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Hermut Kormann

German Family Enterprises

A Sourcebook of Structure, Diversity, Growth and Downfall

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Preface

The structure of German family businesses is unique. Family firms are found in every size class and industry from the three-employee bakery around the corner to multinational companies such as Henkel and Merck with more than 50,000 employees still owned and governed by the family.

It is interesting how the structure of German family enterprises has developed over the decades and how it could sustain. This work presents the essence of different thesis and research projects in the field of family business done at Zeppelin University and the University of Leipzig.

The book offers a unique database of the development of German family businesses. This database comprises the age structure, size classes, employee data, and growth rates of the 500 biggest German family companies since foundation. A comparison with German listed companies emphasizes the relative importance of family business for the economy.

The book explores the dominant influence leading to the two extreme cases of development: growth and downfall.

The demanding challenge in the long-term strategy of family-owned business is linked to growth development. There is no simple key success factor enabling a family and its company to pursue a growth path. It requires a special mindset and a fit in four major dimensions.

A similar multifaceted range of influencing factors characterize the downside of the company development: the disruptions and the ultimate downfall. References are made to various research reports analyzing the frequency of the downfall of family and non-family enterprises and the respective triggering events.

The findings presented could serve practitioners to adjust their developmental aspirations for the company and to formulate practical implications. In addition, this database is the starting point of other research projects dealing with extraordinary growth of family firms and the special cases of listed family companies.

Friedrichshafen, Germany — Laura K. C. Seibold
Munich, Germany — Maximilian Lantelme
Friedrichshafen, Germany — Hermut Kormann

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About the Authors

Laura Seibold M.A., studied business administration and economics at the University of Frankfurt, Vancouver, and Friedrichshafen, graduating with a master's degree. She is currently working on her PhD thesis dealing with the topic of family firm growth. In her studies, she focuses on the growth of large well-established family businesses which show growth spurts in later generation. She is member of a German business family, operating in mechanical and software engineering.

Hermut Kormann served as CFO of Voith GmbH from 1989 to 1999 and CEO from 2000 to 2008. Voith is a 150-year-old German family enterprise in the field of mechanical engineering and plant engineering. Prior to Voith AG, he held positions at Brown, Boveri & Cie.—today ABB—and Booz & Co., management consultants. Dr. Kormann has served on various supervisory boards of family companies. He advises owning families on issues of owner strategy. Dr. Kormann is a Visiting Professor at Leipzig University and at Zeppelin University, Friedrichshafen, where he wrote his habilitation thesis on corporate governance of family businesses and lectures on leadership, strategy, and governance in family-owned businesses.

Maximilian Lantelme M.A., studied corporate management and economics at Zeppelin University, Friedrichshafen, with a focus on family businesses and corporate strategy. He is working as a strategy consultant with more than three years of experience in the field of mergers and acquisitions for an international management consulting firm. His research focuses on the growth and downfall of family businesses as well as their historical analyses over generations.

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1 Introduction: Characterizing Family Owned Enterprises and Assessing Them on Criteria Such as Family Involvement, Size, Age, Longevity, Independence and Vitality

Family enterprises[1] consist of a vast variety of entities: recent start-ups and enterprises that are several hundred years old, almost each and every industry, small and large companies, businesses of one single owner and those with a couple of hundred owners. In family businesses, the challenges regarding organizational structures, as well as management tasks, vary depending on their respective size. The overall importance of family businesses is mainly measured in relation to the gross national or domestic product. In doing so, no distinction is made regarding the size class of the family businesses. However, the three-people bakery around the corner and Volkswagen have one thing in common: Both are family businesses. Yet, there is one essential feature that fundamentally distinguishes the two companies—their size. In order to describe and analyse this variety one needs to form typological clusters of entities with certain similarities. We have chosen the criterion "size" as a leading indicator to elaborate a typology.

1.1 Family Enterprises: The German Pattern

Undoubtedly, family enterprises play a key role in all economies. Especially in Germany there is a grown structure of family enterprises of any size. The story of the German family enterprise structure started even before industrialization, and German family enterprises have reached great success, 70 of the 500 biggest family companies worldwide[2] are German (St. Gallen Center for Family Business, 2018). But not only the biggest German family companies play a global role. There are many Hidden Champions that are global market leaders in their niche. Looking back

[1]Note: The terms family business, family enterprise, family firm, family-owned firm etc. are used synonymously.

[2]According to Global Family Business Index, University of St. Gallen, Accessed 18.09.2017.

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over a period of 100 years, it can be observed that German family businesses sold their property only slowly or not at all in comparison to those in Anglo-Saxon countries (Ehrhardt, Nowak, & Weber, 2006).

In contrast to the USA, where many large, multinational, and publicly listed corporations characterize the corporate landscape, Germany has a broader structural diversity. However, the size of family businesses ranges from micro-businesses to multi-billion euro groups.

In their explanations, general business administration and management theory regularly differentiate between the various size classes of companies and derive their specific results from the company size. In research on family businesses, however, there is seldom any differentiation according to size classes.

The results of the study in Chap. 3 provide an exciting insight into the importance, structure, and size distribution of Germany's most important family businesses. The analysis shows that the research on family businesses should attach a growing importance to the size of the company.

The landscape of family businesses is diverse. It covers the 857-year-old brewery, the three-people bakery, and companies worth billions that export their products all over the world. Each of these companies is controlled by family influences, and depending on the size of the company, there are various recommended actions for its strategy. It becomes clear that the definition of a family business should be expanded to cover the division according to size class.

This structure, developed over centuries, shows how important it is that taxes—inheritance tax or tax on non-income values such as property tax—do not decimate family businesses, as has happened in Great Britain, France, and the USA. The economic politicians and researchers in these countries envy our family businesses—"The Growth Engine of Europe" (Gottschalk et al., 2017).

1.2 The Measurement of Longevity, Independence and Vitality

The vision of the typical family enterprise can be summarized in the construct: Longevity as an independent enterprise in the ownership of the founding family. The fulfillment of this vision can be measured precisely: Does the company exist in the decisive influence of the founding family or not? This influence shall be assumed to be given if the family has the majority of the voting shares.[3] Of course, there can be some questionable cases: Is the majority 5% or are 45% as majority at a normal shareholder meeting sufficient? Or even: Is the full ownership of the partner entity with unlimited liability and managing authority sufficient? However, these are minor points compared to the major question: Why and how can family enterprises survive at all? To verify if a business entity can achieve longevity, there is a long, very long-

[3]We are aware that research has developed more differentiated scales of typology—see below Sect.1.4. For our purpose, the suggested simple method of measuring the family influence proves to be sufficient.

time span required. We suggest a time-span of at least three generations, i.e. some 90 years.

1.3 Structure and Goals of the Collection

This collection of research aims to give an overview of the German family enterprise landscape with special focus on the structure, the diversity, growth and dissolution of German family enterprises. With recourse to several papers[4] from the Research Initiative on Family Business Strategy at the Friedrichshafen Institute for Family Businesses at the Zeppelin University of Friedrichshafen, this book is designed to provide a rich database and its evaluation of the development of German family enterprises. This database could be used as a reference base for research on family-owned enterprises as well as for consultants working with family business organizations. Furthermore, family shareholders interested in research might find that valuable reading, too. The guiding principle in our analysis of the developing family business is "size". Size is the out-come of a continuous development-process that can demonstrate one of the following typical stages:

- Start-up
- Significant growth
- Steady-state development that comprises a variety of potential stages as broken down below.

Thus, we break down the structure and the development of the universe of family-owned enterprises into the following stages (Fig. 1.1).

"Start-up" and "Growth" can be clearly defined as observable phases in the creation and development of a company. The "Continuous Development" can be categorized into three distinct challenges:

- Strategy within the frame of a given and sustainable Business Model. By this we mean all strategies which support the value-added process and marketing within the boundaries of a demand segment, product-technology, ways and means of deploying market demand and profit potential.
- Positive change of the Business Model based on disruptive challenges in environment, markets, or by owners and other stakeholders, and adequate responses based on innovation and entrepreneurial capabilities.
- Critical disruptions that cannot be transformed into a positive change, but have a tendency to a path dependent negative development.

[4]Bachelor theses, master theses, dissertations, working papers, partly published in Best Master Series of Springer and in Journals.

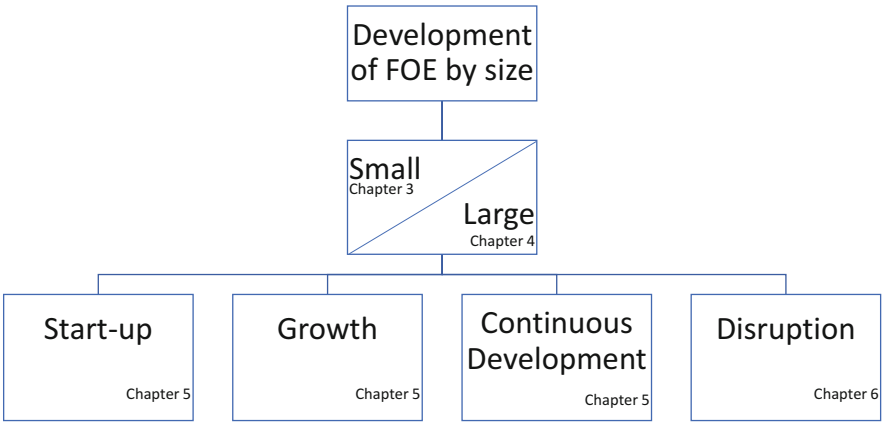

Fig. 1.1 The stages of development of an enterprise. Source: Authors' own figure

The research on corporate strategy originally focused on the continuous development in the frame of clear product-market segments. Even Ansoff's Matrix with "old" and "new" products and markets reflects this starting base of a sustainable Business Model, which—surely—needs to be expanded in a continuous strategy. The strategic logic of Porter is a strategy for a continuous development by generic strategic moves. From the 90s onwards, strategy research has more and more explored the challenges of disruptive changes. However, neither the challenges of high growth nor the dangers of failure and downfall have attracted the same attention as the benefits of a continuous successful development as a leader in the markets or in profitability. Here we shed light on the phases outside the comfort zone of continuous development: Growth and decay. After the general introduction to the topic we will present the findings of a systematic literature review on "Growth of Family Firms" as growth is the prime driver defining size.

The third chapter gives a data-based overview of the current structure of German family enterprises as well as of the age structure and founding statistics. This chapter additionally emphasizes the differences in the size of the enterprises and the need for their consideration in the family enterprise research. The third chapter concludes with a brief description of the development of the current state of the unique family business structure.

The fourth chapter deals with the historic development which has led to this structure. The 500 biggest German family companies are examined with special focuses on their growth development since their original foundation.

Chapter 5 ties to this by examining the growth process in more detail, providing some analytical framework to evaluate the growth development of family enterprises. The research presented in this chapter suggests an achievable generation-specific growth path as a practical implication.

To emphasize this unique structure of German family enterprises and their sustainability as well as their longevity, the sixth chapter examines the potential

reasons for critical enterprise development, which typically leads to a reduction in size or even to a final downfall.

As a concluding chapter, Chap. 7 is designed to condense the depicted findings, and outlines the potential future of German family enterprises. Furthermore, this chapter tries to provide encouragement that longevity is indeed achievable.

1.4 Definition of Family Enterprise

A large body of definition approaches of family firms exist, but there is no clear general definition of what conditions constitute a family firm (Littunen & Hyrsky, 2000; Litz, 1995; Miller, Le Breton-Miller, Lester, & Cannella, 2007; Upton, Vinton, Seaman, & Moore, 1993; Wortman, 1994).

Scholars generally agree that the family involvement is the critical condition that differentiates the family firm from its non-family counterparts (Miller & Rice, 1967). Yet, researchers interpret family involvement in different ways.

There are different ways to operationalize family involvement. Two main definition streams appear within the research community: The components of involvement approach and the essence approach. The first one defines a family business along dimensions such as governance, management, ownership and succession. The latter is a more behavioral approach to define a family enterprise. This approach assumes that the behavior of the family causes distinctiveness between a family enterprise and a public company.

> In this work, family businesses are defined as companies in which one or more German owner families have a dominant position, as a rule since they hold at least 51% of the share property, in the case of stock corporations more than 25%.

1.5 Company Size Classes: A Matter of Definition

German literature differentiates the size classes of companies in several ways. Thus, the classification can be based on qualitative criteria, such as owner-led versus management-led companies, or on quantitative criteria, such as the number of employees or the turnover. In addition to the legal structure of the commercial code (§ 267 HGB), the data provided by the "Deloitte Mittelstandsinstitut" ("Deloitte Institute for Medium-Sized Companies", DMI), the "Institut für Mittelstandsforschung" ("Institute for Research on Medium-Sized Companies", IfM) (Institut für Mittelstandsforschung, 2016), and the European Union (EU) (Europäische Union, 2003) are among the mainly used classification thresholds.

The following analysis applies the thresholds of § 267 HGB, and adds the definition of the DMI (Becker & Ulrich, 2009, p. 3). According to the HGB (Handelsgesetzbuch, 2016), a turnover of EUR 12 Million has been chosen as the minimum threshold.

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Literature Review on the "Growth of Family Firms"

2

As growth is a prime driver for achieving size this chapter gives a descriptive and analytic presentation of the results of the literature research[1] on growth of family firms. The results are depicted in a descriptive analysis followed by a thematic analysis showing the results of the literature review regarding the assigned framework category.

