)</p>



### 4.3 Thematic Interview Analysis (2<sup>nd</sup> sorting)

In the following chapter the seven interviewed companies will be presented. The interviews conducted were compiled and evaluated according to the 2<sup>nd</sup> sorting shown in figure 4.1.

At the end of this chapter, the analytical methods described in the previous chapter are first applied individually to the test results company by company and the new findings are determined.

This is followed by the examination of the relationships and patterns of all interviews as a whole and their analysis to gain further knowledge from this consideration.

The detailed results of the first sorting are located under appendix 9.7. The results were used for the 2<sup>nd</sup> sorting analysis. The same process was used for all seven interviews and their documentation.

The three tables per interview gather, condense, and reflect on the answers during the interview of the three main research spheres:

- Decision in cooperation, sphere one
- Intuition in cooperation, sphere two
- Growth of cooperation, sphere three

To enable comparisons between results of the embedded cases and to level a grade for this three research spheres a graphic overview was developed and described in detail in this chapter (figure 4.1.1).

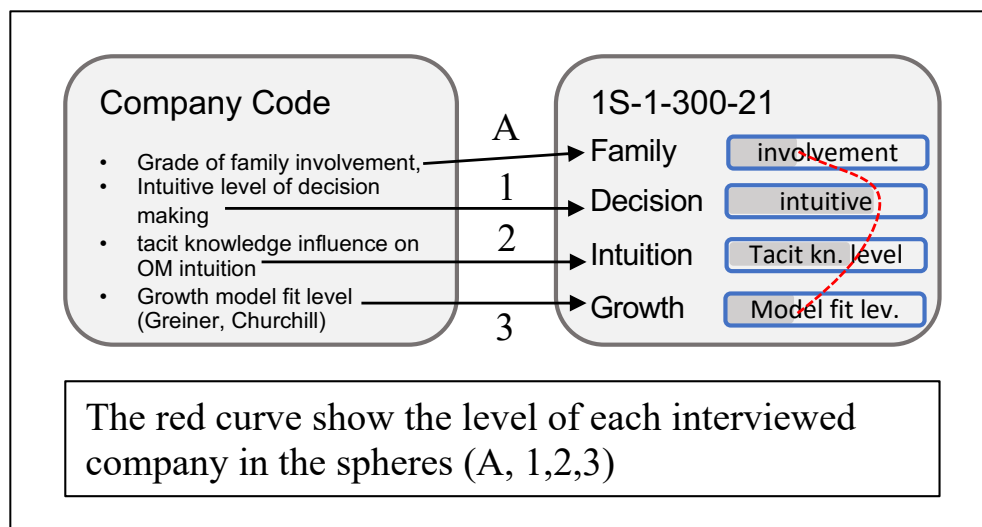


Figure 4.1.1: Graphic element “overview Interview result and interpretation, see chapter four.

#### 4.4 Analysis 1<sup>st</sup> Interview, Company 1S-1-300-21

The interview with the founder, 100% owner, and CEO of two companies (of five in total) in the holding structure, was the first interviewee and was conducted in parallel to the pilot interviews during exhibitions. This company is in the first generation of ownership.

First the decision-making was at the center of the discussion, following the developed interview structure. The owner has a clear picture of decisions which were driven by him with intuitive force. There was no pressure to change anything in the company because the company is growing and it is more the latent feeling of the founder, that something must be changed. Some examples out of the interviews: “... *there are many small decisions, but due to the strong growth of the last years, we only solving issues to fulfil our supply promises ... I am more interested in working and organizational theory... let us talk about this ...*”

It was noted that many other leading persons (CEO in other group members) in the organization are active, but structural changes or ideas for change are driven by the founder. Many, perhaps too many processes are in place which was also expressed in the statement:

“... *there is sales management problem, that hinders us to realize more growth in the group, furthermore the middle management has to many administrative tasks, we are in a crisis of control and administration ...*”

In his opinion the current crisis was “red tape”, analogue to Greiner’s model which was discussed when talking about this, see as well under 3.8.1, red tape means: procedure talking precedence over problem solving (Greiner, 1972).

The organizational structure of this company 1S-1-300-21 is quite difficult to control due to the small units in different markets and the central department for sales, one for administration and one for strategy quite difficult to control. For that reason, the interview was dominated by leadership and personnel issues.

The fluctuation rate is quite high, over 10%, especially compared to the later interviewed GM-SME. Some key facts about 1S-1-300-21:

- Medium SME 300 employees.
- Machine tool and connected sectors in the group.

- € 40 m. annual turnover, turnover by employee over T€ 130.
  - 3 years ago, the corporation was changed into a holding structure, new products and companies joined the group.
- Margin over 10%, partial over 20%.
- Owner (founder) managed.
- Manager over 50 years old.
- Company is 20 years old, first generation.
- Owned by the manager.
- Modern and new production facility, construction work on-going (modernization, growth).

#### 4.4.1 Level or Grade of family involvement Company 1S-1-300-21

Because company 1S-1-300-21 is managed in the first generation by its founder and current CEO there is no family involvement and no handing down of experience from an older generation. In this company there is an active founder in his mid-fifties driving the cooperation into innovation, organizational changes, and ventures like developing startups, buying, and financing other, smaller SMEs in market niches.

Involvement of family / Level of	25%	50%	75%	100%
Ownership level	0%			
Influence decision in GM-SME	15%			
Advice function for owner-manager	0%			
Active in GM-SME	25%			
Tacit knowledge of owner-manager	0%			
Growth of GM-SME	0%			

Table 4.2: Level of family involvement, see chapter 2 and 3

#### 4.4.2 Decision in Cooperation

Questions to owner-manager of Company: 1S-1-300-21	Answers with hints to Decision in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Questions and Answers to sphere one: Decision in cooperation	
Do you remember the last strategic decision, which was intuitive?	Yes, 1.to buy property in city suburbs related to company growth. 2.Buy a company with a large loss and no strategy. 3. Change organization to agile 4. Not to invest in a me-too product (10 years ago), nevertheless knowing that the market will grow substantially.  The decisions were not apparently strategic at the time, but turned out to be strategic in retrospect
Was the result positive, did the corporation grow (more Employees, turnover, Ebit?)	1. Positive 2. still unknown 3. Still on-going, unknown 4. Wrong decision, firm did not participate on market growth in an intellectual property related area
Is a strategic decision process established?	Yes, there are several interconnected processes for decision preparation.
Is the process structure strictly adhered?	No, this interconnected process is flexible but follows a fixed KPI matrix
Is the decision process itself established or management pushes it?	The process is established, management often pushes it as well
Is an innovation team constituted, if yes what structure (department, experience)?	Yes, group management, company leaders, development, and a coach
Questions and Answers to sphere two: Intuition in cooperation (no overlapping answers out of this sphere)	
Questions and Answers to sphere three: growth in cooperation (no overlapping answers out of this sphere)	

Table 4.3: Interview result 2<sup>nd</sup> sorting, sphere decision



The decision sphere specific analysis leads us to the following result in this section: The decision-making-process in company 1S-1-300-21 is focused on the founder-manager, he established a 2<sup>nd</sup> management level of persons with management abilities and no decision allowance in a holding structure. Therefore, he established processes to keep the information flow under his control. His innovation decision, new products, new companies, are clearly arranged in separate entities to ensure control as well as security for him.

- Intuition: Because this company is still managed by the founder, intuition is business standard.
- Decisions: A panel was set up to execute decisions to make it happen in the organization.
- Success: Find new ways for investment, get state subsidies.
- Family: low involvement.
- Organization: overwhelming organization to support a holding structure.
- Innovation driven: Yes, by founding start up's.

#### 4.4.3 Intuition in cooperation

Questions to owner-manager of Company: 1S-1-300-21	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Questions and Answers to sphere one: Decision in cooperation (no overlapping answers out of this sphere)	
Questions and Answers to sphere two: Intuition in cooperation	
Do you conduct market competitor research periodically?	Unstructured yes but not on all subsidiaries in the same manner.
Will the team be informed about the results of such research?	Would like to establish a group-wide information exchange, but the members are quite stuck in their own silos.
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?	I read a lot about working theory take part, unstructured, in internal meetings und talk a lot with the engineers in charge.

Questions to owner-manager of Company: 1S-1-300-21	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
What do you personally know about your competitors?	Due to my long relationship with competitors, interconnection to CEO's, some, but I stepped out of this information flow. My knowledge is maybe broader than that of single managers in my organization
Do your company have knowledge management organized?	We were thinking of this issue, but realization is too time consuming, outcome is unclear/ no specific. There is a kind of wiki in the research and development center
Are there single persons who have special know-how in your organization?	Yes, there 3 people which could be a critical resource for their area they are working in
Have your company programs to get this know-how into a team?	No, we don't have programs to avoid that risk
Questions and Answers to sphere three: growth in cooperation (no overlapping answers out of this sphere)	

Table 4.4: Interview result 2<sup>nd</sup> sorting, sphere intuition

The intuition sphere specific analysis leads us to the following result in this section: The owner-manager is the founder, this company was grown from a one man show to a 300 people operation in 20 years, 5 years ago every process was controlled and executed through the owner. He knows everything and learns everything.

The tacit knowledge is tremendous compared to the other interviewed companies, but we see in this case inherited or developed tacit knowledge by the owner-manager.

- He does a lot of underground leading (without talking to the responsible manager) into the separated subsidiaries. Sometimes he bypasses the responsible person in place and thus increasing his unique knowledge also in this way.
- In this company there are three people which started shortly after the founding of the company with essential knowledge. There is currently no succession plan for these positions to avoid losing core knowledge.
  - Trust and relationship to these people is maybe one of the secrets of the founder.

#### 4.4.4 Growth of Corporation

Questions to owner-manager of Company: 1S-1-300-21	Answers with hints to Growth in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
Questions and Answers to sphere one: Decision in cooperation (no overlapping answers out of this sphere)	
Questions and Answers to sphere two: Intuition in cooperation (no overlapping answers out of this sphere)	
Questions and Answers to sphere three: growth in cooperation	
Was there an organizational change in your company in the last 5 years or is one planed?	Change single corporations into a holding structure, founding of service point for sales, administration, and technical customer support.
Should the management style be changed?	Yes, we must change into an agile world due to the young generation and the speed around the world in our high-tech environment.
Do you have to replace a single know-how person in the next 2 years?	No, fortunately the team is quite young so we shouldn't have to replace people for retirement.
Are your company able to bring out a new product in a new market?	Yes, but it takes too long. We in an Inventors Dilemma, we created a market but are not able to develop this market
Greiner's Theory: In which growths phase your company are?	I think we are in a crisis not in a growth phase.
In which crisis you are in?	If we are in a crisis, we are in the red tape crisis and like to change into collaborative phase with agile methods.  With agile structures a crisis (like Greiner 1 – 3) will not come up.

Questions to owner-manager of Company: 1S-1-300-21	Answers with hints to Growth in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
What do you see when you step back and look on your company?	I can see a group of innovative companies with a great future and a lot of work around the globe.
Better with you, or better with a new/other person in charge?	Without me, that is the reason I stepped out totally

*Table 4.5: Interview result 2<sup>nd</sup> sorting, sphere growth*

The growth sphere specific analysis leads us to the following result in this section: The last 20 years the company was growing a lot and passed some of Greiner's growth and crisis phases at the same time. The owner tries to push internationalization by offering special services, but subsidiaries and organizations were not able to follow.

Young staff and their lack of experience brought some critical moments as well during internationalization. They started many projects with large market potential but were not able to finish and competitors took over a form of Inventors Dilemma (Christensen, 1997).

- Greiner's Model: -> Does fit for the past, maybe also for current phase (too long).
  - No relevant crisis but a challenge in organizational issues "red tape".
  - Hight growth up to 30% per year, stable EBIT.
- Churchill and Lewis's Model: -> no fit.
  - This company is in a mature stage but still in a start-up spirit.
  - The owner is willing to step out but wants to keep control and decision-making.

#### **4.4.5 Saturation Level of research, after interview with company 1S-1-300-21**

The saturation level shows the status of this 1<sup>st</sup> until the 5<sup>th</sup> interview from a general, or more technical position. It is taken into consideration that the interviewed company was selected out of 30 companies in the research context after pilot interviews, with fifteen confirmed interview partners for in depth interviews and the settings for saturation and sample size (see subsection 3.5 and 3.6). Therefore, the saturation level will be checked after each interview, after the 5<sup>th</sup>

interview proving methods will be more detailed i.e., comparison of statements, new themes emerging, redundant answers.

Here in the 1<sup>st</sup> interview, we use the same template to check saturation with the knowledge that there can be no saturation yet, but we also check whether the goals of the investigation are achieved with the direct comparison with the research objectives. This will be explained in more detail in the following template. This template will be used in all following interviews, using the procedure described above and will be not repeated but remains valid.

Proving Question	Result and Rating of saturation
Is the research objective and the two sub-objectives covered by the answers of the interviewee?	
<p>Research objective:</p> <p>To explore the relationship between SDMP, tacit knowledge of the owner/manager, intuition, and corporate growth in SME</p>	<p>The relative emphasis of intuitive processes is high. Rational processes are not involved in important decisions. No political influence perceptible, a strong dependence on local state subsidies is in place.</p> <p>It seems to be that only the owner and his leaders decide, and the lack of processes in their internal workflows leads them to intuitive decisions. But of them points back to the approval by the owner.</p> <p>This looks like a tacit process, or it is easier, and faster to decide by intuitive judgment, at least the 2<sup>nd</sup> management level is not in the position to build up tacit knowledge for the managing issues, only the owner is in this position.</p> <p>A decision is made by the owner-manager; he rated the results as successful. All decisions with entrepreneurial scope are intuitive and conducted directly by or with the owner.</p> <p>So, topics with entrepreneurial scope are brought up from the owner-manager alone and he is the only one to solve this issue.</p> <p>The owner-manager is convinced to act in accordance with the leading team. Separate leadership meetings take place to inform and motivate company leaders to execute the decisions.</p>
<p>Sub-Research Objective 1:</p> <p>To explore the relevance of Greiner's Model (Evolution and revolution as organizations grow, 1972) for SME in the research context</p>	<p>The relevance of Greiner's Model for this company was analyzed and discussed in the above chapter. Usable results have been achieved. For this company the model of Greiner fits better than the model of Churchill. This is due to the fact, that the owner brought up an organizational overkill to his GM-SME</p>

Proving Question	Result and Rating of saturation
Sub-Research Objective 2: Compare the interview result and the relevance of SUB-RO 2 as well with the Models of Churchill and Lewis (Churchill and Lewis 1983) and show the differences.	The relevance of the Churchill and Lewis Model for this company was analyzed and discussed in the above chapter. Usable results have been achieved in relevance to the “not fit criteria”.
Sub-Research Objective 3: Analyze the evolution of tacit knowledge in SME and the relevance of owner-manager’s family	The relevance, the usage, and the existence of tacit knowledge in this company was analyzed and discussed in the above chapter. Usable results have been achieved
Do we get redundant answers?	
Intuitive decisions (see chapter 2.5 intuitive decision is described)	No not after first interview
Trust	No not after first interview
Communication	No not after first interview
Greiner’s Model	No not after first interview
Churchill and Lewis	No not after first interview
Family involvement in day-to-day business	No not after first interview
Did new themes emerge?	
1 <sup>st</sup> Interview	Yes, internal organization could be in the center of attention of the owner if there is enough money to test his ideas
Is researcher feeling to reach the level of saturation?	No not after first interview, there is a lot to learn about GM-SME
More comments to saturation:	No comments currently

Table 4.6: Saturation check template, 1<sup>st</sup> Interview company IS-I-300-21

#### 4.4.6 Summary Interview analysis Company 1S-1-300-21

This company is between the size of the later companies 2 and 3. The decision-making in this company appears to be a hybrid form, this is maybe due to the holding structure. After a period of high growth, the company has invested in property assets and new business. This is probably a result of a strong cash position. Regret was expressed about the failure to invest in a complementary product line. These decisions were intuitive but gained strategic relevance in retrospect. Management now employs the use of KPIs which will tend to enhance the processes of formal control. The difficulties of product development (the Inventor's Dilemma) are recognized in this situation. The owner has perhaps recognized this situation and has "stepped out" partly from his operative leading role.

The research objective was reached, and SUB-RO also, as documented in the check table saturation under 4.4.5, are reached as well. The results after the second sorting analysis are transformed into a graphic overview, see figure 4.2, to allow to facilitate the comparison and to draw conclusion across all seven companies in discussion chapter 5.

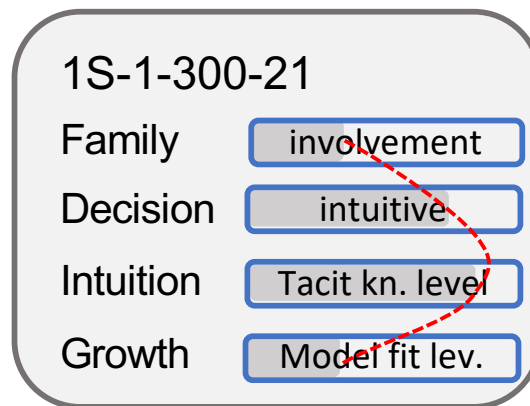


Figure 4.2: Overview result analysis 3 spheres and family involvement for company 1S-1-300-21

#### 4.5 Analysis 2<sup>nd</sup> Interview, Company 2G-5-570-145

The interview with the owner-manager was conducted in December 2016. He is now leading this company in the 6<sup>th</sup> generation together with his brother and his mother. These two family members are not officially in charge of the company, but due to the early death of his father his mother is an important advisor of the current CEO.

Twenty years ago, the company changed business from personnel goods applications into the medical sector; five years ago, an important competitor was taken over. Also, over a similar

period mayor investment in production facilities and international sales structures were built up. All these investments were conducted in joint processes to optimize the merger result of these two companies. During the interview the investments and the acquisition (production: vertical integration of essential production processes) and establishing their own sales and service organization on another continent were discussed in depth. Both investment decisions were successful and taken intuitively by the owner-manager.

The corporate regulation asks for a formal “yes” from brother and mother, but usually the decisions of the owner-manager will be implemented. The stable organization of the board makes the CEO able to decide fast, execute quickly and make this quite large GM-SME flexible and innovative.

Similar to company seven, communication with the leaders in the organization is managed through a daily decision meeting -jour fixe, with topics in detail and also strategic issues. A structured planning and strategy development process is not in place. “...*we tried it with an external strategy workshop and conducted two of them, but I am not sure if this is the way to get along... we discussed many days during this workshop for day-to-day topics....*”

The important ideas come from outside: customer contacts and many conversations with the salespeople are two of the main innovation drivers. The owner reads every customer report and visits all exhibitions around the globe. These information pools and the integration of the family in the regional industrial firm’s network allow the owner to build up a unique network for himself and for his company.

The staff fluctuation is very low, but nevertheless this company invests in parallel structures in critical areas to prevent a know-how loss. As mentioned in Nonaka’s “The knowledge creating company” building of parallel structures (double personnel) could bring at least some of the tacit knowledge to the surface (Nonaka and Takeuchi, 1995).

The organization of the company has been similar for the last 20 years and is tailored to the owner-manager, as it was before to his father and grandfather. Organizational changes are mostly driven by losing or finding people for important positions. If a new employee performs very well, the organization will support their strengths for the benefit of the company. It is a kind of talent-tailored organizational movement.



*“... the corporate DNA take care of every new employee, some of our people are working for us in the third generation, so we really rely on the creativity of our people, and we invest a lot of time to develop and support new talents...”*

We talked about the success of the corporation, but we did not touch on the growth of total headcount, because the tremendous growth due to the take-over of the competitor was not counted as growth. The researcher was wondering about the statement: *“...turnover is always similar over the last years, only the sectors turnover is coming from is changing...”*

Company 2 grew from 550 to 1.200 people in five years across separate legal units, but this was not the view of the family. Some key facts about company 2G-5-570-145:

- Large SME with 570 employees, embedded in a group of 1.200.
- Mixed sectors, machine tool and die making.
- € 82 M. annual turnover, turnover by employee over T€ 140.
  - Five years ago, the corporation took over an enterprise of equal size, turnover and margin was double then (no main issue in the view of the owner).
- Margin under 10%.
- Owner managed.
- Manager over 40 years old.
- Over 140 years old, 6<sup>th</sup> generation.
- 100% Family owned.
- Modern production facility, construction work on-going (modernization, growth).
  - International expansion owns since then a corporation of similar size (550 employees) separately managed.

#### **4.5.1 Level or Grade of family involvement Company 2G-5-570-145**

This large GM-SME is a 140-year-old family business with a history of passionate businessmen in the driver's seat. They never forget the values and the responsibility for the city, the people in the company and the customer.

One of the two owner families has many relevant shareholders, more than 10 people have shares and get a certain bonus every year, but the decision and the responsibility are focused on person, the owner-manager of the other family.

The company 2G-5-570-145 has a high level of family involvement because so many people need the bonus. But no direct involvement of family members, the control belongs to the active owner-manager.

Involvement of family / Level of	25%	50%	75%	100%
Ownership level				
Influence decision in GM-SME				
Advice function for owner-manager				
Active in GM-SME				
Tacit knowledge of owner-manager				
Growth of GM-SME				

Table 4.7: Level of family involvement, see chapter 2 and 3

#### 4.5.2 Decision in Cooperation

Questions to owner-manager of Company: 2G-5-570-145	Answers with hints to Decision in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Questions and Answers to sphere one: Decision in cooperation	
Do you remember the last strategic decision, which was intuitive?	Yes, I remember two strategic decisions: 1. Start production in a NAFTA country, the reason was currency assurance for our US business, location intuitive 2. Start production of a relevant material our self, become a material producer.
Was the result positive, did the corporation grow (more Employees, turnover, Ebit?)	Both decisions were successful, 1. Now 4 people more and more margin (in total) 2. Create a competitive advantage and secure leading market position.

Questions to owner-manager of Company: 2G-5-570-145	Answers with hints to Decision in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
Is a strategic decision process established?	No there is no process in place. Intensive information sharing culture, every day 30 minutes for all leaders together with the owner
Is the process structure strictly adhered?	No, the process is started by chance
Is the decision process itself established or management pushes it?	Management pushes it, but mainly the idea or the pressure to be active comes from the customer. The total communication is based on customer demands.
Is an innovation team constituted, if yes what structure (department, experience)?	Yes, for 5 years there has been a 2-year strategy Workshop with the leading persons, 2 or three days outside of the company
Questions and Answers to sphere two: Intuition in cooperation	
Will the team be informed about the results of such research?	Yes, it will drive decisions in the cooperation
Questions and Answers to sphere three: growth in cooperation	

Table 4.8: Interview result 2<sup>nd</sup> sorting, sphere decision

The decision sphere specific analysis leads us to the following result in this section:

The decision-making process of company 2G-5-570-145 is influenced by the owner and his family and they in turn are influenced by market regulations, governmental laws and a long history and heritage. In daily business the owner-manager makes all decisions based on his position and the information he can gather through his daily networking in and outside the company.

The core of the information is coming out of the market worldwide. Main investments were based on customer demand and were decided intuitively. The closeness to the customer and the customer orientation is part of the company DNA.

- Intuition: Is part of the decision-making.
- Decisions: are a family discipline.
- Success: is not measured in detail, also intuitive.
- Family: high involvement in major decisions.
- Organization: long history for the current organization.
- Innovation driven: more marketing driven.

#### 4.5.3 Intuition in Cooperation

Questions to owner-manager of Company: 2G-5-570-145	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
Questions and Answers to sphere one: Decision in cooperation	
Do you remember the last strategic decision, which was intuitive?	
Was the result positive, did the corporation grow (more Employees, turnover, Ebit?)	Success of 2. Is not measurable, but the feeling is positive
Is a strategic decision process established?	Decisions intuitive by the owner. Get an OK from board of directors (Mother and Brother) now real control function
Is the process structure strictly adhered?	
Is the decision process itself established or management pushes it?	This is in the company DNA, it is a feeling which is given from father to son, from master to mechanic. The owner hates processes: Processes makes you slow, inflexible and kill creativity

Questions to owner-manager of Company: 2G-5-570-145	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
Is an innovation team constituted, if yes what structure (department, experience)?	
Questions and Answers to sphere two: Intuition in cooperation	
Do you conduct market competitor research periodically?	No market competitor research because there are only 5 competitors (like a family)
Will the team be informed about the results of such research?	In the daily meetings all relevant information are shared. Sales team conducts many customers visit all reports are read by the owner, information is comprehensive, many salesmen are in the market
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?	As mentioned, all information going through my office every day and my family disposes over a large network in our region
What do you personally know about your competitors?	I know the main thing about our competitors, new product, new customers, its easy, there are only 5 main players in our business
Do your company have knowledge management organized?	No, we analyzed the necessity for such a system / organization. The corporate DNA keep know-how and transfer it to the next generation
Are there single persons who have special know-how in your organization?	No, also not me, there is one person on our team who knows the same things as I know.
Have your company programs to get this know-how into a team?	Yes, we integrated a successor program, every 2 years the section leaders (min 150 people) conduct a wide analysis who will be leaving in the next two years then we organize a redundant successor for minimum six month

Questions to owner-manager of Company: 2G-5-570-145	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
Questions and Answers to sphere three: growth in cooperation	
Was there an organizational change in your company in the last 5 years or is one planned?	If there is a good employee, may we change the organization for him? Depends on the chance to find one person with special skills. Or a customer demand forces us to change.
Should the management style be changed?	No, it's focused on the owner and organization and has been proven over 20 years
Do you have to replace a single know-how person in the next 2 years?	No comment
Are your company able to bring out a new product in a new market?	No comment
Greiner's Theory: In which growths phase your company are?	No comment
In which crisis you are in?	No comment
What do you see when you step back and look on your company?	No comment
Better with you, or better with a new/other person in charge?	No comment

Table 4.9: Interview result 2<sup>nd</sup> sorting, sphere intuition

The intuition sphere specific analysis leads us to the following result in this section. The owner-manager doesn't like processes and is willing to conduct many meetings and viral communication to avoid too much red tape. This leads to an intensive culture of intuitive decisions and the owner-manager is a person with a wide range of abilities. These abilities have roots in his

personality and his education through his family. His tacit knowledge developed through his education and growing up in an entrepreneurial home.

He is driving competition as a network and marketing like a religion. He and his 2<sup>nd</sup> leader, an external financial specialist, hold redundant know-how, so he can step out for a time, he stated.

- Intuition: is a mantra in this company.
- Tacit knowledge is part of the company DNA.
- Competitors are used by the owner like a network.
- Customer orientation is a rule for everyone.
- Successor programs source new motivated people with the same DNA.

#### 4.5.4 Growth of Cooperation

Questions to owner-manager of Company: 2G-5-570-145	Answers with hints to Growth in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 11.)
Questions and Answers to sphere one: Decision in cooperation	
Do you remember the last strategic decision, which was intuitive?	Acquisition of a competitor was driven by customers and as well from local politics
Was the result positive, did the corporation grow (more Employees, turnover, Ebit?)	Growth in numbers and competitive advantage
Is a strategic decision process established?	
Is the process structure strictly adhered?	
Is the decision process itself established or management pushes it?	
Is an innovation team constituted, if yes what	No result until now

Questions to owner-manager of Company: 2G-5-570-145	Answers with hints to Growth in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 11.)
structure (department, experience)?	
Questions and Answers to sphere two: Intuition in cooperation	
Questions and Answers to sphere three: growth in cooperation	
Was there an organizational change in your company in the last 5 years or is one planned?	Over the last 20 years the organization wasn't changed, only people and responsibilities changed
Should the management style be changed?	Could be, never really stepped back and analyzed. Change is always on board but only in incremental steps
Do you have to replace a single know-how person in the next 2 years?	No, as far as I know, but if yes there will be a successor in place
Are your company able to bring out a new product in a new market?	This question was not discussed
Greiner's Theory: In which growths phase your company are?	We are stable in growth, same number of employees, same turnover, and similar margin.
In which crisis you are in?	If there is a crisis, we are in the crisis of administration.
What do you see when you step back and look on your company?	Good company culture prepared to pass over to the next generation. Company is too big now; 120 employees are best size
Better with you, or better with a new/other person in charge?	Never asked this question to myself, but I will do it. So far, it is a successful company.

Table 4.10: Interview result 2<sup>nd</sup> sorting, sphere growth

The growth sphere specific analysis leads us to the following result in this section:



This company is not in a crisis, they are in a growth phase based on the acquisition of a large competitor. As a result, they are in an administrative emergency, the two companies must be merged, and synergies must be exploited. This is a new task, and the management has never done this, and they do not see the acquisition as a growth factor. As the owner-manager said, a company with 120 people is the best size. They changed markets in twenty years and grew, they changed products and grew, they internationalized and grew, but when you ask... the owner does not perceive this as growth.

- Greiner's Model: -> no fit
  - No relevant crisis but a challenging project after a large acquisition.
  - The parent company do not grow in turnover but in margin (make instead of buy).
  - No relevant crisis because of long family engagement.
- Churchill and Lewis's Model: -> no fit
  - This company is in a wide mature stage which is far behind this theory.
  - The owner and his family are deeply connected to all relevant action in business and do not plan to step out or think about it.

#### 4.5.5 Saturation Level of research, after interview with company 2G-5-570-145

As explained under 3.13 in the following template the respective status of saturation and the achievement of the research objectives is being checked.

Proving Question	Result and Rating of saturation
Is the research objective and the two sub-objectives covered by the answers of the interviewee?	
Research objective: To explore the relationship between SDMP, tacit knowledge of the owner/manager, intuition, and corporate growth in SME	<p>The relative emphasis of intuitive processes is middle to high. Rational processes are involved in important decisions, family involved, customer involved. In some cases, political influence is perceptible, customer, city.</p> <p>The owner made the decision, but he had involved his family and the leaders of 2<sup>nd</sup> management level in the process of preparing and executing the decision.</p> <p>It is expected by the leading persons of company 2G-5-570-145 that the owner can decide, like his father did it before. This has been accepted as a good way of doing things.</p>

Proving Question	Result and Rating of saturation
	Most decisions with entrepreneurial scope are intuitive. These decisions made by the owner-manager; he is preparing these in day-to-day meetings for execution; he rated the results as mainly successful.
Sub-Research Objective 1: To explore the relevance of Greiner's Model (Evolution and revolution as organizations grow, 1972) for SME in the research context	The relevance of Greiner's Model for this company was analyzed and discussed in the above chapter. Usable results have been achieved. It could be noted, for this company the model of Greiner fits better than the model of Churchill. This is because the company made a large acquisition and have a "crisis" of administration.
Sub-Research Objective 2: Compare the interview result and the relevance of SUB-RO 2 as well with the Models of Churchill and Lewis (Churchill and Lewis 1983) and show the differences.	The relevance of the Churchill and Lewis Model for this company was analyzed and discussed in the above chapter. Usable results have been achieved.
Sub-Research Objective 3: Analyze the evolution of tacit knowledge in SME and the relevance of owner-manager's family	The relevance, the usage, and the existence of tacit knowledge in this company was analyzed and discussed in the above chapter. Usable results have been achieved
Do we get redundant answers?	
Intuitive decisions (see chapter 2.5 intuitive decision is described)	The perception of intuitive decisions is same as in 1 <sup>st</sup> Interview
Trust	The trust of the employees for the family and the owner-manager has been there for decades
Communication	
Greiner's Model	No
Churchill and Lewis	No
Family involvement in day-to-day business	No family involvement

Proving Question	Result and Rating of saturation
Did new themes emerged?	
1 <sup>st</sup> Interview	Yes, internal organization could be at the center of attention if there is enough money
2 <sup>nd</sup> Interview	Yes, intensive sharing of information on management level, every day, jour fixe. Intensive reconciliation with the experienced family members.
Is researcher feeling to reach the level of saturation?	No, the results are mainly different
More comments to saturation:	No comments

*Table 4.11: Saturation check template, 2<sup>nd</sup> Interview company 2G-5-570-145*

#### **4.5.6 Summary Interview analysis Company 2G-5-570-145**

This company is significantly bigger than the first company and 120 years older, with about three times the number of staff. There are signs that the culture has become more analytically driven. The owner-manager has acquired an additional business by taking over a local company in the same market segment, the reason was politically driven by state politics and his network in this situation. This was a totally intuitive decision taken in a very short period. The result seems to be quite successful except that integration has been an obstacle.

There is more of a focus on customer-led growth rather than innovation through technical expertise. Although the current owner intends to pass the company to the next generation there is much more emphasis on delegated management through section leaders. The result and the changes do not always fit easily with the owner's mind, he judges them as "processes are too slow" and have to be changed to become more efficient. Ownership keeps the power of decision-making but, in a worldwide market to share the information-based activity in sales, by a daily meeting has to be restructured (opinion of the owner manager).

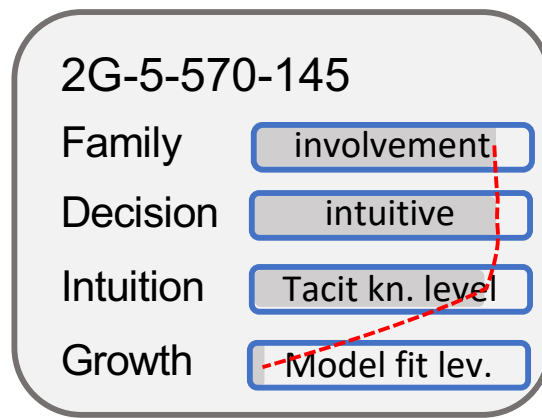


Figure 4.3: Overview result analysis 3 spheres and family involvement for company 2G-5-570-145

#### 4.6 Analysis 3<sup>rd</sup> Interview, Company 3B-3-300-103

##### Background and social environment

The interview with the owner-manager (CEO) took place in January 2017. The pilot interview during Euro-Blech 2016 showed his fit for the research context. The owner-manager leads this 100 per cent family-owned, and more than 100-year-old company together with one of his closer relatives in the third generation. He and his relative share basic responsibilities based on their abilities and historical duties of their families. His relative is responsible for administration functions (CFO). The company is in a rural area and is a major employer in the region. Some key facts are:

- Medium GM- SME, e.g., 330 employees.
- Machine tool company, international organization (worldwide)
- € 64 M. annual turnover, turnover by employee over T€ 195.
- Margin +15%, soundly financed, in a good position for investments.
- Company is growing (over a 10-year period): min. 5% p.a.
- Good production facilities with new interior; modern building.

The two owner-managers work very closely together, their offices are directly connected, and they have multiple discussions daily.

Twenty years ago, the company expanded its business volume in the casting application sector; 17 years ago, an important but smaller competitor was acquired. These two companies were regionally close together and the acquisition was mainly driven by political and regional issues

which the mayor and father of the current CEO perceived to be an important act to show social responsibility in this rural region. The typical drivers for acquisitions of a competitor are:

- takeover market share.
- acquire core technology.
- create all kinds of synergies between the companies.

As mentioned before, these drivers were not considered by the management of this company, as far the transaction was discussed in the family. Due to this, the investments in production extension and the investment in a direct competitor including the vertical integration of the former competitor organization was discussed in depth. The investment was economically unsuccessful, because it coincided with a short machine tool crisis in the year 2000 and (these are short periods for a machine tool company) before the deep financial crisis in 2009.

Both investment decisions were assessed as strategically successful by the owners. No other person was involved in the decision process because the two owner families own 100% of the share.

The CEO stated:

*“... we do not have got a financial payback on this investment yet, but for future business it makes us stronger in our niche...”*

This close relationship with each other makes the owner-managers able to decide fast, execute quickly, and make this GM-SME flexible and innovative in their worldwide market. There is a similarity between this company 3B-3-300-103 and company 2G-5-570-145 in that leaders communicate daily and in much detail with their management teams and have daily touchpoints with their international sales force.

Hence, the important ideas come from customer contacts and many conversations with the international sales executives and subsidiary leaders, which is one of the key drivers of innovation. The owner team receives and reads every customer report and visit all international exhibitions in machine tool and congeneric sector. The owner-managers are well skilled in organizational theory and try to slim down the administrative structure year over year, he states:

*“...compared to our company size with 330 employees our administrative organization is like a 200 people company, due to our large international sales and service organization I still develop, structure, and check every legal document...”*

#### 4.6.1 Level or Grade of family involvement 3B-3-300-103

The last strategic intuitive decision was made by the CEO’s father in his active period, and the whole family including the cousin was involved. The two families who own the cooperation have a deep impact on day-to-day business given the role as managers and board seat holders. The level of long-lasting tacit knowledge of the CEO is medium because he succeeded his father early and must build up a lot more knowledge by himself.

In this GM-SME the family influence level is quite high, due to its long history and the two founder and owner family roots.

Involvement of family / Level of	25%	50%	75%	100%
Ownership level				
Influence decision in GM-SME				
Advice function for owner-manager				
Active in GM-SME				
Tacit knowledge of owner-manager				
Growth of GM-SME				

Table 4.12: Level of family involvement, see chapter 2 and 3

#### 4.6.2 Decision in cooperation

Questions to owner-manager of Company: 3B-3-300-103	Answers with hints to Decision in cooperation ((From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
Questions and Answers to sphere one: Decision in cooperation	

Questions to owner-manager of Company: 3B-3-300-103	Answers with hints to Decision in cooperation ((From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
Do you remember the last strategic decision, which was intuitive?	Yes, we took over a competitor in 2000 and we invested I knew production facilities and we as well know the competitor and his weaknesses and strength in his market niche.
Was the result positive, did the corporation grow (more Employees, turnover, Ebit?)	We don't know, because the investment was in a crisis, and we still not as successful as before
Is a strategic decision process established?	No, there is a daily meeting with 7 managers and a kind of international sales meeting. My cousin and I discuss issues intensively in private and in door-to-door events.
Is the process structure strictly adhered?	This both meetings are strictly adhered
Is the decision process itself established or management pushes it?	No, the decisions are made daily in this meeting
Is an innovation team constituted, if yes what structure (department, experience)?	Sales; general management, research and development more kind of elevator talk
Questions and Answers to sphere two: Intuition in cooperation (no overlapping answers out of this sphere)	
Questions and Answers to sphere three: growth in cooperation (no overlapping answers out of this sphere)	

Table 4.13: Interview result 2<sup>nd</sup> sorting, sphere decision

The decision sphere specific analysis leads us to the following result in this section:

The decision-making process in company 3B-3-300-103 is streamlined to the internal discussions between both owner-managers (cousins). They use a daily internal meeting for communicating intuitive, family-approved decisions to the executives of the company. These decisions are made intuitively by the CEO and in the past by his father in their own opinion, which is also the impression of the author based on the discussion concerning the takeover of a competitor.

- Intuition: Is supported by the information sources and triggered by external facts (politics, local responsibility).
- Decisions: made daily in institutional meetings (Sales, research, and development), which are used to communicate information and decisions.
- Objective: keep the business running.
- Growth: no growth target but investment.
- Success: lower cost to larger EBIT.
- Family: Involvement is limited to the two-owner managers.
- Organization: Lean structure, minimized to what is needed.
- Innovation-driven: yes, by market information.

#### 4.6.3 Intuition in Cooperation

Questions to owner-manager of Company: 3B-3-300-103	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7.)
Questions and Answers to sphere one: Decision in cooperation (no overlapping answers out of this sphere)	
Questions and Answers to sphere two: Intuition in cooperation	
Do you conduct market competitor research periodically?	This is a day-to-day business for the Owner, reading special literature, chamber VDMA etc. discussion, sales, and exhibitions.
Will the team be informed about the results of such research?	Yes, in this day-by-day meeting
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?	Yes, relationship to sales, daily telephone conversation
What do you personally know about your competitors?	Know technical and marketing details



Questions to owner-manager of Company: 3B-3-300-103	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7.)
Do your company have knowledge management organized?	No, thought about but learning by doing is the strategy. Tried it once but we couldn't finish the project.
Are there single persons who have special know-how in your organization?	Yes, but cases like this we had many in the last 100 years, the organization help itself
Have your company programs to get this know-how into a team?	No, "Mut zur Lücke" we don't need things like that... as mentioned.
Questions and Answers to sphere three: growth in cooperation (no overlapping answers out of this sphere)	

Table 4.14: Interview result 2<sup>nd</sup> sorting, sphere intuition

The intuition sphere specific analysis leads us to the following result in this section: The owner manager is involved in the home market of the company and well connected to the relevant sources of information. There is no workflow for competitor research established. Internally the information will be transferred via the daily meeting into the first management level, the report is controlled by the explicit knowledge of the owner regarding his extensive knowledge from his network and his own sources. No external trigger for KM (knowledge management) was found despite existing ISO certification. Organizational tacit knowledge was detected, but the 100-year-old organization saves important know-how only randomly.

- Tacit knowledge: Is accumulated by the owner-managers through multiple channels, his family, and access to unique contacts and communication skills.
  - The owner relies on tacit knowledge of others.
- Intuition: As mentioned in sphere decisions, it is active and recognized as an effective tool
- Social responsibility: Is motivated by the value of regional influences and mainly by family commitment to people and local government (quite similar to company 7O-3-200-102).

#### 4.6.4 Growth of Cooperation

Questions to owner-manager of Company: 3B-3-300-103	Answers with hints to Growth in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7.)
Questions and Answers to sphere one: Decision in cooperation ( <i>no overlapping answers out of this sphere</i> )	
Questions and Answers to sphere two: Intuition in cooperation ( <i>no overlapping answers out of this sphere</i> )	
Questions and Answers to sphere three: growth in cooperation	
Was there an organizational change in your company in the last 5 years or is one planned?	No, only his family must give the control to him (father died)
Should the management style be changed?	The responsibility should be divided in a new way, depends on personnel
Do you have to replace a single know-how person in the next 2 years?	No, know-how is well divided, no fluctuation
Are your company able to bring out a new product in a new market?	Not discussed in detail, at least yes
Greiner's Theory: In which growths phase your company are?	No growth potential, market is demanding and difficult
In which crisis you are in?	All crisis is latent relevant. In the moment a kind of Administration crisis coming up, much effort goes into an QM system
What do you see when you step back and look on your company?	Not discussed. Company is a task not a challenge

Questions to owner-manager of Company: 3B-3-300-103	Answers with hints to Growth in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7.)
Better with you, or better with a new/other person in charge?	This I must think about, but somebody have to do it

Table 4.15: Interview result 2<sup>nd</sup> sorting, sphere growth

The growth sphere specific analysis leads us to the following result in this section: The company is not in a crisis and there is no organizational change planned and the internal structure has been the same for a very long time, the owner manager stated:

*“...our organization is very lean, maybe too much, I read a lot and organize a lot myself...”*

Employee turnover is low, know-how stays in-house for a long time. It looks like the owner CEO maintains a lot of critical know-how himself.

- New Product: no plan, company has lived for a very long time in a niche and optimizes existing products.
- Greiner’s Model: -> no fit
  - No relevant crisis but a challenging project in QM.
  - No growth over the last 10 years, but a stable increase in EBIT.
  - Task is duty not realizing creative growth scenarios.
- Churchill and Lewis’s Model: -> no fit.
  - This company is in a mature stage which is far behind this theory.
  - The owner is deeply connected to all relevant actions in business and does not step out or thinks about it.

#### 4.6.5 Saturation Level of research, after interview with company 3B-3-300-103

As explained under point 3.13 in the following template the respective statuses of saturation and the achievement of the research objectives is being checked.

Proving Question	Result and Rating of saturation
Is the research objective and the two sub-objectives covered by the answers of the interviewee?	
<p>Research objective:</p> <p>To explore the relationship between SDMP, tacit knowledge of the owner/manager, intuition, and corporate growth in SME</p>	<p>The relative emphasis of intuitive processes is middle to high in this company. Rational processes are involved in important decisions, leader team and family are an influencing factor in day-to-day business. In some cases, political influence perceptible, regional influence, city.</p> <p>The owner team makes all decisions and many of them are intuitively driven. Communication is streamlined to the owner-manager (CEO); each decision must (is a family duty, a silent commitment) be made by the owner team and in discussions with the close family members.</p> <p>More details: The owners know the responsibility they have, but due to short experience the factors are not realized in detail.</p> <p>The decision is made by the owner-manager team, prepare these in day-to-day meetings; he rated the results as not successful. Some of the decisions with entrepreneurial scope are intuitive, some are political driven.</p> <p>Topics with entrepreneurial scope are brought up from following sources customer, politics, and sales force. Over a longer time, these themes are discussed in the leaders' meeting, only decision yes or no is pure intuitive.</p> <p>Senior staff is involved in the origination process of decisions, the intuitive judgement is the responsibility field of the owner-manager.</p>
<p>Sub-Research Objective 1:</p> <p>To explore the relevance of Greiner's Model (Evolution and revolution as organizations grow, 1972) for SME in the research context</p>	<p>The relevance of Greiner's Model for this company was analyzed and discussed in the above chapter. Usable results for distinguishing the differences in detail between the analyzed model and the company reality have been achieved.</p>
<p>Sub-Research Objective 2:</p> <p>Compare the interview result and the relevance of SUB-RO 2 as well with the Models of Churchill and Lewis (Churchill and Lewis 1983) and show the differences.</p>	<p>The relevance of the Churchill and Lewis Model for this company was analyzed and discussed in the above chapter. Usable results for distinguishing the differences in detail between the analyzed model and the company reality have been achieved.</p>

Proving Question	Result and Rating of saturation
Sub-Research Objective 3: Analyze the evolution of tacit knowledge in GM-SME and the relevance of owner-manager's family	The relevance, the usage, and the existence of tacit knowledge in this company was analyzed and discussed in the above chapter. Usable results have been achieved.
Do we get redundant answers?	
Intuitive decisions (see chapter x intuitive decision is described)	The perception of intuitive decisions is same in all companies.
Trust	The trust of employees in decision of the owner is same in company 2, 3 and company 4.
Communication	Day for day communication is similar in company 2, 4, 7
Greiner's Model	Must be analyzed and written
Churchill and Lewis	Must be analyzed and written
Family involvement in day-to-day business	Must be analyzed and written
Are new themes emerged?	
Interview 1: From Company 1:	Yes, internal organization could be in the center of attention if there is enough money.
Interview 2: From company 2:	Yes, intensive sharing of information on management level, every day, jour fixe. Intensive reconciliation with the experienced family members.
Is researcher feeling to reach the level of saturation?	No, but the results in area decision-making and intuition become similar, an influence of the age of the owner-manager was realized.
More comments to saturation:	No more comments at this stage, it is too early in the research.

Table 4.16: Saturation check template, 3<sup>rd</sup> Interview company 3B-3-300-103

#### **4.6.6 Summary analysis Interview 3B-3-300-103**

Company 3B-3-300-103 is medium-sized in terms of employees and the turnover is quite low per employee, but in line with the average for this industry sector (Information Statista 2022). This company has a high vertical production integration, and it is assumed with a good margin. This company reached the growth limits in their market due to strong competition and has maintained a similar market share over the years. This issue seems to have become difficult for this company and basic know how could be in danger when people leave or the market change. There had also been an unsuccessful investment in production and a still unsatisfying acquisition. A high level of customer and employer orientation, long customer relationships and, at least no relevant fluctuation (gathers the owner manager).

This company has an international sales and service network and a stable base for production and quality in Germany. Process issues seem to be less significant. The company must look for innovative future products in new markets, they should focus on new ways of marketing and organization to be on the management of innovation. There seems to be a lack of visionary leadership and a lack of strategy.

Company 3B-3-300-103 decisions are mainly made intuitively, the decision is made by the owner-manager. In this case the owner manager is working in detail on every project. Here we have intensive family involvement. Rational and political decisions are possible. Greiner's model could not be used in this case.

The model of Churchill and Lewis is not relevant for this 100-year-old company, because they focused on companies which have recently reached the mature phase and have a totally different view on strategy and focus, compare figure 2.2 and 2.7. In these two elements the practice of Greiner's view is displayed and shows the differences to the results of the interview with company 3B-3-300-103.

The research objective was reached, and SUB-RO are reached as well, as documented in the check table saturation under 4.16 above. The results after the second sorting analysis are transformed into a graphic overview, see figure 4.4, to facilitate the comparison and a resume across all seven companies in chapter 4.

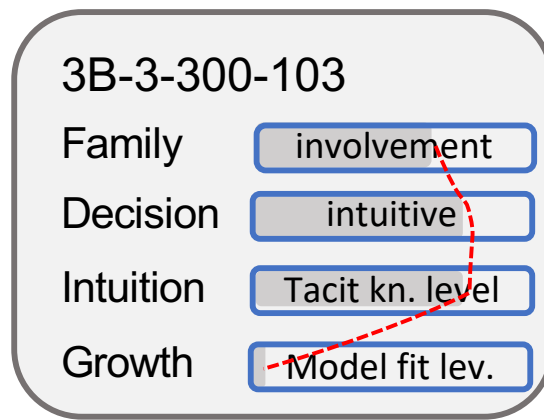


Figure 4.4: Overview result analyze 3 spheres and family involvement for company 3B-3-300-103

#### 4.7 Analysis 4<sup>th</sup> Interview, Company 4A-3-150-94

The interview with the owner manger was conducted in December 2016 after a in depth discussion about intuition and company growth, during an exhibition in September 2016. After these two discussions with the owner-manager, it was expected that the interview partner is a very experienced, skilled, and confident person.

The owner-manager has led the company for more than 30 years and he was proud to report that this company was growing in this time from € 5 million turnover to a € 60 million turnover company. It must be noted that this company is a machine tool company, acting in a technological niche. Given this tremendous growth in this company it is a world market leader in this small market sector. Investments and innovation are initiated by the owner-manager who also takes all the important decisions. The board of directors is an outside element because most shares are held by the owner-manager. Hence, he can decide alone, potentially with the help from a financing bank. The current team which has led the growth spurt was hired in the 1980s and are now largely over 50 years old and will leave the company in the next decade.

Therefore, managing generational change is one of the major tasks in the next five years for this company, the owner manager stated. Additionally, the company will lose a lot of know-how in important staff functions by this generational change. Fluctuation is very low. The owner-manager is preparing a successor from outside the family. Furthermore, the company is currently facing a difficult investment environment and a stagnating market as it already has a large market share in its niche. As we already heard in first interview the owner-manager diagnoses a sales problem and tried to change the organizational structure in this department and in the company as

whole. This change project failed and was cancelled, so this company's organization remains structured as it was during structured in the growth period 30 years ago. Some further data about this company.

- Medium-sized GM-SME 200+ employees.
- Machine tool company, own brand.
- € 58 M. annual turnover, turnover by employee over T€ 300.
- Margin under 10%.
- Owner-managed for the last 30 years same person, over 60 years old.
- Family owned, over 90 years old, 3rd owner generation.
- Modern production facility, construction work on-going (modernization, growth).

#### 4.7.1 Level or Grade of family involvement Company 4A-3-150-94

This machine tool maker has a different family history due to the long time the grandson of the founder has been leading this company. The family is not involved in the company, offers no advice, and does not take part in the decision-making process. This is due to the 100% ownership and personality of the owner; he is planning to hire an external CEO after his retirement. He is the only owner-manager without an engineering degree, he has a degree in marketing.

The following table reflects this, nearly no family involvement, except for the tacit knowledge gained through education and by growing up in an entrepreneurial home and the time in the 1980s together with his father.

Involvement of family / Level of	25%	50%	75%	100%
Ownership level				
Influence decision in GM-SME				
Advice function for owner-manager				
Active in GM-SME				
Tacit knowledge of owner-manager				
Growth of GM-SME				

Table 4.17: Level of family involvement, see chapter 2 and 3



#### 4.7.2 Decision in Cooperation

Questions to owner-manager of Company: 4A-3-150-94	Answers with hints to Decision in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Questions and Answers to sphere one: Decision in cooperation	
Do you remember the last strategic decision, which was intuitive?	Develop a new product; this product is for our market but totally new. The decision was made because an acquisition had failed but the segment was quite interesting. The information about the possible acquisition came from a network partner.
Was the result positive, did the corporation grow (more Employees, turnover, Ebit?)	The result is not clear, it is now 3 years ago, we hired new people and it looks good. The be sure, I think it needs five years.
Is a strategic decision process established?	Yes, once a year a strategic process is conducted. Target are revised 2 to 4 four times a year.
Is the process structure strictly adhered?	Yes, it is following strict rules.
Is the decision process itself established or management pushes it?	I drive the process and the topics.
Is an innovation team constituted, if yes what structure (department, experience)?	Yes, it's a fixed, but small team first and second management level. Information will be transferred in a weekly management meeting and an innovation workshop (RESEARCH AND DEVELOPMENT and Production).
Questions and Answers to sphere two: Intuition in cooperation (no overlapping answers out of this sphere).	
Questions and Answers to sphere three: growth in cooperation (no overlapping answers out of this sphere).	

Table 4.18: Interview result 2<sup>nd</sup> sorting, sphere decision

The decision sphere specific analysis leads us to the following result in this section:

The decision-making process of company 4A-3-150-94 is focused on the owner-manager, there is no family involvement. Therefore, a strategic decision-making process was established to share

and discuss important topics. To ensure company growth, long-term strategies are put in place and followed over the years. The cooperate leaders' network of the owner-manager is huge and helps inform intuitive decision-making by the owner-manager. However, the decisions and strategic topics are driven by the owner.

- Intuition: Is a main part of the decision-making process.
- Decisions: are an owner's task.
- Success: KPI driven.
- Family: no family involvement.
- Organization: long history of the current organization, changes have failed.

#### 4.7.3 Innovation-driven: new products to new markets: Intuition in cooperation

Questions to owner-manager of Company: 4A-3-150-94	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Questions and Answers to sphere one: Decision in cooperation (no overlapping answers out of this sphere)	
Questions and Answers to sphere two: Intuition in cooperation	
Do you conduct market competitor research periodically?	Yes, we check competitor figures once a year and randomly the sales information.
Will the team be informed about the results of such research?	No, not enough. Much information will disappear in the corporation. Many employees say "... <i>I didn't know that, why nobody tell me</i> ".
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?	Yes, my family have a large network, I meet many CEO's during the year and I can interconnect my detailed information with more macro-economic data.
What do you personally know about your competitors?	No very special thing, my sales team know more, I think.

Questions to owner-manager of Company: 4A-3-150-94	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Do your company have knowledge management organized?	No, we have a simple Wiki, but we should do more.
Are there single persons who have special know-how in your organization?	Yes, in the 80s I took over and I structured a team of young managers around me, they still here like I am here, they will retire soon, we have to take care on this soon.
Questions and Answers to sphere three: growth in cooperation (no overlapping answers out of this sphere).	

Table 4.19: Interview result 2<sup>nd</sup> sorting, sphere intuition

The intuition sphere specific analysis leads us to the following result in this section: After the owner manger took over the CEO position in the late 1980s, he builds an organization which was changed in incremental steps over the years, he develops a new product portfolio to enlarge his market and drove the cooperation growth by more than ten times. In this time, he gathered much information, had new experiences, and faced challenges to become the person he is today. His tacit knowledge is not based in the technology of the company's product portfolio it is in the competence area of marketing<sup>17</sup> as a whole, which is unique in this research.

- Intuition: In the marketing discipline is the leading function for the owner manager.
- Tacit knowledge is an important part of the owner-manager's personality (He saw this as very problematic given the difficulty in passing this knowledge on to others).
- The owner-manager and his family are strong networkers.
- Tacit knowledge is also on the second level of management in research and development.

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<sup>17</sup> Marketing: Includes the discipline of the 4 p (product, price, place and promotion (Hollensen, 2007, p. 453 ff.))

#### 4.7.4 Growth of Cooperation

Questions to owner-manager of Company: 4A-3-150-94	Answers with hints to Growth in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
Questions and Answers to sphere one: Decision in cooperation (no overlapping answers out of this sphere)	
Questions and Answers to sphere two: Intuition in cooperation (no overlapping answers out of this sphere)	
Questions and Answers to sphere three: growth in cooperation	
Was there an organizational change in your company in the last 5 years or is one planned?	When I started in the 80s after my business school, I changed a lot, turnover grew from 5 to 60 million. Due to higher expected growth, we have started to change into a new organization. We stopped because the growth rate did not come. The new organization was too complicated for us.
Should the management style be changed?	No, when I leave maybe.
Do you have to replace a single know-how person in the next 2 years?	See answer before, yes, a lot
Are your company able to bring out a new product in a new market?	Did not discussed this question.
Greiner's Theory: In which growths phase your company are?	We are in a slow growth phase. Market is not as demanding as before.
In which crisis you are in?	We in no crisis, we have some problems in sales with control, maybe this is the crisis... I don't know.
What do you see when you step back and look on your company?	Yes, I do, but everything is ok.
Better with you, or better with a new/other person in charge?	With me is good.

Table 4.20: Interview result 2<sup>nd</sup> sorting, sphere growth

The growth sphere specific analysis leads us to the following result in this section:

Given that the strategies from the 1990s was so successful the company and the owner optimize over the thirty years all disciplines to realize growth. The reflection on the results in the interview bring this note taken into the script:

*“...after 20 years of growth over 10% is good, is best. It's not a question of what the company look like if we totally change strategy”.*

This is the position and the point of view, it was not possible to discuss that further, because the market could only expand if there is a new product for the current portfolio. This was not in the focus of the owner-manager; he is looking back a lot, not in the future as he used to do in the late 1980s.

- Greiner's Model: -> small fit.
  - The long-lasting strategy needs an organizational change to secure know-how and future growth (looks like a crisis is coming).
  - in a growth phase for the last twenty years, no crisis, no change.
  - No relevant crisis because of the long engagement of the owner-manager.
- Churchill and Lewis's Model: -> no fit.
  - This company is in a wide mature stage which is far behind this theory.
  - The owner is deeply connected to all relevant actions in business.

#### **4.7.5 Saturation Level of research, after interview with Company 4A-3-150-94**

As explained under 3.13 in the following template the respective statuses of saturation and the achievement of the research objectives is being checked.

Proving Question	Result and Rating of saturation
Is the research objective and the two sub-objectives covered by the answers of the interviewee?	
Research objective: To explore the relationship between SDMP, tacit knowledge of the	The relative emphasis of intuitive processes is high. Rational processes are partly involved in important decisions, network is an influencing factor. In some cases, political influence is perceptible, banks, city.

Proving Question	Result and Rating of saturation
owner/manager, intuition, and corporate growth in SME	<p>The owner makes all decisions and all of them are intuitively driven. This has been the standard for 30 years and is not questioned by anyone in the company. He rated the results as 100% successful. All decisions with entrepreneurial scope are intuitive. No rational and only minor political influence. Topics with entrepreneurial scope are brought by the owner-manager. He has a clear strategy for what is to be done, also this is purely intuitive.</p> <p>The owner is very aware of his way of making decisions, his experience, his strategy. Given he hired the people who made this company grow, they trust him.</p> <p>Senior staff is partly involved in the process of decisions, the intuitive judgement is the responsibility field of the owner-manager.</p>
<p>Sub-Research Objective 1:</p> <p>To explore the relevance of Greiner's Model (Evolution and revolution as organizations grow, 1972) for SME in the research context.</p>	<p>The relevance of Greiner's Model for this company was analyzed and discussed in the above chapter. Usable results have been achieved. It could be noted, for this company the model of Greiner does not fit currently to this company</p>
<p>Sub-Research Objective 2:</p> <p>Compare the interview result and the relevance of SUB-RO 2 as well with the Models of Churchill and Lewis (Churchill and Lewis 1983) and show the differences.</p>	<p>The relevance of the Churchill and Lewis Model for this company was analyzed and discussed in the above chapter. Usable results have been achieved.</p>
<p>Sub-Research Objective 3:</p> <p>Analyze the evolution of tacit knowledge in SME and the relevance of owner-manager's family.</p>	<p>The relevance, the usage, and the existence of tacit knowledge in this company was analyzed and discussed in the above chapter. Usable results have been achieved.</p>
Do we get redundant answers?	

Proving Question	Result and Rating of saturation
Intuitive decisions (see chapter 2.5 intuitive decision is described)	The perception of intuitive decisions is same.
Trust	The trust of employees in decision, strategy and leading of the owner-manager.
Communication	We have in company 4A-3-150-94 a weekly 2 <sup>nd</sup> management level meeting.
Greiner's Model	Maybe organizational change is an issue.
Churchill and Lewis	Does not fit due to long active owner-manager.
Family involvement in day-to-day business	No involvement.
Are new themes emerged?	
1 <sup>st</sup> Interview	Yes, internal organization could be in the center of attention if there is enough money.
2 <sup>nd</sup> interview	From company 2: Yes, intensive sharing of information on management level, every day, jour fixe. Intensive reconciliation with the experienced family members.
3 <sup>rd</sup> interview	From company 3: Yes, no involvement of second parties for decision, only owner-manager decides, due to ownership, success, and financial independence.
4 <sup>th</sup> Interview (this one)	The influence of the experience time in active managing of the owner shows an influence on decision-making and an upcoming crisis in organization.
Is researcher feeling to reach the level of saturation?	No, but the results in area decision-making and intuition become similar.
More comments to saturation:	No further comments yet.

Table 4.21: Saturation check template, 4<sup>th</sup> Interview company 4A-3-150-94

#### 4.7.6 Summary Interview analysis Company 4A-3-150-94

Company 4A-3-150-94 is medium-sized in terms of employees but has the highest turnover per employee. Based on the low margin rate it could be assumed that purchasing volume is high and the vertical range of manufacture is low. This is a company that seemed to come up against the limits to growth due to limited markets. The issues involved seem to become too complicated and basic know-how seems to be in danger. There had also been an unsuccessful acquisition. In terms of generational change, the missing innovation from outside and the stagnating market could cause some future tasks for company 4A-3-150-94.

The focus of this company now appears to be on innovation management. Process issues seem to be less significant; sales information is collected randomly, with the view that information in quantity will overwhelm the company. But the long-lasting successful strategy, from the 80s to 2020, is a good example of the unique growth path of GM-SMEs and indicates a poor fit to the model sphere growth. The research objective was reached, and SUB-RO are reached as well, as documented in the check table saturation under 4.21 above. The results after the second sorting analysis are transformed into a graphic overview, see figure 4.5, to facilitate comparison drawing conclusions across all seven companies in chapter four.

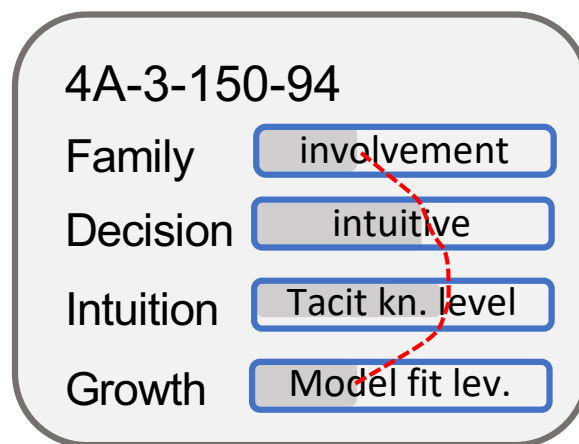


Figure 4.5: Overview result analyze 3 spheres and family involvement for company 4A-3-150-94

#### 4.8 Analysis 5<sup>th</sup> Interview, Company 5S-M4-250-114

The interview with the manager (CEO) was conducted in August 2017. He has led this company for fifteen years. The company is family-owned in the 4<sup>th</sup> generation remains on the board or directors. Due to its long history and many family members the ownership structure has grown to



include more than twenty people. This was one of the reasons for hiring an external manager to develop the company. The manager is fully responsible for all decisions and for all functions in the company.

The reason to choose company five for the research was an in-depth discussion with the manager during a training course at an external institute in which the author took part. It became clear that decision making, company structure and market fit into the research. The main customer group - automotive - and the main application, combustion engine, seem to enrich the results of the interview due to the mixing of the selected companies. Strategic decisions with an entrepreneurial scope will be taken by the manager.

Specifically, the decision to establish a subsidiary in America was selected for analysis in this research. Unlike with the other interviews, the goal was to win more customers and to gain turnover, so the direct answer to the question: Was the investment successful? *“...yes, we increased customer number and increased turnover, we establish a subsidiary in America, and we have done this without conducting market research or setting up a business plan. I analyzed the current results of our dealer there and then I took over his business... but the overall target was to grow, and this we have done...”* This was also a difference to all previous interviews was the clear strategy in reference the business target. We discussed the potential ability of the company to develop a new product for a new market, and the answer was: *“... I think it is worth to have new markets in focus, but our company’s strategy does not designate a new product for a new market, so my answer is, no this is not our strategy...”* The central application of the main product is the combustion engine, which will cause problems in the future. Further information about company 5S-M4-250-114:

- Medium-sized SME with 240 employees.
- Related to the mold and die sector for automotive application.
- Founded in 1908, still family owned.
- € 40 M. annual turnover, turnover by employee over T€ 170.
- Margin over 7 %.
- Externally managed by the same person for more than fifteen years.
- Manager over 50 years old.
- 4<sup>th</sup> generation of a family on the board of directors.
- Modern production facility, latest organizational trend is used.

- Interviewee: external General Manager (CEO).

#### 4.8.1 Level or Grade of family involvement Company 5S-M4-250-114

In this externally managed GM-SME, the family is strongly involved and is focused on business plan and strategic adjustments once a year. On the other hand, due to his long tenure as CEO the general manager acts in main sections of responsibility in a similar mode to an owner-manager. There is no influence of tacit knowledge from the owner's family to the general manager.

Involvement of family / Level of	25%	50%	75%	100%
Ownership level				
Influence decision in GM-SME				
Advice function for general manager				
Active in GM-SME				
Tacit knowledge of general manager				
Growth of GM-SME				

Table 4.22: Level of family involvement, see chapter 2 and 3

#### 4.8.2 Decision in Cooperation

Questions to manager of Company: 5S-M4-250-114	Answers with hints to Decision in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Questions and Answers to sphere one: Decision in cooperation	
Do you remember the last strategic decision, which was intuitive?	Yes, open a sales and service in America without any market research by taken over a business partner.
Was the result positive, did the corporation grow (more Employees, turnover, Ebit?)	The result was positive, more customer in general more EBIT.

Questions to manager of Company: 5S-M4-250-114	Answers with hints to Decision in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Is a strategic decision process established?	Not yet but planned. Currently a leaders group meet every month.
Is the process structure strictly adhered?	No but planed, to fix this process in the next 2 months.
Is the decision process itself established or management pushes it?	The decisions are prepared in the leaders' meeting, normally manager push it.
Is an innovation team constituted, if yes what structure (department, experience)?	No, usually the manager talks to the specialists and drive the innovation thru the organization.
Questions and Answers to sphere two: Intuition in cooperation (no overlapping answers out of this sphere).	
Questions and Answers to sphere three: growth in cooperation (no overlapping answers out of this sphere).	

Table 4.23: Interview result 2<sup>nd</sup> sorting, sphere decision

The decision sphere specific analysis leads us to the following result in this section:

The decision-making-process in company 5S-M4-250-114 is divided into two parts: the business plan decision by the owners (board of directors) together with the general manager, a strategic paper prepared by the general manager will be approved for the coming business year. This business plan is a rough roadmap for the following year and the three years thereafter. Within this framework the general manager decides on his own, and as he stated only intuitively.

- Intuition: Is a main part of the decision-making process and, in this case, also during preparation of the business plan.
- Decisions: framed by the business plan, 100% intuitive within this frame.
- Success: KPI driven.
- Family: no family involvement.

- Organization: long history of the current organization, changes have failed.
- Innovation-driven: costs down, volume up.

#### 4.8.3 Intuition in Cooperation

Questions to manager of Company: 5S-M4-250-114	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Questions and Answers to sphere one: Decision in cooperation	
Do you remember the last strategic decision, which was intuitive?	The decision grew over a long time.
Is an innovation team constituted, if yes what structure (department, experience)?	A special ideas workshop was started.
Questions and Answers to sphere two: Intuition in cooperation	
Do you conduct market competitor research periodically?	Yes, we analyze KPI of the sector we are in and set relation to information of associations like VDMA, VDA and others. We also use a very slim CRM.
Will the team be informed about the results of such research?	Every quarter we present the figures in a sales meeting. Due to the large volume out of automotive industry it's difficult to analyze these data.
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?	The regional association organizes meetings and some special automotive contacts.
What do you personally know about your competitors?	Nothing special, more exhibitions know-how. CTO takes care on this.

Questions to manager of Company: 5S-M4-250-114	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Do your company have knowledge management organized?	No, we planned but it was not in our focus.
Are there single persons who have special know-how in your organization?	Yes, we identified some persons out of the technical department.
Have your company programs to get this know-how into a team?	Yes, we started to take some action.
Questions and Answers to sphere three: growth in cooperation (no overlapping answers out of this sphere).	

Table 4.24: Interview result 2<sup>nd</sup> sorting, sphere intuition

The intuition sphere specific analysis leads us to the following result in this section:

For the last fifteen years the external manager has been leading this company and he is inspired by Asian mainly Japanese management methods. These are his experience and learning methods, it could be compared by the family in owner-manager circumstances, these persons are consulting or advised by their parents, in this case the general manager is influenced by kaizen<sup>18</sup>, Hoshin Kanri<sup>19</sup> to act for optimizing and develop the company.

- Intuition: The level of intuition is different to the owner-manager companies (driven by other parameters (referring to the business plan)).
- Tacit knowledge is on board and influences the medium-term strategy of the company, its influence on decisions is lower.

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<sup>18</sup> Kaizen: Is a Japanese way of improving workflows again and again

<sup>19</sup> Hoshin Kanri: Is a corporate planning and controlling tools for all leaders and workers (based in Japanese corporate culture)

- Network: The owners stepped out of the board years ago. It seems that the network has become less useful, and the general manager did not get an adequate introduction in local entrepreneur networks.

#### 4.8.4 Growth of Cooperation

Questions to manager of Company: 5S-M4-250-114	Answers with hints to Growth in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
Questions and Answers to sphere one: Decision in cooperation (no overlapping answers out of this sphere)	
Questions and Answers to sphere two: Intuition in cooperation (no overlapping answers out of this sphere)	
Questions and Answers to sphere three: growth in cooperation	
Was there an organizational change in your company in the last 5 years or is one planned?	Yes, we have done a lot in this. We started an incentive program, intensify the information flow, also in the workshop. Changed sales structure. Started a lean, Kanban and other operating programs to streamline the company.
Should the management style be changed?	We already changed it, from top down, and controlling of everything to participative.
Do you have to replace a single know-how person in the next 2 years?	No not in the next two years.
Are your company able to bring out a new product in a new market?	Not tested, this is not in the corporate strategy.
Greiner's Theory: In which growths phase your company are?	We are in the collaboration growth phase, I think.
In which crisis you are in?	After the explanation I would assume we are in the crisis of red tape, too much control less trust.

Questions to manager of Company: 5S-M4-250-114	Answers with hints to Growth in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
What do you see when you step back and look on your company?	We see many problems from general economy, and we have to change a lot in the next years.
Better with you, or better with a new/other person in charge?	Not discussed this question.

Table 4.25: Interview result 2<sup>nd</sup> sorting, sphere growth

The growth sphere specific analysis leads us to the following result in this section:

In this general manager-driven company the growth targets are set by the owners in yearly board meetings. Hence, optimization programs were executed, and the organization was changed.

After explaining the model of Greiner, the CEO said, they are facing the crisis “red tape” due to overwhelming administration in the company.

- Greiner’s Model: -> no fit.
  - No relevant crisis no relevant growth phase.
  - Decision-making, intuition, and growth are combined to produce change in the internal organization.
  - The reason to hire an external manager 15 years ago was not due to missing qualifications in the owner family, it was due to the fact, that there are too many owners (20) as mentioned before.
- Churchill and Lewis’s Model: -> no fit.
  - This company is in a wide mature stage which is far behind this theory.
  - The owner stepped out a long time ago, but leadership is still quite similar.

#### 4.8.5 Saturation Level of research, after interview with Company 5S-M4-250-114

As explained under 3.13 in the following template the respective statuses of saturation and the achievement of the research objectives are being checked.

Here in the 5<sup>th</sup> interview, we use the same table to check saturation more intensively because this is the point where the lowest level of necessary sample size is reached.