2.1 Growth and Family Business

The aim of this chapter is to review a larger amount of literature concerning the topic growth and family business.

The catalogue of the University Bayreuth library was searched through applying the key words *Familienunternehmen* and *Wachstum*, with no restrictions concerning date of publication or type of document. Most of the documents had to be dismissed because the title already revealed that the document does fit to the searched interest.

The catalogue of the German National library was also searched through applying the key words *Familienunternehemen* and *Wachstum*, but additionally the terms *family enterprise* and *growth*, which produced a good number of results.

The catalogue of the Family Business Review was searched through only using the expression *growth*, because the journal itself focuses only on family businesses, thus making this term unnecessary. Many documents that were found appeared to be useless due to quotes like "growing in research" or "growing business sector". Overall, *growth* was often used in contexts different than those meaning the expansion of the family business. Moreover, other documents had to be excluded dealing with succession but without the context of the growing business.

[1]These are excerpts of the Bachelor thesis of Felix Giegler (Giegler, 2017) Universität Leipzig.

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The catalogue of the Journal of Family Business Strategy was also searched through with *growth*, but within the results, a conspicuous number of articles were editor notes with quotes such as "a growing research" and more. Furthermore, many potential articles contained the expression *performance* in different ways. All these articles were checked but in the fewest cases was performance measured by growth of the business and not by other common key figures.

The catalogue of the Journal of Family Business Management was searched through applying the terms *family business* and *growth*. The expression *family enterprise* did not reveal as many results as *family business* and thus, the last expression was used to guarantee the greatest possible number of results.

The catalogue of the Journal Entrepreneurship Theory and Practice was searched through using the terms *family firm* and *growth*. Compared to *family business* and *family enterprise* and *grow*, this combination revealed the highest number of results, which serve the aim of this review. But as the name of the journal indicates, the majority of the found articles dealt with entrepreneurship such as start-ups without connection to family business. Moreover, these articles dealing with family had to do with family in other contexts than family business. To name some examples, they dealt with the founder and his work-life balance or the combination of family and founding a start-up. Therefore, many articles had to be dismissed.

The books of the library of the aforementioned Research Initiative, which were selected to be searched through, also contained articles or sections dealing with growth and family businesses.

During the second search, 2156 articles and books were searched through. Within the initial sample, most articles were from Family Business Review (733), followed by the journal Entrepreneurship Theory and Practice (489) and the library of Research Initiative (350). Three hundred and twenty articles were initially collected from the catalogue of University Bayreuth library, followed by 152 articles from the Journal of Family Business Strategy, 77 articles from the Journal of Family Business Management and 35 works from the German National Library.

Overall, during the selection process, 83% of all articles were dismissed in the first step of scanning titles and abstracts. Ten percent of all articles were excluded in the third step, the in-depth analysis of the abstract. After eliminating 3% of all articles during the review of the entire article, the final sample presents itself as follows.

Most of the articles are from Family Business Review (28), the Journal of Family Business Strategy (14) and the Library of Professor Kormann (14). The University Bayreuth library contributes 8 works, the German National Library 6, the journal Entrepreneurship Theory and Practice 3 and finally the Journal of Family Business Management 1 article (Figs. 2.1 and 2.2).

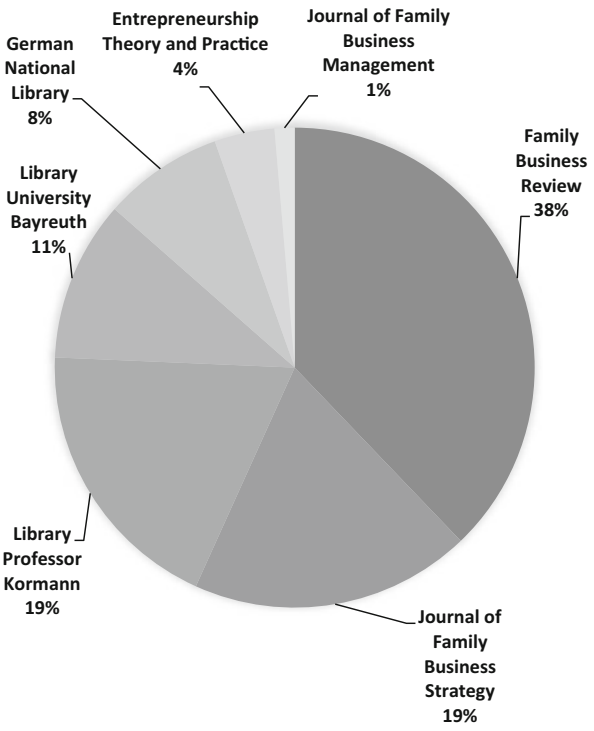

Fig. 2.1 Search II: final sample. Source: Authors' own figure

2.2 Descriptive Analysis

The provenance of the 74 reviewed publications can be broken down as follows: most of the articles are from Family Business Review (FBR, 38%), followed by the Journal of Family Business Strategy (JFBS, 19%), the Library of Professor Kormann (LPK, 19%), the University Bayreuth Library (UBL, 11%), the German National Library (GNL, 8%), the Entrepreneurship Theory and Practice (ETP, 4%) and finally the Journal of Family Business Management (JFBM, 1%) (Figs. 2.3 and 2.4).

Regarding the distribution of the applied methodology, nearly half of the collected works are empirical with a quantitative approach (EQN, 47%), followed by the conceptual approach (CON, 37%). The remaining publications are divided into case studies (CS, 5%), empirical with a qualitative approach (EQL, 4%), literature reviews (LR, 3%), conceptual work with an empirical quantitative approach (CON/EQN, 3%) and grounded theory approach (GT, 1%) (Figs. 2.5 and 2.6).

Regarding the distribution of the applied framework categories, the following ratio exists: 21% are categorized as strategy, 18% as finance and 12% as specific business aspects. Next, 11% are classified as entrepreneurship, 7% as life cycle and 6% as China. The last framework categories are family versus non-family businesses with 5%, social aspects with 5%, governance with 4%, succession with 4%,

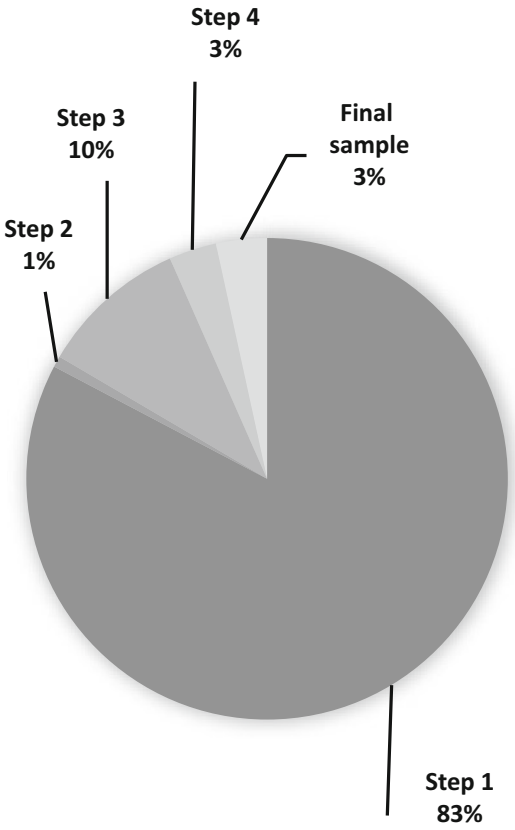

Fig. 2.2 Search II: selection process. Source: Authors' own figure

influences through environment with 4% and finally other with 3% (Figs. 2.7 and 2.8).

2.3 Thematic Analysis

In this part of the book, the thematic findings of the literature review are presented. First, a list of all 74 reviewed publications is given, showing the author(s), the provenance and the framework category. Second, the framework categories are explained and the main findings from the literature review are described (Table 2.1).

Overall, there are 12 different framework categories in this literature review. This number reveals interesting factors. On the one hand, the research in growth and family businesses covers a wide range, and apart from the two factors strategy and finance, it is not very specific. Many different topics and problems are subjects of family businesses and therefore research, and awaken the interest of academics around the world. On the other hand, the number of framework categories proves the exactness of research of the author, reviewing and summing up the articles as

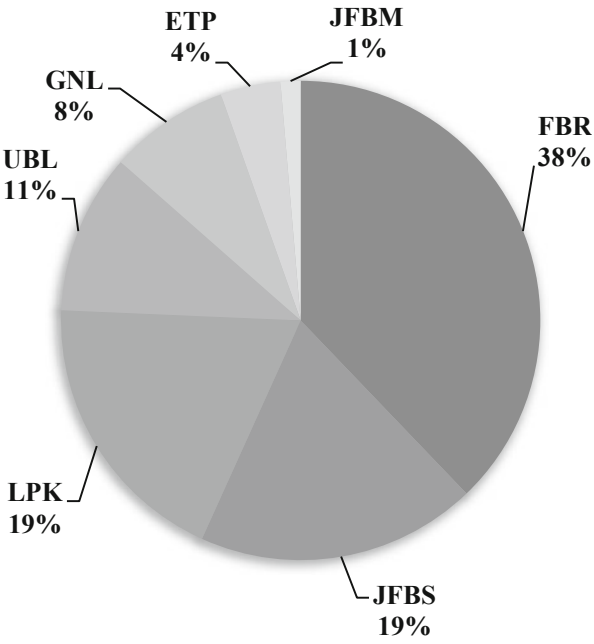

Fig. 2.3 Provenance (percentage). Source: Authors' own figure

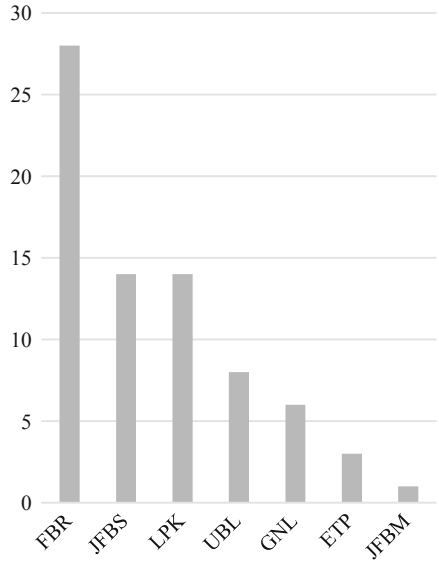

Fig. 2.4 Provenance (absolute). Source: Authors' own figure

specifically as possible and consequently presenting a precise picture of the existing literature on the topic of growth and family businesses.

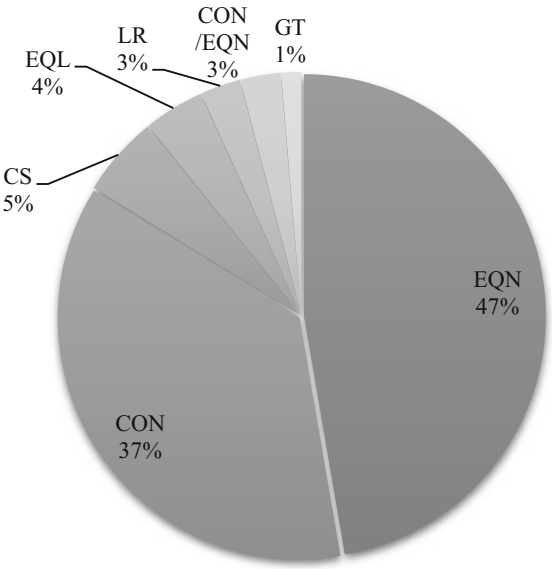

Fig. 2.5 Distribution regarding methodology (percentage). Source: Authors' own figure

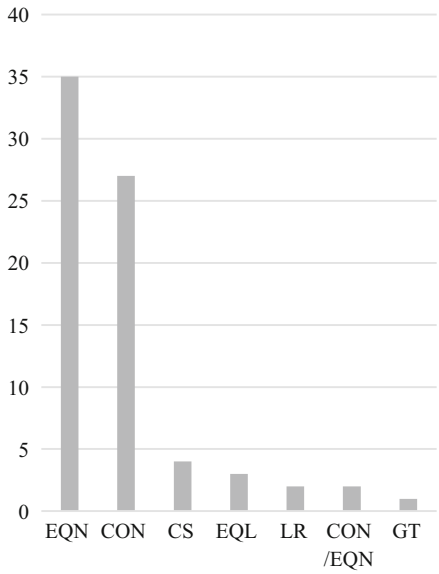

Fig. 2.6 Distribution regarding methodology (absolute). Source: Authors' own figure

2.3.1 Strategy

In this framework category, all publications dealing with the strategic planning of growth in a family business are collected. Within this category, many ways and ideas how to reach growth are presented. The strategy must fit into the environment of the business and the buyer can grow by changing it (Götzen, 2014). Furthermore, the