Proving Question	Result and Rating of saturation
Is the research objective and the two sub-objectives covered by the answers of the interviewee?	
<p>Research objective:</p> <p>To explore the relationship between SDMP, tacit knowledge of the owner/manager, intuition, and corporate growth in SME</p>	<p>The relative emphasis of intuitive processes is high. Rational processes are in front of important decisions by corporate strategy limits the general manager. No political influence on decision established.</p> <p>The manager has full decision ability, intuitive judgment was confirmed in each case. Especially in the case of marketing issues intuition rules the judgment. Success stories support intuitive decisions.</p> <p>The awareness is present, and the advantage is known by the senior staff. The general manager is especially aware of his ability in case of intuitive judgment.</p> <p>Decisions are made by the general manager; these decisions follow the company business strategy which is established between the general manager and the advisory board of directors (owners). All decisions on corporate level are intuitive, rational decisions are at an operational level.</p> <p>In the frame of the business plan the general manager could decide intuitively and alone. In the reported case a sales improvement was the driver.</p> <p>Senior staff are involved in the origination process of decisions in a quarterly sequence, in the past a top-down reporting make the leaders familiar with intuitive judgment.</p>
<p>Sub-Research Objective 1:</p> <p>To explore the relevance of Greiner's Model (Evolution and revolution as organizations grow, 1972) for SME in the research context</p>	<p>The relevance of Greiner's Model for this company was analyzed and discussed in the above chapter. Usable results for distinguishing the differences in detail between the analyzed model and the company reality have been achieved.</p>
<p>Sub-Research Objective 2:</p> <p>Compare the interview result and the relevance of SUB-RO 2 as well with the Models of Churchill and Lewis (Churchill and Lewis 1983) and show the differences.</p>	<p>The relevance of the Churchill and Lewis Model for this company was analyzed and discussed in the above chapter. Usable results for distinguishing the differences in detail between the analyzed model and the company reality have been achieved.</p>



Proving Question	Result and Rating of saturation
Sub-Research Objective 3: Analyze the evolution of tacit knowledge in SME and the relevance of owner-manager's family	The relevance, the usage, and the existence of tacit knowledge in this company was analyzed and discussed in the above chapter. Usable results have been achieved.
Do we get redundant answers?	
Intuitive decisions (see chapter 2.5 intuitive decision is described)	The perception of intuitive decisions is the same. High competition is related to sales problems.
Trust	The trust of employees in decision, strategy and leading of the general manager and the owners was present.
Communication	We have in company 4A-3-150-94 a weekly 2 <sup>nd</sup> management level meeting.
Greiner's Model	Maybe organizational change is an issue.
Churchill and Lewis	No connection to this model.
Family involvement in day-to-day business	No involvement.
Are new themes emerged?	
1 <sup>st</sup> Interview	Yes, internal organization could be in the center of attention if there is enough money.
2 <sup>nd</sup> interview	From company 2: Yes, intensive sharing of information on management level, every day, jour fixe. Intensive reconciliation with the experienced family members.
3 <sup>rd</sup> interview	From company 3: Yes, no involvement of second parties for decision, only owner-manager decides, due to ownership, success, and financial independence.
4 <sup>th</sup> Interview	The influence of the experience time in active managing of the owner shows an influence on decision-making and any upcoming crisis in organization.
5 <sup>th</sup> Interview (this one)	Yes, external managers judgment is more related to growth, no political influence, employees, and fluctuation is not as important as it is in family managed companies.

Proving Question	Result and Rating of saturation
Is researcher feeling to reach the level of saturation?	No, but the results in area decision-making and intuition become similar and here in the external managing style intuitive judgment is common, an influence of the age of the manager is possible.
More comments to saturation:	New topics arose but not of a basic importance including new insights. Saturation comes close, rich results with deep insights in GM-SME business.

*Table 4.26: Saturation check template, 5<sup>th</sup> Interview company 5S-M4-250-114*

#### **4.8.6 Summary Interview analyze Company 5S-M4-250-114**

Company 5S-M4-250-114 is medium-sized in terms of employees and the turnover is quite normal per employee. This company has a low vertical production integration, and the margin is related to the high-volume production quite low for an GM-SME. An investment in a sales and service organization seems to be promising. In reference to corporate vision, the manager's role appears to be limited by board regulation in terms of business models and strategic manifestations.

Company 5S-M4-250-114 is also facing strong competition and must focus on production optimization activities / operational excellence. On the sales side the focus now appears on taking over customers from competitors. The company faces the main constraints in the market, volume becomes smaller, and prices decrease. This company is the only one which is manager-managed, and this is recognizable in the three spheres and in the level of family involvement and the way of conducting decisions, gathered in figure 4.6. Furthermore, we can see a higher level of planning and shorter reporting periods. Overall, the interview enriches the research and shows parallels and similarities between owner management and manager management under owner's control.

The research objective was reached, and SUB-RO are reached as well, as documented in the check table saturation under 4.26 above. The results after 2<sup>nd</sup> sorting analysis are transformed into a graphic overview, see figure 4.6, to allow to facilitate the comparison and a resume over all seven companies in chapter four.

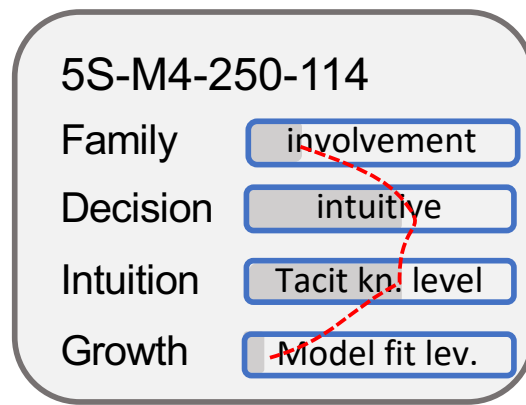


Figure 4.6: Overview result analyze 3 spheres and family involvement for company 5S-M4-250-114

#### 4.9 Analysis 6<sup>th</sup> Interview, Company 6D-3-50-60G

The interview with the owner-manager was conducted in September 2017. After two contacts before during exhibition with intensive discussion about family business new business ideas and economy in machine tool sector this interview was with more than two hours, means also quite long.

The owner-manager took over the business from his father, who was managing company five until his 80<sup>th</sup> birthday. Intuitive decision is standard in company 6D-3-50-60G, and a very big investment was the case which was talked about. This investment costs more than 10% of annual turnover and could be a showstopper if it fails. Private money was invested, and a success story was written in starting a service business related to the sale of machine tools.

An external consulting agency was contracted to develop a plan for company 6D-3-50-60G's future, unfortunately this project was not finished due to lack of skilled personnel for its realization of strategy 2025.

The owner-manager is preparing his exit and would like to change to external managers, a process which has already started.

*"... my father worked until he was 80 and was not able to pass over the business earlier to me, this was negative for the company development and gave not enough time to change business, at least we are too small as a machine tool company with worldwide business..."*

Further information about company 6D-3-50-60G:

- Medium SME 50 employees.
- Machine tool company.
- € 12 M. Annual turnover, turnover by employee over T€ 240.
- Margin unknown.
- Company over 60 years old, 3rd generation.
- Family owned.
- Owner-manager 55 + years old.
- Good production facilities, new interior, buildings older, need a facelift.
- Interviewee: Owner in function of sales director, external CEO, but decision still in owner's way.

#### 4.9.1 Level or Grade of family involvement Company 6D-3-50-60G

The father of the owner-manager stepped out of the company at the age of 80, far too late for the current owner-manager opinion to get started in the manager position. After the transition to today's owner-manager, he decided to change a lot and start a parallel business. No other family member has an influence on the owner-manager decisions and no other family member is in the company.

The owner-manager was in the company early to succeed his father left his ability to decide intuitive has a considerable potential of tacit knowledge due to the longtime of parallel active managing time with his father. He owns the company 100%.

Involvement of family / Level of	25%	50%	75%	100%
Ownership level				
Influence decision in GM-SME				
Advice function for owner-manager				
Active in GM-SME				
Tacit knowledge of owner-manager				
Growth of GM-SME				

Table 4.27: Level of family involvement, see chapter 2 and 3

#### 4.9.2 Decision in Cooperation

Questions to owner-manager of Company: 6D-3-50-60G	Answers with hints to Decision in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Questions and Answers to sphere one: Decision in cooperation	
Do you remember the last strategic decision, which was intuitive?	Yes, we decided to open a job shop which gives our customers the chance to source firstly products from us before they buy a machine and integrate the process in their own workshop.
Was the result positive, did the corporation grow (more Employees, turnover, Ebit?)	Yes, result was positive, we got more turnover and EBIT and as well more machine sales, as well we have now four more employees (10%).
Is a strategic decision process established?	Yes, once a year the leading persons should meet to a strategic workshop, but it is not well established.
Is the process structure strictly adhered?	No, very random
Is the decision process itself established or management pushes it?	All participants are lazy in this case, there is a process in place, but nobody really take care.
Is an innovation team constituted, if yes what structure (department, experience)?	We had a consultant in place, 3 years ago, due to the cost and a crisis in our branch this project was cancelled.
Questions and Answers to sphere two: Intuition in cooperation	
Questions and Answers to sphere three: growth in cooperation	

Table 4.28: Interview result 2<sup>nd</sup> sorting, sphere decision

The decision sphere specific analysis leads us to the following result in this section:

The decision-making process in company six is focused on the owner-manager and his customer contacts. If a customer asks for a machine, the owner-manager discusses the request with the

experienced executives, and they will then come to a decision. The intuitive part takes place in the owner's mind during customer visits and will be sharpened during internal discussion. No external or political influences were recognized.

- Decisions: made on demand, mainly started by the customer.
- Objective: fulfill customer needs.
- Growth: no growth target.
- Success: keep market share in the niche.
- Family: Involvement is limited to the owner-manager.
- Organization: basic structure, technical know-how leads the company.

#### 4.9.3 Intuition in Cooperation

Questions to owner-manager of Company: 6D-3-50-60G	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Questions and Answers to sphere one: Decision in cooperation	
Do you remember the last strategic decision, which was intuitive?	Idea comes from customer side and was brought into the corporation by the owner-manager.
Questions and Answers to sphere two: Intuition in cooperation	
Do you conduct market competitor research periodically?	Yes and no, I myself have the intensive contact to customers and competitors, so I always have them in focus.
Will the team be informed about the results of such research?	The main people visit the exhibitions and will be by day-to-day reports informed about competition.
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?	Yes, due to my sales function I have special information sources and the network in our sector.

Questions to owner-manager of Company: 6D-3-50-60G	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
What do you personally know about your competitors?	My knowledge is limited, but I think I have a quite good overview about the competitors.
Do your company have knowledge management organized?	No, but we know that two people have core know-how which we have to secure.
Are there single persons who have special know-how in your organization?	Yes, as mentioned, two technical persons have to be observed.
Have your company programs to get this know-how into a team?	Yes, we start early to set successors in place and pay a good salary.
Questions and Answers to sphere three: growth in cooperation	

Table 4.29: Interview result 2<sup>nd</sup> sorting, sphere intuition

The intuition sphere specific analysis leads us to the following result in this section:

The owner manager is involved in the home market of the company and so he has direct access to the relevant information. There is no workflow for competitor research established. Internally the information will be transferred via the daily meeting or discussions with all relevant people. The explicit knowledge of the owner regarding his extensive knowledge comes from his network and his own sources.

- Tacit knowledge: Is accumulated by the owner manager through his experience in the company (together with his father and now with the customers and their demand, no relevant network was mentioned, but there is an owners' network in this region, it is a small, specialized sector and its quite easy to stay in the loop).
- Intuition: This is a common way to decide and act in this company.
- Technical people with customer contacts earn more than management, in some cases, they have a lot of tacit knowledge.

#### 4.9.4 Growth of Cooperation

Questions to owner-manager of Company: 6D-3-50-60G	Answers with hints to Growth in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Questions and Answers to sphere one: Decision in cooperation.	
Questions and Answers to sphere two: Intuition in cooperation.	
Questions and Answers to sphere three: growth in cooperation.	
Was there an organizational change in your company in the last 5 years or is one planed?	3 Years ago, the owner took over from his father (80 years old). Now he plans a change in management and sales.
Should the management style be changed?	Yes, the owner likes to have an external CEO.
Do you have to replace a single know-how person in the next 2 years?	No, still more time left.
Are your company able to bring out a new product in a new market?	Yes, but this market is quite mature and have long innovation cycles.
Greiner's Theory: In which growths phase your company are?	We try to grow every year, it's difficult to select a growth phase.
In which crisis you are in?	We have all a crisis at the same time. Maybe leading ...
What do you see when you step back and look on your company?	We are too small to grow, but we in a stable niche and we have the best people and highest quality.
Better with you, or better with a new/other person in charge?	In the moment only with me, in two years only without me.

Table 4.30: Interview result 2<sup>nd</sup> sorting, sphere growth



The growth sphere specific analysis leads us to the following result in this section:

Company six is not in a crisis, there is an organizational change planned by the owner, he like to hire an external manager and step out. The first try was not successful but now a promising candidate is in place.

- Greiner's Model: -> late but small fit.
  - No relevant crisis but due to the change in organization a crisis of leadership was mentioned.
  - Growth targets are set for the future management.
- Churchill and Lewis's Model: -> late but small fit.
  - The owner likes to step out of this this model, but quite late in his career.

#### 4.9.5 Saturation Level of research, after interview with Company 6D-3-50-60G

The saturation level shows the status of this 6<sup>th</sup> interview from a general, or more technical position. It is taken into consideration that the interview company was selected out of 30 companies in the research context after pilot interviews, with 15 confirmed interview partners for in depth interviews and the settings under the chapter 3.5 Sample Size and 3.6 Saturation. Therefore, the saturation level will be checked after each interview, after the 5<sup>th</sup> interview proving methods will be more detailed i.e., comparison of statements, new themes emerging, redundant answers. Here in the 6<sup>th</sup> interview, the same table is used to check saturation with the knowledge that there can be no saturation yet, but we also check whether the goals of the investigation are achieved with the direct comparison with the RO. This will be explained in more detail in the following table.

Proving Question	Result and Rating of saturation
Is the research objective and the two sub-objectives covered by the answers of the interviewee?	
Research objective: To explore the relationship between SDMP, tacit knowledge of the owner/manager, intuition, and corporate growth in SME	<p>The relative emphasis of intuitive processes is high. Rational processes are not involved in important. The intensive customer contact and discussion with 3 leading people could be rated as a rational process.</p> <p>The owner makes all decisions and all of them are intuitively driven. This is a standard for 60 years and 3 generations out of the question for everyone in the company.</p>

Proving Question	Result and Rating of saturation
	<p>The owner makes decisions, and he communicates to each person, the company is small.</p> <p>The decision is made by the owner-manager; he rated the results as 100% successful. All decisions with entrepreneurial scope are intuitive. No rational and only minor political influence.</p> <p>Topics with entrepreneurial scope are brought from the owner-manager, and from customers. He has a clear strategy for what is to do.</p> <p>Senior staff is partly involved in the process of decisions, the intuitive judgement is the responsibility field of the owner-manager.</p>
<p>Sub-Research Objective 1:</p> <p>To explore the relevance of Greiner's Model (Evolution and revolution as organizations grow, 1972) for SME in the research context</p>	<p>The relevance of Greiner's Model for this company was analyzed and discussed in the above chapter. Usable results have been achieved.</p>
<p>Sub-Research Objective 2:</p> <p>Compare the interview result and the relevance of SUB-RO 2 as well with the Models of Churchill and Lewis (Churchill and Lewis 1983) and show the differences.</p>	<p>The relevance of the Churchill and Lewis Model for this company was analyzed and discussed in the above chapter. Usable results have been achieved.</p>
<p>Sub-Research Objective 3:</p> <p>Analyze the evolution of tacit knowledge in SME and the relevance of owner-manager's family</p>	<p>The relevance, the usage, and the existence of tacit knowledge in this company was analyzed and discussed in the above chapter. Usable results have been achieved.</p>
Do we get redundant answers?	
<p>Intuitive decisions (see chapter 2.5 intuitive decision is described)</p>	<p>The perception of intuitive decisions is the same.</p> <p>The trust of employees in decision of the owner is same in company 2, company 3, company 6 and company 7.</p>
<p>Trust</p>	<p>It is a major influence on the company's success that the employees and their families have mutual trust in the</p>

Proving Question	Result and Rating of saturation
	owners. So, the father's presence and the day to day of the owner-manager holds the people in the company.
Communication	Daily, weekly, in meetings, directly.
Greiner's Model	Do in general not fit to this company, some growing phase descriptions could be adopted to this embedded case.
Churchill and Lewis	No fit for the model.
Family involvement in day-to-day business	All relevant investments and decisions will involve the family.
Are new themes emerged?	
1 <sup>st</sup> Interview	Yes, internal organization could be in the center of attention if there is enough money.
2 <sup>nd</sup> interview	From company 2: Yes, intensive sharing of information on management level, every day, jour fixe. Intensive reconciliation with the experienced family members.
3 <sup>rd</sup> interview	From company 3: Yes, no involvement of second parties for decision, only owner-manager decides, due to ownership, success, and financial independence.
4 <sup>th</sup> Interview	The influence of the experience time in active managing of the owner shows an influence on decision-making and an upcoming crisis in organization.
5 <sup>th</sup> Interview	Yes, external managers judgment is more related to growth, no political influence, employees, and fluctuation is not as important as it is in family managed companies.
6 <sup>th</sup> Interview (this one)	The owner communicates every decision direct to the working level, no real 2 <sup>nd</sup> management level.
Is researcher feeling to reach the level of saturation?	Yes, now redundant level is reached, variation is present, but this does not lead to new insights.
More comments to saturation:	no

Table 4.31: Saturation check template, 6<sup>th</sup> Interview company 6D-3-50-60G

#### 4.9.6 Summary Interview analysis Company 6D-3-50-60G

Company 6D-3-50-60G is the smallest enterprise in terms of employees and has a notably high turnover per employee compared to the machine tool sector. For sustainable growth in the home market the company has too little headcount and entering new markets will also be difficult. After a late generational change, the new owner-manager prepares the next generational change instead of working out a growth strategy.

Unfortunately, a consulting project for future strategy failed. On the other hand, the successful investment in the integration of a service product should point to the next investment possibility, an international service project or similar vision. The stable personnel and know-how in the company could open new fields of business.

This company seems to have good potential to grow, a good name and the highest accredited product and service quality.

The research objective was reached, and SUB-RO are reached as well, as documented in the check table saturation under 4.31 above. The results after the second sorting analysis are transformed into a graphic overview, see figure 4.7, to allow to facilitate the comparison and a resume over all 7 companies in chapter 4.

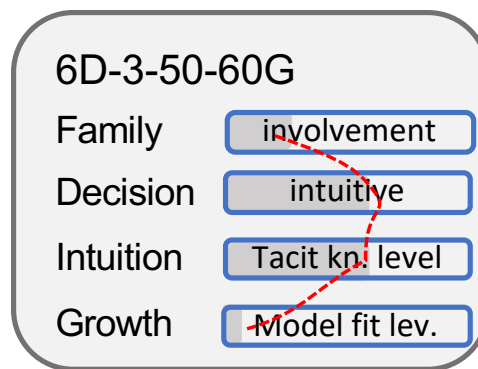


Figure 4.7: Overview result analyze 3 spheres and family involvement for company 6D-3-50-60G

#### 4.10 Analysis 7<sup>th</sup> Interview, Company 7O-3-200-102

##### General information

The interview with company 7O-3-200-102 in summer 2018 was conducted with the owner manager from the fourth generation. The current general manager is 54 years old and owns the

majority of the company's shares. His father, the grandson of the founder, is still legally responsible for the company at 86 years of age. The grandson of the founder does not have any executive role in the company, but he is still present once or sometime twice a week for some hours and many of the employees have a deep relationship with him. He grew the small handcraft company to an internationally active, GM-SME with strong USP in the market they are working in. He was able to do so because he had an international theoretical background in physics. The interviewee took over general management 10 years ago, after having been in various positions in the company for 15 years. The current managing director still discusses relevant topics with him, such as those important for decisions on structure and innovation. The company is in a rural area in the north of Bavaria in a small village with around 10.000 inhabitants. This is quite crucial because fluctuation in company 7O-3-200-102 is close to zero and important know-how remains in the company for a long time.

The background of all corporation leaders in the 110-year-long history of the company was technical. Innovation was never driven by a financial point of view but from a technical philosophy. Some key facts about this company:

- Medium GM-SME with 180 to 200 employees.
- Supplier of machine tool industry and other main industries in Europe.
- Founded 1909, over 110 years old, 4<sup>th</sup> generation.
- € 40 M. annual turnover, turnover by employee over T€ 200.
- Margin over 15%.
- 100% family owned.
- Modern production facility, construction work on-going (modernization, growth).
- Interviewee: Owner-Manager.

After the first contact (pilot interview during an exhibition), the owner was immediately open for an interview on growth, tacit knowledge and decision making in SME. Because his answer to the question: Do you conduct intuitive decisions in your company was:

*“...yes of course all decision we make are intuitive and we can do so, we are prepared to invest millions of Euros in a project where we believe in success, without asking someone out of the family. I tell you... this is a free zone for me which I really enjoy, very much...”*

During the interview we intensively discussed the results of the last five intuitive decisions, and we analyzed the investments and projects undertaken by this company over the last five years in quite a detailed way. The reaction was:

*“I never thought about success itself, my main goal was to keep the company independent and I always try to integrate and buy processes for our own production and increase our know-how portfolio” and a second important statement to understand Company 7O-3-200-102 drivers was:” ...the main reason of a high margin target in daily business is to invest for future technology to be at the edge of technology, only this keeps us a step ahead...”*

A notable position of the today owner manager was the “quite” confusing statement on decision processes:

*“...in my company there are no decision processes installed, we only meet for 8\* different events per year to analyze company situation and future action.... \*(Abbreviation of the text of the interviewee in this case, due to non-disclosure agreement for internal information)”*

The interview section which describes the abilities of the decision maker and the decision process itself shows a strong desire for making decisions alone. However, his own view on decision making and the eight events per year show another picture. The owner and his team have a long history of positive experiences with intuitive decision making by the owner. In this case the personality of the father still has a very positive influence on success and on the new ways for corporate growth projects.

The Company is a successful GM-SME, the EBIT is over 15% and the general growth rate is significantly above average in this industry sector. As the researcher could work out of the interview and related research (internet, press, newspaper, perceptions acquired during company tour) this is due to the technical experience in customized high-tech products which an compete with large-scale global enterprises like Siemens, General Electric, Airbus or Boeing.

The ability to decide intuitively was developed over generations. The founders created the business and the skills for their successors and for the family business. The following generation grasp special knowledge in universities all over the world. They done this with an invisible connection to company, employers, village government, and family. This person returned with unique knowledge into a powerful organization and started to equip the children with courage and experienced tacit knowledge tailored to the family business.

I would like to repeat here what Nonaka and Takeuchi described (Nonaka and Takeuchi 1995) as the only one possible way to extract tacit knowledge from a specialist is to place somebody beside him, who is similar in personality and values. If that is the case, the person takes over a lot more of the relevant knowledge from the know-how carrier.

#### 4.10.1 Level or Grade of family involvement Company 7O-3-200-102

The father of the owner-manager still works at the company twice a week and advises his son. Furthermore, the targets for company values and growth are a family value, discussed and agreed on privately during many dinners.

Here in this company the owner-manager was trained by his father and grandfather since childhood to become a manager and an. Therefore, he developed his ability to decide intuitively and has a considerable potential of tacit knowledge.

Involvement of family / Level of	25%	50%	75%	100%
Ownership level				
Influence decision in GM-SME				
Advice function for owner-manager				
Active in GM-SME				
Tacit knowledge of owner-manager				
Growth of GM-SME				

Table 4.32: Level of family involvement, see chapter 2 and 3

#### 4.10.2 Decision in Cooperation

Questions to owner-manager of Company: 7O-3-200-102	Answers with hints to Decision in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
Questions and Answers to sphere one: Decision in cooperation	
Do you remember the last strategic decision, which was intuitive?	Change from buy to make, reason: critical process (USP depending on a supplier) It was a technologically relevant decision.

Questions to owner-manager of Company: 7O-3-200-102	Answers with hints to Decision in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
	Important to be independent for core processes. Decision was made by the owner.
Was the result positive, did the corporation grow (more Employees, turnover, Ebit?)	Growth is not necessary, saving the environment is more beneficial, technical leading production is more important for the company. Becoming a leading producer is more important. The new equipment must be integrated into the facility, must look good.
Is a strategic decision process established?	No decision process was established; employees would be informed about the decisions; they (selected people) are part of the decision-making preparation. Testing, researching, pilot investments.
Is the process structure strictly adhered?	No process, only the management meet to possible projects and future business.
Is the decision process itself established or management pushes it?	Only driven by management.
Is an innovation team constituted, if yes what structure (department, experience)?	1.) A weekly, unstructured discussion on a Friday including company lunch, maximum 5 people. 2.) Two times per week, leading people meet for lunch in a restaurant (no agenda). 3.) Team leaders meet 4 times a year. 4.) Information purpose, Corporate Meeting two times a year, corporate news (paper) three times a year, corporate education, ten times a year.
Questions and Answers to sphere two: Intuition in cooperation.	
Questions and Answers to sphere three: growth in cooperation.	
Should the management style be changed?	No, it is perfect, single opinion of the owner.

Table 4.33: Interview result 2<sup>nd</sup> sorting, sphere decision

The decision sphere specific analysis leads us to the following result in this section:



The decision-making process in this company was established a long time ago and became optimized over an evolutionary development in the 4<sup>th</sup> generation of family management. It is a mix of using the right ideas, of the right people, at the right moment, and what is right is decided intuitively driven by the owner-manager tacit knowledge based on his and on his family's, perception based on their motto or mindset: we make unique technology ourselves to be best in class in our market segment. Is the decision right to secure the survival of the company in its current shape and size.

In the mind of the interviewee, it is not a structured process and highly intuitive.

The last corporate decision was made by the owner-manager's father 20 years ago.

- Intuition: Is a part of the management process of the owner, by using unique tacit knowledge (acquisition see next article).
- Decisions: Issues for decisions are selected intuitively, many people are involved in decision process, idea and information sharing, selection of people intuitively.
- Objective: Be a leading technology provider in the home market.
- Growth: The definition of growth is not turnover and not number of people, it is safety and freedom to decide.
- Success: Security for the Company.
- Family: Is involved in every important step.
- Organization: Fits streamlined to the owner's abilities.

#### 4.10.3 Intuition in Cooperation

Questions to owner-manager of Company: 7O-3-200-102	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Questions and Answers to sphere one: Decision in cooperation	
Do you remember the last strategic decision, which was intuitive?	Decision was intuitive: Information from his father, production more flexible, "we make technology..." slogan of the company.

Questions to owner-manager of Company: 7O-3-200-102	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
Was the result positive, did the corporation grow (more Employees, turnover, Ebit?)	
Is a strategic decision process established?	Selecting the people working on the topic in the pre decision phase, are driven by the gut feeling of the owner (exiting level).
Is the process structure strictly adhered?	If management decides to follow up a good idea, then a decision will follow than discussion and information starts in company.
Is the decision process itself established or management pushes it?	Only by owner, sometimes gut feeling (a good person (employee) is driving a topic).
Is an innovation team constituted, if yes what structure (department, experience)?	This kind of information and meeting structure should support ideas and engagement in the teams to find the right people for the right strategic topic, the owner knows the people with innovative ideas and support them, but there is no department to drive this.
Questions and Answers to sphere two: Intuition in cooperation	
Do you conduct market competitor research periodically?	No, there is no regular market research and competitor analysis. Information is transported verbally but unstructured.
Will the team be informed about the results of such research?	Only verbally and random.
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?	<ol style="list-style-type: none"> <li>1.) The owner is member in a few chamber workshops.</li> <li>2.) Is supporting a regional network to other entrepreneurs.</li> <li>3.) Participate in leading and psychological and advanced training.</li> <li>4.) Is interested in macro-economic development.</li> <li>5.) Conduct specific speech on a cooperate level (VDA, VDI, VDE) the preparation is a big value).</li> </ol>

Questions to owner-manager of Company: 7O-3-200-102	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
What do you personally know about your competitors?	Nothing special, but due to the internal connectivity (driving every forum) and the external network is the view is quite holistic. In this case the competitors are very large entities and good controllable by specific media or during exhibitions.
Do your company have knowledge management organized?	No, we do not conduct knowledge management, and it's not planned.
Are there single persons who have special know-how in your organization?	No, in the past we had this problem but meanwhile we doubled strategic function (redundant).
Have your company programs to get this know-how into a team?	Yes/no, there no program in place but we have this intensive communication structure, and we source our personnel local; fluctuation is nearly zero.
Questions and Answers to sphere three: growth in cooperation	
Was there an organizational change in your company in the last 5 years or is one planned?	Changes are more intuitive than planned. Owner's father is still in the board, but no active influence (support by consulting).
Should the management style be changed?	
Do you have to replace a single know-how person in the next 2 years?	
Are your company able to bring out a new product in a new market?	No, yes... it's not necessary product portfolio is perfect.
Greiner's Theory: In which growths phase your company are?	The company have no crisis and had no crisis.

Questions to owner-manager of Company: 7O-3-200-102	Answers with hints to Intuition in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7)
In which crisis you are in?	We are in no crisis.
What do you see when you step back and look on your company?	I will not do this; I am in heaven. I can invest 5 million without asking somebody... maybe my father, now?
Better with you, or better with a new/other person in charge?	I am the right person; nobody could do what I do.

*Table 4.34: Interview result 2<sup>nd</sup> sorting, sphere intuition*

The intuition sphere specific analysis leads us to the following result in this section: External specific knowledge acquisition is done by the owner-manager in several areas, chambers, exhibitions, conferences, and local entrepreneurial networking.

Internally, as shown in previous article (decision in corporation) via daily viral selective communication with key players in the market and in the company. Important internal know-how is secured by doubling key staff and employer satisfaction is high. This leads to a very low fluctuation, and this keeps know-how in the company, as does this long history in family management.

The knowledge acquired by the owner-manager is unique in his company and unique in the competitive environment of this company.

- Tacit knowledge: Is accumulated by the owner-manager through multiple channels and unique access to unique resources.
- Intuition: Is a prepared ability by the above shown activities.
- Social responsibility: Is motivated by the value of regional influences and mainly by family commitment to people and local government.

#### 4.10.4 Growth of Cooperation

Questions to owner-manager of Company: 7O-3-200-102	Answers with hints to Growth in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Questions and Answers to sphere one: Decision in cooperation	
Do you remember the last strategic decision, which was intuitive?	More employees, more customers, EBIT stable (add value into company) Investment ca. 10% of annual turnover.
Was the result positive, did the corporation grow (more Employees, turnover, Ebit?)	Not sure, never proved.
Is a strategic decision process established?	
Is the process structure strictly adhered?	There is now focus on growth in strategic decision-making.
Is the decision process itself established or management pushes it?	This is always in the mind of the owner, also the exited employees could be an accelerator for new growth projects.
Is an innovation team constituted, if yes what structure (department, experience)?	Information/ Innovation events support teambuilding and contribute growth (a feeling from the owner, not result of measures).
Questions and Answers to sphere two: Intuition in cooperation	
Do you conduct market competitor research periodically?	
Will the team be informed about the results of such research?	

Questions to owner-manager of Company: 7O-3-200-102	Answers with hints to Growth in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?	Company is not doing benchmarks with competitors in terms of market share, growth rate and result.
What do you personally know about your competitors?	A kind of benchmark with these very large entities is made periodically. Growth comes out of the niches where these companies are not able to perform. Good prices because of low competition.
Do your company have knowledge management organized?	
Are there single persons who have special know-how in your organization?	
Have your company programs to get this know-how into a team?	
Questions and Answers to sphere three: growth in cooperation	
Was there an organizational change in your company in the last 5 years or is one planned?	The organization is tailored to the owner; some changes are made (new leaders in the company) but no general organization (i.e., from hierarchical to matrix).
Should the management style be changed?	Opinion of the owner is: I am the right person for this job, company and I are a like single unit.
Do you have to replace a single know-how person in the next 2 years?	No, this was done years ago.
Are your company able to bring out a new product in a new market?	Think about to sell a special machine, design was made during the development of a production process.

Questions to owner-manager of Company: 7O-3-200-102	Answers with hints to Growth in cooperation (From all questions and answers out of the three spheres (see 4.3, and appendix 9.7))
Greiner's Theory: In which growths phase your company are?	The model does not fit to us, the growth and crisis scenario will be avoided by the owner.
In which crisis you are in?	Turnover is growing qualitatively; the organization is stable. New business is coming up. Growth without crisis.
What do you see when you step back and look on your company?	
Better with you, or better with a new/other person in charge?	This company is very successful.

*Table 4.35: Interview result 2<sup>nd</sup> sorting, sphere growth*

The growth sphere specific analysis leads us to the following result in this section:

The organization in company 7O-3-200-102 is tailored to the owner's leadership and as mentioned above his father is still on board, joining for 2 days a week. The only changes were in the 2<sup>nd</sup> hierarchy level some years ago.

New products are in development, by chance, during a process development a product idea came up and the owner established a team to drive this new challenging issue.

The discussion about Greiner's Model (Greiner, 1972) of organizational growth brought up no fit with this successful 110 year old company, also the comparison to the paper of Churchill and Lewis "The Five Stages of Small Business Growth" brought up no data to explain the development of this company (Churchill, 1983).

We can see the main differences in the perception of the owner-manager, as he stated there is no crisis and no organizational change planned or necessary.

Does the organization development fit into Greiner's Model?

- No crisis.
- No growth phases as shown, but growth over 30 years.

- A crisis will come up if the owner steps out, with no successor in place.

Does the development of the company fit into the model of Churchill and Lewis?

- In the mature stage V shows a wide organization, nothing comparable.
- The owner-managers father is still managing the company (from behind) and not stepped out of business.

#### 4.10.5 Saturation Level of research, after interview with company 70-3-200-102

The saturation level shows the status of this 7<sup>th</sup> interview from an objective, or more technical position. Here in the 7<sup>th</sup> interview, we reach saturation due to several facts, these will be explained in more detail in the following table.

Proving Question	Result and Rating of saturation
Is the research objective and the two sub-objectives covered by the answers of the interviewee?	
<p>Research objective:</p> <p>To explore the relationship between SDMP, tacit knowledge of the owner/manager, intuition, and corporate growth in SME</p>	<p>The relative emphasis of intuitive processes is high. Rational processes are partly involved in important processes. Some of the decisions are politically driven and a rational factor is the discussion with his father. The owner makes all decisions and all of them are intuitively driven. Decisions for people and their abilities are also intuitive. This is a standard for 110 years and 4<sup>th</sup> generations.</p> <p>Influence on the employees:</p> <p>The owner makes decisions the company is small, he communicates to each person. The awareness of intuitive judgment is there is no other judgment.</p> <p>Senior staff are partly involved in the process of decisions, intuitive judgement is the responsibility field of the owner-manager. Preparing the decision, the senior staff and specialists are involved.</p> <p>Examples out of the interview:</p> <p>The decision is made by the owner-manager; he rated the results as 100% successful. All decisions with entrepreneurial scope are intuitive. No rational and only minor political influence.</p> <p>Topics with entrepreneurial scope are brought from the owner-manager, from his creative staff and from customers. He has a</p>



Proving Question	Result and Rating of saturation
	clear idea of what is to do, but mainly he relies on people. The decision itself is purely intuitive.
Sub-Research Objective 1: To explore the relevance of Greiner's Model (Evolution and revolution as organizations grow, 1972) for SME in the research context.	This company has no current crisis and is growing. The owner does not see a relevant to Greiner's model and the researcher could also not realize some connection.
Sub-Research Objective 2: Compare the interview result and the relevance of SUB-RO 2 as well with the Models of Churchill and Lewis (Churchill and Lewis 1983) and show the differences.	See detailed analysis of the interview, after table 4.35.
Sub-Research Objective 3: Analyze the evolution of tacit knowledge in SME and the relevance of owner-manager's family.	The father of the owner-manager is still working (attending the company twice a week (he is 86 years old and lead the company over decades)) So owner-manager asks him many issues and his mother will be involved
Do we get redundant answers?	
Intuitive decisions (see chapter x intuitive decision is described)	The perception of intuitive decisions is the same. The trust of employees in the decision of the owner is same in company 2, company 3, company 6 and company 7.
Trust	It is a major influence on the company's success that the employees and their families have mutual trust to the owners. So, the father's presence and the day to day of the owner-manager holds the people in the company.
Communication	Daily, weekly, direct, via newsletter, 2 <sup>nd</sup> management level.
Greiner's Model	Do in general not fit to this company, some growing phase descriptions could be adopted to this embedded case.
Churchill and Lewis	Must be analyzed and written.