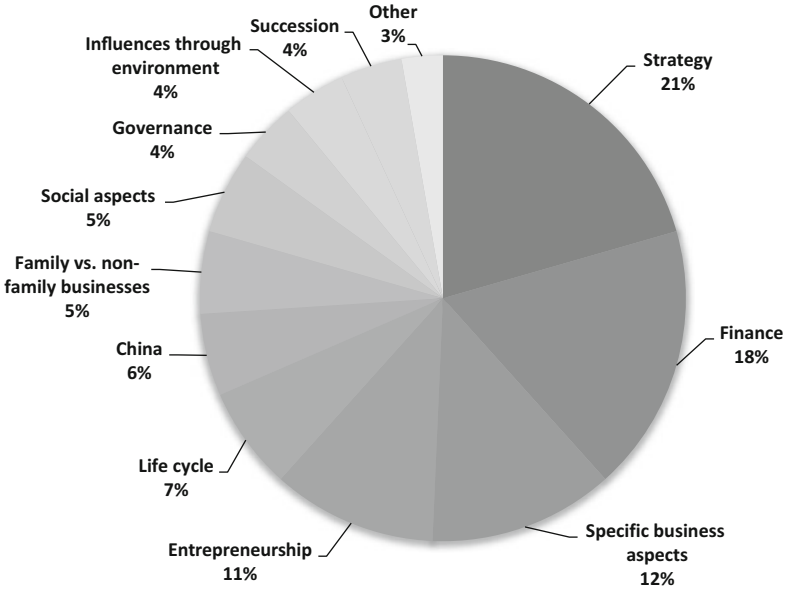

Fig. 2.7 Distribution regarding framework category (percentage). Source: Authors' own figure

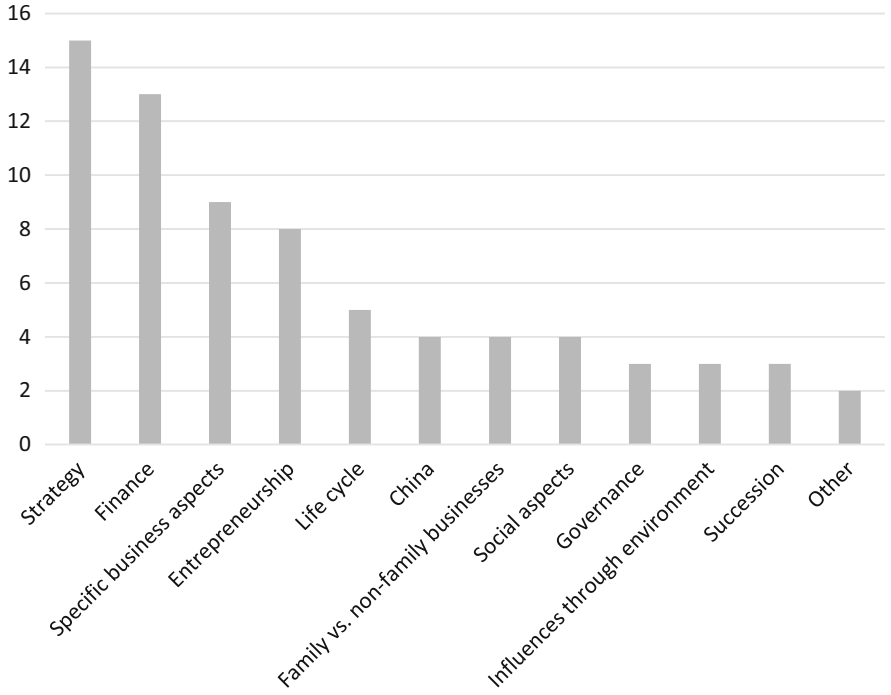

Fig. 2.8 Distribution regarding framework category (absolute). Source: Authors' own figure

Table 2.1 Overview of all 74-reviewed publications

No.	Authors (year)	Provenance	Framework category
1	Becker, Ulrich, and Zimmermann (2014)	UBL	Finance
2	Böllhoff (2006)	UBL	Strategy
3	Moos (2002)	UBL	Governance
4	Sachs (2008)	UBL	Specific business aspects
5	Schneider and Pudliszewski (2007)	UBL	Specific business aspects
6	Schraml (2010)	UBL	Finance
7	Seibold (2017)	UBL	Specific business aspects
8	Winkeljohann (2010)	UBL	Specific business aspects
9	Albach, Küster, and Warnke (1985)	GNL	Family versus non-family businesses
10	Fopp and Prager (2006)	GNL	Governance
11	Geyer (2015)	GNL	Family versus non-family businesses
12	Götzen (2014)	GNL	Strategy
13	Schwass (2005)	GNL	Strategy
14	Sieger (2006)	GNL	Strategy
15	Barbera and Hasso (2013)	FBR	Finance
16	Casillas, Moreno, and Barbero (2009)	FBR	Entrepreneurship
17	Davis and Harveston (2000)	FBR	Specific business aspects
18	Davis and Stern (1988)	FBR	Social aspects
19	Dunn (1995)	FBR	Strategy
20	Dyer (2001)	FBR	Specific business aspects
21	Gallo (1995b)	FBR	Finance
22	Gallo (1995a)	FBR	Strategy
23	Goel and Jones (2016)	FBR	Entrepreneurship
24	Goldberg (1996)	FBR	Succession
25	Goldberg (1997)	FBR	Specific business aspects
26	Graves and Thomas (2008)	FBR	Strategy
27	Greiner (1997)	FBR	Life cycle
28	Jorissen, Laveren, Martens, and Reheul (2005)	FBR	Family versus non-family businesses
29	Kellermanns, Eddleston, Barnett, and Pearson (2008)	FBR	Entrepreneurship
30	Lee (2006)	FBR	Family versus non-family businesses
31	Lee and Tan (2001)	FBR	China
32	López-Gracia and Sánchez-Andújar (2007)	FBR	Finance
33	Mazzola and Marchisio (2002)	FBR	Finance

(continued)

Table 2.1 (continued)

No.	Authors (year)	Provenance	Framework category
34	McConaughy and Philips (1999)	FBR	Life cycle
35	McKibbin and Pistrui (1997)	FBR	Finance
36	Poutziouris, O'Sullivan, and Nicolescu (1997)	FBR	Life cycle
37	Poza (1988)	FBR	Entrepreneurship
38	Rue and Ibrahim (1996)	FBR	Strategy
39	Sundaramurthy (2008)	FBR	Social aspects
40	Tan and Fock (2001)	FBR	China
41	Ward (1997)	FBR	Strategy
42	Yeung (2000)	FBR	China
43	Arosa, Iturralde, and Maseda (2010)	JFBS	Specific business aspects
44	Arrondo-García, Fernández-Méndez, and Menéndez-Requejo (2016)	JFBS	Finance
45	Backman and Palmberg (2015)	JFBS	Influences through environment
46	De Massis, Kotlar, Campopiano, and Cassia (2013)	JFBS	Social aspects
47	Galluccia, Santullia, and Calabròb (2015)	JFBS	Specific business aspects
48	Grundströma, Öbergb, and Rönnbäcka (2012)	JFBS	Succession
49	Kammerlander, Sieger, Voordeckers, and Zellweger (2015)	JFBS	Governance
50	King and Peng (2013)	JFBS	Influences through environment
51	Landry, Fortin, and Callimaci (2013)	JFBS	Finance
52	Memili, Eddleston, Kellermanns, Zellweger, and Barnett (2010)	JFBS	Entrepreneurship
53	Neubaum, Dibrell, and Craig (2012)	JFBS	Finance
54	Stafford, Danes, and Haynes (2013)	JFBS	Influences through environment
55	Welsh, Memili, Rosplock, Roure, and Segurado (2013)	JFBS	Entrepreneurship
56	Zhang, Venus, and Wang (2012)	JFBS	China
57	Meneses, Coutinho, and Pinho (2014)	JFBM	Succession
58	Eddleston, Kellermanns, Floyd, Crittenden, and Crittenden (2013)	ETP	Strategy
59	Miller, Steier, and Le Breton-Miller (2016)	ETP	Entrepreneurship
60	Molly, Laveren, and Jorissen (2012)	ETP	Finance
61	Berthold (2010)	LPK	Finance
62	Ehringer, Hackl, and König (2007)	LPK	Life cycle
63	Felden and Hack (2014)	LPK	Other
64	Giménez and Novo (2013)	LPK	Other
65	Hofer and Charan (2002)	LPK	Strategy
66	Klein (2010)	LPK	Life cycle

(continued)

Table 2.1 (continued)

No.	Authors (year)	Provenance	Framework category
67	Lansberg (2002)	LPK	Social aspects
68	Moritz (2008)	LPK	Finance
69	Peiser and Wooten (2002)	LPK	Strategy
70	Poza (2002)	LPK	Strategy
71	Poza (2007)	LPK	Entrepreneurship
72	Salvato and Corbetta (2014)	LPK	Strategy
73	Upton, Teal, and Felan (2008)	LPK	Strategy
74	Wimmer (2004)	LPK	Finance

Source: Authors' own table
UBL University Bayreuth Library, *GNL* German National Library, *FBR* Family Business Review, *JFBS* Journal of Family Business Strategy, *JFBM* Journal of Family Business Management, *ETP* Entrepreneurship Theory and Practice, *LPK* Library Professor Kormann

strategy must be developed, implemented and the organization must be adapted to reach profitable growth (Sieger, 2006). Dunn (1995) presents a strategy to make Scottish family businesses aware of their possibilities to grow, and Rue and Ibrahim (1996) reveal that 97% of the examined Georgian family businesses are planning for growth. Another aspect of strategies to grow the family business is the planning of the transition from the entrepreneurial stage to the management stage (Hofer & Charan, 2002). Strategies to overcome problems preventing growth are also presented in the literature (Gallo, 1995a; Ward, 1997). Moreover, Schwass (2005) names evolutionary growth, the combination of tradition and innovation, as a strategy for growth. Internationalization (Graves & Thomas, 2008), diversification (Salvato & Corbetta, 2014) and planning over generations (Eddleston et al., 2013) are also discovered strategies for growth. The specific planning for growth made by fast growing family businesses (Upton et al., 2008) is part of the literature, as well as factors helping the business to grow (Böllhoff, 2006; Poza, 2002).

2.3.2 Finance

Financing the expansion is an important factor for the growth of family business that rises with the influence of the family (Becker et al., 2014). Family businesses with high-growth ambitions prevent financing the growth with profit reserves, choose external CFOs and prevent factoring (Schraml, 2010). An external but embedded accountant helps to raise sales (Barbera & Hasso, 2013). The differences between family and non-family businesses concerning growth financing (López-Gracia & Sánchez-Andújar, 2007) are part of the literature, as are differences in the financial behavior between generations (Molly et al., 2012). The possibilities for a family business to grow by going public (Mazzola & Marchisio, 2002) and the impact of growth on the behavior towards the stakeholders of the family business (Neubaum et al., 2012) are also discussed. First-generation family businesses could cope better

with the global financial crisis than multi-generational businesses (Arrondo-García et al., 2016). Among family businesses, leasing is not as popular as among lone-founder businesses due to the ideal of passing on values to the next generation (Landry et al., 2013). Different and often modern and flexible ways to finance the growth are popular among family businesses (Berthold, 2010; Moritz, 2008). An important factor for many family businesses is the independence and therefore they try to avoid the usage of external capital (Gallo, 1995b; McKibbin & Pistrui, 1997; Wimmer, 2004).

2.3.3 Specific Business Aspects

Within the framework category specific business aspects, publications dealing with one specific business topic and its influence on the growth of the family business are collected. Topics are the usage of the internet and technology (Davis & Harveston, 2000), the contributions of financial controlling to growth (Schneider & Pudliszewski, 2007) and the growth opportunities for family businesses out of network marketing organizations (Dyer, 2001). Another aspect is internationalization, combined with acquisitions (Sachs, 2008) or innovation (Seibold, 2017). Moreover, branding strategies and the promotion of the family as a way to reach growth are involved (Galluccia et al., 2015). Growth can be promoted through an operational management (Winkeljohann, 2010) and prevented by problems with the organizational structure (Goldberg, 1997). A last aspect is the effect of outsiders on the board on the growth of the family business (Arosa et al., 2010).

2.3.4 Entrepreneurship

An entrepreneurial behavior is essential for an existing family business to achieve growth (Kellermanns et al., 2008), as are entrepreneurial risk taking and an entrepreneurial image within the family business (Memili et al., 2010). The concept entrepreneurship combines entrepreneurship and intergenerational perspective in order to reach growth also for the following generation (Poza, 1988, 2007). Non-family businesses learn from family businesses concerning growth from entrepreneurial ventures, because within family businesses, growth is always seen in the context of saving the business for later generations (Miller et al., 2016). For family businesses, growth can be promoted through entrepreneurial orientation (Casillas et al., 2009), exploration and exploitation (Goel & Jones, 2016).

2.3.5 Life Cycle

A life cycle view of family businesses is also part of the literature review. In all life cycle models, the stage of growth is important. Greiner (1997) states that each organization develops through five phases followed by five crises. McConaughy

and Philips (1999) stress the importance of the successor, because the life cycle of the family business shows rapid growth first, but after the founder has left, a phase of slower growth follows. In this phase, the behavior of the descendants is essential to keep the business growing. A specific life cycle model is installed by Poutziouris et al. (1997), the so-called Organizational Life Cycle Growth Model of the Balkan Small Family Firm. Ehringer et al. (2007) develop a life cycle model for family businesses out of the product life cycle model, the former being further developed by Klein (2010) as presented in her vitality life cycle model.

2.3.6 China

The growth of Chinese family businesses is another framework category in this literature review. Lee and Tan (2001) combine the four growth stages of Chinese family businesses with McKinsey's seven S-factors to describe their influence on the growth of these businesses. Tan and Fock (2001) name key factors that enable Chinese family businesses to grow in Singapore. Internationalization as solution to overcome the growth problems of Chinese family businesses is presented by Yeung (2000). Finally, the reason for the growth difficulties of Chinese family businesses, especially in the Henan region, is not a matter of ownership but of their financing preferences (Zhang et al., 2012).