Proving Question	Result and Rating of saturation
Family involvement in day-to-day business	All relevant investments and decisions will involve the family.
Are new themes emerged?	
1 <sup>st</sup> Interview	Yes, internal organization could be in the center of attention if there is enough money.
2 <sup>nd</sup> interview	From company 2: Yes, intensive sharing of information on management level, every day, jour fixe. Intensive reconciliation with experienced family members.
3 <sup>rd</sup> interview	From company 3: Yes, no involvement of second parties for decision, only owner-manager decides, due to ownership, success, and financial independence.
4 <sup>th</sup> Interview	The influence of the experience time in active managing of the owner shows an influence on decision-making and an upcoming crisis in organization.
5 <sup>th</sup> Interview	Yes, external managers judgment is more related to growth, no political influence, employees, and fluctuation is not as important as it is in family managed companies.
6 <sup>th</sup> Interview	The owner communicates every decision direct to the working level, no real 2 <sup>nd</sup> management level.
7 <sup>th</sup> Interview (this one)	No new topic emerges.
Is researcher feeling to reach the level of saturation?	After 7 interviews and no new topics and diverse similar facts, saturation was expected here.
More comments to saturation:	After the seven conducted interviews the different characters of the managers enriched the interview with new insights and new ways of conducting interviews with these motivated and responsive people. The researcher was inspired and willing to go on with more and more interviews. So, it was necessary and valuable to stop after this interview to get an analyzable set of data for a rich result.

Table 4.36: Saturation check template, 7th Interview company 7O-3-200-102

#### 4.10.6 Summary Interview analysis Company 7O-3-200-102

The management of this company professes to adopt a style that sees success of the company to be based on intuitive marketing. Ownership and the maneuverability that this creates seem to be central to their worldview. There is a forum for discussing change that meets eight times a year together with a program of consultation and discussion within the organization. These are structured as open forum discussions. The relationship between ownership and organizational resilience is often seen to be difficult.

This is the basis of the crisis theories of SME growth discussed above. Moving ownership through the generations often leads to a diversity of aims. In parallel organizational growth increases complexity, restricting the power of the owner and his father. As this company has now entered the fourth generation of owners it appears to have avoided some of these difficult issues.

The remarkable point in this company was the self-esteem of the owner-manager, it was big, compared to all the other interviewees, he was driving his company and his employees with this power to a high level of success in their competitive market.

The research objective was reached, and SUB-RO are reached as well, as documented in the check table saturation under 4.36 above. The results after the second sorting analysis are transformed into a graphic overview, see figure 4.8, to allow to facilitate the comparison and a resume over all 7 companies in chapter four.

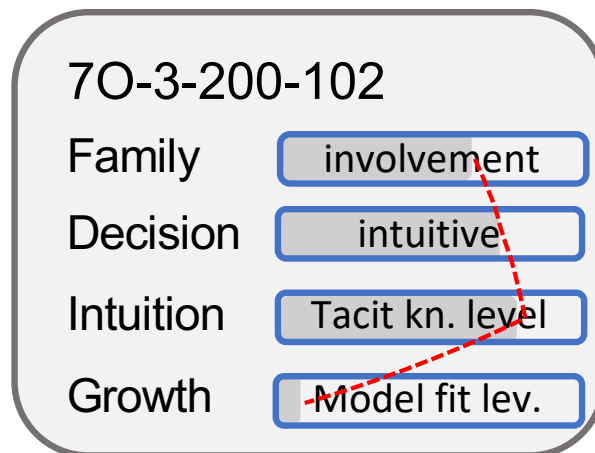


Figure 4.8: Overview result analysis 3 spheres and family involvement for company 7O-3-200-102

## 4.11 Research Results

With the results of the seven interviews and the analysis it was possible to close the four described gaps in literature. Therefore, I note the results of the literature review and of the interviews in one overview (working diagram) to see which gap is related to which source in literature, see figure 4.9. This figure is a development of figure 3.9.

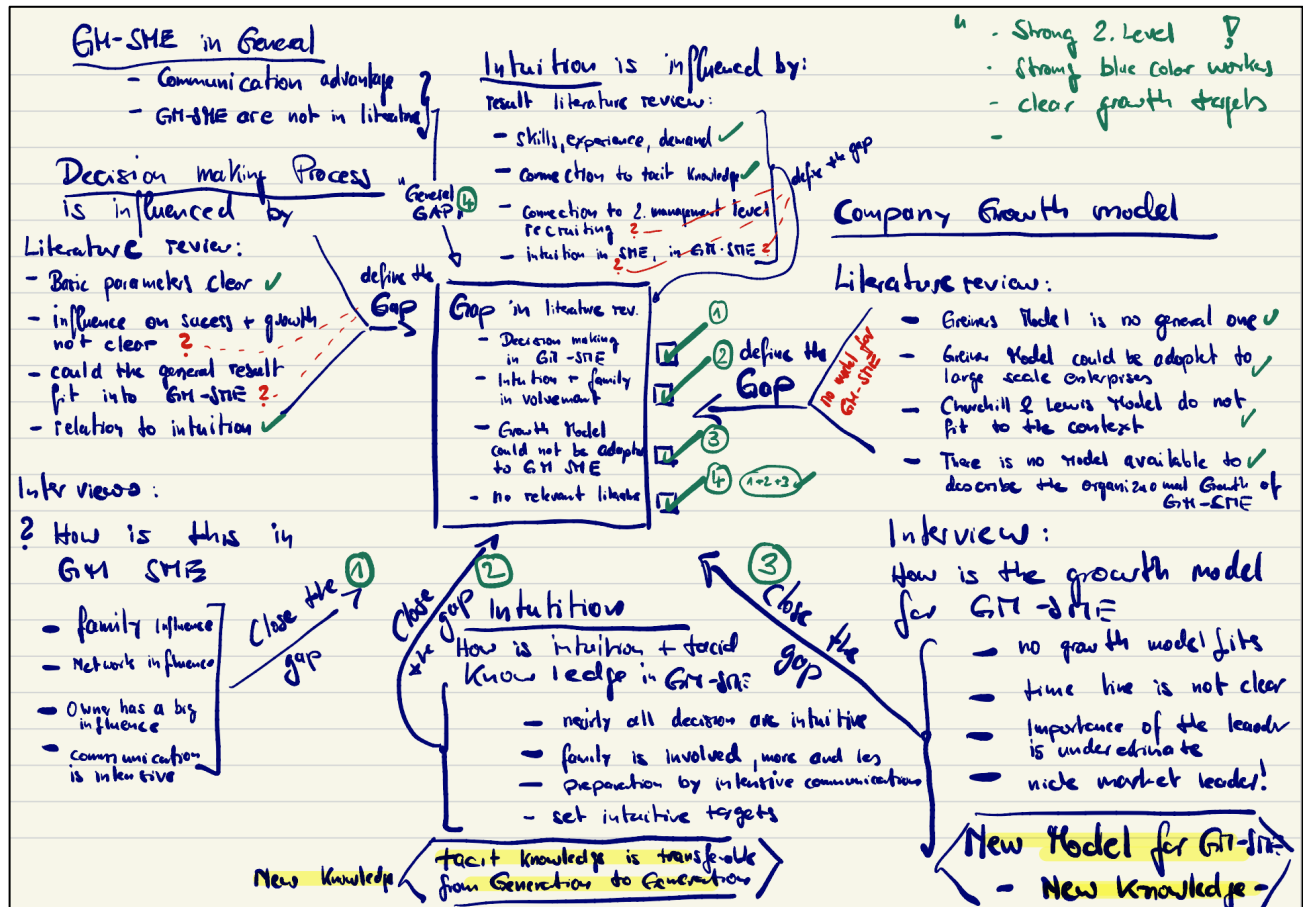


Figure 4.9: Working model (Version 2) of the research and the literature review to close the gap's

In this chapter's findings, the seven interviews conducted was analyzed in a 5-step process (coding, condensation, interpretation, mind mapping (bricolage), connecting), see figure 4.1. This leads to the following result of the interview analysis.

After obtaining saturation in interview results in all three categories (growth, decision-making and tacit knowledge) the interview notes, audio recording, and concentration of the relevant statements in this chapter was analyzed, interpreted, discuss the interpretation by compare with

the results out of the literature review in detail and set this in relation to the research objective and reflect the result of the research. This all flowed into figure 4.10 on the next page.

The value of the single diagrams and the overview of figure 4.10 is that they illustrate in a comparative way the extent of the four significant factors at play in the companies studied. Figure 4.10 provides a visual summary of the crucial factors of this research and enable a quick comparison of the factor related to the interviewed GM-SME in a relative position to each other. As showed in figure 4.1.1 where the company code is explained for the four categories in each diagram.

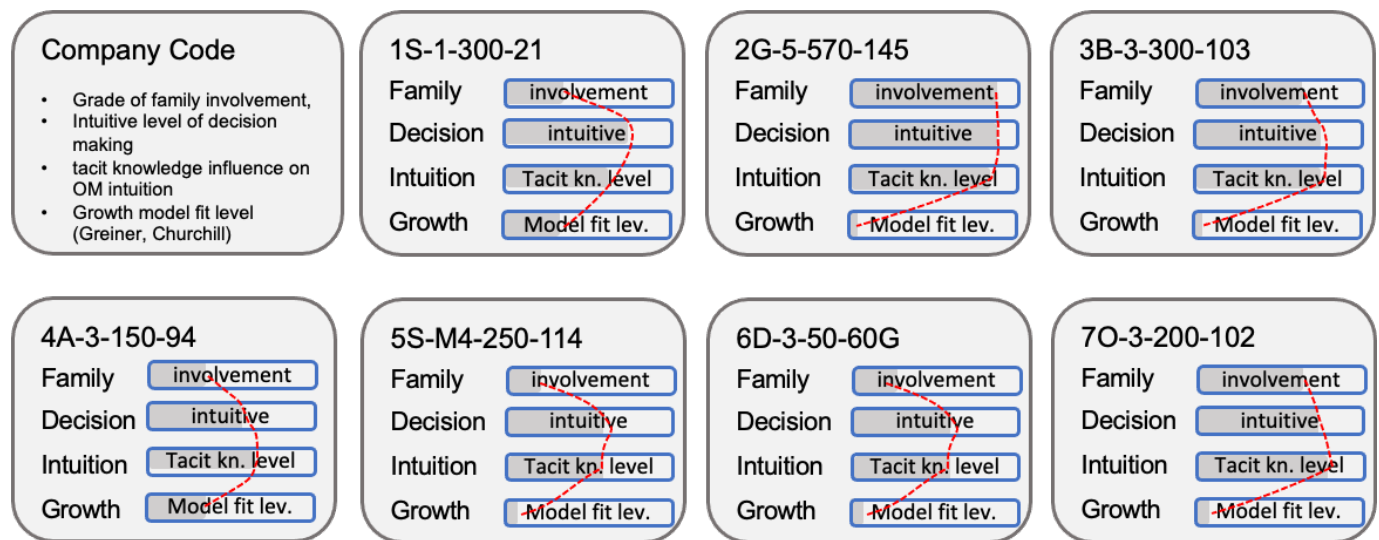


Figure 4.10: Overview result of interview analysis, display the three context spheres and family involvement.

#### 4.11.1 GAP 1: The influence on networking, leadership, and marketing by the owner family on the success of GM-SME is not described in the literature.

GAP 1 Question: Is there an influence of the family on GM-SME success in terms of networking, leadership, and marketing?

##### Result:

In all interviewed GM-SMEs I noticed an influence on success in different levels and characteristics. These depend on how long the current manager has been in charge (In figure 4.10 this is shown for each company in the column family and the grade is shown with the red line). I would like to exhibit one example out of the interview with company two (see attachment 9.2.2.2).

Company 2: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation
Do you personally have special sources of market information such as network, alumni, exhibition, visit courses?	The researcher meets the owner twice during exhibition, he is very present on sales activities		As mentioned, all information going through my office, every day, and my family dispose over a large network in our region

*Table 4.37: Example for family influence analog GAP 1, Interview company 2*

**Closing GAP 1, description of networking leadership and marketing:** The example of the interviewee's answer (table 4.37) offers a deeper view into the influence of the family and the network. This company has been integrated for generations into the social environment of their home city, in the county and sometimes directly into local or national politics.

When they need new workers, a new place for a factory or a direct contact at a university, all this is discussed during dinner, at local sports clubs and other event locations. This is a big plus for GM-SME in all disciplines of the value chain.

So, the answer to the GAP 1 question above is: There is an influence by the owner manager, the owner family and the main corporate function supported by networking and marketing.

#### **4.11.2 GAP 2: Decision-making specifically in GM-SME in the research context is not described.**

##### **Result:**

In GM-SME nearly all decisions are intuitive, and these decisions are made by the owner-manager. His ability to take good decisions depends on the support of his family, the input of his senior leadership team and his employees involved in the project.

I would also like to underpin the above statement by two relevant citations out of the attached interview results (see chapter 9.2.3 and 9.2.7).

Company 3: Owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation
Is a strategic decision process established?		No, there is a day-by-day meeting with 7 leading people and a kind of international sales meeting. My cousin and I also discuss intensively in private and in door-to-door events.	Ideas come out of this information pool

Table 4.38: Example for intuitive decision-making analog GAP 2, Interview company 3

Company 7: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Do you remember the last strategic decision, which was intuitive?	More than one was mentioned, but the change to make, was mainly driven by owner's fathers experience	Change from buy to make, reason: critical process (USP depending on a supplier) It was a technologically relevant decision.  Important to be independent for core processes. Decision was made by the owner	Decision was intuitive: Information from his father, production more flexible, "we make technology..." slogan of the company	More employees, more customers, EBIT stable (add value into company) Investment ca. 10% of annual turnover

Table 4.39: Example intuitive decision-making analog GAP 2, Interview company 7

Based on this, and again, the special position and procedures of GM-SME there is a gap in the literature and a possibility to contribute to knowledge by showing how important the owner-manager is and how important his tacit skills are. The latter will vary from owner-manager to owner-manager, but only in the level and characteristic of each one's tacit-skills.

Decision-making is closely connected to intuition and intuition is mainly enabled by tacit knowledge and this is gathered in the tacit skills of the decision makers in the research context. The question arises what is the most efficient driving force behind a good decision, when good means “my company is growing in a positive way”?

It is the will of the GM-SME decision maker to make a good decision and to say it with Polanyi's words: “they can do more than they can tell”, because if you ask the decision maker: How did you do it, they cannot explain their decision reasons. These people use all their abilities and their conviction when they make intuitive decisions, and this stands for the more of seriousness in their behavior in using their explicit and implicit knowledge but furthermore they use their personality to decide, again a hint to lifelong achieved “tacit skills”.

In the literature review analysis, I discovered tacit knowledge is the main driver for “good” decisions and the question arises: How is tacit knowledge acquired by the owner-manager?

The environment in which a GM-SME owner's children grew up is different to the environment of a founder or an external manager. The company is part of the family's daily reality, and the main knowhow is in the DNA of the parents, of the grandparents and in the company itself. Any future leader will combine and must combine this experience, with their own, their learnings, and their pain over a very long time, before they succeed their parents to lead the company, the GM-SME for next-generation.

This is the uniqueness of a GM-SME and an owner-manager whose family has been owning and leading the company for generations.

**To close the GAP 2 in literature, I gather the decision-making process of GM-SME in the following Three points:**

Three main points, in the connection to the interview results:

1. The rational decision could be right or could be wrong, both are documented in the literature (Brouthers et al., 1998; Mintzberg et al., 1976). The interviewed companies one, two and three have organized decision making meetings involving 2<sup>nd</sup> management level and sales to set up a certain niveous of decision-making process. The combination with the described intuitive decision making by the owner opens a quasi-combination of rational and intuitive decision.



2. The rational process requires more time and more resources to prepare a decision. This is shown from the literature review. In the interviews, only company five's manager reports a rational planning, targeting and decision-making process between the owners and the manager. This was as well the target of the owner of company one, but he reported that in the end he is deciding, and not always on rational data.
3. For important strategic decisions (the company will become bankrupt when this decision fails) a hundred percent rational decisions are not documented in the literature. This could be confirmed by the interview results, the important strategic decision making is dominated by intuitive decisions of the owners and their families.

It was expected by me that the GM-SME decide in a mainly intuitive manner, and this intuition is driven by tacit knowledge and family influence. Perhaps it was also obvious to me that the GM-SME managers act mainly on intuition, due to the interviews I conducted and based on my observations in this industry over the last 30 years, but the level of intuition and the strong influence of tacit knowledge was new for me. Therefore, the grade of tacit-skill and the abilities of the owner-manager resulting from this research was not as readily apparent at the outset.

#### **4.11.3 GAP 3: The family's influence on the owner-manager's decisions, and to which extent tacit knowledge may impact intuitive decisions is not described.**

##### **Result:**

As we can see in figure 4.10 above, the level of family involvement and intuition and tacit knowledge level are highest at company two, three and seven. These three companies have a similar size, and they are in 4<sup>th</sup> and 5<sup>th</sup> generation. In these companies the parents are still partly active in the company, they cannot let go of their former responsibility, and here is the influence of tacit knowledge at its highest level. This is because the parents act as senior consultants to the owner-managers in their own company, as shown in one example from company two in table 4.40 below. Researchers' amendment, from my experience, a very typical way of management in GM-SME.

Hence, the grade of used tacit knowledge is high and in combination the influence of the family as well.

Company 2: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation
Is a strategic decision process established?	The owner gets the OK from his people by speaking every day about the 5 important issues	No there is no process in place. Intensive information sharing culture, every day 30 minutes for all leaders together with the owner	Decisions intuitive by the owner. Get an OK from board of directors (Mother and Brother) now real control function
Is the decision process itself established or management pushes it?	The customer is the core of all activities, the center of value.  The company DNA has a large influence on this	Management pushes it, but mainly the idea or the pressure to be active comes from the customer. The total communication is based on customer demands.	This is in the company DNA, it's a feeling which is given from father to son, from master to mechanic.  The owner hates processes: Processes makes you slow, inflexible and kills creativity

Table 4.40: Example intuitive decision-making analog GAP 3, Interview company 2

**Closing GAP 3:** I expect, as a managing engineer, clear wording, and a clear solution if there is a problem to solve. GAP 3 asks for the grade of tacit knowledge and the influence on the decision of the owner-manager.

In the subsection above I build the argument, from Figure 4.10, that the level of tacit knowledge is different in each GM-SME, but it is an important part or the basic influence for decision making. This is a crucial point, because nobody knows to which level tacit or explicit knowledge is in action when a decision is taken by the owner-manager. Hence, if the interpretation of the interview and the tacit-skill level of the interviewee was “tangible” and real during the interview then, consequently, the levels of influence in the graphs shown in figure 4.10 must be equally appropriate. During the interview detailed follow-up questions were asked to further reveal the processes and issues relating to each decision to find out the tacit level or the process driven decision making (using explicit knowledge or based on facts.

Also, after the second and third questions the answers did not show that a decision-making process is in place. Ergo: Without a high tacit-skill level of the decision maker (in this case the owner manager) the important corporate decisions discussed would have been undecidable. So, I conclude, this GAP is closed by the evidence gathered in this research.

### **Intuition in decision-making**

Following Sub RO3, a method for decision-making which was analyzed in more detail in this study is the GM-SME way of decision-making. This is the intuitive way, sometimes there is a process but at the end the responsible owner-managers decides intuitively, and they do that based on their tacit skills, these are powered by the following-mentioned skills, and by more detailed parameters:

Tacit skills-parameters (already partly mentioned in subsection 1.5.1) are considered to be: Indwelling, gut feeling, emotion, knowledge, experience, mood, gender, attitude, risk tolerance, tacit knowledge, responsibility, honesty, braveness, religion, self-esteem, education, society, values, heritage of the family, creativity, foresight...maybe as well empathy, resilience, leadership, and power, (the parameters coming from results out of the interviews and from these sources (Baum and Wally, 2003; Elbanna and Child, 2007; Matzler et al., 2007; Rajagopalan et al., 1993)). These parameters were referenced and used to develop the thinking in this research. These ideas will be selected and developed below.

Three main points:

1. It is described in literature (Brouthers et al., 1998; Mintzberg et al., 1976) that intuitive decisions could be right or could be wrong, as it is for rational ones. As mentioned above, there will be no 100% rational decisions but there will be many 100% intuitive decisions while the majority of all will be hybrid, for all industries.
2. The interviewee from Company 2G-5-570-145 valued the ability to make fast decisions. He was able to do this due to the trust given by family members. This speed was appreciated as a benefit to the company.
3. What is also stated is that some decisions need to be taken intuitively (speed, new situation, unknown context). For GM-SME intuitive decisions are the most common way to make decisions, and for this the manager must have tacit skills. This is shown in figure 4.10 (tacit and intuitive graph) and in the detailed interview analysis, see appendix subsection 9.9.

After analyzing the interviews, it can be concluded that most of the GM-SMEs in this research show that tacit knowledge is transferred from generation to generation, and this is realized by a kind of “apprenticeship”. This kind of apprenticeship in tacit understanding of the business operation is not clearly described in the literature. In this research the results of the interview analyze illustrated this important factor and was thus able to close the gap in literature and contribute to knowledge.

The owner-managers of a GM-SMEs has a key position not only because they are the owners of the company, and thus responsible for all his employees and the needs of their families. In all the cases I researched they are in the driver’s seat, they are the heart, and the soul of the company.

#### **4.11.4      GAP 4: Is there a current growth model based on Greiner’s which could be applied on the growth development of GM-SME in the context.**

##### **Result:**

No current growth model could be applied to the GM-SME in the context, so this GAP could not be closed yet. Why could this GAP not be closed by reviewing the literature and analyzing the interviews?

Because none of the assessed organizational growth models could be applied on the GM-SME in the research context.

The objective to apply the model of Greiner or a later variant of other authors models to the development and growth of GM-SME shows several important differences to the reality in the context.

The two major papers I analyzed focus on growth phases and crisis phases which enable the next step of growth. These growth phases and crisis phases are directly connected to the size or the maturity of the company. Greiner’s Model is based on Large-Scale-Enterprises as shown in chapter two under subsection 2.7.1. In contrast to Greiner’s model the model of Churchill and Lewis is focusing on SME and a very early phase in existence and growth of an entrepreneur.

In the research context studied here, are only companies which act in international niche markets, and they grow for generations, for several reasons, without changing their organizations nor

leadership. Nevertheless, I developed my interview structure and my following research activity on the possibility of applying some aspects of these two existing and widely proven models.

After assessing the relevance of the five phases of growth for SME I realized that the model must be adapted because Greiner used for his research large entities in markets which could be developed with the right products or the right marketing. Due to this single view a second and further research from Churchill and Lewis was analyzed.

The research from Churchill and Lewis (1983) also used only a few cases and is based on quite old data from the United Kingdom, later researchers analyzed regional focused industries in the United States of America based on Churchill and Lewis.

Therefore, it would be crucial to create an insight into the GM-SME with a direct view on their experience in their industrial sector. Hence, opportunity for the research lies in describing “Five -or less or more- forces of organizational growth” for a GM-SME and develop a valid model for the factors in Germany in GM-SME and set these in relation to the Greiner’s view in the US.

Each business has size as the first one dimension, and company maturity or the stage of growth as a second dimension. While useful in many respects, these frameworks are inappropriate for small businesses and especially for GM-SME on at least three counts.

1. They assume that a company must grow and pass through all stages of development or die in the attempt.
2. The models fail to capture the important early stages in a company’s origin and growth.
3. These frameworks characterize company size largely in terms of annual sales (although some mention number of employees) and ignore other factors such as value added, number of locations, complexity of product line, and rate of change in products or production technology.

To develop the analysis, there follows a summary of the seven companies and the appropriate fit with Greiner’s model, interpretation of figure 4.10 respectively of the above-described parameters.

**Company 1S-1-300-21** is deciding mainly intuitively, the decisions are made from the owner although he said he stepped out. The rational processes seem to be in place to execute intuitive

decisions. The feeling of “inventors dilemma” underpins the difficulties in product development, also described by Christensen (1997). No family is involved in the decision-making process but a wider influence in general administration is in place. The relation to Greiner’s model will be possible to describe in some areas because of the early phase in existence of this company. The fluctuation in this company is relatively high (Christensen, 1997).

**Company 2G-5-570-145** is deciding almost exclusively intuitively, the decision is made by the owner-manager. He is leading this GM-SME alone. A frequent everyday meeting with the first leader level, allows him to control all main streams in the company. He has intensive support from his family but not with relevant in the company. For this company Greiner’s model cannot be adapted, the company is 140 years old and has grown through new products acquisition and intensive sales activity. Some political decisions are possible, the fluctuation is close to zero.

**Company 3B-3-300-103** is decisions are almost all intuitive, the decision is made by the owner-manager in direct agreement with his cousin who is also leading the company. In this case the owner-manager is not working on all projects, but all decisions are taken by him. The family is involved, without direct influence. Some rational and political decisions are possible due to the close connection in the region and the international orientation of the company. Greiner’s model could not be adopted in this case; the fluctuation is close to zero.

**Company 4A-3-150-93** is deciding essentially intuitively, in this case the owner-manager is not working on all projects, but all decisions are made by him. Rational decision processes are set in place. Some political influence on decisions is perceived, no family involvement due to the long leading period of the owner-manager. He is looking for an external leader due to no available candidates in the GM-SME. A lack of a new business model could cause a crisis in the future. Greiner’s model could be adopted with major adaptations in this case. The fluctuation is close to zero.

**Company 5S-M4-250-114** is here decisions are taken intuitively by the manager. In this company an external manager takes all responsibility. Due to the external manager a dedicated business plan is in place and in this way rational decision process as well. No political and no rational decisions for strategic decisions. Based on the internal rules the owner-family influence is essential. Due to economic influence growth is limited. Greiner’s model could be used with adaptations in this case, the fluctuation is close to zero.

**Company 6D-3-50-60G** is deciding essentially intuitively, the decision is made by the owner-manager. He is leading this company essentially in the main issues alone, there is a designated successor in place. Due to the small number of employees, he communicates directly with his employees. He has no support from his family. This company cannot adapt to Greiner's model, company 6 is more than 60 years old and has grown with new products and services in existing markets. The fluctuation is close to zero.

**Company 7O-3-200-102** is deciding mainly intuitively, the decision is made by the owner-manager. In this case the owner-manager is working on every project, and his tacit skill factor is the highest one in this research. Here we have intensive family involvement. Rational and political decisions are possible. Greiner's model cannot be not used in this case. The fluctuation is close to zero.

#### ***4.11.4.1 Comparison of the models of Greiner (1972) and Churchill (1983)***

In comparison to the statement of Greiner in this overview (see Table 4.41) Churchill and Lewis describe the organization of the mature SME in a different way. After a detailed comparison the main difference between Greiner's overview and Churchill's version (see figure 2.9) becomes obvious and show the same issues are in category and practice.

By comparing phase five (Greiner) and stage V (Churchill) the result shows here in table 4.41:

Category (Greiner)	Category (Churchill)	Practice Greiner	Practice Churchill	Difference
Management Focus	Major strategy	Problem solving and innovation	Return on Investment	Greiner has an LSE view; Churchill has owner view
Organizational Structure	Organization	Matrix of teams	Functional company organizational structure	Also, here an LSE view of Greiner and a smaller one of Churchill
Top management Style	Management style	Participative	Line and staff	Greiner expect an external CEO, Churchill expects still a direct order by the owner style

Category (Greiner)	Category (Churchill)	Practice Greiner	Practice Churchill	Difference
Control System	Extent of formal systems	Mutual goal setting	Extensive	Greiner is pointing to control the leaders; Churchill is pointing to ERP Systems
Management Reward Emphasis	No equivalent	Team bonus	No equivalent	Greiner again focus on management motivation
No equivalent	Business and owner		Owner leaves the business focus	Churchill point out the involvement of the owner in daily business

*Table 4.41: Comparison Greiner and Churchill*

Important facts of the owner-manager for a long time stay:

- Tacit skills.
- Communication ability and style and employee's trust.
- Organization of the second level of seniority in the GM-SME.
- Product manager, marketing manager, manager in the driving chair, the owner-manager creates the organizational framework for him to avoid a crisis and is a specialist in one major discipline in the value chain.

For the GM-SME model I like to start with a comparison to Greiner's "Evolution and revolution as organizations grow" (Greiner, 1972). In his first paper Greiner starts to show the model of organizational development in three different growth scenarios for the industry the company is acting in, high, medium, and low growth industry (see figure 9.6.1 and 9.6.2). There are a fewer number of crisis events in low growing industry, this means he is expecting the same crisis but later. In the five phases, it then focusses on the high growth industry of the companies which this paper is made for.

The main difference between Greiner's target and the reality of the analyzed GM-SME is the time horizon, which Greiner (1972) and Churchill (1983) have chosen. They start from an early entrepreneur status and develop an organizational growth model for the future. For GM-SME this is not a valid approach because the main aspects are not mapped in these two models.



What is a real crisis for a GM-SME? From the interview material I can state: A real crisis for an GM-SME is when the owner or the manager has a low tacit skill level, or when the time for the successor is coming or was overrun (compare table 4.41 and figure 4.11). The second difference between the view of Greiner's model and the reality of GM-SME is the understanding of growth and the industry where both positions (LSE and GM-SME) are located.

The GM-SMEs which was analyzed are market leaders in an international high-tech environment. Compared to an LSE market, the GM-SME market is a smaller one, a so-called niche market. To be market leader in such a high-tech environment niche market means that your EBIT is higher as average, but the company growth is limited by the market size.

Therefore, even if your market share is big, total market value will be small compared to that of LSE in large international consumer markets, see following table 4.42.

Parameter	Greiner LSE view		GM-SME reality	
	Start	End	1 <sup>st</sup> Generation (+)	5 <sup>th</sup> Generation (-/+)
Time view				
Age of organization (Years)	1	20 (?)	20+	200+
Size of organization (People)	1 (+)	10.000 (+/-)	50 (+/-)	500 (+/-)
Stages of evolution	0	5	100 small ones	depends on the market / customer
Stages of revolution	0	5+	When active owner leave	As many owners or managers left
Growth rate of Industry	20%	20%	10 – 30%	10 – 30%
Market share	low	high	high	high
Tacit-Skill level (see 5.1, intuitive decisions)	Not in here as factor		high	Very high

Table 4.42: Comparison Greiner's base of industry, GM-SME view

Having developed the results of the research thus far, it would seem useful to revisit the Greiner model and its graphical presentation (see appendix 9.6).

**GAP 4 will be closed** with the development of a GM-SME growth model in subsection 4.12, because of the reasons mentioned under 4.11.4.

#### **4.11.5 Research Objectives, results**

RO: To explore the relationship between decision making, tacit knowledge of the owner/manager, intuition, and corporate growth in SME.

Result: In GM-SMEs there is a direct connection between tacit skills, the intuition of the owner manager and the decisions made. Accordingly, the corporate growth is connected to the tacit skills of the owner manager. Furthermore, in the long run the corporate growth is connected to the successor planning of the GM-SME owner's families (see figure 5.3).

- Sub RO 1: To explore the relevance of Greiner's Model (Evolution and revolution as organizations grow, 1972) for GM-SME in the research context.

Result: The model of Greiner (1972) could not be applied the reality of GM-SME in the context, see table 4.42 and the new developed STS-Model under subsection 4.12. The model of Greiner is relevant for the development of the STS-Model due to the essential points of view, i.e., management categories, evolutions and revolutions, model application result (see figure 2.7, summarize under subsection 2.7.1 and discussed in figure 5.4).

- Sub RO 2: Compare the interview result and the relevance of SUB-RO 1 as well with Churchill and Lewis' models of (Churchill, 1983) and show the differences, if evident.

Result: The differences were carved out and commented on table 4.41 and comprehensively presented in the above subsection. The relevance of this model was explored and the relevance in the research context is established as small and only for young GM-SME in phase "Y" (displayed in Figure 4.13).

- Sub RO 3: Analyze the evolution of tacit knowledge in SMEs and the relevance of the owner-manager's family.

Result: The evolution of tacit knowledge was worked out in the literature review under subsection 2.5.6 and was also analyzed for GM-SMEs and displayed in the summarizing figure 4.10 under family involvement, see figure 5.3 as well.

Furthermore, this thesis will contribute to knowledge by outlining a new model for organizational growth in GM-SME as I find that existing models (Greiner 1972, Churchill, and Lewis 1983) do not reflect the realities of the companies which are in focus here, see section 4.12 below.

### **Conclusion to findings**

We now know, that in the GM-SMEs studied, the influence of intuition, and corresponding to this, the tacit knowledge on decision making is essential to corporate development, growth, and success. We further now know that the ability of the owner managers to decide intuitively is developed during their, their parents and their grandparent's (and sometimes over multiple generations) shared lifetime phases and was transferred during this time of togetherness into usable tacit knowledge for the active owner manager (see figure 5.3). It seems that this influences the GM-SME in total and especially its employees in their trust and motivation to support the success of the GM-SME they are working for. It is probable that this phenomenon also influences the knowledge transfer and influences the way of sharing information in the GM-SME.

We now know that none of the existing organizational growth models fits to the development of a GM-SME in the research context, it seems to be possible to adopt the current scientific knowledge to a new organizational growth model. Under usage of the provided insights out of this research a GM-SME growth model is developed and presented later in this chapter, see subsection 4.12.

The analyzed seven GM-SMEs interviews gave a deep insight in the world of family-owned and family-managed high-tech corporations. As described in chapter one, this part of the German industry is one of the most innovative and competitive industry parts. The roots for this amazing ability on the one side to compete international and on the other side research and develop in rural areas with people out of the region, is impressive. The experience of how GM-SME take intuitive decisions and enable their organizations to grow by using tacit knowledge, which is an understanding built through education and on-the-job experience and transferred from one generation to the next.

### **4.12 Description of the STS-Model**

During the analysis of the results, it was not possible to close Gap 4 directly. To be able to do this a new model of company growth in this area has been developed in the STS-Model below.

The STS-Model shows the relationship between intuition, acquiring tacit knowledge and the ability for a successor of the current manager to be able to decide intuitively, and successfully. Furthermore, the model shows the time period for transition of knowledge and the danger of early or late transfer of responsibility. In figure 4.11 is displayed the optimal way (path 1) and variants of a semi successful development (path 2 with the variants 2.1 and 2.2).

After defining the main differences between the existing models, particularly considering the Greiner model shown above, a graphical presentation of the “The forces to grow a family business over generations” is developed from the analysis in this research and is shown in figure 4.11. analog to Greiner’s model the discovered GM-SME model (figure 4.13 starts in the founding phase when the entrepreneur enterprise is small and young, the “Y” phase. The first crisis may change the way of the company in direction one or two and the second crisis may have no impact like this is displayed on direction or like we can on path no. 2 it becomes difficult on path 2.2 or increase the business on path 2.1. for a long period.

In comparison to the clear and structured revolution and evolution steps of Greiner this model is richer and provides a more representative illustration of the pathways in GM-SME development. There is often no change in management and no communication or delegation crisis, the owners or the managers of the GM-SMEs are leading and communicate better and better in their active period. Especially when the GM-SME is after phase Mature I and, on the way, or after the Mature II phase the family and the tacit skills in these old and educated organizations solve every crisis which could take place in business.

As mentioned before, if the owner-manager has sufficient abilities to develop a new business or hire the right research and development employees or the best financial officer, the GM-SME will expand their market leadership, because this company is the largest player in its high-tech single know how niche market and is able to set new trends.