2.3.7 Family Versus Non-family Businesses

Albach et al. (1985) compare the growth of family and non-family businesses and discover lower growth by family businesses due to risk aversion and the importance of independence regarding financing. Differences in the demographic samples in research on family and non-family business do not have an influence on the growth of these businesses (Jorissen et al., 2005). The impact of the family on growth compared with the growth in non-family businesses is also part of the literature (Geyer, 2015; Lee, 2006).

2.3.8 Social Aspects

In this category, articles dealing with the family are cited. Davis and Stern (1988) stress the interaction between the family and the business system, and obstacles the family is responsible for and that prevent growth. Sundaramurthy (2008) focuses on the importance of trust within the family in a growing business, and De Massis et al. (2013) examine the impact on growth the dispersion of family and ownership has.

2.3.9 Governance

Good governance is a precondition for the growth of family businesses, but specific pitfalls can hinder the business from growth. Therefore, principles of good governance to overcome such obstacles and to achieve growth are cited (Moos, 2002). Fopp and Prager (2006) install guidelines for the governance of family businesses, proposing a subdivision into family, corporate and public governance. Regarding the life cycle of the family business, the governance structure must be adapted to the different phases (Kammerlander et al., 2015).

2.3.10 Influences Through Environment

The connection between the family business and the area it is located in is subject of research as well. Family businesses experience higher growth rates in rural areas than non-family businesses due to their local and social connection (Backman & Palmberg, 2015). Certain industry characteristics also have an impact on family firms. The characteristic growth is responsible for an earlier loss of control for the founders of family firms (King & Peng, 2013). The impact of natural disasters on the long-term growth of family businesses is moderated due to their adaptive capacities (Stafford et al., 2013).

2.3.11 Succession

Succession is another topic in the research on family businesses. Goldberg (1996) states factors that are important for a succession and for bringing growth to the family business. Differences exist between family businesses taken over by an internal successor compared to those undergoing an external takeover. As a consequence, the last-named businesses perceive higher growth (Grundströma et al., 2012). Meneses et al. (2014) deal with the question how succession influences the internationalization of a family business, an important driver of growth.

2.3.12 Other

Two works do not match any of the 11 categories, therefore they are classified as other. First, Giménez, and Novo (2013) develop different microeconomics models for family businesses, revealing that growth depends on the ownership structure. And Felden and Hack (2014) present an overview of the topic of growth and family businesses.

2.4 Synthesis

First, the topic of leadership in growing or even fast-growing family businesses is not popular in the research on family business. There are hardly any articles dealing with the specific topic of leadership, often this aspect is more generally aggregated in categories such as strategy or management. Second, the issue of fast or strong growth is almost not addressed by research. Especially start-ups, instead of established family businesses, that often cannot be counted among the group of family businesses are in the focus of the research. Third, research on strategies and financial issues concerning growth and family business is the most common field. Concerning growth, it seems that for family businesses the right strategy of how to plan and pursue growth is the most crucial one, accompanied by the question of how to finance the growth, mostly on condition of staying independent. Finally, the literature review reveals that besides these two main topics, except for the topic of entrepreneurship coming mainly from the innovative founder of a growing family business, a lot of different topics are addressed by the research. This can be regarded as proof of the many different influences affecting growth and the multiple areas a family business must take care of in order to achieve growth.

This literature review presents the current state of research on the topic of *growth* and *family businesses*. To do this, in a first step, 14 out of 417 searched through works on *leadership of fast growing family businesses* were collected. To broaden the result, 2156 publications including 74 works on the topic *growth and family businesses* were collected. The main results are the following: There is a gap in research concerning the leadership of fast growing family businesses. The importance of the topics strategy and finance shows that these are the crucial issues for family business and growth. Finally, the wide range of topics that play a role in growth and family businesses are an indication of the complexity of the field.

This literature review offers three main contributions to the research field of family businesses. First, it presents an extensive collection of publications dealing with the topic of growth and family businesses. This might be essential for further research in this field. Second, a gap in the research on the leadership of fast-growing family businesses is made out. This discovery might be a stimulus for other researchers to deepen the studies in this aspect of family businesses. Finally, the most critical issues for growth and family businesses are detected, giving further research the possibility to focus on the most essential topics.

Having outlined the extent of literature on the growth of family firms, the next chapter aims to give an overview of the structure and age of the German family enterprises landscape.

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Structure and Age of German Family Enterprises

3

Applying the definition mentioned in Sect. 1.4 to a unique database that covers the 10,000 biggest and most important family businesses shows an interesting landscape of the German Family Enterprise. The database was provided by the Institute "Die Deutsche Wirtschaft" (Die Deutsche Wirtschaft, 2016a, 2016b).

3.1 Range of German Family Enterprises: From Local to Global Player

3.1.1 The Total Range: EUR 12 Million to EUR 231 Billion

The turnover of the listed companies ranges from EUR 12 Million up to EUR 231 billion. The highest turnover family business is Volkswagen, which generates EUR 231 billion. In terms of turnover, the smallest company in the research is a Bavarian toy manufacturer (Table 3.1).

With 96%, the small and medium-sized family businesses make up a substantial part of the German corporate landscape, offer approximately 4.1 Million jobs, and generate roughly EUR 880 billion total turnover. These companies operate in the most diverse industries. The remaining 4% are large groups, generating a total turnover of EUR 1.3 billion and employing approximately 5.9 Million people. The analysis shows the importance of small and medium-sized companies (SMEs) in the corporate landscape of family businesses.

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Table 3.1 Structure of company by size

	Small companies	Medium-sized companies	Large companies	
Size class	EUR 12 Million to EUR 40 Million	EUR 41 Million to EUR 600 Million	EUR 600 Million to EUR 1 Billion	More than EUR 1 Billion
Percentage	38%	58%	2%	2%
Absolute number of companies	3800	5900	185	232
	96% of the corporate landscape 4.1 Million jobs Total turnover EUR 880 Billion		4% of the corporate landscape 5.9 Million jobs Total turnover EUR 1.3 Billion	

Source: Authors' own table

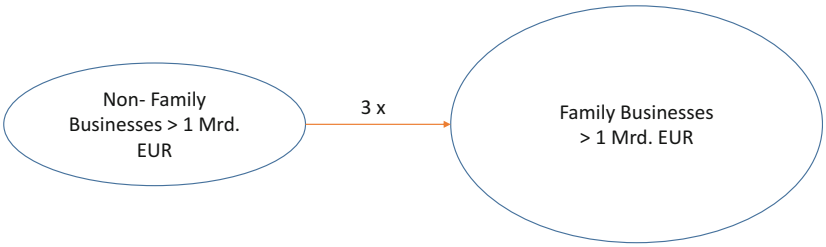

Fig. 3.1 Breakdown of large enterprises by ownership. Source: Authors' own figure

3.1.2 More than 200 Companies Worth Billions Are Family-Owned

A comparison with DAX companies[1] makes it possible to better classify the number of more than 200 companies worth billions that are family-owned. The analysis shows that there are 83 publicly listed, non-family businesses in the DAX indices generating a turnover of more than EUR 1 billion. Compared to them, there are 232 family businesses generating more than EUR 1 billion turnover (Fig. 3.1).

This clearly shows that there are three times more large family businesses than there are large publicly listed companies.

If you concentrate on the companies of the DAX30, you will find seven examples of family businesses: Volkswagen, BMW, Fresenius, Henkel, Fresenius Medical Care, Heidelberg Cement and Merck. In terms of turnover, the "Deutsche Börse", with EUR 2.9 billion, is the smallest company listed in the DAX30. From the list of 232 companies worth billions that are family-owned, 71 companies can be identified that generate a turnover of more than EUR 2.9 billion. If you now compare the number of 23 publicly listed companies worth billions that are not family-owned with the 71 family businesses generating more than EUR 2.9 billion each, the

[1]The companies listed in the DAX30, TecDAX, MDAX and SDAX are taken into account.

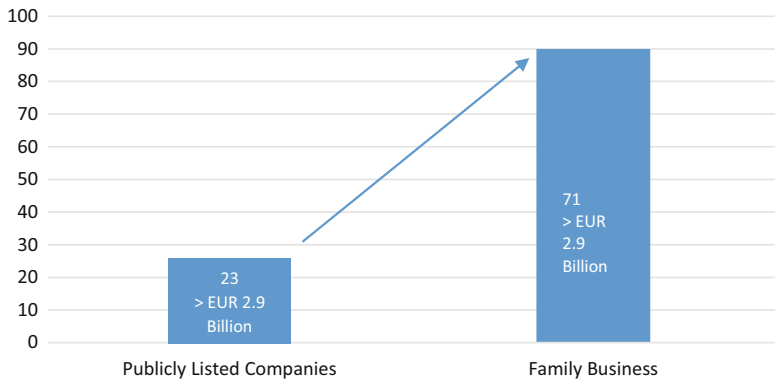

Fig. 3.2 Companies worth billions. Source: Authors' own figure

strength of family businesses, even in this segment of large companies, becomes obvious: 75% of the companies worth billions[2] are family businesses (Fig. 3.2).

The analysis shows that in addition to research on small and medium-sized family businesses, which represent the largest percentage with 96%, research on large family businesses is important as well, since there are more large family businesses in Germany than there are large publicly listed companies.

3.2 Age Structure

3.2.1 The Oldest Company Is 857 Years Old

The "Bayerische Graf zu Toerring-Jettenbach Brauereien Gmbh & Co. KG" were founded in 1160. Today, the firm generates a turnover of approximately EUR 20 Million with its 80 employees. The youngest company in this analysis, the bakery chain "Karl" GmbH from North-Rhine-Westphalia, was founded in 2014. Today, it generates a turnover of approximately EUR 25 Million with its 490 employees (Table 3.2).

It is remarkable that the smallest company (brewery) is the oldest across the size classes. Keeping in mind the limitations of the sample, it can be suggested that size is not a necessary factor for survival.

3.3 Development of the Current Structure Over Centuries

Dividing the roughly 6500 companies with a turnover of more than EUR 40 Million for which the founding year has been recorded (approximately 90% of the total (6500)), one can see the following development (Table 3.3).

[2]In this case more than EUR 2.87 billion.

Table 3.2 Age structure

Size class	EUR 13 Million to EUR 40 Million	EUR 41 Million to EUR 600 Million	EUR 600 Million to EUR 1 Billion	More than EUR 1 Billion
Oldest company	Bayerische Graf zu Toerring-Jettenbach Brauereien GmbH & Co. KG	Eisenwerk Martinlamitz GmbH	BGH Edelstahl-werke GmbH	Merck KGaA
Founding year	1160	1200	1467	1668

Source: Authors' own table

Table 3.3 Founding statistic

Founding year up to 1800	Approximately 120 companies
Founding year 1801–1850	Approximately 215 companies
Founding year 1851–1900	Approximately 874 companies
Founding year 1901–1950	Approximately 2089 companies
Founding year 1951–2000	Approximately 2487 companies

Source: Authors' own table

Such a specification of the founding activities for sustainable companies gives us an idea how many foundations with promising business models have to take place every year to make sure that this structure of the German family businesses can continue even in 100 years.

A huge part of the development of the current structure was achieved by growing enterprises. Therefore, the analysis of growth developments is of specific relevance.

Studying growth of family enterprises is a complex undertaking as the phenomenon of growth is influenced by many factors. Some of these factors are researched thoroughly in the context of family businesses, such as internationalization, innovation and diversification. But the influence of the family on the growth phenomenon as a comprehensive model is still missing.

To describe the development of this unique German structure the 500 biggest enterprises are analysed in the next chapter.

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Development of the 500 Biggest Family Enterprises Since Foundation

4

In a first step it is outlined why growth has been chosen to describe the development of a company. Furthermore, the determinants of growth are described.[1]

The growth of a company is often mentioned as representative of the firm's development and success, although there are other indicators in the theory of business administration—for example employee satisfaction or innovativeness—which can also measure the firm's performance. Nevertheless, growth is often mentioned as one of the major objectives of strategy.

Company growth has become a well-studied field of research. In the last 50 years, its importance and understanding for strategic corporate decisions have developed strongly. The reference for growth can vary, but in the practical application the most common basis are the sales figures. Further, the number of employees, the profit figure and the market capitalization are often used since they are easy to measure and often already available in the companies' annual reports or other available documents.

4.1 Growth as an Indicator of Success

The idea of measuring the success of a company on the basis of growth—the key indicator being the growth rate which can also make a comparison possible—can lead to unclear or even wrong conclusions. An increase in sales does not inevitably mean a growth of the company. Accordingly, other measured growth figures can decrease at the same time. For example, price changes or sales volume have to be considered as well. Therefore, the growth of sales—or the growth of the number of employees and all other quantitative figures covering values and amounts—can only

[1]This chapter is based on the bachelor thesis of Maximilian Lantelme at Zeppelin University in 2012.

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be seen as an indicator of company growth. To measure the real growth of a firm a more comprehensive method should be applied. In particular, not only quantitative but also qualitative indicators—like the use of more efficient production factors—should be part of the process to measure the success of a company. A combination of these should improve the applied method. Simultaneously, the process gets more complicated and due to the qualitative measures, the comparability decreases. Therefore, despite the possible misinterpretations and further disadvantages, the use of indicators looks to be the most practical and realizable way to measure the growth of a company, especially if there is limited access to corporate information for researchers because of discreet shareholders.

4.1.1 Determinants of Growth

Different perspectives on growth determinants can be identified. Fischer (1993) describes "The role of macroeconomic factors in growth" and refers to inflation and budget deficits among others. Such macroeconomic reasons also have an impact on the growth opportunities of the single firm as an external barrier. Nevertheless, even this barrier can be overcome. Furthermore, industry-specific factors can have an impact on growth rates. For example, Caves and Porter have extended the concept of barriers to entry in the late 70s with their theory of mobility barriers. They argue that within an industry different strategic groups exist which also have barriers as they exist for different industries (Caves, 1998; Caves & Porter, 1977). Both perspectives—the macroeconomic and the industry-specific view—describe external factors as determinants for growth. In a certain way, they define the environment in which the company can operate. McGuire works out several different factors that affect especially the growth of manufacturing firms. He also distinguishes between internal factors—like production and administrative factors—and external factors—like locational factors and competition. Moreover, he states that even if age—as an internal factor—has a negative effect on the growth of a company, this barrier can be overcome and therefore the management can act to reduce or change the negative relation between both variables. His conclusion is that the company has to overcome both barriers to make growth possible and that "[s]uccessful growth, then, would appear to be a function of successful management, and successful management is that which undertakes positive actions toward growth" (McGuire, 1963, p. 95).

The theoretical fundamentals of the growth process of a company deal, among others, with the different ways companies can grow. As early as 1959, Edith Penrose established the resource-based approach of the firm's growth with her highly-regarded book "The Theory of the Growth of the Firm". This approach is based on the idea that the development of the company is the result of required human resources for the management. Further, personal motives of the stockholder, or of the manager respectively, drive the growth. Thereby, the growth of a firm, especially regarding its speed, is constrained by its available (managerial) resources. Accordingly, the resources the company can rely on are crucial for its development. Before Penrose studied the growth of the firm, other approaches that capture growth

processes had mainly focused on the macroeconomic development from an economic perspective. In the meantime, a lot of research deals with microeconomic theories for corporate growth. Among others, the theory of the product life cycle—based on another macroeconomic study by Vernon in 1966—analyses the growth process of a product, its decline stage until the total withdrawal. Transferred to the development process of a company, firms have to renew their products or develop new ones in order to avoid being subject to the same declining procedure. These steps, which should secure the existence of the company, offer new growth opportunities. They can be implemented more efficiently in a stage of growth than in a stage of stagnation (Rall, 2002, p. 8).

To summarize so far, growth is dependent on external forces as well as on internal resources that influence the market environment and the capabilities of the company. These dynamic elements have to be managed in an efficient and effective way within the company to make growth possible and secure the existence as well as the success of the firm in the long term.

4.2 The Data

4.2.1 Research Objectives

The overall objective of this research is a contribution to the specific business administration of family businesses. This work particularly focuses on questions of the growth process and thus of the growth rate, which are essential for family businesses to realize their "dynastic projects" (May, 2012, p. 53),[2] and on longevity. The age of the company might have an influence on these developments.

In contrast to this consideration, the relation between firm size and firm growth has often been addressed and researched. Yet, the basic idea of Gibrat's law can no longer be maintained. A wide range of research has stated contrary results and therefore the theorem must be reconsidered.[3] With this chapter on hand, the impetus to close the research gap of the relation between firm age and firm growth of family businesses should be provided. The results should help to formulate a strategy to move forward with the *dynastic project*.

Accordingly, the objectives of this chapter are the following:

1. Creating knowledge of the relation between the growth rates and the age of family businesses in Germany

[2]The *dynastic project* describes the continuing existence of the family business.

[3]Short explanation of *Gibrat's law*: growth rates are independent of firm size (original source: Gibrat, 1931). Further, see Sutton (1997) for a more comprehensive description of *Gibrat's law*, its origins and database as well as its assumptions. Santarelli, Klomp, and Thurik (2006) give an overview of the empirical literature to *Gibrat's* law. Some researchers, Sutton as well, also call it *the Law of Proportional Effect*.

2. Possible and plausible formulations for the strategic thinking of family businesses over generations
3. Recommendations for further research to contribute to a new business administration for family businesses

The methodology to achieve the formulated objectives is based on quantitative analyses that use available public company data focusing on the top 500 family businesses in Germany with the highest total sales and with the highest number of employees in 2010.[4] Therefore, companies that are still working on their individual growth process to prepare for the future and that have already successfully gone through a long development since their foundation to become one of the biggest family businesses in Germany are the research object of this chapter. In addition, the study of the firms focuses on one national economy. Thereby, different general conditions are excluded and the framework in which all companies act is approximately the same. The analysis covers the following approach: The compound annual growth rates over the entire lifetimes of the companies are calculated. This should help to develop a strategic objective how fast a company should grow, and can thus ensure the survival of the *dynastic project*.

Based on the objectives, three main topics of this chapter can be identified: (1) Family businesses; (2) Growth rates and (3) Company age. Over and above that, the interactions between all three research fields are focused on. It seems that they play a major role for corporate strategy due to their influential basic characteristics and strategic orientation.

In the context of the mentioned objectives and the considerations about the characteristics of family businesses, the research question is as follows:

> Does the firm age affect the growth rates of German family businesses and which implications for the strategic thinking of the family businesses can be derived from the results to secure the existence of the company?

All in all, the following hypothesis can be formulated: With increasing age, the growth rates of German family businesses decrease. The chapter focuses on the research question as well as on this hypothesis and examines the average growth rates of the current 500 biggest German family businesses over their whole life time until 2010.

4.2.2 Data Set

The data used for the empirical analysis of the growth rates of German family businesses is based on the studies "Die volkswirtschaftliche Bedeutung der

[4]For this purpose, the following publication will be used: Stiftung Familienunternehmen (2011)—see the next chapter for more details.

Familienunternehmen" published in 2011 (Stiftung Familienunternehmen, 2011),[5] as well as "Die Deutsche Wirtschaft: Die 1000 größten Familienunternehmen" (Die Deutsche Wirtschaft, 2016). In cooperation with the *Zentrum für Europäische Wirtschaftsforschung* and the *Institut für Mittelstandsforschung* of the University of Mannheim, the *Stiftung Familienunternehmen* prepared the data for the 500 biggest German family businesses—taking into account the whole group of a company and based on their definition of family business.[6] The data—including the total sales and number of employees—was collected by the *Mannheimer Unternehmenspanel* together with *Creditreform*—a German business information service and debt collection organization. Due to their systematic research, the collected data is highly representative and is almost comparable to a full survey of all German companies.[7] The figures were taken from several sources including the annual reports, press articles and public registers, as well as other databases. In a few cases, estimates have to be made using industry specific factors and trends due to a lack of information.[8] In addition, the data was checked and completed using the list of the top-1000 family businesses.

The definition of family businesses by the *Stiftung Familienunternehmen*—considering the shareholder structure and the influence of one family or several families—can be compared to the definition used in this chapter. Therefore, all identified family businesses can be used for the calculations. Based on the collected and prepared data, the rankings of the 500 largest German family businesses were created—which also reveal the different industries of the firms—among others a ranking of the total sales in 2010 or of the total employees in 2010. Further, the figures of the previous 4 years—starting in 2006 and based on the previous studies of the *Stiftung Familienunternehmen*—were added to calculate, among others, the relative sales growth from 2006 to 2010.

4.2.3 Results of the Study

Based on the rankings and the whole database, the study concludes that family businesses are an essential part of the German economy and their impact is highly relevant. The 500 biggest family businesses in Germany employed around 4.5 Million people around the world and had a turnover of almost EUR 900 Billion in 2010. Thus, they can be compared to the biggest listed companies in Germany. Although the DAX-26-companies (DAX-30-companies minus the four family businesses in

[5]For figures that are not shown in the tables or in Chap. 8 please look at this reference.

[6]The definition of family business can be found on page 5 et seq. of the quoted study. It is comparable to the definition of this book and therefore the collected data can be used for the empirical analyses.

[7]The database includes a total of 2,835,536 companies in Germany for 2010.

[8]See Stiftung Familienunternehmen (2011), p. 7 for the scientific validation of the quality of the data and page 28 et seqq. for explanations of the methodology.

the index) outperformed the family companies in the years 2007–2010 regarding their growth of sales—8.5% compared to 4.0%—, on the other hand the publicly owned companies reduced their number of employees between 2006 and 2010 by around 7% especially due to the financial and economic crisis. However, the family businesses increased their number of employees in the same period by around 9% and therefore have improved the stability of the German economy. These figures show the necessity to examine the characteristics of family businesses and their development, and how they have become such an important participant in economic activities over years. Further, this database is used for the study because it includes comprehensive figures of the family businesses which are difficult to collect due to the limited publication of corporate indicators.

4.2.4 Data Preparation

This study uses the ranking of the 500 biggest German family businesses based on the total sales in 2010 in line with the considerations in Sect. 4.1 that the figures of the total sales are predominantly used as an indicator for growth and success. In addition, it can be assumed that all companies are entrepreneurial family businesses that want to secure the independence and realize the *dynastic project*. The majority of the firms is older than 60 years and therefore in the third generation. The younger businesses have achieved such a big size in a relatively short time that the continuation of the entrepreneurial activities is intended. To increase the comparability and due to specific industry effects, the companies are sorted by industry; industrial companies, banks and other financial companies, retail and wholesale companies, as well as service providers. The focus of this chapter is on the industrial companies and their growth processes. Banks and other financial firms, especially asset management firms and investment companies are not considered in the analyses but their data is listed in Chap. 8 for the sake of completeness.[9] Retail and wholesale companies are also not included in the main analyses especially due to their specific financing options based on trade credits and the resulting big growth opportunities in a short time.[10] It is worth mentioning that the three largest family businesses in Germany, the *Metro AG*, the *Schwarz Group* and the *Aldi Group*, are all retail companies and with years of foundation in 1963, 1930 and 1913 they do not belong to the oldest firms at all. These findings support the assumptions that retailers and wholesale companies have exceptional growth potential. Media companies are also not

[9]Especially due to the different business models and therefore the obvious differences in the balance sheet, a comparison does not lead to the objectives of this study. For further information on the special characteristics of a bank's balance sheet, see Scharpf (2009) for the German regulations. The *M. M. Warburg & Co. Gruppe KGaA* is an example of the described business. Management holding companies like the *Delton AG* with its sole shareholder Stefan Quandt are not considered because of the enormous financial resources right from the beginning.

[10]For retail and wholesale companies with their specific characteristics, especially regarding their cost structure and trade credit options, see Rudolph (2009).

considered in this long-term analysis due to their extraordinary rise after the Second World War in connection with their important functions. Finally, service companies—in this case especially facility and travel management firms, as well as personal leasing services—are excluded so that the industry specific factors are minimized and the calculations are based on industrial companies.

After sorting out the mentioned industries—92 retail and wholesale companies, 10 media companies, 9 banks and other financial institutions, 15 service providers—the number of family businesses is 374. They should be analysed considering the focus on industrial companies. For the long-term analysis, the year of foundation of all 500 firms was added to the given data to calculate the compound annual growth rates over their existence. For this purpose, predominantly the homepages of the family businesses and further the annual reports—if available at all due to the low disclosure requirements of some private companies and their legal forms—as well as databases like DAFNE are used as sources. For six companies the year of foundation could not be clearly identified. Therefore, these companies have been eliminated from the sample so that the total number of family businesses to be considered in the calculations amounts to 368. It has to be taken into account that the year of foundation is mostly information directly from the companies and therefore is subject to their interpretation of their company's history. In some cases, different years of foundation are given, for example, the start of the self-employment or of the trading activities compared to the beginning of the industrial production.[11] Often the year of the registration in the commercial register is used as the year of foundation, which is the most obvious date and is specified by most of the companies. In the cases of several different dates, the year of the beginning of the industrial production has been chosen for the calculations of the compound annual growth rate due to the main focus of this chapter on manufacturing companies.[12]

4.2.5 Data Description

The oldest company of the edited data set, the *William Prym GmbH & Co. KG*, was founded in 1530 and therefore has a company history of around 480 years. In total, 15 family businesses were founded in the eighteenth century or earlier. Hundred and fifteen of the 368 biggest industrial family businesses have existed since the nineteenth century. The majority of 238 firms started its entrepreneurial activities in the twentieth century and has grown to the 500 biggest family businesses in 2010 regarding the total sales. The largest one of the companies examined, the *Robert*

[11]For example, *Brose Fahrzeugteile GmbH & Co. KG*—foundation of the retail company in 1908 and beginning of industrial production in 1919—and *Merck KGaA*—acquisition of the pharmacy in 1668 and start of the production and research in 1827—as well as the *B. Braun Melsungen AG*—beginning of the production of pharmaceutical products in 1864 compared to the opening of the pharmacy in 1839.

[12]For the different conditions of the founding of each family business, see the next chapter for a general approach.

Bosch GmbH with total sales of more than EUR 47 Billion in 2010 was founded in 1886. Later on, in the years from the Second World War until 1950, 24 of the considered companies began to offer their products and services in Germany. An accumulation of company foundations can be found in the years from 1921 to 1930 with 40 in total.[13] Ten firms are younger than 30 years and therefore represent only 2.7% of all family businesses in this study.