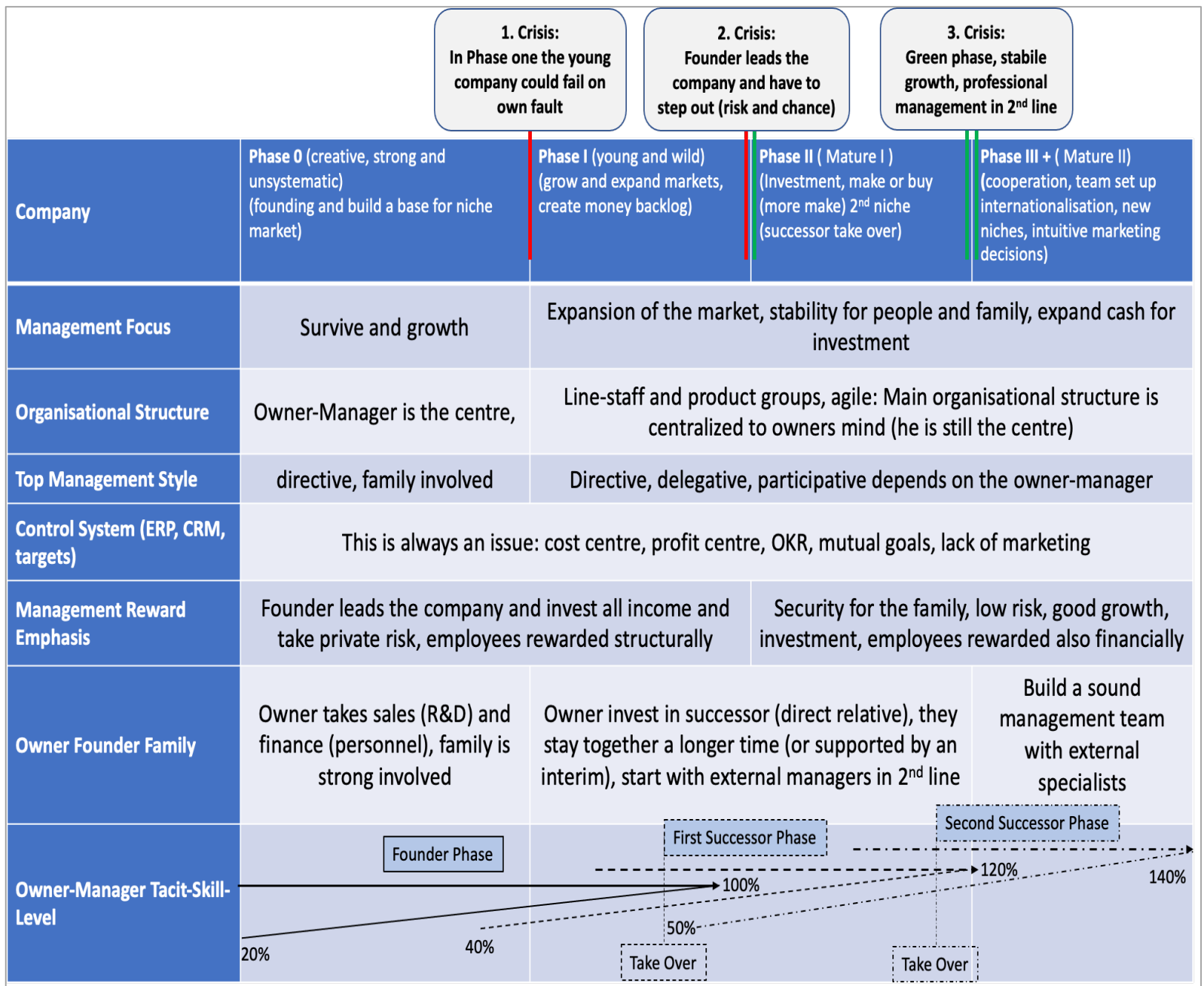
The below figures 4.11, 4.12 and 4.13 in short:

In figure 4.12 the results gathered from the interview analysis, triangulation, and interpretation, as done above into a general view on the conditions of a GM-SME. This table for organizational practices was developed comparable to Greiner’s view and based on similar view based on the presentation in figure 4.11 and the related explanations above. As mentioned above in a GM-

SME the growth phases and the crisis phases are very different to those that Greiner and Churchill describe and is proposed based on the empirical material provided by the interviews.

The phases are different in period length and influencing triggers as featured in figure 4.13 Especially in the graphic connection between both figures it becomes obvious in which period which phase a successor has to be in place.

Figure 4.11: GM-SME business growth in best case (family view) with stable successor take over phases.



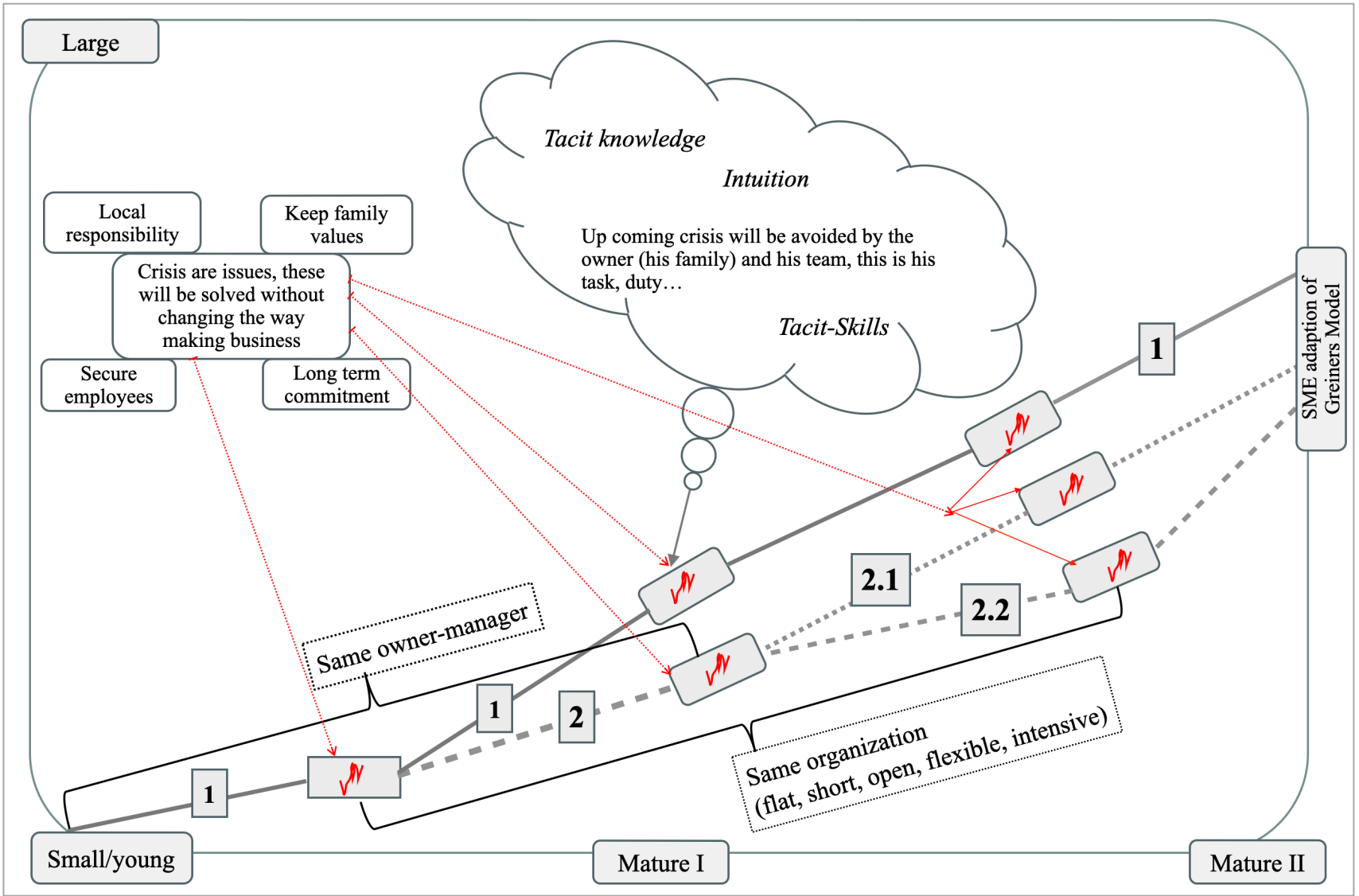
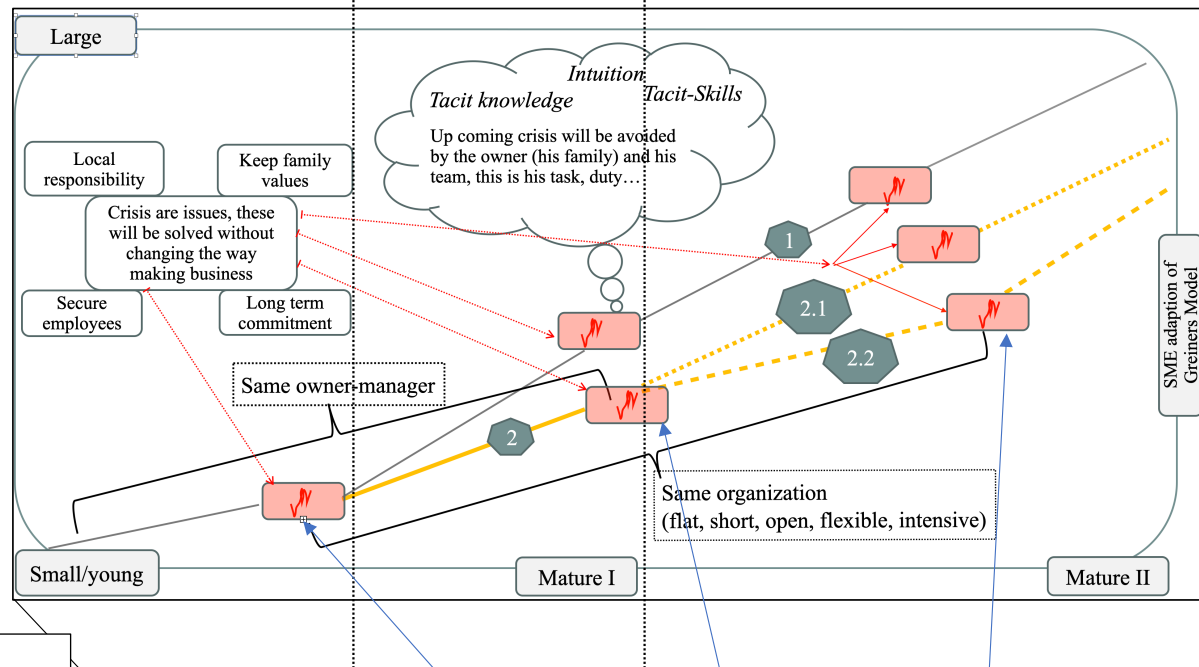


Figure 4.12: GM-SME business growth in variants, depending on owner manager tacit skills and timing.

Time Period, crisis, and development in relation to management factors

Y

The research area



Graphic connection of time and phases of the two figures.

1. Crisis: In Phase one the young company could fail on own fault
2. Crisis: Founder leads the company and have to step out (risk and chance)
3. Crisis: Green phase, stable growth, professional management in 2<sup>nd</sup> line

Company	Phase 0 (creative, strong and unsystematic) (founding and build a base for niche market)	Phase I (young and wild) (grow and expand markets, create money backlog)	Phase II ( Mature I ) (Investment, make or buy (more make) 2 <sup>nd</sup> niche (successor take over)	Phase III + ( Mature II ) (cooperation, team set up internationalisation, new niches, intuitive marketing decisions)												
Management Focus	Survive and growth	Expansion of the market, stability for people and family, expand cash for investment														
Organisational Structure	Owner-Manager is the centre,	Line-staff and product groups, agile: Main organisational structure is centralized to owners mind (he is still the centre)														
Top Management Style	directive, family involved	Directive, delegative, participative depends on the owner-manager														
Control System (ERP, CRM, targets)	This is always an issue: cost centre, profit centre, OKR, mutual goals, lack of marketing															
Management Reward Emphasis	Founder leads the company and invest all income and take private risk, employees rewarded structurally		Security for the family, low risk, good growth, investment, employees rewarded also financially													
Owner Founder Family	Owner takes sales (R&D) and finance (personnel), family is strong involved	Owner invest in successor (direct relative), they stay together a longer time (or supported by an interim), start with external managers in 2 <sup>nd</sup> line	Build a sound management team with external specialists													
Owner-Manager Tacit-Skill-Level	<table border="1"><caption>Owner-Manager Tacit-Skill-Level Data</caption><thead><tr><th>Phase</th><th>Start Skill Level (%)</th><th>End Skill Level (%)</th></tr></thead><tbody><tr><td>Founder Phase</td><td>20%</td><td>100%</td></tr><tr><td>First Successor Phase</td><td>50%</td><td>120%</td></tr><tr><td>Second Successor Phase</td><td>100%</td><td>140%</td></tr></tbody></table>				Phase	Start Skill Level (%)	End Skill Level (%)	Founder Phase	20%	100%	First Successor Phase	50%	120%	Second Successor Phase	100%	140%
Phase	Start Skill Level (%)	End Skill Level (%)														
Founder Phase	20%	100%														
First Successor Phase	50%	120%														
Second Successor Phase	100%	140%														

Figure 4.13: Model of Growing GM-SME and Organizational practices from founding to Mature II level, set in a relation



## **The contents of figures 4.11, 4.12 and 4.13 in detail:**

### **Time period (the research area)**

All the seven interviewed companies have already left phase 0, company one is still in the founder leading phase and the efforts of the founder to make himself obsolete are documented in the interview results. The other GM-SME are in mature I, mature II and later phases. Thus, the interview result offers much data for the base of the STS-Model.

Without the STS-Model, the most difficulties will have the founder of a mature GM-SME. This is because there is no model that fits the demands of a GM-SME. Now there is one and the advantage is, this model is based on existing and widely proven models for LSE business and sound research in the business sector of GM-SME.

Hence, the period of the model development basic information encloses up to 3 generations of owner manager, means from 2 up to 5 decades of corporate development. This sounds long, but if we take the necessary time for transferring tacit knowledge into consideration, the managing owners must speed up the preparation and education of their successor.

### **Phase 0 until Phase Y**

Before phase Y (see figure 4.13) the founder leads the company, and the family is involved highly in operations and it's on a low base on behalf of strategic issues. This is because the business is new, and the owner manager takes care of the most main tasks himself. After phase Y or better period Y the transfer of tacit knowledge must start. In the family or to an interim if the target is to make the start up to an GM-SME.

### **Phase I**

In phase one (see figure 4.11) the GM-SME is 20 years + and already disposes professional structures in organizational, processes, and professional business software. As we learned in chapter 2, the GM-SME could have weaknesses in marketing international approaches. The founder still leads the company by his own and preparing his successor, in the beginning of phase one the successor was able to build up a level of 40% tacit knowledge in comparison to the owner manager. In the takeover phase this could be 100% or more, this is dependent on his relation to the owner manager and his own cognitive abilities (see under subsection 2.5 ff.).

This successor can use available specialists in research and development, operations and administrative staff.

A crisis occurs if the founders' step of the GM-SME without a chance to transfer the main parts of their tacit knowledge to the successor. If the family is deeply involved in daily and strategic business the crisis is not as dangerous as it could be when there is not enough parallel time for the successor with the founder.

## Phase II

As we can see in figure 4.11 in line owner manager tacit skill level:

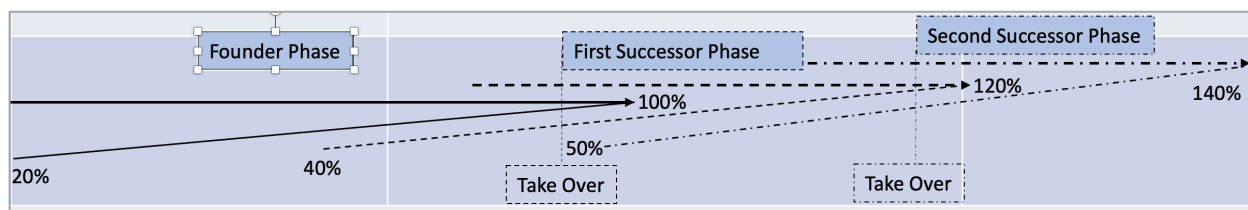


Figure 4.14: Section of figure 4.11, increasing tacit skill level of the successor in stable family managed GM-SME

In the best case, the founder is still available when first successor will be in selection or growing phase (I like to emphasize this, because the GM-SME best case is the children are willing to take over and also be able to do so, but the interim or two decades by an external manager could be necessary (for example: an economic crisis occurs and the GM-SME need special know how from outside the family)). In the section of figure 4.11 in we can see a foreseeable phenomenon in figure 4.14; a successor achieves a higher tacit-skill level than the founder.

After phase two the influence of the family will move into the strategic, supervision or board level. Stable internal hierarchy structures are established, and the GM-SMEs internal DNA is created and could be used for onboarding of new employees.

## Phase III

The GM-SME is in phase three international successful and build up international organization. This is attended by the feeling of overwhelming organizational and personnel issues (problems). In the interview I heard two times “...I am feeling that we are in a red tape crisis...”.

Nevertheless, when an organization grows the 2<sup>nd</sup> management level offers possibilities to build a sound and powerful management team with professional know-how at the latest level.

In this stage a GM-SME with more than 250 employees is comparable with much larger entities in means of professionalization in all management disciplines. Especially human resource and finance are on a high level. If the successor line was linear and positively developed, the owner manager is in an encouraging position. The GM-SME is internationally successful and can grow or stay with a sound EBIT in the comfort zone of a hidden champion.

### **Later phase III**

I would like to investigate the later mature phase and come back to Greiner's last sentence before he concludes his paper "*...And what about the managements of very large organizations? Can they find new solutions for continued phases of evolution? Or are they reaching a stage where the government will act to break them up because they are too large....*" (Greiner, 1972, p. 46).

I like to predict that a GM-SME will not reach the size that the government step in and smaller the company, I think the company expand in the niche where they are or develop a new product found a new company to come back into the founder's phase.

What is a danger through all phases, is the issue, no successor, no one like to take over, the GM-SME will be sold. But also in this case, do not forget the tacit knowledge of the family and the active owner manager.

#### ***4.12.1.1 Organizational and time relation***

##### **Management focus**

The management focus in phase zero (figure 4.11) of a GM-SME compared to a SME is nearly the same and follows the results of the literature review results and the model of Churchill (1983) (subsection 2.7.2). In later phases the GM-SMEs focus on financial security and long-term development for products, markets (customers) and production abilities.

Furthermore, the employers are in the focus of the GM-SME's management, especially regarding talent management and networking in local regions, political and educational (University, LSE). Nevertheless, the family stands in the middle of all activities and decisions.

##### **Influence of the owner-manager timing**

The main trigger for growth is the know-how and the tacit skills of the owner manager. The genuine growth of the market of the GM-SME is responsible for the possible rate of business

increase. The second trigger for long term growth is to avoid a crisis when the first successor takes over. This depends as well on the ability of the current owner manager of the GM-SME. When the successor is not ready to take over the responsibility from his predecessor a crisis will appear.

### **Top management style and organizational structure**

As shown in table 4.39 the top management style of the interviewed GM-SME was focused on the owner-manager and changes after succussing periods. The existing systems in place will persist longer or unchanged (organization, people, reports, meetings, and leadership), because of the existing company DNA and the education (learning by doing) status of the successor. It is at least his system and the best system to use.

### **Owner-founder-family**

The long leading period of the founder is due to the involvement in many working fields and mostly connected to crucial corporate know-how (technical, marketing, finance) of the founder. Unfortunately, I had only one founder still lead the company in the research portfolio, but here I can say, he was able to take over many jobs when it comes to problems, because of his sound knowledge in many disciplines.

For the other GM-SME in this research we are in phase “Mature II” and the transfer of the manager position to the new owner manager was a known process in this companies. Many of these GM-SMEs have had experience with external managers in 1<sup>st</sup> and 2<sup>nd</sup> level from outside the company.

### **Owner-Manager Tacit Skill level**

In the lowest line in figure 4.14 is pictured how the tacit skill level develops in a GM-SME over generation. The founder starts on his personal tacit skill level and ends up at 100% (this is the maximum he can achieve, and it is the base for my view on this value for the successors). The founder’s successor is starting on a higher value because of his education and being part of the owner family. The successor of the successor starts again on a higher level compared to his predecessor and is “maybe” able to achieve an again higher level (here in figure 4.14, a level of 140%). The “maybe” in the previous sentence is due to the general ability of the new owner-manager to acquire tacit skills and his personality.

If I constitute the result of the seven companies I analyzed and ask: Is this result, as part of the STS-Model, transferable into other GM-SME and into SME in same or related industry in a similar mature phase? If the answer is a yes, then this model could be used for assessing past developments and to predict the future development of the focused company.

All interviewed companies were already in phase mature I, mature II, and later phases. This model will show an evident situation for the case of interest.

# 5 Discussion

The results of this dissertation show us the important role of the implicit knowledge of the GM-SME owners and their families. They continue to show the considerable influence of the implied knowledge of the entrepreneurs on the decisions made in GM-SMEs. This chapter considers the broader conclusions that have been discovered on the basis of the interview material. The essential classification of the criteria of this study are shown in Figures 5.1, figure 5.2 and figure 5.3.

The task is to translate these results into usable statements that both do justice to the academic aspect of the research and give entrepreneurs recommendations on how to use their skills and experience (which have been created over generations through implied knowledge) for the benefit of the company and its employees. To classify the academic aspect of the research topic, we go back to the outcomes of the literature review and the associated results of the interviews, which were summarized in subsection 4.11.

In the following section 5.1 I discuss the most important aspects from the perspective of the knowledge gained and their academic and practical usability. One result of the present research is the statement that there is no applicable model to map the essential criteria of company growth for GM-SMEs. As a reference to achieve this result, the study of Greiner (1972) and the models and research based on his work were used. Only the elaboration of Churchill (1983) evaluates, with the theories put forward by Greiner, the growth disorders and growth impulses of SMEs, but even this model cannot offer any usable application to companies in the research context, because it essentially refers to young companies and not to those that are long established. For this reason, based on the available research results, a model for GM-SME was developed, which anticipates the existing growth disorders and growth impulses (see subsection 5.2). This gives the GM-SMEs the opportunity to compare their own development and long-term strategic planning with the model and to reduce negative influences and amplify the positive.

The use of the STS-Model when considering past influences is also supportive, as these also impact the future of the company when making important decisions, i.e., past decisions may have to be reversed.

## GM-SME organizational growth model, a new approach the STS-Model

Greiner (1972) stated in his paper on page 45 and 46 (see citation under 2.7.1), how his model could avoid wrong management decisions which seem to be right today but could cause problems in future. He further stated it would be better to predict the outcome of today's decisions for the future development of the company. A decision could be "... *not to grow...*" or "... *to grow, they may do themselves out of the job...*", as mentioned in earlier chapters and as shown in the interviews, in GM-SME the situation is different.

- The owner manager uses mainly intuition and tacit knowledge to drive their company.
- The owner manager is leading the company to prepare it for their successor.
- They must know very early who his successor will be to transfer their and his family's tacit knowledge, this takes a while and needs a long-lasting strategy.

As also mentioned in subsection 4.12, it could be necessary to bridge the management position for a while, because the successor is too young or not willing to take over the GM-SME after the current owner manager passes over the business.

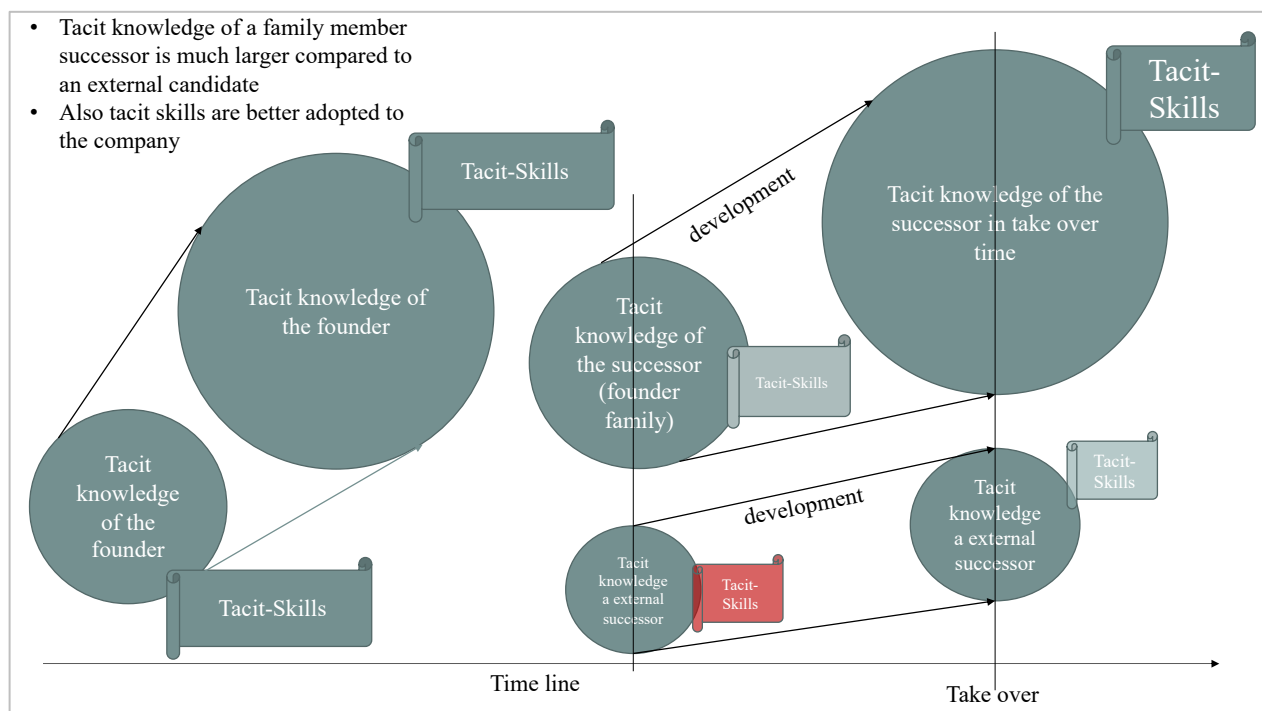


Figure 5.1: Development of Tacit knowledge and Skills in GM-SME

As we see in two interviews as a result, "... we hired an external successor for me ... but he failed...". We know now, based on the reviewed literature, tacit knowledge could not be

transferred easily. It needs the right person, trust, time, money, and the right mindset of the current owner manager, see figure 5.1.

At the end of this subsection, I would like to make a short excursion to the initial problems of the German Mittelstand to find successors (see figure 5.2). The findings show us the necessity of this research and the necessity for a new organizational growth model for GM-SME.

The development of this type of knowledge in this setting can be vital. Whilst an LSE may easily obtain a contract with a major consultant firm like Boston Consulting Group, McKinsey, a GM-SME will be immediately rejected from these paramount consultants (I tried it several times, *“oh an offer for such a small account and only for one project, no thank you for asking”* ....).

So, it is crucial for the owners to know why their companies are strong and how they could grow in the best way. Therefore, an applicable model, like that of Greiner can help the owner-manager to lead their companies to a successful future.

The research gets an unexpected new topic in discussion phase. By evaluation the influences and usage possibilities of the STS-Model the shortage on successors in SME Germany and the idea that an early planning and knowledge about tacit knowledge and its use could open new ways for finding a successor for the 250.000 SME searching for one.

By analyzing the influence of decision making on organizational growth of GM-SMEs it becomes clear that each single decision of the owner manager has an important impact on the corporate success and future development of the company. Going deeper into the field of GM-SME the influence of the owner manager in all disciplines in leading a company becomes obvious. The dependence on the abilities of the owner, their knowledge, and foresight for future tasks also becomes clear, but what is not as obvious as it is on first sight, is the influence of tacit knowledge on the viability and growth. The tacit knowledge of a three generational GM-SME is one significant success factor and have to be transferred to the next generation, with a good timing and an education plan.

It is a common problem in Germanys family owned Mittelstand companies that a successor is not in place. This, a successful acting international company with further growth potential has to be sold after generations of family driven business growth. As mentioned before, hundred thousand SMEs are in a successor crisis. More than 50% per cent of the current owners would like to have a successor out of the family, but there is nobody available.



*“Company succession within the family, without a doubt the defining picture of generational business transition, is increasingly fading into the background. Only 44% of owners currently considering succession would now like their business to pass into the hands of a family member. The previous clear preference for family business succession arrangements is thus gradually losing more and more ground in SMEs.” (Schwarz, 2019, p. 3)*

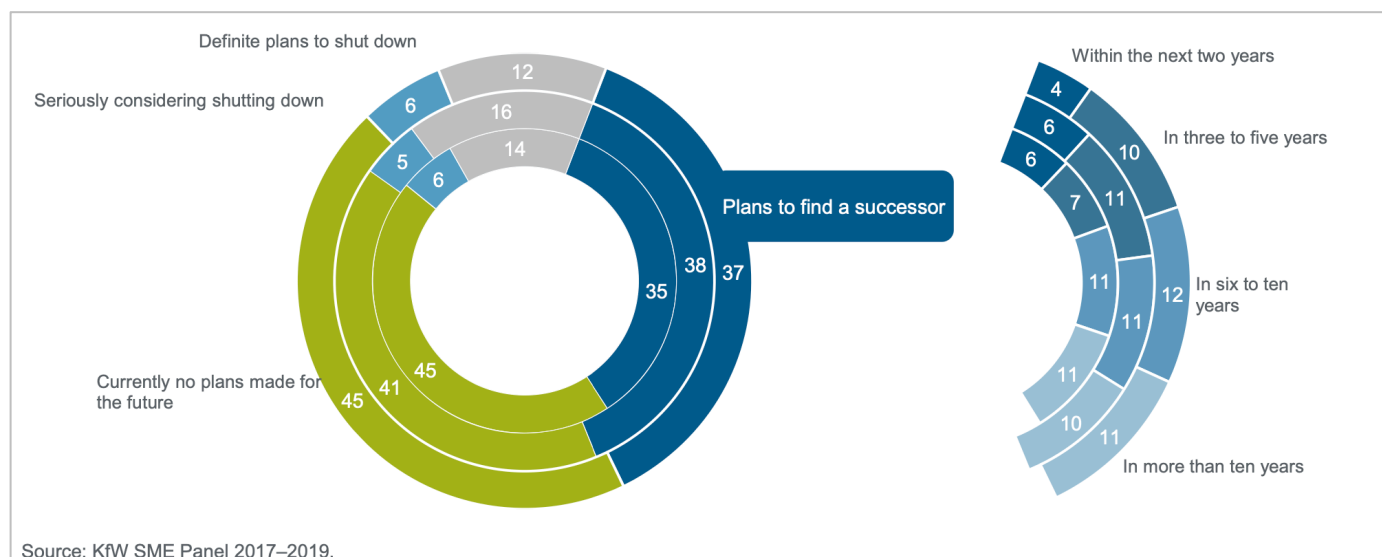


Figure 5.2: Percentage shares in total SME sector; diagram on the right: Breakdown of planned successions by timeline (Schwarz, 2019, p. 1)

The lack of successors is a long-term problem and needs a solution, one perspective is the results of this research. For an owner manager this means being prepared to develop a long-term plan maybe with an external interim successor to avoid losing family tacit knowledge and an advantage in competition.

Building up tacit skills and intuitive knowledge helps to develop long term stability and growth; but it does have difficulties when a successor needs to be found. Especially if this is outside the family. The problem is located at a different level to that of the question discussed here, one major problem of takeover by external investors is, the GM-SME is losing its core know how when an external investor takes over, this knowhow of generation long tacit knowledge. Nobody can tell, what this knowledge is about but it's like the iceberg (Haider, 2009) in the ocean the owner manager is not aware of the extent of their tacit skills and knowledge.

So, to summarize the research so far, it has studied the phenomenology of growth in small businesses. The standard models of business growth adopt a model that considers such growth to

be manifest through several crises. In examining this view in the sample studied, it seems that this view is partial at best. What it neglects is the long-term knowledge development in this type of organization.

As reviewed in the literature the classical model of business development is that of stage growth (Churchill, 1983; Flamholtz, 1990; Flamholtz and Randle, 2015; Greiner, 1967). From my experience in this type of organization, this form of business evolution did not fit their observations of how business develops. The findings from this study have provided sufficient evidence to support this initial contention. The issue here is if the stage model of firm growth did not apply through organizational crises, then an alternative forms of business development should be discovered.

Several small business studies pointed the way to an understanding of this phenomena. Some of the literature reviewed pointed to this situation. Entrepreneurial management has been the formation and consolidation of experiential knowledge (O'Dwyer, Gilmore, & Carson, 2009a).

Several factors about these kinds of business have already been noted. Firstly, the owner has a more significant role compared to a larger business. Thus, the growth of the company is highly related to the skills of the owner (Per-Anders Havnes, 2001) and are significantly dependent on their networks, customer observation, and accrued experience (O'Dwyer et al., 2009b). This is one of the main hurdles for GM-SME, that owners often do comprehend which strategy to pursue. As noted above these limitations can become “...a barrier to real growth...”.

This consolidation is often considered to produce a holistic form of knowledge, often contrasted with an analytic style (Hallo and Nguyen, 2022; Hodgkinson and Sadler-Smith, 2018). The formation and depth of experiential knowledge, as a practice orientated endeavor (Berglund, 2007), is considered to be the key competence of the entrepreneur. This experiential knowledge is developed substantially through intuition as suggested by several theories of managerial decision making, particularly that of Simon (Simon, 1987) who considers that rational and or analytical and intuitive thinking are not employed exclusively. A number of other authors also discuss the issue of intuitive decision making (Brouthers et al., 1998, p. 136).

The way in which the owner-manager inspires the people around him makes the GM-SME strong and flexible in international markets, one important quality of a successful owner-manager is the

way they lead the first hierarchy of people and how they communicate with the company's workers (*Mintzberg et al., 2009*).

In this subsection the results related to GM-SME are gathered. Apart from the general points raised above, I could find no references to family owned German Mittelstand SME and none to the influence of the family, respectively the last generation and their influence on the active owner-manager. I am sure based on my professional observations and the discussions with the interviewed owner-managers that the help and support of parents and grandparents over generations substantially influences the abilities of the owner-manager.

So, the literature provided different conclusions on company growth. The consideration of the holistic nature of experiential decision-making contrasts with the analytical style that proceeds by articulating the process of coming to a decision. There seems to be a connection between experiential knowledge and tacit knowledge, in that knowledge through experience cannot always be expressed. This research found that the importance of intuitive knowledge, which can be identified as unstructured decision processes, and there is some support for this in the literature (Fábio de Oliveira and Popadiuk, 2020, p. 33), especially some hints to tacit skills and Mintzberg's unstructured decision (USD) process (Mintzberg et al., 1976).

The study findings add considerably to the current understanding of small firm growth. It was found that in this industry the development of the firm was much longer term, often over multiple generations, and was based on the development of the owner's intuitive knowledge. The industry, and its environment, within which the firm operates will have an effect on the development of the firm (Ali and Varoğlu, 2022).

Intuitive knowledge is often considered to be holistic because the process of rational decision making is articulated both into separate elements and is construed in terms of language. This study found that there was a difference between three factors in small business operational understanding. Those of the family involvement in the business, intuitive decision making, and the amount of tacit industry relevant knowledge gained. Some authors considered that knowledge developed in the firm consisted of four domains: problem-solving, creativity, moral judgment (Dane and Pratt, 2009; Haidt, 2001; Klein, 2003; Reynolds, 2006; Sinclair et al., 2010; Sonenshein, 2007) and that intuition should be conceptualized as a multifaceted rather than a unitary construct (Gore and Sadler-Smith, 2011).

## 5.1 Interpretation of the research results

The two main research considered in sphere three (organizational growth of a GM-SME), Greiner (1972) and Churchill (1983) offered the base for the understanding in sphere one (decision making) and sphere two (intuition, tacit knowledge), what limitations are necessary, and which key points are essential ones. As shown in the above subsection, based on these two papers combined with the results of this research an adopted model for organizational growth could be set up. This model probably offers the chance for GM-SME managers to anticipate future necessities for sustainable growth, for example by the education plan of the successor of the owner manager in charge.

By analyzing the relevant literature connected to sphere two a direct connection to SME or GM-SME was not available, only (Nonaka and Takeuchi, 1995) present a wider insight in the functions and roots of intuition and tacit knowledge in corporations. Regardless, their book uses examples from larger entities like Honda. These examples were very useful for this study especially for the understanding of the connection between owner managers intuitive decision the use of networking, family support and the difficulty to transfer personal knowledge into a GM-SME workforce.

The interview analysis shows the weakness of a GM-SME in how to organize know-how transfer from one core person to another. As explained in Nonaka (1995) there is a certain trust in the important employees themselves “...yes we know he is the only one who know this, but he will stay ...never had problems to like this...”. In SME-specific literature the focus lies on the owner manager and their ability to use intuition, because of the lack of strategic planning and a smaller team where profound market research is not possible. Seldom was a link found between intuition and tacit knowledge and if there is a specific connection described, no further information or deeper insight was given; see figure 5.3.

In this research, the connection between intuition, tacit knowledge, decision making, and organizational growth was intensively researched and set into relation. As base for this relation is the interview results of seven leaders of successful GM-SME. The possible implications on GM-SME in the context will be discussed later in this chapter.