To become one of the 500 biggest family businesses in 2010 in Germany, a certain *successful* development process—with appropriate growth (rates)—has to be achieved over the years of the company's existence. But what kind of growth was necessary to reach the numbers of total sales in 2010 since the companies' foundations? How high were the annual growth rates of the family businesses in the long term, and what kind of strategic implications can be derived from them?

4.2.6 The Long-Term Analysis

As already mentioned in the previous sections, growth is a process that develops over a long period. Especially for family businesses and their specific characteristics, considering the next generations in their strategy, growth processes should be examined in the long term. Further, the research and development of new products require a lot of resources—including time—in manufacturing and engineering companies. Also, the sustainable growth processes in new markets and new business areas are expensive and very time-consuming.

4.3 The Methodology

4.3.1 Compound Annual Growth Rate

The applied long-term analysis is based on the idea that the current conditions of family businesses can be measured—in accordance with Haberlandt (1970) and obviously in quantitative units. Afterwards, the reproduction, respectively the *reverse extrapolation*[14] of their previous developments since the years of foundation, is applied.

[13]Important aspects of the entrepreneurial activities in the time after the First World War are the hyperinflation of 1923 with the following recovery of the economy and the political changes of the Weimar Republic [for a detailed explanation of the development see Kolb (2002) and Wehler (2008)—especially volume 4] as well as the Wall Street Crash of 1929 [among others see Klingaman (1990)].

[14]The concept of *reverse extrapolation*—in contrast to *extrapolation*—describes the development of a future formulated aim or parameter from the final point backwards to the present. The long-term analysis uses this method to examine the development process from the current parameters backwards to the parameters at the time of foundation.

With the approach of the compound annual growth rate (CAGR)—stated in the following equation—as a suitable indicator for growth processes as well as their quantification, these developments are calculated and therefore reproduced for each family business (Pflaumer, Heine, & Hartung, 2009, p. 38 et seq.):

$$CAGR(t_0; 2010) = \left(\frac{S(2010)}{S(t_0)}\right)^{\frac{1}{2010-t_0+1}} - 1$$

$S(2010) = Total\ sales\ in\ 2010$;
$S(t_0) = Total\ sales\ in\ the\ year\ of\ foundation$;
$2010 - t_0 + 1 = Age\ of\ the\ company$.[15]

Moreover, this method allows for a comparison among the quantified results. All in all, the growth processes cover the whole existence of the firms and therefore have an adequate time period compared to other studies in the current research which mainly focus on a shorter time period of around 4–5 years.[16] On the other hand, due to limited research capacities and limited access to further required data, an analysis in real time that would cover most of the influencing corporate activities and environmental factors is currently impossible. Therefore, the *reverse extrapolation* offers a comprehensive method to illustrate the growth processes over the complete existence of the family businesses.

The approaches of the evolutionary theory of organizations are of great importance when considering the growth of companies since their foundations, and with progress of their early growth stages, their establishments, and further on.[17] Accordingly, a certain similarity to the business life cycle can also be recognized. Yet, compared to the long-term analysis the data for the single stages of the business life cycle can only be raised for a limited period and for a smaller number of companies, especially of family businesses, because often the figures cannot be clearly determined and examined afterwards. Otherwise the long-term analysis with its CAGR method used in this chapter does not reproduce the variations in the process, but it shows the average development from a hypothetical starting point which intentionally should influence the strategic thinking of family businesses and thus make the entrepreneurial activities more sustainable. Therefore, a continuous development of the companies is assumed. Due to the large sample of 368 family

[15]Age of the company: subtracting the year of foundation from 2010 plus one. See among others Yasuda (2005).

[16]For example, see Evans (1987).

[17]See Kieser and Woywode (2006) for their overview on the approaches of the evolutionary theory of organizations.

businesses, the individual development of each firm is not and cannot be the objective of this study.[18]

A suitable comparison to this long-term method can rather be found in the natural sciences due to the fact that both approaches focus on the *evolution*, on the one side, that of family businesses and, on the other side for example, that of the universe. In the natural sciences—as well as in philosophy—thought experiments are important tools to investigate theories and the nature of things. The aim is to derive new knowledge from the given data.[19] In this chapter the thought experiment is executed because it is not possible to make the experiment in real time and in the real world—as already mentioned—since we examine the past of up to 480 years.[20] Therefore, this chapter uses a simulated calculation—as an approach to thought experiments[21]—to reproduce the evolution of family businesses over their whole time of existence. For this method, some assumptions, which will be discussed in the following section, have to be made to basically make the experiment possible. Furthermore, it has to be considered that the connections between the hypothetical starting points and the measured data in 2010 are determined. Thus, the developments of the family businesses are simulated—which are the crucial and interesting aspects of this chapter. Moreover, these results are interpreted to contribute to the strategic thinking of the companies. The developments of the family businesses after the year 2010 are not recognized in this chapter. This could be part of further research if the database will become available in the near future.

To make the described long-term comparison possible and to better understand the growth processes over this long-time period—despite their hypothetical average rates—the analysis obviously focuses first of all on one type of companies with their specific characteristics: family businesses. Further, all firms are German companies and therefore they all act in one and the same national economic area.[22] Especially developments in the national economy and the historical political situation—for example recessions and wars compared to economic upturns and peacetime—, as well as the legal and tax framework can influence the growth. Therefore, focusing on one economic area the external structures and factors are basically the same; the

[18]The (qualitative) examination of the individual development of each firm could be part of further research.

[19]See Gähde (2000) for recent publications on thought experiments and Ørsted, Jelved, Jackson, and Knudsen (1998) for the basic ideas from the late eighteenth and early nineteenth century.

[20]See Sorensen (1998), pp. 200–202 for the reasons of the impossible experiment in the real world and its alternatives.

[21]See among others Nida-Rümelin (2000)—in comparison to the *Calculation Thought Experiment (CTE)* mentioned in Waner and Costenoble (1996), which describes an approach to deal with more complicated mathematical expressions.

[22]Most of the family businesses do not only operate in the German market but due to their German legal form of business they generally have the same framework for entrepreneurial activities. Moreover, several employees of the firms are also working in other countries than Germany but they are included in the data as described in the previous chapter.

conditions are kept constant. Thus, the validity of this study increases, and a comparison of the results becomes possible.

4.3.2 Data and Assumptions

Due to the fact that the analyses are based on the ranking of the 500 biggest family businesses, young companies are rare. Therefore, the chapter examines established companies—the small number of only ten firms founded in the last 30 years supports this research decision—as well as *successful* ones to give some general advice on how to improve the strategic long-term thinking of other family businesses. Many of the biggest family businesses have changed their industry or expanded their product portfolio since their foundation.[23] Therefore, their entrepreneurial actions have taken place in different environmental settings and consequently other factors have determined the development of the firms over their period of existence. Nevertheless, it has to be considered that the change of the industry is eventually the result of the company's strategy. Due to this fact, these changes depend on the previous strategic decisions that finally make a comparison based on the company's current industry again possible and useful for the objectives of this chapter.

With the years of foundation, the date of the beginning of the entrepreneurial activities is basically given, but for the calculations based on the CAGR method and equation—as previously shown—the start value of the total sales ($S(t_0)$) is also needed to calculate the average growth rate of each company. However, these figures are neither publicly available nor in each case well documented. In addition, in some cases the examined family businesses are prevented from giving out this data. Due to this missing value, the initial conditions for the beginning of the development of the companies have to be assumed, or simulated respectively. The basic assumptions are that all examined firms have had the same initial conditions and thus the same total sales after their foundation. It is thus assumed that they all started with a hypothetical total sales volume of EUR 3 Million—expressed in current value.[24] When considering the different initial conditions of the family businesses in the assumptions 3 years of the company age are subtracted, in other words, 3 years are added to the year of the foundation: $t_0 \rightarrow t_0{+}3$.[25] The mentioned parameter also represents the transformation from a small workshop to a structured and organized industrial company this

[23]For example, see the *Sto AG* expanding their portfolio from cement to thermal insulation composite systems over the last 55 years or the *Kirchhoff Group* changing their products from needles in the early years after the foundation in 1785 to screwdrivers and waste collection vehicles in the present.

[24]The start value of EUR 3 Million was varied in the calculations to prove its influence on the average growth rates over the years. The results are not subject to large fluctuations when using a value of EUR 2 Million or EUR 4 Million.

[25]The CAGR equation changes to the following: $CAGR(t_0 + 3; 2010) = \left(\frac{S(2010)}{S(t_0+3)}\right)^{\frac{1}{2010-(t_0+3)+1}} - 1$.

study focuses on.[26] Furthermore, the assumed value of EUR 3 Million has to be deflated to the year of foundation—considering the three additional years—of every family business due to the advanced productivity over time. The first employees were not able to generate total sales of EUR 3 Million in current value in the eighteenth or nineteenth century, therefore, the annual deflator has to be assumed. Hence, this calculation makes it possible not to change the currencies of the total sales over the different time periods.

To determine the deflator, the average growth rate per capita GDP can act as an indicator of the advanced productivity. The numbers for Germany over the last centuries are especially interesting regarding the status of German family businesses today. In his book "Contours of the World Economy", Maddison examines the development of the world-wide GDP from the year 1 AD to 2003 AD, also considering the world population to calculate the changes per capita GDP. For Germany, for example, Maddison estimates an average growth rate per capita GDP of 1.08% between the years 1820 and 1870. Adding the following years until 2003, the average rate increases to 1.6%.[27] This figure represents the increase in the productivity over the period between 1820 and 2003. Therefore, it can be used as the deflator for the hypothetical total sales volume of EUR 3 Million over the years of the existence of the family businesses—minus the mentioned 3 years. Finally, the deflated total sales for the years of foundation of each family business are calculated using the following equation: $S(t_0 + 3) = \left(3,000,000/1.016^{2010-(t_0+3)+1}\right)$—which also considers the life time of the firms in the calculation. It can be neglected that the end date of the deflator is 2003 and the numbers of total sales are from 2010. The deflator should represent a reference value; therefore, an application is useful. Further, minimal variations in the value do not particularly change the results. It has to be considered that the calculation of the average growth rates of the total sales of each family company in the long term now includes the advanced productivity. On the other side, the inflation rate is not considered in this methodology but the operationalization of the initial conditions—especially due to the same currency—makes a comparison possible.

In summary, the long-term analysis and its calculation with the data of 368 family businesses are based on 3 assumptions. The first one is that for a better simulation of the different initial conditions of the foundation of the family businesses, 3 years are added to the *official* year of foundation (t_0+3). The second assumption is that a company founded today has total sales of EUR 3 Million 3 years after its foundation and is therefore in accordance with the first step. The third assumption supposes an

[26]Therefore, the years of foundation are also based on the beginning of the industrial production if several dates are given. Otherwise, the year of foundation represents the start of the structured and organized company.

[27]See Maddison (2007), especially page 383. The calculation of the average rate of 1.6% is based on the five average rates (1.08%, 1.61%, 0.17%, 5.02%, 1.58%). Maddison estimates for Germany over the last 183 years between 1820 and 2003 which he divides into five time sections (1820–1970, 1870–1913, 1913–1950, 1950–1973, 1973–2003). Finally, the arithmetic mean of these five figures is 1.6%.

annual deflator of 1.6% based on the advanced productivity over the last centuries, which is used to calculate the initial total sales 3 years after the foundations. Finally, the CAGR is calculated from t_0+3 until 2010. In the next chapter the results of the long-term analysis are described and interpreted with regard to the developed theoretical framework.

4.4 Results

The description of the results starts with the general findings for all 368 family businesses.[28] In the second step, the 25 largest and the 25 smallest companies are examined. The family businesses are then divided into age groups and ranked based on their average CAGRs to determine the upper and lower limits of the growth rates for each category. In the last step, an approach for a possible general *successful* development of family businesses is formulated to get closer to a sustainable growth rate which considers the specific characteristics of family businesses and supports the strategic thinking over generations. The descriptive results are embedded in the theoretical framework to improve their consistency.

When examining the rates regarding the research question, it has to be considered that they result from the simulated development of the 500 biggest family businesses in Germany since their foundation. Therefore, they represent the growth of this outstanding group. Generalizations for all family businesses have to be formulated as hypotheses and tested in further research activities. Nevertheless, the rates show the so far achieved growth potential of family businesses. To realize this potential, the companies require further resources. These factors vary from business to business.

4.4.1 General Description

First of all, it can be seen that the biggest family businesses are not the oldest ones. Accordingly, even some of the younger companies have already reached a remarkable size. Therefore, the differences between some of the average growth rates can vary extremely. Considering all CAGRs of the 368 examined family businesses, the mean is 9.41% and the median is 7.98%. The *SOLARWATT AG*, founded in 1993 and consequently the youngest of the biggest family businesses in Germany, shows the highest average growth rate with 40.43%. On the other side of the chart, the *William Prym GmbH & Co. KG* has the lowest CAGR of 2.62% over their entire existence since 1530—which makes them the oldest business of the sample. In total, 16 companies—4.4% of all analysed firms—have achieved a growth rate of more than 20% over time. All of them were founded after 1971 and therefore they are all

[28]The whole table of the 368 family businesses and the previously excluded companies can be found in Table 8.1.

younger than 40 years. In comparison to these 16 firms, the 16 companies with the lowest growth rates in the long-term analysis—ranging from 2.62% to 4.22%—started their business before the twentieth century; the youngest in 1826—the *UVEX WINTER HOLDING GmbH & Co. KG*—and the oldest—as mentioned—in 1530. From these results, the hypothesis can be roughly supported that growth rate decreases with age—both in the long term and on average.

4.4.2 The 25 Largest Family Businesses of the Sample

In the next step, the 25 largest family businesses are analysed and are compared with the 25 smallest firms of the sample to improve the understanding of how both ends of the ranking came to be ranked among the 500 biggest family businesses at all.[29] The following table ranks the 25 companies with the highest total sales in 2010 in combination with their growth rates (Table 4.1).

The results show that the 25 companies were founded in a range of 229 years—from 1756 to 1984—with an average age of 112.56 years. Further, 12 companies have achieved a compound annual growth rate of more than the mean of 9.41% over their whole existence. Accordingly, two different ways seem to make the rise to one of the biggest companies possible:

1. High growth rates in a short period of time; e.g. *Marquard & Bahls AG*, *INA-Holding Schaeffler KG*, *B. & C. Tönnies Fleischwerk GmbH & Co. KG* and *Enercon GmbH*.
2. Moderate growth rates over a long period of time: e.g. *Robert Bosch GmbH*, *Franz Haniel & Cie. GmbH*, *HERAEUS HOLDING GmbH* and *Henkel AG & Co. KGaA*.

The younger companies of the top 25 have higher growth rates compared to the average, and below average growth rates compared to the older family businesses. To achieve such high sales of Billions of euros in different time periods these two growth processes are logical and comprehensible. The differences between the rates are higher for the younger companies. The variations decrease with age, and a more stable development starts.

Further, the results show that it is possible to become one of the biggest family businesses and a major player in the market even as a younger company. Foundations from 1971—*B. & C. Tönnies Fleischwerk GmbH & Co. KG*—and from 1984—*Enercon GmbH*—have total sales of EUR 4.3 Billion or EUR 3.57 Billion, respectively, which are approximately equal to the total sales of companies founded in 1934 with EUR 4.321 Billion—*DKV EURO SERVICE GmbH & Co. KG*—and 1905 with EUR 3.7 Billion—Knorr-Bremse AG.

[29]Their size is also comparable to the DAX companies. Again, this shows the strength of the family businesses in Germany as well as in the international context.

Table 4.1 Growth rates of the 25 biggest family businesses of the sample

#	Family business	Year of foundation	Total sales in 2010 (mEUR)	CAGR ($t_0 + 3$; 2010) (%)
1	Robert Bosch GmbH	1886	47,259	9.98
2	Franz Haniel & Cie. GmbH	1756	27,432	5.34
3	HERAEUS HOLDING GmbH	1851	22,025	7.53
4	Henkel AG & Co. KGaA	1876	15,092	8.38
5	Marquard & Bahls Aktiengesellschaft	1947	12,588	16.49
6	C.H. Boehringer Sohn AG & Co. KG	1885	12,586	8.73
7	INA-Holding Schaeffler KG	1946	9500	15.71
8	Dr. August Oetker KG	1891	9457	8.84
9	Rethmann AG & Co. KG	1934	9300	13.26
10	MERCK KGaA	1827	9290	6.21
11	Adolf Würth GmbH & Co. KG (Würth-Gruppe)	1945	8633	15.29
12	Benteler AG	1876	6105	7.64
13	Knauf Gips KG	1932	5500	12.16
14	Freudenberg & Co. KG	1849	5481	6.51
15	Mahle GmbH	1920	5261	10.60
16	Voith AG	1867	5198	7.12
17	Dr. Alexander Wacker Familiengesellschaft mbH	1914	4748	9.88
18	B. Braun Melsungen AG	1864	4423	6.88
19	DKV EURO SERVICE GmbH & Co. KG	1934	4321	12.09
20	B. & C. Tönnies Fleischwerk GmbH & Co. KG	1971	4300	23.65
21	Scholz AG	1872	4000	7.12
22	Dachser GmbH & Co. KG	1930	3800	11.35
23	Knorr-Bremse AG	1905	3700	8.87
24	Enercon GmbH	1984	3570	36.47
25	Hella KGaA Hueck & Co.	1899	3550	8.41

Source: Authors' own table

Focusing on the 25 biggest family businesses and the first results of the long-term analysis, it seems that the growth rates decline with age or with an earlier foundation of the company, respectively. But it has to be considered that the growth process of the younger ones may change with age as well. Therefore, a further development with higher two-digit rates in the long term is questionable.

Table 4.2 Growth rates of the 25 smallest family businesses of the sample

#	Family business	Year of foundation	Total sales in 2010 (mEUR)	CAGR ($t_0 + 3$; 2010) (%)
344	C. & A. Veltins GmbH & Co. KG	1824	268	4.11
345	Günther Reh AG	1920	267	6.92
346	SIMONA AG	1857	267	4.67
347	Johannes Reifenhäuser Holding GmbH & Co. KG	1911	266	6.41
348	Neue Dorint GmbH	1959	265	11.33
349	CHT/BEZEMA-Gruppe	1953	265	10.22
350	M U L T I V A C Sepp Haggenmüller GmbH	1961	262	11.74
351	ARBURG GmbH & Co. KG	1923	260	7.08
352	Leistritz AG	1905	260	6.10
353	Hamberger Industriewerke GmbH	1866	260	4.84
354	PLURADENT AG & Co. KG	1915	256	6.58
355	hülsta-werke Hüls GmbH & Co. KG	1940	254	8.45
356	Friedrich Zufall GmbH & Co. KG	1928	254	7.40
357	ALLGAIER WERKE GmbH	1906	254	6.12
358	Scheidt & Bachmann GmbH	1872	254	4.97
359	Optima-Maschinenfabrik Dr. Bühler GmbH & Co.	1922	252	6.97
360	Fränkische Rohrwerke Gebr. Kirchner GmbH & Co. KG	1906	252	6.11
361	Ahlers AG	1919	251	6.78
362	Agrarfrost GmbH & Co. KG	1967	250	13.17
363	Rösler Oberflächentechnik GmbH	1933	250	7.77
364	Bauerfeind AG	1929	250	7.45
365	Joh.Winklhofer Beteiligungs GmbH & Co. KG	1916	250	6.60
366	Hassia Mineralquellen GmbH & Co. KG	1864	250	4.77
367	Develey Holding GmbH & Co. Beteiligungs KG	1845	250	4.39
368	H. Butting GmbH & Co. KG	1777	250	3.56

Source: Authors' own table

4.4.3 The 25 Smallest Family Businesses of the Sample

The 25 family businesses which have the lowest total sales of the sample in 2010 show lower average growth rates since their foundation compared to those of the largest companies (Table 4.2).

With a range of 191 years and a mean firm age of 106.28 years, only four family businesses have a higher average growth rate than the mean of 9.41%. In this part of the sample as well, the younger companies have a higher growth rate than the older

Table 4.3 Limits of the CAGRs by age group

Year of foundation	Before 1841	1841–1850	1851–1860	1861–1870	1871–1880	1881–1890	1891–1900	1901–1910
Number of companies	28	10	11	17	23	19	24	25
Upper limit of CAGR	6.21%	6.51%	7.53%	7.12%	8.38%	9.98%	8.84%	8.87%
Lower limit of CAGR	2.62%	4.39%	4.67%	4.77%	4.97%	5.45%	5.71%	6.10%
Average CAGR	4.21%	5.11%	5.51%	5.52%	5.91%	6.43%	6.83%	7.22%
Year of foundation	1911–1920	1921–1930	1931–1940	1941–1950	1951–1960	1961–1970	1971–1980	After 1980
Number of companies	29	40	33	32	30	23	14	10
Upper limit of CAGR	10.60%	11.35%	13.26%	16.49%	15.40%	18.07%	26.54%	40.43%
Lower limit of CAGR	6.41%	6.97%	7.77%	9.49%	10.20%	11.74%	16.40%	22.61%
Average CAGR	7.98%	8.26%	9.68%	11.19%	12.05%	14.78%	19.91%	31.63%

Source: Authors' own table

companies. Therefore, the two mentioned ways to develop and to achieve the reported total sales of the firm can also be found in this part of the sample. Further, the variations of the growth rates decrease with age.

To summarize these findings, it can be stated that age, as well as high growth rates, can lead to a significant size of family businesses. Moreover, it seems that high growth rates can predominantly be achieved by younger companies, and with age the growth rates decline to a more constant level. But which way is more successful for the strategy of a family business? Is there a limit to the growth rate for family businesses, or which growth potential can possibly be used by family businesses?

4.4.4 Upper and Lower Limits

To examine the development potential further, the German family businesses are divided into age groups of 10 years each between 1841 and 1980. Two more groups include the foundations before 1841 and after 1980. The companies are then ranked within these categories based on their average growth rate from the largest to the smallest.[30] This should help to find upper and lower limits of the growth rates which can support the formulation of strategies for the primary objectives of the family businesses. The analysis of the age groups of all 368 family businesses leads to the following figures including the average of the CAGRs within each category[31] (Table 4.3).

The upper and lower limits of the average growth rates increase continuously the more recent the age group is—three minor exceptions of the upper limits can be identified in the age groups "1851–1860", "1881–1890" and "1941–1950" although the figures tend to rise. It has to be considered that the limits are numbers of single companies after the firms have been ranked, and therefore outliers could be included in the analysis. But also when looking at the average growth rates, the tendency can be confirmed. Further, the spreads of the limits widen with decreasing age from a difference of 2.12% between 1841 and 1850 to 10.14% between 1971 and 1980. The age groups from 1971 and more recent show that these family businesses have achieved growth rates from around 16% to around 40% and therefore they are now among the largest family businesses in Germany. Yet, more moderate growth rates from 10 to 15% can also lead to a place among the group of the top 500. Smaller companies—regarding the total sales—with high growth rates in the categories were founded later, otherwise they would have reached a bigger size over their entire existence. Further, it can be assumed that family businesses can only grow continuously at a rate of more than

[30]The period of 10 years has been chosen due to the fact that it should be possible to consider the different generations of the family business. How many years a generation covers is discussed in science, especially in demography and sociology. Most of the studies apply a period of 25–35 years; see among others Howell (2000), as well as Weiss and Wobst (1973). Therefore, the length of one generation is set to 30 years for the calculation purposes of this book. Thus, the first generation includes all foundations after 1980 (2010 minus 30 years) and so on.

[31]The single tables of the age groups can be found in Table 8.2.

17%—regarding their potential—within the first 60 years of their existence and therefore also within the first and second generation of the company. It seems that growth rates of around 20% and more can only be achieved in the first generation (foundations after 1980) and with the beginning of the second generation.

A slight influence of the Second World War and the following economic recovery on the long-term growth rates of the company foundations between 1941 and 1950 can be assumed by the calculated figures. Potential growth rates of 16.49% show an increase compared to the rates in the adjacent groups. Furthermore, only one family business was founded before 1945 in this group and thus during the Second World War. All other 31 firms started their entrepreneurial activities after the military surrender of Germany.[32] The impact of relatively small differences in the average growth rate over a period of 60–70 years can be tremendous. Both companies, the *INA-Holding Schaeffler KG* and the *Jakob Müller GmbH & Co. KG*, were founded in 1946 but achieved a CAGR of 15.71 and 11.91%, respectively. The difference is *only* 3.80%, but after 65 years the difference of the total sales is EUR 8.3 Billion. *Schaeffler* generates nearly eight times the sales of *Müller*. For strategic decisions, the effect of the interest calculation has to be considered; increasing the intended growth rates by a small amount can have a big impact in the long term.

The average growth rate of the companies founded between 1951 and 1960, namely 12.05%, slightly increases compared to that of the previous category which can also be an indicator of the impact of the reconstruction era between 6 and 11 years after the end of the Second World War.

In the period between 1921 and 1930, only 2–3 years after the First World War,[33] the highest number of the currently 500 most *successful* family businesses was founded—in total 40 companies. In the following 10 years between 1931 and 1940, 33 firms were founded which now belong to the largest family businesses in Germany.

Of the 29 foundations in the years between 1911 and 1920, 13 companies achieved total sales of more than EUR 1 Billion with an average CAGR of 7.98%. This rate is only 0.28% lower compared to the one in the following 10 years. Therefore, the period starting in 1910 created the highest number of companies with total sales of more than EUR 1 Billion. The differences of the growth rates between the two age groups are generally small. Regarding the different generations of the family businesses founded in these 20 years, the change from the third to the fourth generation had already happened.[34]

[32]The German military surrender was signed on the 7th/8th May 1945 and officially ended the Second World War in Europe. After this armistice the economic recovery started. This can possibly explain the large number of foundations. The influence of this external factor on the development of companies could be part of further research.

[33]The end of the First World War can be fixed on 11th November 1918 with the armistice between the Entente Powers and Germany. See Rudin (1967) for the political and national economic circumstances and development in Germany.

[34]A closer analysis of each firm would be necessary to examine the current generation of the family that is responsible for the company, but with the formulated assumption the change of the third to the fourth generation would be after 90 years.