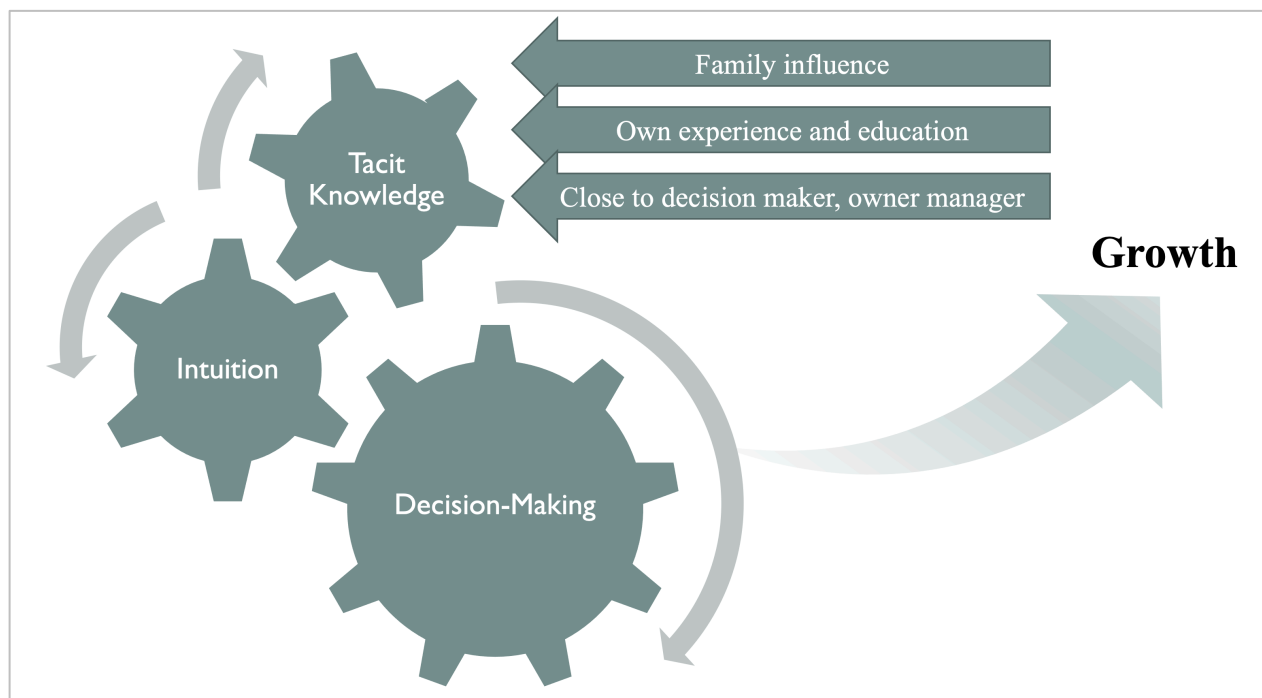


Figure 5.3: Express the relation between growth, decision-making and intuition

The available literature for decision making, here sphere one, is large, diverse, and similar to the point before, there is no specific literature or research in relation to GM-SME, as shown in the literature review, chapter two.

The conclusion in subsection 2.4 gave some hints and the question: "What is the right approach?" to make a good decision and: "What is the reality in the GM-SME world?" is addressed to the interviews. The graphs in figure 4.10 (overview results interviews) indicate a connection between family involvement and intuitive decision making. It seems to be possible that the tacit knowledge level is also influenced by family involvement, hence the owners are used to deciding carefully but intuitively, because they have the full responsibility and are used to making gut decisions. In one Interview, in a side discussion with the owner manager, I asked: "What do you do when you are struggling with a decision?" And he said "...I go and ask my mother... she don't know the issue, but she is a good listener, and she is used to take responsibility...".

However, also in the above discussed sphere one is a specific GM-SME situation.

From a separate, maybe, new viewpoint, by taking the learnings of this research into consideration, one of the main issues beside the tacit skills of the owner managers is: What is owners, owners' family and the company's ability to learn new things from outside: the world

outside of the perception from owner, the family and employees (if they tell him, what they know or think). In being dependent on tacit and intuitive knowledge this could make the firms too insular. In other words, besides the networking, the tacit knowledge over generations, the trust of the employees and training programs, education systems, how will a new point of view enter the GM-SME. Two of the seven companies have tried or already decided to hire an external manager, one is already managed by an external (means outside the family), probably this is a path to follow up in this discussion.

It is possible that no family members are available now and forever. In this case the question is, how do we get an external manager connected with our tacit knowledge, and to which level is this possible. In this case it is crucial that the owner family try to hire an external person with good fit in all areas, personality, mood, strength, values maybe similar experiences to pass over as much as possible of the family tacit knowledge.

From the interview material important information was extracted, analyzed, clustered, and interpreted, but in every session, I heard again the audio recording of the interviews, new insights were created, this was an advantage of the decision not to transcript the interviews. A transcription is clean, it's not possible to listen between the words, and sentences, hear the voice and create a new idea. One of these ideas was born during interview number four "*... we hired an external manager to succeed me, but it failed ...I am not sure if we do that again...maybe I try one of my current managers ...*".

The benefit of recruiting an external manager is that it brings in new ideas. This also has a downside in that they don't possess accumulated know-how (nothing of the valuable tacit knowledge) and must follow the advice of the owner manager. Initially they are not able to decide by intuition due to lack of particular experience, but they will dive deep into the data and make plans, scenarios based on sound market research. In Figure 4.13, after phase "Y" the successor phase is, I guess, 5 years for the family member. For an external manager 1 year, without the tacit knowledge born from the parallel time with parents and grandparents. In the light of this observation, when there is the recruitment of external management, it is probable that the successor program for new managers in GM-SME must be re-engineered and the STS-Model given here, must more closely follow Greiner's-Model.

It seems to be that the GM-SME must have an early plan for succession, especially if the successor is expected to be recruited in the family, this could open the chance to get early external know how. An external manager can avoid being stuck in a family silo and avoids the reduced growth and future sustainability. This could be a matter of timing. As outlined in the two examples above, if a family successor is not ready to take over the responsibility from the today owner manager, it is crucial to avoid an ad hoc take over by a very young person. In the new model the time horizon for a skilled successor is displayed. The family can bridge the time between a very young owner manager and a too old owner manager with an external manager. If the major strategy is to bring young family members in place, children and grandchildren can learn outside their own company and come back, this is a second chance to get in external sustainable knowledge.

An advantage is the external manager brings in new ideas and knowledge streams from their own life and professional experience. This could really be a win-win for GM-SME, the family, the owner managers, and the future successor. Therefore, a well-organized know-how and ethos transfer program, including decision making processes to support information management, and distribute tacit and explicit knowledge in the corporation, as written under 2.4, a rational process is more efficient, and it seems that a combination of rational and intuitive procedure can create a good outcome.

*“... As our study shows, small firms can improve the quality of their strategic decisions by increasing the rationality of the process...Small firm decision makers must rely less on intuition and more on information provided by analysis. While intuition is often vital in establishing small firms, for continued growth a more analytical approach is required. Since the environment is changing rapidly, information gathering and analysis may provide a better picture of business opportunities and threats than intuition, which is usually based on past experience....”*  
(Brouthers et al., 1998, p. 137)

The results of this research could probably be used to set up a strategy for sustainable future growth and as well for strategic planning of know-how transfer and employee development. The future challenges for GM-SME, which could include staff shortage, international competitors, necessity for new work models (home office, agile work models and work life balance) will need clear and flexible strategies for the GM-SME's corporate structure.

In this research the relation between organizational growth and tacit knowledge of the owner manager by conducting intuitive decisions in a GM-SME is proposed in Figures 5.3 and 5.4 above. Furthermore, the influence of the owner manager's family on her ability to decide intuitively is described and an organizational growth model was developed.

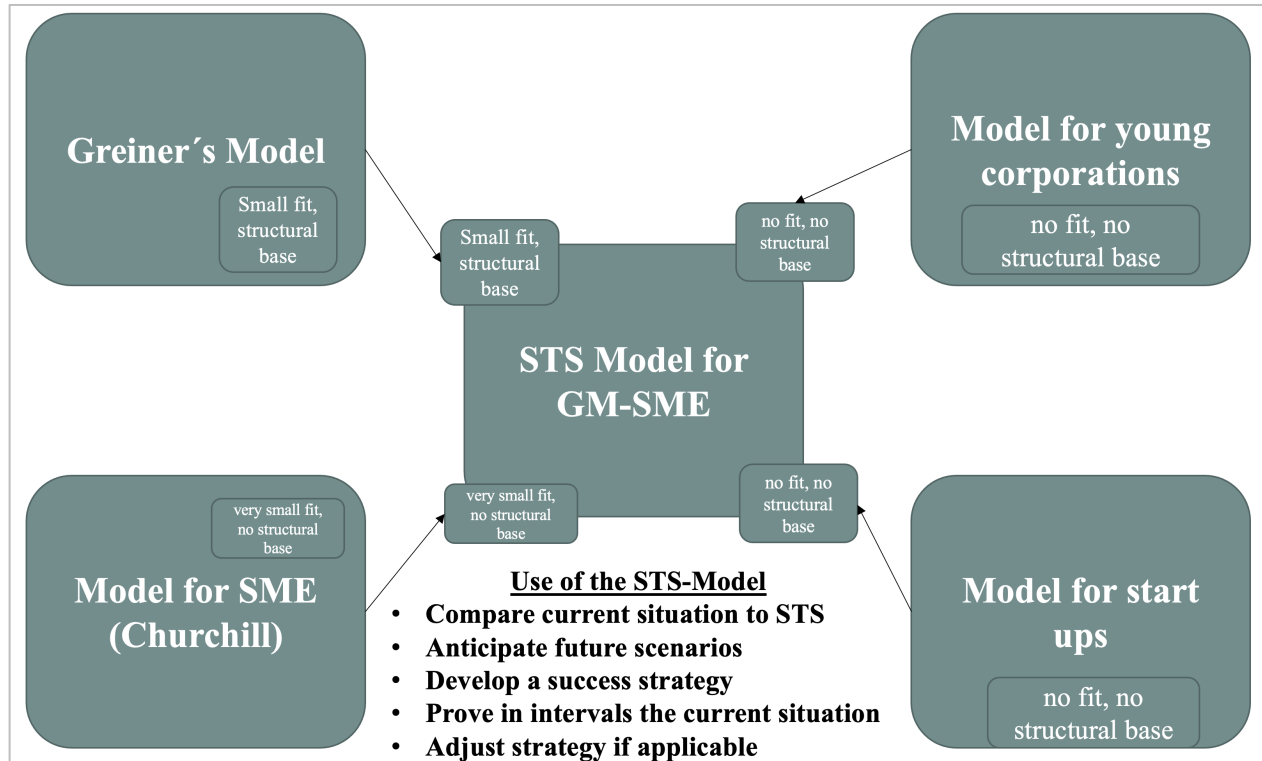


Figure 5.4, Overview of influence of existing models and usage recommendation for STS

Coming back to the statement of Greiner, cited in first paragraph in chapter 5, the STS-Model could avoid wrong decisions in organization development, successor education and business strategy which seems to be right today but could cause problems in future. This model also opens the possibility to save the generation-wide tacit knowledge for the good of all the GM-SME's employees and for the owner family. It could also give a hint to the founder when the time to plan for a successor is at hand and time for them to step out of the enterprise.

As shown in above figure 5.4 the possible way to use the STS-Model is quite similar to the five forces of organizational growth with an assimilated time and focal point for preparing the GM-SME for future growth. Because GM-SME have no crisis in phases as we could see in Greiner's model and if the company is aware of this advantage (having a long and stable management with tailored tacit skills) a very successful future is possible.



# 6 Conclusion

The research brought out several new sights on GM-SMEs by analyzing the interviews from the “3-spheres” and by challenging the Greiner-based growth models in a retrospective approach to the intuitive action of the analyzed companies.

However, this research opened new insights in a sector of intuitive decision-making, the influence, and the creation of tacit knowledge in GM-SME and the importance of the tacit skills of the owner-manager.

Now we know the way how GM-SME use decision-making to grow, this is realized by establishing the relationship between communication, leadership, explicit knowledge, tacit knowledge, and the use of the major skills for intuitive judgment, the so-called tacit skills.

Now we know that GM-SME transfer tacit knowledge from one generation to the other to enlarge their competitive advantage by expanding the core know how of the GM-SME management and the owner family.

An STS-Model for GM-SME has been developed. We get this by challenging the existing models for organizational growth (Greiner 1972 (updated 1998) and Churchill (1983)). By challenging these two models with the interview results I got evidence that these two approaches are not applicable in describing the GM-SME environment and offer not a useful path to create future success for GM-SME.

To achieve all this new knowledge, I have had to look to my own views and thoughts based on the results of the literature review and the interview analysis. After asking myself the question for the first time 30 years ago:

How do (at this time I only asked this for managers) (owner)managers make important business decisions with complete conviction, but without any market research, or consultant recommendations and are still successful? This question asked 11 years ago was the starting point for my doctoral journey.

Maybe this is the reason because a large part of the thesis asks obvious questions with obvious answers for daily business, but I was able to find the obvious part in the literature as shown and discussed before, but the full answer lays:

- in the combination of the obvious and current state of this research and in the literature,
- in our tacit understanding of decision-making, intuition, and growth,
- in the results of the analysis of the interviews and the model of GM-SME organizational growth over generations which I developed in this thesis.

In a competitive world the right decision for the right product developed at the right time could make the difference for an ongoing and growing business. This is not the only viewpoint for making the right decision, also the workforce and their families are affected persons in a decision-maker's environment.

The founders, owners, and manager of small and medium sized enterprises in Germany stand for 93% of the companies and for millions of people being connected or active in this so-called backbone of the German industry. The employees in GM-SME make decisions in their own working field every day and the managers make decisions with a corporate influence, maybe not daily. To understand the parameters and the influences on the owners or their managers in this diverse and tensional field of responsibility a research sector was selected which will offer a quite general view.

It was known before the research for this thesis started that in the machine tool industry and in the mold and die making industry a large quantity of family-owned and-managed companies grow over generation and lead an important sector in German Mittelstand. I was able to be part of this sector for more than 25 years and I know in detail about the "intuitive" way of working in this sector. It was rather remarkable to realize after the first literature review results that the intuitive way of deciding strategic investment is shown as "the wrong way" of doing business in some papers. Also notable was that mainly large entities had been researched or small companies in countries without global influence in their business. Some of the companies which are part of this research are world market leaders in their fields and this over generations or like company one has become such leaders in only 20 years. Also, a remarkable detail is that only some of the international companies have a business plan and a strategy paper.

During the preparing of the topic of this thesis the literature review reveals a lack of understanding of the relationship between company growth, intuition, tacit knowledge, and the strategic decision-making processes (SDMP) in GM-SME, as well as of the influence of the owner family to the interrelation of these three spheres was found in literature (see under 2.5.6 (Family ownership in GM-SME)) and as well in the results of the interview analysis in findings chapter 4.

This thesis has been targeted to achieve a major research objective and three assigned underlying objectives (see 1.1 research objectives). And this thesis demonstrates which factors influence and enable owner-managers of GM-SME in context to take good intuitive decisions. It also works out the connection between tacit knowledge, the influencing factors and company growth.

Furthermore, the validity of two growth models for GM-SME should be proven and reflected under this result. The focus and therefore the limit of this research is defined by industry sector, company size, not smaller than fifty employees or € 10 Million turnover, not larger than 500 employees or € 100 Million turnover. Furthermore, for a company to participate in the study, the ability to make comprehensive decisions is mandatory, it was preferred that the interviewee is the owner, and he is managing the company.

After the desk research 30 companies were in the preselection pool and 15 companies agreed to be a partner for the in-depth-semi-structured interviews. These companies have between 50 and 500 employees, company five is manager managed and company one is organized in a specific holding structure. In proving the saturation level after interviewing seven and documenting the new emerging themes the research result becomes wider than expected and must be limited more than once. Some examples:

- Internal organization of SME and GM-SME
- Intensive sharing of information on management level, every day, jour fixe. Intensive reconciliation with experienced family members.
- No involvement of second parties for decision, only owner-manager decides, due to ownership, success, and financial independence.
- The influence of the experience time of the owner shows an influence on decision-making.
- External managers judgment is more related to growth, no political influence, employees, and fluctuation is not as important as it is in family managed companies.

After these, sometimes limited, deep dives into of the world of GM-SME, I ask myself the following questions: How will the interviewed companies manage the following future challenges? Will they use the STS-Model?

1. Set up an early successor planning for the current owner manager.
2. Keep their generation's long tacit knowledge for the GM-SME and its employees.
3. Worldwide information technology development, working around the globe.
4. Competitions from Asian region
5. Worldwide know-how competition

I hope that other researchers take the opportunity to adopt this now available model to similar fields of interest.

## **6.1 Recommendations for future research**

Based on the results of this research I would like to encourage further research in the field of corporate growth of mature family-owned enterprises in variable contexts and variable industries to close gaps in literature and support this important and large environment of engaged entrepreneurs in Europe and all over the world.

Furthermore, I would like to encourage further research in transporting tacit knowledge over generations and work out the main parameters which support this very valuable way of preserving unique know-how and avoiding loss and preventing a possible failure of a successful or promising company.

In the STS-Model for GM-SME growth over generations I would like to suggest further research in the fields of tacit skills, to realize which skill has which main influence on the growth of the SME, or GM-SME. In this field I would like to also emphasize the ability or rather the communication strategy of the leaders of SME and GM-SME. In this research this direct and frequent communication of the leader with their employees has an enormous impact on the workforce motivation and ultimately on the success of the company.

## **6.2 Ethical Implications**

To be a human being means to take decisions. It seems that I follow Emanuel Kant's arguments and take as a basic his "CI".

“Act only according to that maxim whereby you can at the same time will that it should become a universal law without contradiction” (Ludwig and Umbach, 2008, pp. 7, 73, 119). Kant’s values and moral thoughts widely interpreted but they are in their self-understandable because they follow strict rules. I am not a religious person, but I was born in a Christian society in which I learn values, which I adopt for me and my action. At least, I will be able to decide by following Kant’s thoughts and his “CI”.

My decision has consequences and affects the thesis: I will write, the interviews I will conduct and the analysis of the resulting data. As already mentioned, I try to avoid bias and harm to persons involved in this research, keep all my data, and results confidential and protected especially in the case of the direct relation to persons. Furthermore, the interviewees must agree on the action, and they must have the ability to understand the nature of my research. Hence, I could state like this: Values have substance only in practice: we are what we do; actions speak louder than words (Bolton, 2010, p. 34) (Lee, 2009, pp. 134 - 150).

Confidential information could be disclosed; therefore, I have to be as impartial as possible and must be aware of the personal judgements, political issues and secure data storage. Thus, ethical implications have to be addressed with care.

Interviewees will be asked to give their informed consent well in advance of interviews. Confidentiality of all interviews and interviewees will be ensured, and all data kept securely and destroyed after analysis.

# 7 Postscript to my doctoral journey

My journey begun in a subway in Berlin in 2010 shortly after I finished my MBA, I read about the possibility to start a doctoral journey in Cheltenham parallel to work. Since this short trip in Berlin more than 12 years, has gone by and I can say, a long time but so much experience and new insights, I would not miss one second.

After my long journey to a professional doctoral degree, I would like to give an overview and like to share some of my major experiences and learnings during this amazing decade in my professional and academic life.

The professional doctorate (DBA) be equitable to PhD and Dr. title and was initially developed from Harvard University in the early 1990<sup>th</sup>. Meanwhile many Universities around the globe offer DBA full time or part time programs. In 2011 I decide for a part time DBA program at the University of Gloucestershire and finished this with this thesis my doctoral journey over twelve years. In the following pages I will give a statement of experience and endurance.

The official framework of the University of Gloucestershire gives a minimum of 36 months for the modules and an additional 2 months to submit the thesis. The maximum time is 7 years and the possibility to have a break of one year. The thesis should have a minimum assessment load (number of words) of 30.000 and a maximum of 80.000, the expected volume of this thesis is 86.000 word, there is always a ... it depends.

So, when I look back to this nearly 12 years, my values do change in small steps, but some was inherent and stay to the total time of my doctoral journey... the believe in the power of intuition and the knowing, that GM-SME are the backbone of our economy, and they not only follow the rules of crisis and growth like it is in other regions of the world.

## **The plan**

Starting in 2011 when I was 48 years old and target to end in 2018 when I am 55 years old. Today it looks like a period until my 60<sup>th</sup> year of age.

## **The reality**

At that time the requirements of doctoral English language were the most important issue for me. The time exposure for should be one day, maximum two days, per week they said, this should be possible for me, then I start my doctoral journey. My start in Munich was full of personal enthusiasm and dreams of new knowledge and new people in my life.

## **My learnings**

Reflections and philosophy and point of view, getting into thoughts of Kant (kategorische Imperativ), Heidegger (Sein und Zeit), and Habermas. Also, learning about the power of finding your position in the research. Things became clear by the right position and after a structured reflection from this point.

In one of our first lectures, I noted these bullet points, without knowing how important these will be in the next 12 years:

- These 18 months will change your personality!
- To work in an ALS means learning from each other, trying to achieve a joint target. This doesn't work if one of the team competes with someone else in the team.
- Everyone, even if she seems to be incompetent in your research field, could bring you one step ahead.
- Each statement in the thesis must be referenced, or derivate,
- Own opinion must be placed on the end.
- The topic of a doctoral thesis must contribute to knowledge.
- Doctoral steps are baby steps, thank you Barry, for this important sentence.
- Be active for this module for the whole time, if not it will be a mess to finish the assignment.
- What is the meaning of peer reviewed? It means you can trust on others work!
- "So, what" Question and "it depends" as a phrase.
- The "what, why and how "questions could be helpful (Watson, 1994).
- How to narrow down a topic to make it feasible.
- How to formulate questions and objectives to lead to valuable outcomes?
- Avoid bias to get into the insight.
  - Get up in meta-analyzes position or better following quantitative data from a more distanced position (Jesson et al., 2011, pp. 66, 126, 140) to get along with bias.

Used documents must be from academic sources and or peer reviewed, a basis for new knowledge is created. This base for new knowledge is now available for all people who want to add further insights. Contribute to knowledge with small steps, as Barry said, doctoral steps are baby steps, this I wrote from today view, because this insight came quite late to me.

Learnings for reviewing the literature:

- Read all in the research field (it is quite important to get a clear limitation of the field) and work out the gap in literature for the specific topic of interest.
- Limitation of reviewed literature possible (time, region, sector).
- The citation and the bibliography could be organized with Endnote. Meanwhile I created a sound bases in endnote links and am still learning to expand the used functions of endnote, also a training was suggested to find out usable function of Endnote. Referencing is an integral part of academic work and guides production of the thesis (Jesson et al., 2011, pp. 30, 60, 146) (Lee, 2009, p. 46).
- Plagiarism must be avoided, use plagiarism detection software, the software Turnitin.com was suggested.
- Be aware of the danger of diving deep in topics without consider your research boundaries, I had days where I lost half of my time into a topic, very interesting but far out of my research filed.
  - But I get insights in new worlds I may have never gotten in touch with.

### **New ways of collaboration**

I could imagine in this stage, that the research will change my personality, because I realized a similar phenomenon during my MBA (2008 - 2010) which changed my engineering mind into a business engineer's one.

Unfortunately I wasn't able to recognize that the change would touch not only be in my professional side, as a hint was given from Nancy -Jane Lee in her book achieving your professional doctorate (Lee, 2009, p. 1) “... *achieving your DBA rests with you..... However, you cannot undertake this process on your own...*”

In the University of Gloucestershire DBA program, we done some activities in active learning sets (ALS) and together with all participants. In one of these activities, I realized that my general standpoint was fixed, and I only tried to convince the others. After the second group activity I



realized that I would miss a lot of hints, tips, and new ways to look on a task. Since 7. October 2011 my general standpoint is neutral, I try to keep my standpoint neutral, and this way of discussing brought many new insights. (Brookfield, 1995, p. 3; 2015, pp. 30-33) gave some direct hints to this he describes four activities for a critical reflective process, I feel activity four, imaginative speculation, fits to my observation. (Rigg, 2008, p. 376) stated in their article “...critical reflection in the workplace: is it too difficult?” that imaginative speculations involve many alternatives to think about a problem and not following predominant ways of acting.

Further, I got in touch with philosophy and the different directions for the purpose of knowledge creation, without understanding the purpose of this lecture, from today point of view it was an essential basis for further research.

Later during my DBA module 502, I was sure that my thoughts to “intuitive marketing” correspond in a clear way to the positivistic stance. By reading the suggested article of Karl E. Weick (Tsoukas; Haridimos, 2003) I get in touch with a new word out of a new world: “thrownness” (German language: Geworfenheit), Heidegger creates this word in his famous book “Sein und Zeit” (Heidegger, 2006, pp. 174, 175 ).

Hence, thrownness was exactly the feeling I had, during the period of reading Weick’s article. Heidegger used thrownness in the meaning of the situation “Being delivered over to the “there” and here is the meaning of the “there” a new, in the first step, unclear situation, a main issue of the thoughts of Weick, the difference between theory and praxis in the real world.

In these days the question of change management comes into my focus, this was due to the discussions with my ALS about intuition and the process of transform a company from an unprofessional to a professional one. (Rigg, 2008, p. 380) reflects on an organizational change and research in the abilities of employees to reflect on their own work. The parallels to KVP and Kaizen was obvious in this paper but was not mentioned.

### **My experiences become explicit knowledge, tacit: I cannot tell.**

In the more than 12 years of time, the research was my day today follower, partner, inspiration, fear point and driver:

- My ability to talk, understand and read English becomes much better.

- Understanding of interconnections between totally different issues was growing and my ability to structure topics increased.
- Today I work intensively on the topic methods and so on, it looks like I now understand the relation between my thought and the research structure for the first time. But this belongs to the long time it takes to bring the small parts of knowledge in the process into a real doctoral spectrum. It is amazing!

### **Something Unexpected**

In the 3 long break periods of my research, all of them was mixed situation of job, work, and the fear „...*oh it takes so long to come into the topic again...*” shows me, after the second entrance and the barriers. It is possible to start again faster, and this could be better organized by the following 4 measures to come in the topic more effective:

- Make a clear stop in the paper and document the last idea and target (I stopped here with the following thoughts).
- Create a to do list of open points and mark where you are.
- Use Endnote more professionally (integrate all document including notes in endnote) and mark cited pages in the thesis).
- If possible, in a break, open the document once a week for 30 minutes or longer and make minor changes (so you keep familiar with the text), sounds easy, but is not.

## **7.1 Topic development**

This research rests initially on my personal experience in GM-SMEs in the machine tool, injection molding, mold and die making and co-generic sectors. I have had the chance to observe owner-managers directing their SMEs with intuition during ups and downs, crises, growing and declining markets.

The idea for this this doctoral thesis arose in my professional life, after the first ten years of my career I was not involved in strategic decisions and the miracle of starting an own business with total power of one inspired person and his dreams.

The research in the field of SME business has begun with the title “Marketing research in small and medium sized enterprises”. This title was changed during RD1 into “Intuitive Marketing in SME, the influence of leaders tacit marketing knowledge”. The interest in this topic emerged

during my time in the new company and after, in more than three GM-SME I worked in. In this time, I had more than 20 years' experience in leading marketing, sales, and MD positions in SME, especially in the sectors of machine tool, mold and die makers in companies of small and medium size, the context area of this research.

During this period, I realized that corporate decisions, as well as fundamental and expensive investments, were made without any investigation in the market. In my early time in this industry, I was not able to understand the mechanism behind these methods. But after my MBA in 2010 I recognized a structure behind these ways of corporate decision-making.

The impression of great spirit, the deep passion of the managers, owners, CEO's and their intuitive management practice occur in my mind. Based on these perceptions in general management realities it becomes more and more desirable for me to investigate relevant thoughts, ideas, and facts in the academic literature about the observed phenomenon in GM-SME. To get the possibility to work on this idea, to understand the mechanism behind my observations the research title "Intuitive Marketing" was formulated. The following step by step development show the way to the today title of the thesis:

Development of the Main Topic and Title:

- Sept. 2011 und February 2012: Marketing research in small and medium sized enterprises.
- May 2013: Intuitive Marketing in SME, the influence of leaders tacit marketing knowledge.
- August 2013: Intuitive Marketing in SME, the bearing of leader's tacit marketing knowledge on company growth.
- November 2013: The Marketing Decisions Process in SME, the influence of leader's intuition on company growth.
- July 2021: Corporate intuitive decisions in growing German Mittelstand SME, tacit knowledge creation in long term-oriented companies.
- Mai 2022 The Final one: Organizational growth in family-owned SME in German Mittelstand, the influence of intuition and tacit knowledge over generations on decision-making.

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# 9 Appendices

## 9.1 SME Definition European Commission

In its updated SME definition, IfM Bonn continues to distinguish small and medium-sized enterprises (SMEs) from large enterprises on the basis of quantitative size criteria, i.e. annual turnover (= 50 millions €) and number of employees (<500 employees).

In order to achieve greater harmonization with the SME definition of the EU commission in the micro- and small enterprise segment, micro and small enterprises are now defined analogously to the EU definition. However, IfM Bonn's (higher) threshold value for medium-sized enterprise still amounts to 499 employees in order to take account of the specific size distribution of the German enterprise population.

### SME definition of IfM Bonn since 1/1/2016

Enterprise size	Number of employees	Annual turnover €
micro	max. 9	max. 2 million
small	max. 49	max. 10 million
Medium	max. 499	max. 50 million
(KMU) altogether	less than 500	max. 50 million

Table 9.1: Source: (IfM, 2021) Homepage, Download 12/2019

## 9.2 Definition „The German Mittelstand“

The IfM Bonn defines Mittelstand enterprises by the unity of ownership and management. In order to filter out Mittelstand companies from the entirety of all enterprises for statistical/ empirical analyses, the definition of Mittelstand is operationalized as follows: In a Mittelstand enterprise to two natural persons or their family members (directly or indirectly) hold at least

50% of the company shares and these natural persons also belong to the management of the enterprise. According to the definition of IfM Bonn, the terms Mittelstand, family enterprise and owner-managed enterprise are considered as synonyms.

There is a large overlap between Mittelstand enterprises / family enterprises and independent small and medium-sized enterprises (SMEs). Nonetheless, also large enterprises with more than 500 employees or an annual turnover exceeding 50 million € are classified as Mittelstand / family enterprises if they fulfil the above mentioned (qualitative) criteria. By contrast, small and medium-sized enterprises which are (dependent) constituents of an enterprise group do not meet the Mittelstand definition (IFM Mittelstandsdefinition, IFM, 2021).

### **9.3 Number of companies, topic: sampling**

In this three following tables the data for calculation the sample size for the thesis. Machine tool industry:

To get a rough overview, a calculation on relevant companies are conducted:

- 10,9 % are over 1000 employees, 44% of total number -> 73.474 means: 32.328 (average 1500 per company -> 22, ca. 20 to 30 Companies)
- 17,4% are between 501 and 1000, 26, 4% of total number - > 73.474 means: 19.397 (average 750 per company -> 26, 20 to 40 companies)
- 20,7% are between 500 and 251, 16.5 % of total number - > 73.474 means: 12.123 (average 300 per company -> 40, 20 to 50 companies)
- 28,6% are between 250 and 100, 10,7 % of total number - > 73.474 means: 7.861 (average 150 per company -> 52, companies)
- 9,8% are between 100 and 51, 1,6 % of total number - > 73.474 means: 1.175 (average 75 per company -> 15, ca 10 to 20 companies)

Relevant: 100, prove:

Average (see information Branchenskizze), size is 150 employees per company, so we look at 450 companies, of these are 25% to 50% family managed. So, our population size is between 100 and 225 companies.

## 9.4 Machine Tool and mold and Die making industry

Here in this sector we see 54.000 employees and 3800 companies, so average is 14, but here we have got better information, 1% more than 100 employees, means 38 companies, assuming that we have a population of 50 to 100 companies. Also here 25 to 50% are family managed, means 25 to 50 companies.

Deutsche Werkzeugmaschinenindustrie nach Betriebsgrößenklassen (%-Anteile)* German machine tool industry by company size (%-shares)*									
Zahl der Beschäftigten Number of employees	Betriebe Companies			Beschäftigte Employment			Produktion Production		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
1–50	11,7	12,8	13,0	0,7	0,7	0,8	0,7	0,7	0,7
51–100	12,8	10,6	9,8	2,4	1,9	1,6	2,1	1,9	1,9
101–250	29,8	30,9	28,3	11,8	12,0	10,7	10,3	11,6	10,5
251–500	16,0	17,0	20,7	13,7	14,4	16,5	11,7	11,0	14,1
501–1 000	19,1	18,1	17,4	29,4	27,6	26,4	28,2	28,0	24,0
> 1 000	10,6	10,6	10,9	41,8	43,3	44,0	47,0	47,0	48,9
Gesamt Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

\* auf Basis der Meldungen von Mitgliedsfirmen des VDW und des Fachverbandes Werkzeugmaschinen im VDMA  
\* based on reports from member companies of VDW and VDMA section Machine Tools

Table 9.2: Machine tool Industry, Source: (VDW, 2019)

# Historische Zeitreihen der deutschen Werkzeugmaschinenindustrie (Mio. EUR)

## Historical time series of the German machine tool industry (mill. EUR)

	Produktion Gesamt* Production total*	Produktion (ohne Repar.*) Production (excl. Repair*)	Export Exports	Import Imports	Verbrauch Domestic consumpt.	Gesamt Total	Auftragseingang Inland Order intake Domestic	Ausland Foreign	Beschäftigte Employment	Kapazitäts- auslastung (%) Capacity utilization (%)
1968		1 815	1 239	156	733	2 466	1 124	1 343	110 000	
1969		2 202	1 301	269	1 170	3 471	1 933	1 538	120 000	
1970		2 744	1 498	397	1 643	3 173	1 872	1 300	125 000	
1971		3 082	1 563	419	1 938	2 327	1 264	1 063	120 000	
1972		2 921	1 664	356	1 612	2 534	1 151	1 383	113 000	
1973		2 969	1 861	300	1 408	3 675	1 638	2 037	112 000	85,9
1974		3 459	2 444	316	1 332	3 737	1 423	2 313	111 500	88,7
1975		3 462	2 595	341	1 208	3 629	1 606	2 023	102 000	80,2
1976		3 562	2 564	382	1 380	3 542	1 377	2 165	97 000	77,9
1977		3 623	2 528	472	1 567	3 894	1 921	1 973	99 000	80,2
1978		3 926	2 552	585	1 959	4 681	2 303	2 378	98 500	88,2
1979		4 396	2 722	709	2 384	5 313	2 664	2 649	100 000	90,3
1980		5 055	3 162	924	2 817	5 515	2 514	3 001	99 000	92,5
1981		5 252	3 447	895	2 701	4 829	2 158	2 671	99 000	89,7
1982		5 005	3 211	773	2 567	4 679	2 307	2 371	94 500	79,3
1983		4 807	2 980	766	2 592	4 207	1 846	2 361	84 000	75,9
1984		4 822	3 092	871	2 602	5 645	2 699	2 946	83 000	84,1
1985		5 588	3 485	1 182	3 284	7 400	3 493	3 907	88 000	94,6
1986		6 654	4 034	1 485	4 104	7 535	3 542	3 994	93 000	95,7
1987		6 786	3 907	1 444	4 323	5 847	2 894	2 953	93 500	92,8
1988		6 811	4 214	1 443	4 040	6 988	3 186	3 801	94 000	92,5
1989		7 622	4 692	1 777	4 707	9 196	4 647	4 549	99 500	96,4
1990		8 398	4 830	2 248	5 816	8 939	4 759	4 180	103 000	95,0
1991		8 812	5 025	2 488	6 275	7 838	4 287	3 551	98 000	89,7
1992		7 239	4 350	1 960	4 850	5 942	3 004	2 938	89 500	81,5
1993		5 474	3 552	1 292	3 214	4 734	2 120	2 614	82 500	69,0
1994		5 316	3 608	1 348	3 056	6 014	2 682	3 333	72 000	79,2
1995	6 448	6 325	3 611	1 667	4 381	7 519	3 401	4 117	65 400	88,4
1996	6 954	6 855	4 168	1 884	4 572	6 742	3 167	3 575	66 500	87,1
1997	7 325	7 182	4 145	2 141	5 178	7 893	3 532	4 361	64 100	88,1
1998	8 223	8 094	4 438	2 729	6 386	9 269	4 714	4 555	64 100	92,6
1999	8 602	8 476	4 278	2 860	7 058	7 931	4 180	3 752	65 300	90,8
2000	9 207	9 070	5 099	2 399	6 370	10 822	4 957	5 865	66 000	94,8
2001	10 294	10 147	5 676	2 623	7 094	9 375	4 734	4 641	69 500	92,3
2002	9 606	8 989	5 157	2 091	5 922	9 430	4 490	4 940	67 700	83,5
2003	9 078	8 448	4 965	1 856	5 339	8 720	3 670	5 050	66 885	82,3
2004	9 586	8 912	5 546	1 950	5 316	10 300	4 050	6 250	65 036	86,3
2005	10 374	9 700	6 136	2 165	5 730	10 460	4 050	6 410	64 951	88,2
2006	10 806	10 072	7 055	2 599	5 617	12 380	5 050	7 330	65 044	90,6
2007	12 624	11 769	7 759	3 341	7 351	16 000	6 730	9 270	66 369	93,6
2008	14 178	13 253	8 206	3 712	8 758	13 730	5 610	8 120	70 839	94,7
2009	10 177	9 390	6 033	2 121	5 477	6 230	2 170	4 060	66 042	72,6
2010	9 894	9 029	6 087	1 983	4 925	11 650	3 790	7 860	61 075	75,4
2011	12 919	11 866	8 516	3 147	6 497	16 860	5 550	11 310	62 019	93,8
2012	14 172	13 115	9 830	3 391	6 676	15 140	5 020	10 120	64 972	95,2
2013	14 576	13 447	9 285	3 073	7 235	14 180	4 670	9 510	66 819	92,8
2014	14 486	13 255	9 233	3 250	7 272	14 760	4 920	9 840	67 414	90,1
2015	15 087	13 791	9 506	3 431	7 717	14 950	4 860	10 090	68 482	88,2
2016	15 007	13 652	9 374	3 420	7 697	15 950	4 850	11 100	68 985	88,0
2017	16 006	14 563	10 214	3 550	7 899	17 220	5 340	11 880	70 937	91,6
2018	17 110	15 604	10 686	3 983	8 901	17 460	5 600	11 860	73 474	93,9

\* Produktion Gesamt beinhaltet ab 1995 „Installation“ und ab 2002 „Reparatur/ Instandhaltung“. Für einen sinnvollen Vergleich mit Export- und Importdaten sind diese Werte aber nicht enthalten.

Hinweise:

- Verbrauch = Produktion – Export + Import
- Teilweise wurden Daten revidiert
- Auftragseingang enthält ab 2002 „Installation, Reparatur und Instandhaltung“
- Beschäftigte und Kapazitätsauslastung sind Jahresdurchschnitte
- Daten ab 1991 inkl. neue Bundesländer (Beschäftigte ab 1993)
- Beschäftigte, ab 2009 Betriebe mit >=50 Beschäftigten (davor >= 20)

Quellen: Statistisches Bundesamt, Ifo-Institut München, VDMA, VDW

\* Production total includes "installation" (since 1995) and "repair/maintenance" (since 2002). For a reasonable comparison with export and import data these figures are excluded.

Note:

- Consumption = production - exports + imports
- Data are partly revised
- Order intake includes "installation, repair and maintenance" since 2002
- Employment and capacity utilization = average of year
- Data include New German Countries since 1991 (employment since 1993)
- Employment, since 2009 companies with >=50 employees (prior to that >= 20)

Sources: German Statistical Office, Ifo Institute Munich, VDMA, VDW

Table 9.3 Historical data Machine tool Industry, Source: (VDW, 2019)

## Kleine Betriebe in Clustern

Rund 3.800 Werkzeugbaubetriebe mit etwa 54.000 Mitarbeitern existieren laut der Studie aktuell in Deutschland.

Von diesen Unternehmen beschäftigen 72 Prozent weniger als 50 Mitarbeiter und nur 1 Prozent der Unternehmen mehr als 100 Mitarbeiter.

Dies verdeutlicht, dass die Branche größtenteils klein- und mittelständisch organisiert und von starker Heterogenität und Fragmentierung geprägt ist.

Besonders viele Werkzeugbaubetriebe finden sich in Baden-Württemberg in der Region um Stuttgart und weiteren Standorten in Baden-Württemberg, Ost- und Südwestfalen sowie dem Hochrheingebiet.

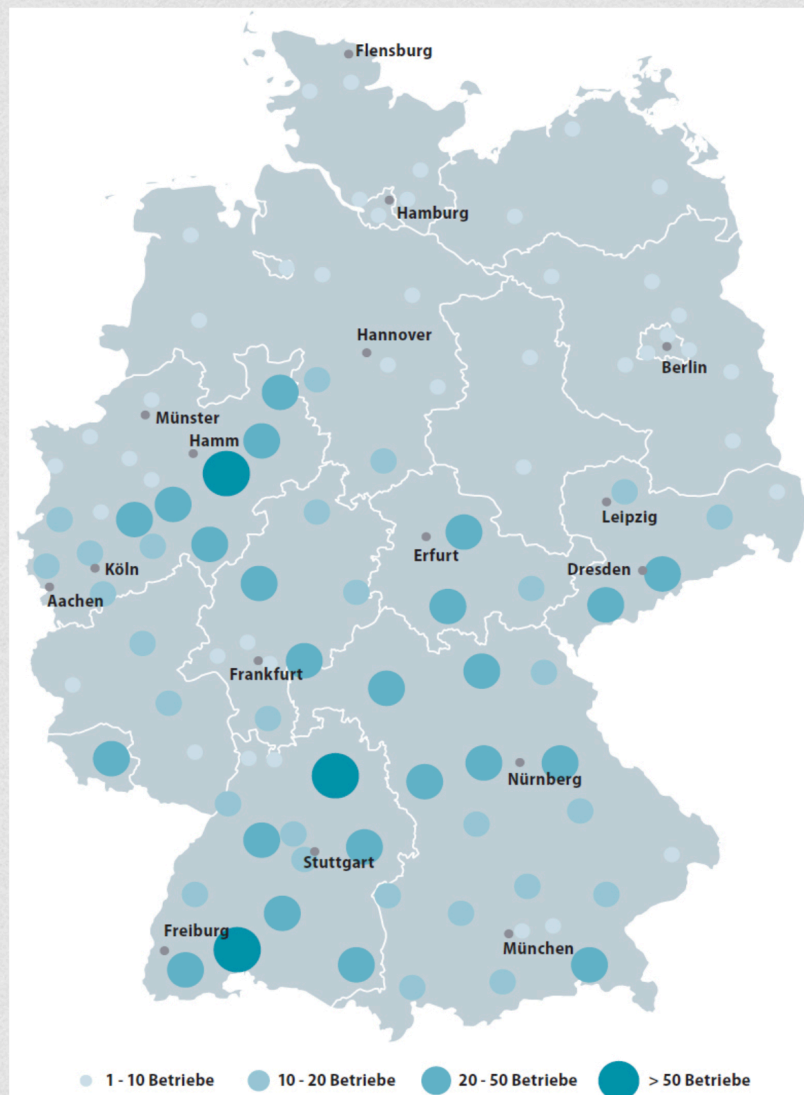


Figure 9.1: Regional clusters for Toolmaking industry, Source: Werkzeug und Formenbau (Article 6.12.2018: Tooling in Germany), online presentation December 2019

## Branchenskizze

*„Der Maschinen- und Anlagenbau ist der Mittelpunkt der deutschen Investitionsgüterindustrie: Er stellt komplexe Erzeugnisse für die gesamte Wirtschaft her und verwertet technologisch anspruchsvolle Vorprodukte. Er spiegelt die gesamte Bandbreite des Leistungsvermögens der deutschen Industrie und ist maßgeblicher Innovationstreiber unter anderem in den Bereichen Industrie 4.0, ressourcenschonender Umweltschutz, Energieeffizienz und Elektromobilität.*

*Die über 6.500 Unternehmen des Maschinen- und Anlagenbaus erzielten mit über einer Million Beschäftigten im Jahr 2017 einen Gesamtumsatz in Höhe von 226,2 Milliarden Euro – 5,4 Prozent als im Vorjahr. Als größter deutscher Arbeitgeber, insbesondere für größtenteils hochqualifizierte Beschäftigte, liegt die Branche gemessen am Umsatz auf dem zweiten Platz aller Industriezweige. Der Maschinenbau ist sehr stark mittelständisch geprägt: Rund 87 Prozent der rund 6.500 Unternehmen haben bis zu 250 Beschäftigte (rund 65,5 Prozent weniger als 100; Branchendurchschnitt: 178,9)“Source:*

<https://www.bmwi.de/Redaktion/DE/Artikel/Branchenfokus/Industrie/branchenfokus-maschinen-und-anlagenbau.html>

*„Die Branche ist mit einer Exportquote von 78,2 Prozent (2017) das Aushängeschild der deutschen Wirtschaft in der Welt. Wichtigste Zielregion für die deutschen Unternehmen ist Europa (96,1 Milliarden Euro) gefolgt von Asien (39,7 Milliarden Euro) und Nordamerika (19,5 Milliarden Euro). Die USA (18,0 Milliarden Euro) sind vor China (17,4 Milliarden Euro) wichtigster Absatzmarkt. Deutschland ist weltweit drittgrößter Maschinenproduzent.*

<i>Eckdaten des Maschinen- und Anlagenbaus</i>	<i>2016</i>	<i>2017</i>	<i>reale Veränderung (%)</i>
<i>Umsatz (Mrd. Euro)</i>	<i>214,6</i>	<i>226,2</i>	<i>+5,4</i>
<i>Produktion (Mrd. Euro)</i>	<i>204,1*</i>	<i>214,0*</i>	<i>+4,9</i>
<i>Beschäftigte (Tsd.) (Dezember)</i>	<i>1.005</i>	<i>1.032</i>	<i>+2,3</i>
<i>Export (Mrd. Euro)</i>	<i>155,8</i>	<i>168,9</i>	<i>+8,4</i>
<i>Investitionen* (Mrd. Euro)</i>	<i>7,5</i>	<i>8,1*</i>	
<i>(Interne) FuE-Aufwendungen** (Mrd. Euro)</i>	<i>5,7</i>	<i>5,8*</i>	

*\* = Werte geschätzt“ Quelle: ifo-Institut, Statistisches Bundesamt, Stifterverband für die deutsche Wissenschaft, VDMA - Verband Deutscher Maschinen- und Anlagenbau e.V.*



## 9.5 Search terms and first selection of literature

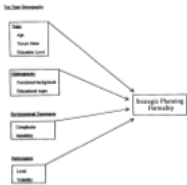
Search Terms English, (German)	Description of purpose for the key words	Google scholar	Libraries	ebesco (English)	Relevant
Marketing SME, (Marketing KMU)	To find general literature in SME field for in depth reading	58.300 (8.140)	194 (208)	708	104
Marketing research SME, (Marktforschung KMU)	Following up first (marketing research) of main topics of interest	62.600 (1.520)	84 (112)	223	45
Tacit Knowledge SME, (verstecktes Wissen KMU)	Following up second (knowledge management SME) main topics of interest	20.000 (1.860)	21 (54)	11	25
Tacit and explicit knowledge, (implizites und explizites Wissen)	Following up second main topics of interest. Broader the search term.	163.000 (18.500)	287 (208)	389	128
Leadership SME, Führung in KMU	Following up third (leadership in SME) main topics of interest.	34.200 (7.360)	102 (99)	89	34
Management SME, (Management KMU)	Following up third (leadership in SME) main topics of interest. Broader the search term.	112.000 (18.000)	926 (805)	2141	18
Decision-making, decision- making in SME, decision- making in KMU	To get information about the strategic decision-making process in detail, find out the importance in SME	45.700 (28.000)	180 (110)	80	59
Gut Feeling decisions SME, KMU Bauchentscheidungen in KMU	In American literature the intuitive decision is called gut feeling Maybe also looking for literature in German language	100.600 (56.000)	97	76	27
Intuitive decisions, SME, KMU	Create more details about intuition in SME, especially in decision- making	34.000 (12.300)	167 (25)	30	14
Polanyi and tacit knowledge	Extent Literature review on behalf of Polanyi and his related research, set a gathered statement	52.000	20	35	39

Search Terms English, (German)	Description of purpose for the key words	Google scholar	Libraries	ebesco (English)	Relevant
Greiner's Evolution and revolution as organizations grow	Extent literature review, analyze his theory, compare to SME apply on SME, look for further literature in special view on small business	4200	18	20	5
Family Business, Familien geführte Gesellschaften und implizites Wissen	Looking for evidence of transferring implicit knowledge	24.000	230	87	20
Werkzeugmaschinenbau, Werkzeugbau, Konjunktur und Brancheninformationen	This is not a search term, but a section of interest for identifying relevant statistical data.	1.970	no search	no search	5

Table 9.4: Results of using selected search term

### 9.5.1 Example of the analyse of literature, sphere one, decision-making

As mentioned in chapter 2, scope, the selection of relevant literature was conducted as shown in the following table (8 out of 57)

Nr	Bibliography	Comment/Note	Relevant to research: Low/Middle/high
1	*1-Bantel, K. A. (1993). Top team, environment, and performance effects on strategic planning formality. <i>Group &amp; Organization Management</i> , 18(4), 436-458. (Bantel, 1993)	 <p>Auswirkungen des Teams (Erfahrung, alter, Amtszeit) auf den Planungsprozess. Abstract:</p> <p>This study examined hypotheses linking three categories of variables, top management team demography, environmental uncertainty, and firm performance, to the extent to which retail banks engage in a formal strategic planning process. The specific variables studied included: mean tenure, mean age, mean education level, functional background heterogeneity, and education major heterogeneity under team</p>	Low

Nr	Bibliography	Comment/Note	Relevant to research: Low/Middle/high															
		demography; environmental complexity and instability under environmental uncertainty; and performance level and volatility under firm performance. Results show that low tenure mean, functional heterogeneity, environmental complexity, and performance volatility all had positive effects on strategic planning formality																
2	*2-Bastick, T. (1982). <i>Intuition: How we think and act</i> . New York: John Wiley and Sons. (Bastick, 1982)	Very basic book, will be read and analysed in section intuition and tacit knowledge	high															
3	*3-Baum, H. S. (1989). Organizational politics against organizational culture: A psychoanalytic perspective. <i>Human Resource Management</i> , 28(2), 191-206. (Baum, 1989)	<p>Was ist organisatorische Politik, beispiele, unbewußte wahrnehmung, aggieren.</p> <p>Yet every organisation, at least tacitly, has a politics (i.e., procedures for promoting interests to allocate scarce resources)</p> <table><caption>Table I.</caption><thead><tr><th>Type of Power</th><th>Stage of Development</th><th>Type of Politics</th></tr></thead><tbody><tr><td>I ("It will strengthen, me")</td><td>Trust vs. Mistrust</td><td>Subordinacy</td></tr><tr><td>II ("I will strengthen myself.")</td><td>Autonomy vs. Shame, Doubt</td><td>Isolation</td></tr><tr><td>III ("I will have an impact on others.")</td><td>Initiative versus Guilt</td><td>Interpersonal conflict</td></tr><tr><td>IV ("It will move me to serve others.")</td><td>Identity vs. Identity Confusion Intimacy vs. Isolation Generativity vs. Stagnation</td><td>Collaboration</td></tr></tbody></table> <p>Workers' capacity to identify with an organisation depends on the fit between their personal development and the norms of organisational politics.</p> <p>4 Types of power and 4 types of politics in a company.</p>	Type of Power	Stage of Development	Type of Politics	I ("It will strengthen, me")	Trust vs. Mistrust	Subordinacy	II ("I will strengthen myself.")	Autonomy vs. Shame, Doubt	Isolation	III ("I will have an impact on others.")	Initiative versus Guilt	Interpersonal conflict	IV ("It will move me to serve others.")	Identity vs. Identity Confusion Intimacy vs. Isolation Generativity vs. Stagnation	Collaboration	<p>middle</p> <p>interessante aufteilung</p>
Type of Power	Stage of Development	Type of Politics																
I ("It will strengthen, me")	Trust vs. Mistrust	Subordinacy																
II ("I will strengthen myself.")	Autonomy vs. Shame, Doubt	Isolation																
III ("I will have an impact on others.")	Initiative versus Guilt	Interpersonal conflict																
IV ("It will move me to serve others.")	Identity vs. Identity Confusion Intimacy vs. Isolation Generativity vs. Stagnation	Collaboration																

Nr	Bibliography	Comment/Note	Relevant to research: Low/Middle/high
4	<p>*4-Baum, J., &amp; Wally, S. (2003). Strategic decision speed and firm performance. Strategic (Baum and Wally, 2003)</p> <p>weitere Bemerkungen aus dem Text:</p> <p>Mesias Effekt:</p> <p>Nevertheless, the causal link between decision speed and subsequent performance is not assured. It may be that CEOs who lead fast strategic decision processes tend to be energetic, smart, proactive leaders who also get high growth from their companies through other processes.</p>	<p>This 4-year study examines the effect of strategy decision speed upon subsequent firm performance and identifies environmental and organisational characteristics that relate to decision speed. We draw upon strategic decision-making theory and organisation theory to propose that strategic decision speed mediates the relation between environmental and organisational characteristics and performance. Measures of business environment, organisation structure, strategic decision speed, and firm performance (growth and profitability) were collected from MH CEOs from 1996 to 2000. Structural equation modelling confirmed that fast strategic decision-making predicts subsequent firm growth and profit and mediates the relation of dynamism, munificence, centralisation, and formalisation with firm performance.</p> <p>Interessante Auswertung zur Firmenleistung!</p>	hoch
5	<p>*5-Belton, V., &amp; Stewart, T. J. (2002). Multiple criteria decision analysis: an integrated approach: Springer.</p>		
6	<p>*6-Berger, C. R., Karol, S. H., &amp; Jordan, J. M. (1989). When a lot of knowledge is a dangerous thing: The debilitating effects of plan complexity on verbal fluency. <i>Human Communication Research</i>, 16, 91–119. Nicht</p>	<p>Three experiments examined the relationships among plan complexity, access to planned actions, and verbal fluency while pursuing a persuasion goal. Consistent with theoretical expectations, complex planners were less fluent than less complex planners under high access conditions. Persons whose access was raised were less fluent than those whose access was not raised. A second experiment showed that</p>	

Nr	Bibliography	Comment/Note	Relevant to research: Low/Middle/high
	gefunden(BERGER, KAROL, and JORDAN, 1989)	reduced fluency was not induced by lowering of self-confidence. The third experiment replicated the findings of the second experiment and demonstrated that the questioning procedure used to raise access in the first two experiments produced increases in plan complexity as suggested by theory. These findings are discussed in terms of their implications for the study of strategic communication	
7	*7-Bonabeau, E. (2003). Don't trust your gut. <i>Harvard Business Review</i> , 81(5), 116-121.(Bonabeau, 2003)	<p>danger of intuitional decisions in complicated situations.</p> <p>A good description of intuition.</p> <p><b>Abstract:</b> Intuition plays an important role in decision-making, but it can be dangerously unreliable in complicated situations. A new set of analytical tools can help you leverage your instinct without being sabotaged by its weaknesses.</p> <p><b>Notes:</b> But people generally agree that intuition refers to the brain's process of interpreting and reaching conclusions about phenomena without resorting to conscious thought. And further, it's usually assumed that this process draws on the mind's vast storehouse of memories. Bruce Henderson, founder of the Boston Consulting Group, may have put it best when, in 1977, he called intuition "the subconscious integration of all the experiences, conditioning, and knowledge of a lifetime, including the cultural and emotional biases of that lifetime."</p>	mittel, da es sehr populistisch geschrieben ist.
8	*8-Bourgeois III, L. J., & Eisenhardt, K. M. (1988). Strategic decision processes in high velocity environments: Four cases in the microcomputer	Politics in decisions, microcomputer industry Interviews, multiple case study, 8 companies	klein bis auf die Aussage, dass politik im Unternehmen die leistung senkt.

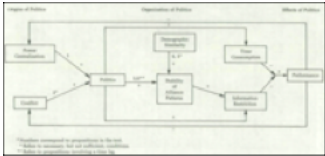
Nr	Bibliography	Comment/Note	Relevant to research: Low/Middle/high
	<p>industry. <i>Management science</i>, 816-835.(Bourgeois Iii and Eisenhardt, 1988)</p> 	<p>Proposition 1: The greater the centralization of power in a chief executive, the greater the use of politics within a top management team.</p> <p>The firms with politically active teams exhibited slow growth and low profitability. Our cases suggest that politics are time-consuming and information-restricting,</p>	

Table 9.5: Exemplary table for selecting relevant literature.

## 9.6 Figures of Greiner's Model "Five Phases of Organizational Growth"

The market growth and market dynamics in relation to organizational size and age.

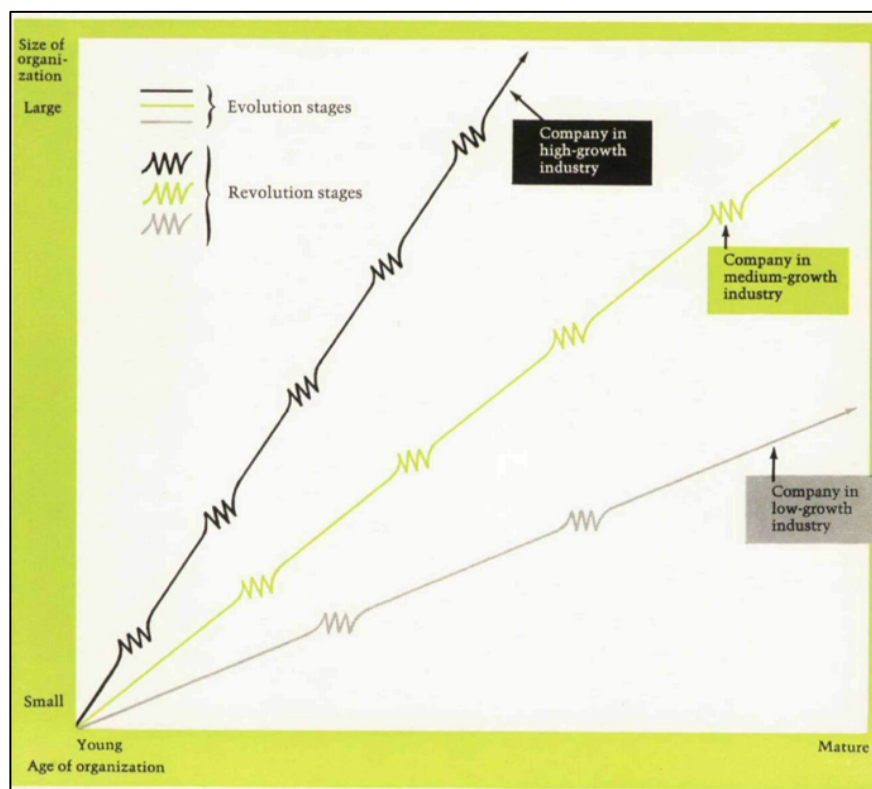


Figure 9.6.1: The five phases of growth in relation to market development (Greiner, 1972, pp. 39, 41)

The 5 phases of organizational growth, showing evolution and revolution phases.

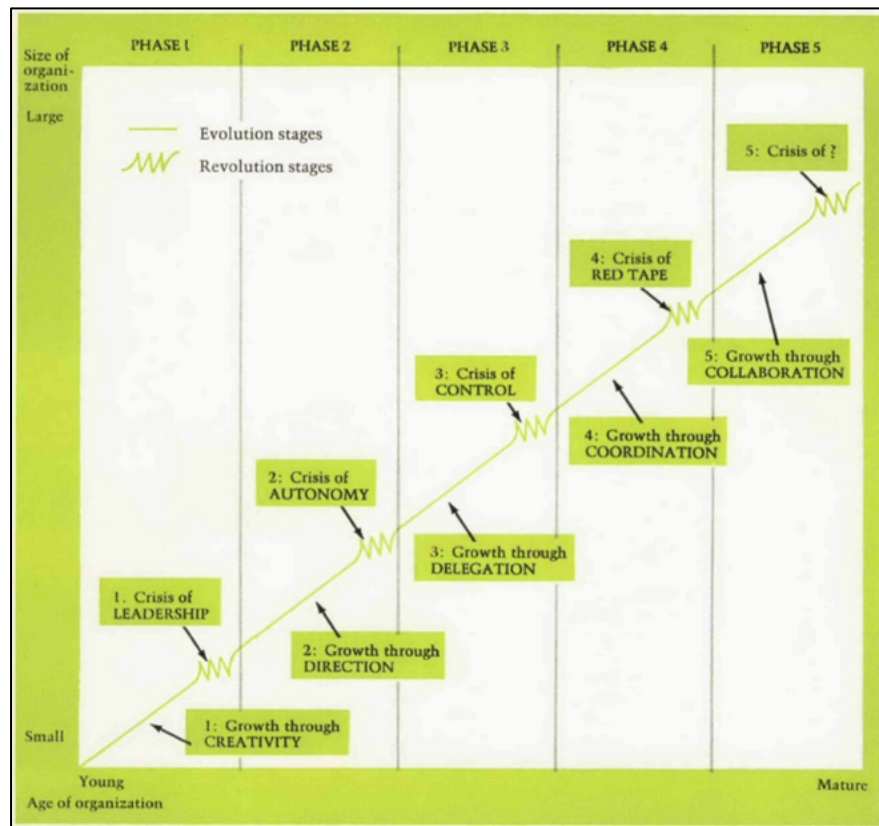


Figure 9.6.2: Model organizational development, the five phases of growth (Greiner, 1972, pp. 39, 41)

## 9.7 Information for the interviewees

In advance of the interviews the following four documents were provided to the participants.

They are in German language and not translated, due to the fact, that the interviews was realized in German language and a fully translation will not add necessary information to the thesis, relevant details are described in chapter 4 (Interviews).

## 9.7.1 Invitation letter

Dissertation der University of Gloucestershire

Company  
z.Hd. Herr xxx  
Street  
City

Wie erfolgreich sind strategische „Bauchentscheidungen“ ?

Sehr geehrter Herr xxx,  
mit diesem Schreiben möchte ich Sie um die Mitwirkung an einer Befragung von 10 mittelständischen Unternehmern aus den Branchen Maschinen-, Werkzeug-, Formen- und Fahrzeugbau bitten.  
Das Interview basiert auf meiner Dissertation mit dem Thema: **Strategischer, unternehmerischer Entscheidungsprozesse in kleinen und mittelständischen Unternehmen (KMU)**. Unter besonderer Betrachtung von intuitiven Entscheidungen und deren Einfluss auf das Unternehmenswachstum.  
Hierzu möchte ich mit Ihnen 9 Fragen aus 3 Themenkomplexen erörtern: Unternehmenswachstum, Entscheidungsfindung, Intuition und verstecktes Wissen (in diesem Zusammenhang oft Wissensmanagement genannt).

Unser Gespräch wird ca. 1,5 Stunde dauern und für Sie den folgenden Nutzen haben:

- den Einfluss von „Bauchentscheidungen“ auf die Motivation der Mitarbeiter erkennen
- eine neue Perspektive auf Entscheidungsfindung in KMU kennenzulernen
- kostenlos und frühzeitig die Ergebnisse der Forschungsarbeit zu erhalten
- einen Beitrag zum wissenschaftlichen Erkenntnisgewinn leisten

Auf diesem Weg hoffe ich, Ihnen und Ihrem Unternehmen einen Gegenwert für die investierte Zeit für unser Gespräch geben zu können.

Die mir zur Verfügung gestellten Informationen werden von mir absolut vertraulich behandelt. Die Ergebnisse unseres Gesprächs werden in einer wissenschaftlichen Analyse verwendet, deren Ergebnisse keinen Rückschluss auf Sie, Ihr Unternehmen und die anderen Teilnehmer der Befragung zulassen.

Es würde mich sehr freuen, wenn Sie sich die Zeit für das Interview nehmen können. In den nächsten Tagen werde ich mich telefonisch mit Ihnen in Verbindung setzen, um einen Termin zu vereinbaren.

Mit freundlichen Grüßen  
Dipl. Ing (FH)  
Uwe Schumann MBA

PS: Eine Bestätigung meiner Universität, mein persönliches Profil, eine Beschreibung der Forschungsarbeit und eine kurze Darstellung der 3 Themenkomplexe zu Ihrer Vorbereitung füge ich dieser Mail bei.



## 9.7.2 Presentation of the Thesis

### **Vorstellen der Dissertation:**

Strategischer, unternehmerischer Entscheidungsprozesse in kleinen und mittelständischen Unternehmen (KMU).

Unter besonderer Betrachtung von intuitiven Entscheidungen und deren Einfluss auf das Unternehmenswachstum.

### **Praktischer Bezug und Nutzen der Dissertation**

Es wurde oft untersucht und praktisch bewiesen, dass das Wachstum direkt verbunden ist mit dem strategischen Entscheidungsprozess im Unternehmen. Dieser strategische Entscheidungsprozess beeinflusst sowohl die interne Organisation, die Abläufe und die Motivation der Mitarbeiter, als auch externe Kräfte, die auf das Unternehmen wirken, z.B. den Wettbewerb, die gesellschaftlichen und politischen Rahmenbedingungen. Vor allem aber, wird das Ergebnis des strategischen Entscheidungsprozess vom Entscheider selbst beeinflusst, seinem Können, seiner Reputation und von seinem Bauchgefühl.

Die KMU sind der wirtschaftliche Motor in der europäischen Union, sie sind flexibel, innovativ, weltweit anerkannt und profitabel. Dort werden die meisten strategischen Entscheidungen von Unternehmern intuitiv getroffen.

Der Erfolg gibt dieser Art der Entscheidungsfindung recht, ist es nun der charismatische Unternehmer oder gibt es mehr Faktoren die Intuition mit Unternehmenswachstum verbinden, oder erzeugt die Kultur der intuitiven Entscheidungen eine natürliche Grenze für das Unternehmenswachstum?

### **Ziel der Dissertation**

Diese Forschungsarbeit resultiert aus meinen Erfahrungen in KMU aus den Bereichen des Maschinen- und Werkzeugbaus. Ich konnte beobachten wie Eigentümer und Geschäftsführer intuitiv ihr Unternehmen durch Höhen, Tiefen und Krisen steuerten. Das folgende Zitat (Driving blind: Strategic decision making in small companies (1998)) bringt es auf den Punkt:

„Wenn strategische Entscheidungen zu treffen sind ignorieren die Manager der befragten KMU die Ergebnisse ihrer durchgeführten Marktstudien und vertrauten ihrem Bauchgefühl“.

Die durchgeführte Literaturrecherche ergab eine Wissenslücke in der Beziehung zwischen strategischen Entscheidungsprozessen und dem Unternehmenswachstum in KMU.

Das Ziel der Studie ist es zu erforschen, wie dieser „intuitive“ strategische Entscheidungsprozess abläuft, die Ergebnisse zu analysieren, reflektieren und zu dokumentieren.

### **Die Methode und Inhalte der Dissertation**

Die induktive Forschungsarbeit (induktiv: Erarbeitung einer Theorie) wird qualitativ durch semi strukturierte Interviews (min. 10 Unternehmen, persönlich, in offener aber geordneter Grundstruktur) aus der philosophischen Position des Interpretivisten (der Forscher ist Teil der Untersuchung), mit der Methode der Grounded Theory durchgeführt (sukzessive Entwicklung des theoretischen Ansatzes durch iterative Veränderung der Interviewstruktur). Zur Beantwortung der Forschungsfragen werden in den Interviews mit den Entscheidern (Eigentümer oder Geschäftsführer) 3 thematische Bereiche der strategischen Unternehmerischen Entscheidung mit je 3 Fragen erörtert.

- (1) Entscheidungsprozess, (2) Intuition und impliziertes Wissen, (3) Unternehmenserfolg

Die Interviewergebnisse werden nach wissenschaftlichen Methoden strukturiert und die Ergebnisse analysiert. Der Abgleich mit dem heutigen Stand der Forschung durch die Betrachtung der Literaturrecherche setzt die Ergebnisse der Studie in das Verhältnis zur erkannten Wissenslücke ggf. kann eine Theorie zur Verbindung von „Bauchgefühl“ und Unternehmenserfolg aufgestellt werden.

Die Dokumente und Daten sind anonym und lassen keinen Schluss auf die befragten Unternehmen zu. Die so erarbeitete Promotionsschrift wird nach den Statuten der Universität geprüft und veröffentlicht.

## 9.7.3 Interview questions for own preparation

### 9 Frage aus 3 Themenkomplexen

Zur Durchführung des Interviews habe ich eine Frage/Diskussionsstruktur entworfen um unser Gespräch in einer „semi strukturiertes Interview“ Form zu führen (flexible und situative Frageänderungen sind möglich).

#### Entscheidungen im Unternehmen

- Erinnern Sie sich an die letzte strategische Entscheidung die intuitiv getroffen wurde?
  - mögliche Folgefrage: Führte die Investition zu einem Unternehmenswachstum (Höhe zusätzliche Mitarbeiter, Ertrag)?
- Gibt es einen strategischen Entscheidungsprozess in Ihrem Unternehmen?
  - mögliche Folgefrage: Wird dieser Prozess (Ablauf, Organisation, Durchführung) eingehalten?
- Werden Entscheidung geplant herbeigeführt, z.B. durch Innovationsworkshops, oder treibt das Management Entscheidungen voran?
  - mögliche Folgefrage: Gibt es Innovationsteams und wie sind diese strukturiert?

#### Intuition, verstecktes Wissen

- Erstellen Sie in regelmäßigen zeitlichen abständen Markt- und Wettbewerbsanalysen?  
mögliche Folgefrage: Wie wird die Organisation über die Ergebnisse der Analyse informiert ?  
Verfügen Sie, als der Entscheider, über spezielle Fähigkeiten, Informationsquellen und Fachwissen im Vergleich zu Ihrem Management?  
mögliche Folgefrage: Wie erlangen Sie einen Eindruck von der Leistungsfähigkeit Ihrer Wettbewerber?
- Betreiben Sie Wissensmanagement in Ihrem Unternehmen (wie komme ich an das Fachwissen der Spezialisten dran und stelle es im Unternehmen zur Verfügung)?  
mögliche Folgefrage: Gibt es gefährdetes Fachwissen in Ihrer Organisation?

#### Unternehmenswachstum

1. Wenn Sie Ihr Unternehmen betrachten und die Entwicklung der letzten Jahre bewerten haben Sie wesentlich organisatorische Änderungen durchgeführt oder stehen diese an?
  - a. mögliche Folgefrage: Gibt es aus Ihrer Sicht eine Notwendigkeit den Management Stil (z.B. direkt, funktional, Linie, divisional) im Unternehmen zu ändern?
2. Wie wichtig ist das derzeitige Fachwissen ihrer Spezialisten für Ihr Unternehmen, bezogen auf die Planung der nächsten 3 Jahre?
  - a. mögliche Folgefrage: Kann Ihr Unternehmen eine neue technologie in den Markt bringen, gibt es ein Beispiel hierfür (Umsatz mit Neuprodukten in angestammten Märkten)?
3. Folgend der Arbeiten von Greiner (1972, 1998: Evolution and Revolution as Organizations grow) gibt es für ein Unternehmen fünf Wachstumsphasen und zugehörig auch fünf Krisen.
  - a. Wachstum durch Kreativität -> folgend Führungskrise
  - b. Wachstum durch Direktiven -> Krise durch Autonomie
  - c. Wachstum durch Aufgabenverteilung -> Krise durch Kontrolle/Kontrollverlust
  - d. Wachstum durch Koordination -> Krise durch Verwaltung
  - e. Wachstum durch Zusammenarbeit, Vertrauen -> Krise durch organisatorische Grenzen

In welcher Phase ordnen Sie Ihr Unternehmen ein?

## 9.7.4 Presenting the researcher

### Persönliche Vorstellung

Dipl. Ing. (FH) Uwe Schumann MBA, 53 Jahre, 3 Kinder, geboren in Mainz

### Meine Motivation

Im Jahre 2011 entschloss ich mich mit den DBA Programm der University of Gloucestershire zu beginnen. Das Doctor of Business Administration Programm kann berufsbegleitend mit einem weitestgehend selbstbestimmten Thema durchgeführt werden. Das wissenschaftliche Arbeiten an einer praktischen Aufgabenstellung ermöglicht mir einen neuen Blickwinkel auf mein Arbeitsumfeld. In diesem Fall die Entscheidungsfindung in KMU (Kleine und Mittelständische Unternehmen), und deren Beitrag zum Unternehmenserfolg.

### Erfahrungen im Management (KMU)

- Organisatorische Umbildung eines mittelständischen Unternehmens
- Aufbau und Führung einer Vertriebsniederlassung in China
- Gründung und Führung eines Werkzeugbaus in Deutschland
- Führung von Niederlassung in der Schweiz und Frankreich
- Due Diligence zur Übernahme von Händlern und Partnern

### Überblick Management Aufgaben

- Geschäftsführung, Bereichsleitung, Vertriebsleitung
- Personalführung von 5 bis 40 Mitarbeitern
- Strategieentwicklung, Change Management, Generationswechsel
- Aufbau Vertriebsorganisationen im In- und Ausland
- Key Account und Account Management

### Arbeitgeber (chronologisch)

1. Scansonic GSM GmbH, (Lasertechnik, Automotive (250 MA))
2. Graf Syteco GmbH & CO KG, Tuningen (HMI für mobile Maschinen (50 MA))
3. Steinel Normalien AG, Villingen-Schwenningen (Werkzeugbau, (150 MA))
4. EWIKON Heisskanalsysteme GmbH & Co. KG, Frankenberg, (Formenbau (240MA))
5. Willy Vogel AG, Berlin, (Heute SKF, Maschinenbau (900 MA))
6. VDO Adolf Schindling AG, (Heute Continental, Automotive (17.000 MA))

### Ausbildung (chronologisch)

- University of Gloucestershire in Cheltenham, England (DBA, Promotion laufend)
- Europäische Fernhochschule Hamburg, MBA, Internationales Management
- Fachhochschule Frankfurt am Main, (Diplom Ingenieur (FH), Feinwerktechnik)
- Adam Opel AG, Rüsselsheim Berufsausbildung Maschinenschlosser

## 9.8 Interview Analyze Results after 1<sup>st</sup> sorting

Following the first sorting (analog to figure 4.1) interview analyze is documented in the following tables under the condensed meaning out of the interview will be interpreted and brought into an evaluable form for second sorting which was shown after section 4.3. This is identical for all interviews analyze documentation.

The following 3 tables per interview gatherers, condense and reflect the answers during the interview in 3 main research spheres:

- Decision in cooperation
- Intuition in cooperation
- Growth of cooperation

The active cluster is marked with a frame in the table and the answer of the interviewee is noted and additionally reflected on in the marked column. If the answer of the interviewee also shows insights or information to the two other clusters, the answer and reflection is also noted in the table but in the allocated column for the relevant cluster.

## 9.9 Documentation Interview Result after 1<sup>st</sup> sorting, Company 1S-1-300-21

### 9.9.1.1 Decision in Corporation Company 1S-1-300-21

Company 1: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1/Research Objectives	Additional notes, in preparing analyze, reflections	Answer and (helps to understand decision process)	Information or hints to intuition	Information or hints to growth
Do you remember the last strategic decision, which was intuitive?	Parent company had 10 years a tremendous growth and this provide funds to invest	Yes, 1.to buy property in city suburbs related to company growth. 2.Buy a company with a large loss and no strategy. 3. Change organization to agile 4. Not to invest in a me to product (10 years ago), nevertheless knowing that the market will grow extreme.  At least all decision was not strategic in the moment I done is, only in retrospect they are strategic		
Was the result positive, do the corporation grow (more Employees, turnover, Ebit?)	Very active in developing SME or start ups	1. Positive 2. still unknown 3. Still on-going, unknown 4. Wrong decision, not participate on market growth in an intellectual property related area		

Company 1: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1/Research Objectives	Additional notes, in preparing analyze, reflections	Answer and (helps to understand decision process)	Information or hints to intuition	Information or hints to growth
Is a strategic decision process established?	<p>The owner is in all decision loops, personal or with delegates, which act in their sense.</p> <p>I am like you use intuition of others and conclude the with the main mind-set.</p>	Yes, there are several interconnected processes for decision preparation. But influence all the processes.		
Is the process structure strictly adhered?	Also, here, many changes in a short time	No, this interconnected process is flexible but following a fixed KPI matrix		
Is the decision process itself established or management pushes it?		The process is established, management often pushes it as well		
Is an innovation team constituted, if yes what structure (department, experience)?		Yes, group management, company leaders, development, and a coach		

**9.9.1.2 Intuition in cooperation, company 1S-1-300-21**

Company 1: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2/ Research Objective 2	Additional notes, in preparing analyze, reflections	Information or hints to decision- making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
Do you conduct market competitor research periodically?			Unstructured yes but not on all subsidiaries in the same manner.	
Will the team be informed about the results of such research?			We like to establish a group wide interchange platform, but the members are quite sticky in their own silo.	
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?	He does a lot of underground leading into the separated subsidiaries, sometimes passing (beside) the responsible person in place		I read a lot about working theory take part, unstructured, in internal meetings und talk a lot with the engineers in charge.	
What do you personally know about your competitors?	In some areas the knowledge is limited to experience in local market		Due to my long relation with competitors, interconnection to CEO's, some, but I stepped out of this information flow. My knowledge is maybe wider than of single managers in my organization	

Company 1: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2/ Research Objective 2	Additional notes, in preparing analyze, reflections	Information or hints to decision- making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
Do your company have knowledge management organized?			We were thinking of this issue, but realization is too time consuming, outcome is unclear/ no specific. There is a kind of wiki in the RESEARCH AND DEVELOPMENT Centre	
Are there single persons who have special know-how in your organization?			Yes, there 3 people which could be a critical resource for their area they are working in.	
Have your programs to get this know-how into a team?			No, we don't have programs to avoid that risk.	

#### 9.9.1.3 Growth of cooperation Company 1S-1-300-21

Company 1: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Objective 3	Additional notes, in preparing analyze, reflections	Information or hints to decision- making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
Was there an organizational change in your company in	Try to push internationalization by offering special services, but			Change single corporations into a holding structure, founding of service point for sales, administration, and technical customer support.



Company 1: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Objective 3	Additional notes, in preparing analyze, reflections	Information or hints to decision-making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
the last 5 years or is one planed?	subsidiaries still in their silos.			
Should the management style be changed?	Average age of the employees is 34, so there is not so much experience in management			Yes, we have to chance into an agile world due to the young generation and the speed around the world in our high-tech environment.
Do you have to replace a single know-how person in the next 2 years				No, fortunately the team is quite young so we shouldn't have to replace people for retirement.
Are your company able to bring out a new product in a new market?	They started many projects with large market potential, but was not able to finish, competitors took over (Inventors Dilemma)			Yes, but it takes too long. We in an Inventors Dilemma, we created a market but are not able to develop this market
Greiner's Theory: In which growths phase your company are?				I think we are in a crisis not in a growth phase.

Company 1: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Objective 3	Additional notes, in preparing analyze, reflections	Information or hints to decision- making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
In which crisis you are?			With agile structures a crisis (like Greiner 1 – 3 will not come up.	If we are in red tape crisis and like to change into collaborative phase with agile methods
What do you see when you step back and look on your company?				I can see a group of innovative companies with a great future and a lot of work around the globe.
Better with you, or better with a new/other person in charge?				Without me, that is the reason I stepped out totally

## 9.9.2 Documentation Interview Result after 1<sup>st</sup> sorting, Company 2G-5-570-145

### 9.9.2.1 Decision in Corporation Company 2G-5-570-145

Company 2: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1/ Research Question 1/ Research Objectives	Additional notes, in preparing analyze, reflections	Answer and (helps to understand decision process)	Information or hints to intuition	Information or hints to growth
Do you remember the last strategic decision, which was intuitive?	My view is, the M&A was as well intuitive: Question: could we make it - > yes, we can (competitor was same size as company 2, and bankrupt)	Yes, I remember two strategic decisions: 1. Start production in a NAFTA country, reason currency assurance for US business, location intuitive 2. Start production of a relevant material our self, become a material producer		Acquisition of a competitor was driven by customers and as well from local politics
Was the result positive, do the corporation grow (more Employees, turnover, Ebit?)	There is a very positive impact on the business with this material, but they did not establish any KPI for measure it	Both decisions were successful, 1. Now 4 people more and more margin (in total) 2. Create a competitive advantage and safe leading market position	Success of 2. Is not measurable, but the feeling is positive	Growth in numbers and competitive advantage
Is a strategic decision process established?	The owner gets the OK from his people by speaking every day about the 5 important issues	No there is no process in place. Intensive information sharing culture, every day 30	Decisions intuitive by the owner. Get an OK from board of directors (Mother and	

Company 2: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1/ Research Question 1/ Research Objectives	Additional notes, in preparing analyze, reflections	Answer and (helps to understand decision process)	Information or hints to intuition	Information or hints to growth
		minutes for all leaders together with the owner	Brother) now real control function	
Is the process structure strictly adhered?		No by chance		
Is the decision process itself established or management pushes it?	The customer is the core of all activities they are the center of value.  The company DNA has a large influence on this	Management pushes it, but mainly the idea or the pressure to be active comes from the customer. The total communication is based on customer demands.	This is in the company DNA, it's a feeling which is given from father to son, from master to mechanic.  The owner hates processes: Processes makes you slow, inflexible and kills creativity	
Is an innovation team constituted, if yes what structure (department, experience)?	Until now there was no result from this workshop, it's more a chance to discuss the ideas of the owner.	Yes, for 5 years there is a 2-year strategy Workshop with the leading persons, 2 or three days outside of the company		No result until now

**9.9.2.2 Intuition in cooperation, Company 2G-5-570-145**

Company 2: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2/ Research Question 2/ Research Objective 2	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
Do you conduct market competitor research periodically?	Competitors are used by the owner like a network		No market competitor research because there are only 5 competitors (like a family)	
Will the team be informed about the results of such research?	At least this close customer relation and the large sales force is like market research.	Drives decisions in the cooperation	In the daily meetings all relevant information are shared. Sales team conducts many customers visit all reports are read by the owner, information is comprehensive, many salesmen are in the market	
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?	The researcher meets the owner twice during exhibition, he is very present on sales activities		As mentioned, all information going through my office every day and my family dispose over a large network in our region	
What do you personally know about your competitors?	Talking during exhibitions,		I know the main thing about our competitors, new product, new customers, its easy, there are only 5 main players in our business	

Company 2: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2/ Research Question 2/ Research Objective 2	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
Do your company have knowledge management organized?	The 6 <sup>th</sup> generation leading the company successful		No, we analyzed the necessity for such a system / organization. The corporate DNA keep know-how and transfer it to the next generation	
Are there single persons who have special know-how in your organization?	A long time ago, the leaders decide to hold know-how in the corporation over generation. The father of CEO told his son: lead the company that every person could be out for 3 months, in that time the team should be able to take over		No, also not me, there is one person in our team who knows the same things as I know.	
Have your programs to get this know-how into a team?	The typical German education program, learning by doing together with the master		Yes, we integrated a successor program, every 2 years the section leaders (min 150 people) conduct a wide analysis who will be leaving in the next 2 years then we organize a redundant successor for minimum 6 month	

### 9.9.2.3 Growth of cooperation Company 2G-5-570-145

Company 2: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Question 3/ Research Objective 3	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
Was there an organizational change in your company in the last 5 years or is one planned?	What he does not explain, due to his opinion, the purchase of a same size enterprise was a customer driven action, each SME is an own entity		If there is a good employee, may we change the organization for him? Depends on the chance to find one person with special skills. Or a customer demand forces us to change.	Since the last 20 years the organization wasn't changed, only people and responsibilities changed
Should the management style be changed?			No, it's focused on the owner and organization is proved over 20 years	Could be, never really step back and analyzed. Change is always on board but not a big one, only incremental steps
Do you have to replace a single know-how person in the next 2 years				No, as far as I know, but if yes there will be a successor in place
Are your company able to bring out a new product in a new market?	Not discussed this question			

Company 2: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Question 3/ Research Objective 3	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
Greiner's Theory: In which growths phase your company are?	Do not fit to this corporation. They changed markets in 20 years and grow, they changed products and grow, the internationalize and grow, but when you ask... there is no growth.			We are stable in growth, same number of employees, same turnover, and similar margin.
In which crisis you are?	He does not like administration due to the experience from the company they took over, this company was 20 years old and, in this crisis, (and went into deep trouble)			If there is a crisis, we are in the crisis of administration.
What do you see when you step back and look on your company?	Reflection is not a tool in his family, the duty to secure cooperation for all 10 shareholders (relevant) around the world			Good company culture prepared to pass over to the next generation. Company is too big now; 120 employees are best size
Better with you, or better with a new/other person in charge?				Never asked this question to myself, but I will do it. So far, it is a



Company 2: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Question 3/ Research Objective 3	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
				successful company.

### 9.9.3 Documentation Interview Result after 1<sup>st</sup> sorting, Company 3B-3-300-103

#### 9.9.3.1 Decision in Corporation Company 3B-3-300-103

Company 3B-3-300-103: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1/ Research Question 1/ Research Objectives	Additional notes, in preparing, analyze, reflections	Answer and (helps to understand decision process)	Information or hints to intuition	Information or hints to growth
Do you remember the last strategic decision, which was intuitive?	At least it was driven by external analysts	Yes, we took over a competitor in 2000 and we invested I knew production facilities and we as well know the competitor and his weaknesses and strength in his market niche.		
Was the result positive, do the corporation grow (more Employees, turnover, EBIT?)	Very long-lasting strategies in this company	We don't know, because the investment was in a crisis, and we still not as successful as before		

Company 3B-3-300-103: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1/ Research Question 1/ Research Objectives	Additional notes, in preparing, analyze, reflections	Answer and (helps to understand decision process)	Information or hints to intuition	Information or hints to growth
Is a strategic decision process established?		No, there is a day-by-day meeting with 7 leading persons and a kind of international sales meeting. My cousin and I discussing as well intensive in private and in door-to-door events.	Ideas come out of this information pool	
Is the process structure strictly adhered?		This both meetings are strictly adhered		
Is the decision process itself established or management pushes it?		No, the decisions are made daily in this meeting		
Is an innovation team constituted, if yes what structure (department, experience)?		Sales; general management, RESEARCH AND DEVELOPMENT more kind of elevator talk		

**9.9.3.2 Intuition in cooperation, Company 3B-3-300-103**

Company 3B-3-300-103: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2/ Research Question 2/ Research Objective 2	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
Do you conduct market competitor research periodically?			This is a day-to-day business for the Owner, reading special literature, chamber VDMA etc. discussion, sales and exhibitions	
Will the team be informed about the results of such research?			Yes, in this day-by-day meeting	
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?			Yes, relation to sales, daily telephone conversation	
What do you personally know about your competitors?			Know technical and marketing details	
Do your company have knowledge management organized?			No, thought about but learning by doing is the strategy. Tried it once but we weren't able to finish the project	

Company 3B-3-300-103: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2/ Research Question 2/ Research Objective 2	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
Are there single persons who have special know-how in your organization?	Mature organization has know-how diversification over generations		Yes, but cases like this we hat many in the last 100 years, the organization help itself	
Have your programs to get this know-how into a team?	The team come closer together an solve the Problem		No, “ mut zur Lücke” we don't need things like that... as mentioned	

### 9.9.3.3 Growth of cooperation Company 3B-3-300-103

Company 3B-3-300-103: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Question 3/ Research Objective 3	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
Was there an organizational change in your company in the last 5 years or is one planed?				No, only his family have to give the control to him (father died)
Should the management style be changed?	Persons and tasks have to fit, if not			The responsibility should be divided new, depends on personnel

Company 3B-3-300-103: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Question 3/ Research Objective 3	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
	organization have to be changed			
Do you have to replace a single know-how person in the next 2 years?				No, know-how is good divided, no fluctuation
Are your company able to bring out a new product in a new market?				Not discussed in detail, at least yes
Greiner's Theory: In which growths phase your company are?	The owner is not looking into growth necessity he is not leading the company...			No growth potential, market is demanding and difficult
In which crisis you are?				All crisis is latent relevant. In the moment a kind of Administration crisis coming up, much effort for an QM system
What do you see, when you step back and look on your company?	He is not reflecting in a right way, more from family perspective			Not discussed. Company is a task not a challenge

Company 3B-3-300-103: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Question 3/ Research Objective 3	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
Better with you, or better with a new/other person in charge?	He was a little confused about this question			This I have to think about, but somebody have to make it

#### 9.9.4 Documentation Interview Result after 1<sup>st</sup> sorting, Company 4A-3-150-94

##### 9.9.4.1 Decision in Corporation Company 4A-3-150-94

Company 3: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1/ Research Question 1/ Research Objectives	Additional notes, in preparing, analyze, reflections	Answer and (helps to understand decision process)	Information or hints to intuition	Information or hints to growth
Was the result positive, do the corporation grow (more Employees, turnover, EBIT?)	There is a loss, but in a machine tool environment investment are long lasting.	The result is not clear, it is now 3 years ago, we hired new people and it looks good. The be sure, I think it needs five years.		Company is growing for 20 years now
Is a strategic decision process established?	I think is more a planning process to check KPI for the leaders	Yes, once a year a strategic process is conducted. Target are revised 2 to 4 times a year		

Company 3: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1/ Research Question 1/ Research Objectives	Additional notes, in preparing, analyze, reflections	Answer and (helps to understand decision process)	Information or hints to intuition	Information or hints to growth
Is the process structure strictly adhered?		Yes, it is following strict rules		
Is the decision process itself established or management pushes it?	The decision and the topics are driven by the owner	I drive the process and the topics		
Is an innovation team constituted, if yes what structure (department, experience)?		Yes, it's a fixed, but small team first and second management level. Information will be transferred thru a weekly management meeting and an innovation workshop (RESEARCH AND DEVELOPMENT and Production)		

**9.9.4.2 Intuition in cooperation, Company 4A-3-150-94**

Company 3: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2/ Research Question 2/ Research Objective 2	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
Do you conduct market competitor research periodically?	There is not really a process, it's a kind of gathering information		Yes, we check competitor figures once a year and randomly the sales information.	
Will the team be informed about the results of such research?	He saw this as a big problem since ever, how to assure information transfer in the corporation		No, not enough. Many information will bog down in the corporation. Many employees say "I didn't know that, why nobody tell me"	
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?			Yes, my family have a large network, I meet many CEO's during a year and I be able to interconnect my detailed information with more macro-economic data	
What do you personally know about your competitors?	The connection from the owner to the customers are not very intensive. As well the connection to the competitors are weak.		No very special thing, my sales team know more, I think.	



Company 3: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2/ Research Question 2/ Research Objective 2	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
Do your company have knowledge management organized?			No, we have a simple Wiki, but we should do more	
Are there single persons who have special know-how in your organization?	The is not really a concept how to keep knowledge in the company, I assume the leader will be able to work as a consultant after retirement.		Yes, in the 80 <sup>s</sup> I took over and I structured a team of young managers around me, they still here like I am here, they will retire soon. We have to take care	
Have your company programs to get this know-how into a team?			No, but we should have!	

### 9.9.4.3 Growth of cooperation Company 4A-3-150-94

Company 3: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Question 3/ Research Objective 3	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
Was there an organizational change in your company in the last 5 years or is one planned?	The organizational change makes many things more difficult, and the persons in charge weren't able to fulfil their tasks, mainly market orientation was missing			When I started in the 80s after my business school, I changed a lot, turnover grows from 5 to 60 million. Due to an expected growth, we changed into a new organization. We stopped because the growth rate did not come. The new organization was too complicated for us.
Should the management style be changed?				No, when I leave maybe.
Do you have to replace a single know-how person in the next 2 years?				See answer before, yes, a lot
Are your company able to bring out a new product in a new market?				Did not discuss this question

Company 3: owner managed	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Question 3/ Research Objective 3	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
Greiner's Theory: In which growths phase your company are?				We are in a slow growth phase. Market is not as demanding as before.
In which crisis you are?				We in no crisis, we have some problems in sales with control, maybe this is the crisis... I don't know
What do you see, when you step back and look on your company?	The reflection is a kind of own view on the results: 20 years of growth over 10% is good, is best. It's not a question how the company look like if we totally change strategy.			Yes, I do, but everything is ok.
Better with you, or better with a new/other person in charge?				With me is good

## 9.9.5 Documentation Interview Result after 1<sup>st</sup> sorting, Company 5S-M4-250

### 9.9.5.1 Decision in Corporation Company 5S-M4-250-114

Company 5: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1/ Research Question 1/ Research Objectives	Additional notes, in preparing, analyze, reflections	Answer and (helps to understand decision process)	Information or hints to intuition	Information or hints to growth
Do you remember the last strategic decision, which was intuitive?	The manager has a certain interest in intuition	Yes, open a sales and service in America without any market research by taken over a business partner	The decision grew over a long time	
Was the result positive, do the corporation grow (more Employees, turnover, EBIT?)		The result was positive, more customer in general more EBIT		
Is a strategic decision process established?	The manager is interested in lean production and Asian innovation culture	Not yet but planed. Currently a leaders group meet every month		
Is the process structure strictly adhered?		No but planed, to fix this process in the next 2 months		
Is the decision process itself established or management pushes it?		The decisions are prepared in the leaders' meeting, normally manager push it.		

Company 5: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1/ Research Question 1/ Research Objectives	Additional notes, in preparing, analyze, reflections	Answer and (helps to understand decision process)	Information or hints to intuition	Information or hints to growth
Is an innovation team constituted, if yes what structure (department, experience)?		No, usually the manager talks to the specialists and drive the innovation thru the organization	A special ideas workshop was started	

#### 9.9.5.2 Intuition in cooperation, Company 5S-M4-250-114

Company 5: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2/ Research Question 2/ Research Objective 2	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
Do you conduct market competitor research periodically?	Due to the mainly dealer driven sales organization, direct contact to customers and competitor quite difficult		Yes, we analyze KPI of the sector we are in and set relation to information of associations like VDMA, VDA and others. We also use a very slim CRM	
Will the team be informed about the results of such research?			Every quarter we present the figures in a sales meeting. Due to the large volume out of automotive industry it's difficult to analyze these data sheets	

Company 5: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2/ Research Question 2/ Research Objective 2	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?	The owners stepped out of the board some years ago. It seems that the network become old		The regional association organizes meetings and also some special automotive contacts	
What do you personally know about your competitors?			Nothing special, more exhibitions know-how. CTO takes care on this	
Do your company have knowledge management organized?			No, we planned but it was not in our focus	
Are there single persons who have special know-how in your organization?			Yes, we identified some persons out of the technical department	
Have your company programs to get this know-how into a team?	Not sure which kind of action was started, basic know-how mainly in the mind of older people		Yes, we started to take some action	

### 9.9.5.3 Growth of cooperation Company 5S-M4-250-114

Company 5: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Question 3/ Research Objective 3	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
Was there an organizational change in your company in the last 5 years or is one planned?				Yes, we have done a lot in this. We started an incentive program, intensify the information flow, also in the workshop. Changed sales structure. Started a lean, Kanban and other operating programs to streamline the company.
Should the management style be changed?				We already changed it, from top down, and controlling of everything to participative.
Do you have to replace a single know-how person in the next 2 years?				No not in the next two years.
Are your company able to bring out a new product in a new market?				Not tested, this is not in the corporate strategy.
Greiner's Theory: In which growths phase your company are?	Economies is difficult, in the moment, growth could only be acquired with new products			We are in the collaboration growth phase, I think

Company 5: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Question 3/ Research Objective 3	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
In which crisis you are in?	The reason for the management style change, mentioned above			After the explanation I would assume we are in the crisis of red tape, too much control less trust
What do you see, when you step back and look on your company?	The change in automotive will have a strong impact on company 5			We see many problems from general economy, and we have to change a lot in the next years.
Better with you, or better with a new / other person in charge?	A long discussion about the changes which was done, also own management style was changed and so the question was not answered			Not discussed this question



## 9.9.6 Documentation Interview Result after 1<sup>st</sup> sorting, Company 6D-3-50-60G

### 9.9.6.1 Decision in Corporation Company 6D-3-50-60G

Company 6: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1/ Research Question 1/ Research Objectives	Additional notes, in preparing, analyze, reflections	Answer and (helps to understand decision process)	Information or hints to intuition	Information or hints to growth
Do you remember the last strategic decision, which was intuitive?	General in this interview, answers were long an unstructured, we slipped away many times into irrelevant fields.	Yes, we decided to open up a job shop which gives our customers the chance to source firstly products from us before they buy a machine and integrate the process in their own workshop	Idea comes from customer side and was brought into the corp. by the manager	
Was the result positive, do the corporation grow (more Employees, turnover, EBIT?)		Yes, result was positive, we got more turnover and EBIT and as well more machine sales, as well we have now 4 more employees (10%)		
Is a strategic decision process established?		Yes, once a year the leading persons should meet to a strategic workshop, but it is not well established		

Company 6: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1/ Research Question 1/ Research Objectives	Additional notes, in preparing, analyze, reflections	Answer and (helps to understand decision process)	Information or hints to intuition	Information or hints to growth
Is the process structure strictly adhered?		No, very random		
Is the decision process itself established or management pushes it?	My feeling is, the everyday meeting is the place where decisions are prepared, and strategies are developed	All participants are lazy in this case, there is a process in place, but nobody really take care		
Is an innovation team constituted, if yes what structure (department, experience)?	At least the process in total based on the owner's sales action, he gets all ideas and intuition issues from customer contact and bring that into the company	We had a consultant in place, 3 years ago, due to the cost and a crisis in our branch this project was cancelled		

### 9.9.6.2 Intuition in cooperation, Company 6D-3-50-60G

Company 6: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2/ Research Question 2/ Research Objective 2	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
Do you conduct market competitor research periodically?	It is a big plus for the company that the owner doing sales on site personally		Yes and no, I myself have the intensivist contact to customers and competitors, so I always have them in focus	
Will the team be informed about the results of such research?			The main people visit the exhibitions and will be by day-to-day reports informed about competition	
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?			Yes, due to my sales function I have special information sources and the network in our sector	
What do you personally know about your competitors?	It's a small, specialized sector and its quite easy to be on track		My knowledge is limited, but I think I have a quite good overview about the competitors	
Do your company have knowledge			No, but we know that two persons have core know-	

Company 6: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2/ Research Question 2/ Research Objective 2	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
management organized?			how which we have to secure.	
Are there single persons who have special know-how in your organization?	The small structure of company 5 brings problems		Yes, as mentioned, two technical persons have to be observed	
Have your programs to get this know-how into a team?	This payment is impressive, technical people earn more than management, in some cases		Yes, we start early to set successors in place and pay a good salary	

### 9.9.6.3 Growth of cooperation Company 6D-3-50-60G

Company 6: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Question 3/ Research Objective 3	Additional notes, in preparing, analyze, reflections	Information or hints to decision-making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
Was there an organizational change in your company in the last 5 years or is one planned?				3 Years ago, the owner takes over from his father (80 years old). Now he plans a change in management and sales

Company 6: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3/ Research Question 3/ Research Objective 3	Additional notes, in preparing, analyze, reflections	Information or hints to decision- making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
Should the management style be changed?				Yes, the owner like to have an external CEO
Do you have to replace a single know-how person in the next 2 years?				No, still more time left
Are your company able to bring out a new product in a new market?				Yes, but this market is quite mature and have long innovation cycles
Greiner's Theory: In which growths phase your company are?				We try to grow every year, it's difficult to select a growth phase
In which crisis you are?				We have all crisis at the same time. Maybe leading ...
What do you see when you step back and look on your company?				We are too small to grow, but we in a stable niche and we have the best people ant highest quality
Better with you, or better with a new/other person in charge?				In the moment only with me, in two years only without me

## 9.9.7 Documentation Interview Result after 1<sup>st</sup> sorting, Company 7O-3-200-102

### 9.9.7.1 Decision in Corporation Company 7O-3-200-102

Company 7: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1: Decision in Cooperation  Questions to the interviewee	Additional notes during the interview, in preparing analyze, reflections	Answer and reflected notes from researcher (help to understand decision process)	Information or hints to intuition out of the Cluster 1 Question	Information or hints to growth of the Cluster 1 Question
Do you remember the last strategic decision, which was intuitive?	More than one was mentioned, but the change to make, was mainly driven by owners' fathers experience	Change from buy to make, reason: critical process (USP depending on a supplier) It was a technological relevant decision.  Important to be independent for core processes. Decision was made by the owner	Decision was intuitive: Information from his father, production more flexible, "we make technology..." slogan of the company	More employees, more customers, EBIT stable (add value into company) Investment ca. 10% of annual turnover
Was the result positive, did the corporation grow (more Employees, turnover, Ebit?)	Result was positive, answer was emotional driven.	Growth is not necessary, save the environment is more beneficial, technical leading production is more important for the company. Becoming a leading producer is more important. The new equipment must be integrated into the facility, must look good		Not sure, never proved

Company 7: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1: Decision in Cooperation  Questions to the interviewee	Additional notes during the interview, in preparing analyze, reflections	Answer and reflected notes from researcher (help to understand decision process)	Information or hints to intuition out of the Cluster 1 Question	Information or hints to growth of the Cluster 1 Question
Is a strategic decision process established?	Discussion in the family, leader team involved. Daily meetings	No decision process established; employees would be informed about the decisions; they (selected persons) are part of the decision-making preparation. Testing, researching, pilot investments	Selecting the people working on the topic in the pre decision phase, are driven by the gut feeling of the owner (exiting level)	
Is the process structure strictly adhered?	Process is over years established, no written process	No process, only the management meet to possible projects and future business.	If management decides to follow up a good idea, then a decision will follow than discussion and information starts in company	There is now focus on growth in strategic decision- making
Is the decision process itself established or management pushes it?	Outside the company are many drivers, city, mayor, employees	Only driven by management	Only by owner, sometimes gut feeling (a good person (employee) is driving a topic)	This is always in the mind of the owner, also the exited employees could be an accelerator for new growth projects

Company 7: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 1: Decision in Cooperation  Questions to the interviewee	Additional notes during the interview, in preparing analyze, reflections	Answer and reflected notes from researcher (help to understand decision process)	Information or hints to intuition out of the Cluster 1 Question	Information or hints to growth of the Cluster 1 Question
Is an innovation team constituted, if yes what structure (department, experience)?	Many involvements of “important” people, not only the leaders are important. Selection of people is an intuitive process	1.) A weekly, unstructured discussion on a Friday including company lunch, maximum 5 people. 2.) Two times per week, leading people meet for lunch in a restaurant (no agenda) 3.) Team leaders meet 4 times a year 4.) Information purpose, Corporate Meeting two times a year, corporate news (paper) three times a year, corporate education, ten times a year	This kind of information and meeting structure should support ideas and engagement in the teams to find the right people for the right strategic topic, the owner knows the people with innovative ideas and support them, but there is no department to drive this.	Information/ Innovation events support teambuilding and contribute growth (a feeling from the owner, not result of measures)

#### 9.9.7.2 Intuition in cooperation, company 7O-3-200-102

Company 7: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2: Intuition in cooperation  Questions to the interviewee	Additional notes, in preparing, analyze, reflections	Information or hints to decision- making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
Do you conduct market	Owner follows the large competitors,		No, there is not regularly market research and competitor analyze.	



Company 7: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2: Intuition in cooperation Questions to the interviewee	Additional notes, in preparing, analyze, reflections	Information or hints to decision- making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
competitor research periodically?	but this not a process		Information is transported verbally but unstructured.	
Will the team be informed about the results of such research?	The involved persons are part of the decision, without knowing it.		Only verbally and random.	
Do you personally have special sources of market information such as network, alumni, exhibition, and visit courses?	His father is a very skilled man, I am sure there are a lot of information coming from him		1.) The owner is member in a few chamber workshops 2.) Is supporting a regional network to other entrepreneurs. 3.) Participate in leading and psychological and advanced training 4.) Is interested in macro- economic development 5.) Conduct specific speech on a cooperate level (VDA, VDI, VDE)” the preparation is a big value)	Company is not doing benchmarks with competitors in terms of market share, growth rate and result.
What do you personally know about your competitors?	He knows where the weakness from large companies is and use this for investment decisions.		Nothing-special, bud due to the internal connectivity (driving every forum) and the external network is the view quite holistic. In this case the competitors are very large entities and good	A kind of benchmark with these very large entities is made periodically. Growth comes out of the niches where these companies are not be able to perform. Good prices

Company 7: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 2: Intuition in cooperation Questions to the interviewee	Additional notes, in preparing, analyze, reflections	Information or hints to decision- making	Answer and points noted for reflection (help to understand decision process)	Information or hints to growth
	More a tacit thing.		controllable by specific media or during exhibitions	because of low competition.
Do your company have knowledge management organized?			No, we do not conduct knowledge management, and it's not planned.	
Are there single persons who have special know- how in your organization?			No, in the past we had this problem but meanwhile we doubled strategic function (redundant)	
Have your company programs to get this know- how into a team?	At least also a knowledge security, people stay long, and transfer know- how		Yes/no, there no program in place but we have this intensive communication structure, and we source our personnel local; fluctuation is nearly zero	

### 9.9.7.3 Growth of Cooperation Company 70-3-200-102

Company 7: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3: Growth of cooperation	Additional notes, in preparing, analyze, reflections	Information or hints to decision- making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
Was there an organizational change in your company in the last 5 years or is one planned?	Growth is not important, so the organization will be stable		Changes are more intuitive than planned. Owner's father is still in the board, but no active influence (support by consulting)	The organization is tailored to the owner; some changes are made (new leaders in the company) but no general organization (i.e., from hierarchical to matrix).
Should the management style be changed?		No, it is perfect, single opinion of the owner.		Opinion of the owner is: I am the right person for this job, company and I are a like single unit
Do you have to replace a single know- how person in the next 2 years?				No, this was done years ago.
Are your company able to bring out a new product in a new market?			No, yes... it's not necessary product portfolio is perfect	Think about to sell a special machine, design was made during the development of a production process
Greiner's Theory: In which growths phase your company are?			Company had and had no crisis	The model does not fit to us, the growth and crisis scenario will be avoided by the owner.

Company 7: owner managed.	Researcher Notes	Decision in Corporation	Intuition, in cooperation	Growth of cooperation
Cluster 3: Growth of cooperation	Additional notes, in preparing, analyze, reflections	Information or hints to decision- making	Information or hints to growth	Answer and points noted for reflection (help to understand decision process)
In which crisis you are in?	If the owner died or step out than there is a crisis of leading. Because nobody could replace the owner. If his father dies, there will be as well a crisis (continuity)		We are in no crisis.	Turnover is growing qualitative, organization is stable. New business is coming up. Growth without crisis.
What do you see, when you step back and look on your company?	Targets are more private, company was successful organized by the father, growth should be similar then its good (Father and son agreement)		I will not do this; I am in heaven. I can invest 5 million without asking somebody... maybe my father, now?	
Better with you, or better with a new/other person in charge?	Reflection is not a known discipline in Germany.		I am the right person; nobody could do what I do.	This company is very successful.

## 9.10 Figures in landscape format

## Interview analyzing workflow

Interview, notes and audio recording documentation

GM-SME 15 planed  
in depth interviews

Company Code /Sector/ main product	Pilot Interviewee	People	Launch of company	Result of pilot interview: to be used or not used for business
15-I-330-27 /Automotive/ Machine tool	Oswar Manager, 1 <sup>st</sup> generation	300	2001	1. 80% fit (Manager) 2. Yes
20-I-570-145 /Medical / control manufacturer	Oswar Manager, 5 <sup>th</sup> generation	570	1877	1. 90% fit (nurse) 2. Yes
38-I-330-103/ Machine tool/ Machine build own brand	Oswar Manager, 3 <sup>rd</sup> generation	243	1919	1. 100% fit 2. Yes
45-I-570-103/ Machine tool/ Machine build own brand	Oswar Manager, 3 <sup>rd</sup> generation	140	1928	1. 100% fit 2. Yes
58-MA-250-114 GmbH /Automotive/ manufacturer	CEO 15 years	240	1908	1. 80% fit (Manager) 2. Yes
63-I-50-060/ Machine tool/ Machine build own brand	Oswar Manager, 3 <sup>rd</sup> generation	45	1965	1. 100% fit 2. Yes
70-I-300-022/ Machine / Equipment	Oswar Manager, 3 <sup>rd</sup> generation	200	1920	1. 100% fit 2. Yes

### After 7<sup>th</sup> Interview achieved saturation

9R-2-70-42/ Machine tool / Machine builder	Owner Manager 2 <sup>nd</sup> generation	70	1980	1. 50% fit (went bankrupt) 2. No
10R-2-165-54/Food / Machine builder	Owner Manager 2 <sup>nd</sup> generation	165	1966	1. 100% fit 2. No
11H-1-40-38/ Automation / Machine builder	Owner Manager, 1 <sup>st</sup> generation	41	1984	1. 80% fit (1 <sup>st</sup> gen.) 2. Yes

*Chapter 3, Table 1 : List of pilot interview partners, selection of in-depth interview partners, including triangulation*

Chapter 3, Figure 9 shows in 3 colors the analyze steps of the audio recorded interviews, artificial diffuse (detailed Interview information are confidential)

1<sup>st</sup> Sort  
Structure  
cluster  
reflect  
interpret  
condense

Interview result clustered  
in 3 spheres, 2<sup>nd</sup> sorting

Summary Interview result  
per spheres and company

This leads to

This leads  
to these  
relations

*Chapter 4 Interview result analyze:  
meaning condensation, interpretation,  
commendation per company*

Chapter 4/ and 5: 2<sup>nd</sup> Analyze, compare, document interconnection and similarities, prepare data for interpretation