Table 4.4 Growth rates of the fictitious family business founded in 1890—I

Time period		Growth rate in the time period (%)	Total sales at the end of the time period in mEUR	CAGR (1890; end of time period) (%)
	1890		0.461	
1891	1900	30.00	6.35	30.00
1901	1910	30.00	87.61	30.00
1911	1920	30.00	1208	30.00
1921	1930	3.00	1623	22.65
1931	1940	3.00	2181	18.44
1941	1950	3.00	2931	15.72
1951	1960	2.00	3573	13.65
1961	1970	2.00	4356	12.12
1971	1980	2.00	5310	10.95
1981	1990	2.00	6473	10.02
1991	2000	2.00	7890	9.27
2001	2010	2.00	9618	8.64

Source: Authors' own table

Looking at the age group of 1901–1910 with 25 foundations, it can be assumed that no German family business achieved a compound annual growth rate of its total sales of more than 10% over 100 years of entrepreneurial activity. Perhaps the younger companies with currently higher growth rates of 10% can increase the growth potential for a period of more than 100 years. External factors as well as the requirements for the development of internal factors have probably changed over time, and therefore could improve the growth rate of younger businesses in the long term.

With average growth rates from 5.71 to 8.84% in the years 1891–1900, 24 family businesses, among others the well-known *Dr. August Oetker KG* and the *Unternehmensgruppe Theo Müller GmbH & Co. KG*, have reached the size to be ranked among of the 500 biggest family businesses in Germany. In this age group the impact of small differences in the growth rates over a long-time period is again obvious. With a rate of 5.71% over 119 years, the *Heitkamp BauHolding GmbH* has total sales of EUR 300 Million in 2010, the *Dr. August Oetker KG* has total sales of EUR 9.5 Billion with a rate of 8.84% over 120 years.

Due to a higher growth rate of 9.98% and despite a higher age of 125 years, the biggest family business in 2010 in Germany is the *Robert Bosch GmbH* with total sales of EUR 47.3 Billion. The relatively large difference of this upper limit of the age group 1881–1890 to the average growth rate of 6.43% in this category shows *Bosch's* exceptional performance over such a long-time period.

However, the next age group between 1871 and 1980 confirms that with a more moderate growth rate of around 5.0–8.4% a family business can become a major player in the market. The *Henkel AG & Co. KGaA*, founded in 1876, is one of the leading global companies in the business areas home care and personal care with total sales of around EUR 15.0 Billion.

Even older family businesses like the *Voith AG* or the *B. Braun Melsungen AG* achieved Billions of total sales in 2010, EUR 5.2 Billion and EUR 4.4 Billion respectively, with a company history of 144 and 147 years, respectively and average growth rates of 7.12 and 6.88%. Yet, even with a growth rate of 4.77% like that of the *Hassia Mineralquellen GmbH & Co. KG*, founded in 1864, it is possible to become one of the 500 biggest family businesses in Germany.

Some of the companies older than 150 years and thus founded before 1861 are today as big as the well-known DAX 30 companies like the *HERAEUS HOLDING GmbH* (1851) with total sales of EUR 22.0 Billion and a growth rate of 7.53% or the *MERCK KGaA* (1827) with total sales of EUR 9.3 Billion and a growth rate of 6.21%. As number five of the largest companies, the *Franz Haniel & Cie. GmbH* grew at an average rate of 5.34% from 1756 to total sales of EUR 27.4 Billion in 2010. These family businesses show that with moderate rates of around 5–7.5%, a company can become very large, provided that the family business survives such a long time. Further, a company which was founded between 1801 and 1850 requires a CAGR of more than 4% to become one of the top 500 family businesses in Germany. The *William Prym GmbH & Co. KG* is a remarkable exception to all examined family businesses. With an age of 481 years, they show that the *dynastic project* can be successful for more than 16 generations. Due to their high age, the average growth rate is relatively low with 2.62%.

4.5 Interpretation of the Results

The descriptive results of the CAGR calculations over the entire existence of the examined German family businesses indicate a connection between the firm age—and thus the year of foundation—and the achieved growth rate. The data in Table 4.4 show that especially in the first generation—foundations after 1980—and at the beginning of the second generation—foundations between 1971 and 1980—companies can achieve *exceptionally* high growth rates. These findings support Miller, Le Breton-Miller, Lester, and Cannella (2007) that the (lone) founder businesses outperformed their competitors (Miller et al., 2007, p. 856 et seq.). Therefore, a more dynamic progress of the growth rates over the existence of the family businesses should be considered. A first approach could be to start the hypothetical development of the firms with a growth rate of 30% in the first generation. This approximately corresponds to the average rate that has been measured in the sample of the 500 biggest family businesses for companies founded after 1980. A random example of a fictitious company with its year of foundation in 1890—four generations old—is calculated. In the sample of the 500 largest examined companies the *Dr. August Oetker KG* is a reference with its year of foundation in 1891 and total sales of EUR 9.5 Billion in 2010, as well as an average growth rate of 8.84%. With these figures *Oetker* is the most *successful* company in its age group. To achieve approximately the same total sales in 2010 with an average growth rate of 30% in the first generation—in the first 30 years after the foundation—the growth rates of the

Table 4.5 Growth rates of the fictitious family business founded in 1890—II

Time period		Growth rate in the time period (%)	Total sales at the end of the time period in mEUR	CAGR (1890; end of time period) (%)
	1890		0.461	
1891	1900	15.00	1.86	15.00
1901	1910	15.00	7.54	15.00
1911	1920	15.00	31	15.00
1921	1930	6.60	58	12.84
1931	1940	6.60	110	11.56
1941	1950	6.60	208	10.72
1951	1960	6.60	393	10.12
1961	1970	6.60	746	9.68
1971	1980	6.60	1413	9.33
1981	1990	6.60	2677	9.05
1991	2000	6.60	5072	8.83
2001	2010	6.60	9611	8.64

Source: Authors' own table

fictitious family business have to be very low in the following years, especially compared to the assumed advanced productivity of 1.6% per year.

But this development seems inappropriate. The average growth rate of the total sales of *Oetker* between 2006 and 2010 is 7.24% and so a development of 30% in the first generation was not possible in this case—assuming a continuous growth. Due to the fact that *Oetker* is the biggest company founded in the considered period, it can be assumed that it was not possible to grow at 30%—like the family businesses founded after 1980—at the end of the nineteenth century or the beginning of the twentieth century, respectively. A firm of an unprecedented size would have grown. Or else, all companies that had such a high growth rate at the beginning did not survive until 2010 or their entrepreneurial activities decreased in the next generations so that they do not appear in the ranking of the top 500 family businesses in Germany. This finding would recommend a more continuous development in the long term of the company. Then, high growth rates should be avoided. Nevertheless, the examined *exceptional* rates in the first generation of the 500 biggest family businesses in Germany support the hypothesis that the growth rates are higher when the companies are younger and decrease with age. But older companies could not have grown that fast in their first years. A higher growth rate at the beginning compared to the average rate observed in 2010 can be assumed and observed even for companies founded before 1971. Therefore, the average growth rates after the first generation of the family businesses will decrease by a certain factor due to the *exceptional* growth at the beginning. A more moderate example calculation that could represent the development of Oetker more realistically would be the following.

Assuming a 15% growth in the first generation over a period starting in 1890, the following growth rates would decrease by approximately 2% compared to the average growth rate over the entire existence—*Oetker's* 8.84% compared to

the 6.60% in the example. Every single time period equally determines the average growth rate over the entire existence of the company. A development with a growth rate of 8.64% in the long term, as shown above, would also be possible starting with a 6.60% increase at the beginning and growing at a 15.00% rate in the period from 2001 to 2010. But the observed *exceptional* growth rates of family businesses founded after 1980 indicate that the growth is more similar to the development shown in Table 4.5 and therefore the average growth rate also depends on the initial growth rate. Further, if age affects the growth rate and basically the percentage decreases the older the company gets, then the growth rates in the first generation are even more important for the achievable size of the family business.

For further discussion and research, it would be necessary to examine if the *exceptional* growth rates are sustainable. Two ways have been addressed so far: Firstly, companies like the *Solarwatt AG* (1993) and the *Enercon GmbH* (1984) benefit from different, i.e. better initial economic circumstances compared to old companies like the *Witzenmann GmbH* (1885) and the *Hella KGaA Hueck & Co.* (1899), for example due to international markets and increased prosperity. Secondly, the mentioned younger companies will not become as old as 126 and 112 years because of their *exceptional* growth rates right after their foundation and they will not be able to go on with their *dynastic project*. Companies founded in the last 30 years with more moderate growth rates would then appear in the sample of the 500 biggest family businesses in Germany in around 100 years.

4.6 Further Calculations Based on the CAGR

To investigate the research question more intensively, the average growth rate of the total sales of each family business of the sample between 2006 and 2010 is now compared to the average growth rate from the company foundation until 2006. The previous results, which support the formulated hypothesis, suggest that the rate from 2006 to 2010 should be smaller than the average rate right from the start of the entrepreneurial activities until 2006. Moreover, this means that the $CAGR\ (t_0{+}3; 2006)$ is also higher than the $CAGR\ (t_0{+}3; 2010)$. Thus, the hypothesis for this calculation is that the 368 examined family businesses achieved a smaller growth rate from their foundation until 2010 in comparison to the growth rate from their foundation to 2006.[35] With age, the growth rates would then decline based on the theoretical framework and the results of the first CAGR calculation. To determine the mentioned ratios, the same CAGR formulation as already described is used as well as the data from the *Stiftung Familienunternehmen* that also includes the total sales of each year between 2006 and 2010.

The results of the comparison show that in 289 of 368 cases the $CAGR\ (t_0{+}3; 2006)$ is higher than the $CAGR\ (t_0{+}3; 2010)$.[36] The differences are

[35]The mathematical formulation: $CAGR\ (t_0{+}3; 2006) > CAGR\ (t_0{+}3; 2010)$.

[36]See Table 8.3.

small due to the long time period of the existence of the family businesses compared to the four more years between 2006 and 2010. Nevertheless, these findings support the hypothesis that the examined family businesses achieved a smaller CAGR until 2010 than until 2006 since their foundation. The first hypothesis is supported, i.e. that the growth rates decrease with age.

4.7 Conclusion

All in all, the long-term approach using the CAGR of the family businesses over their entire existence leads to the assumption that the growth rates of family businesses in Germany decrease with age. The formulated hypotheses are supported so far. The age—as an internal factor—affects the growth opportunities. In the theoretical framework, family businesses seem to be subject to the business life cycle as well but in combination with the *dynastic project* it seems possible to extend this cycle over several generations.[37] A comparison to evolutionary processes—in the organizational behavior theory as well as in natural sciences—is obvious. Age weakens the company's growth.

Family businesses represent an enormous part of the national economy in Germany as well as around world. Nevertheless, the theory of business administration does not consider their specific characteristics sufficiently. But even these characteristics seem to make family businesses successful. Especially the objective to pursue the *dynastic project*—to preserve the independence and to safeguard the survival of the company over generations, as well as to keep the family business system together—establishes the company on the market and makes it possible to build up a business that creates value for the family and for the society. Growth is a necessary element of this development. The family business gets older with every generation but still it has to achieve growth. So, does age influence the growth rates? And which strategic implications can be formulated from the results? The answer is not clear.

Considering the average growth rates of the examined companies since their foundation over up to several hundreds of years, growth slows down with age. The strategic implications derived from this analysis are that measures have to be established which counteract the aging process. Further, the calculations with the 500 biggest German family businesses show that advanced productivity over the years leads to a necessary growth rate that is higher than the productivity increase to definitely secure the existence of the company. But defining a certain growth rate to achieve primary objectives has long-term effects—even small differences can change the company tremendously with age.

Overall, it can be assumed that age has an influence on the growth of family businesses. But its impact on other factors like size is more significant—with age and presumed growth the size increases—and therefore the effect is indirect. To realize

[37] See the *William Prym GmbH & Co. KG* in the 16th generation as an exceptional example.

the *dynastic project*, the strategic thinking of family businesses should focus on the safety strategy and ask for growth rates that secure the existence of the company. Factors like size and age have to be considered to counteract these processes—as well as further internal and external factors. A successful implementation of these results in the safety strategy of the family business can lead to a position among the 500 biggest family businesses in Germany and—this is the more important objective—it can secure the existence of the family business.

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Growth Path of Family Enterprises

5

Having examined the 500 biggest family enterprises regarding their longitudinal growth process, this chapter analyses the growth process along the generational development and tries to develop practical implications for the sequence of generations.

One of the interdependent research projects dealt with the exploration of the complexities of the family businesses' growth process. Seibold (2017a, 2017b) has developed a phase theorem to analyse the growth paths of family businesses.

5.1 Phase Theorem

This phase theorem was derived from different examples of family business growth. All studied companies were older than 100 years, had sales of more than EUR 10 billon (2014) and are still family controlled. The data gathered from the cases studies reflect the generational influence on the growth phases. These findings were supplemented by overall economic as well as political factors and embedded in the life cycle theory (Table 5.1).

The first phase covers the company's establishment up to the beginning of the First World War in 1914. In 1914, the period of high industrialization ended in Germany.

The second phase covers the time between the outbreak of the First World War and the beginning of the post-war period of the Second World War in 1952. In this phase, the difficult reconstruction time of wars is covered. At this time, important company archives were destroyed.

The third phase (1952–1974) includes the post-war period, the time of the economic miracle and the beginning of the recession in the wake of the oil crisis.

The fourth phase covers the period from 1974 to 1991: the markets are increasingly networked and commercial and market entry barriers are steadily reduced. In

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Table 5.1 Phase theorem

Phase I	Phase II	Phase III	Phase IV	Phase V
Pre-industrialization	World Wars I + II	Post War boom	Globalization	Eastern expansion
Phase I (foundation-1914)	Phase II (1914–1952)	Phase III (1952–1974)	Phase IV (1974–1991)	Phase V (1991–2014)

Source: Authors' own table

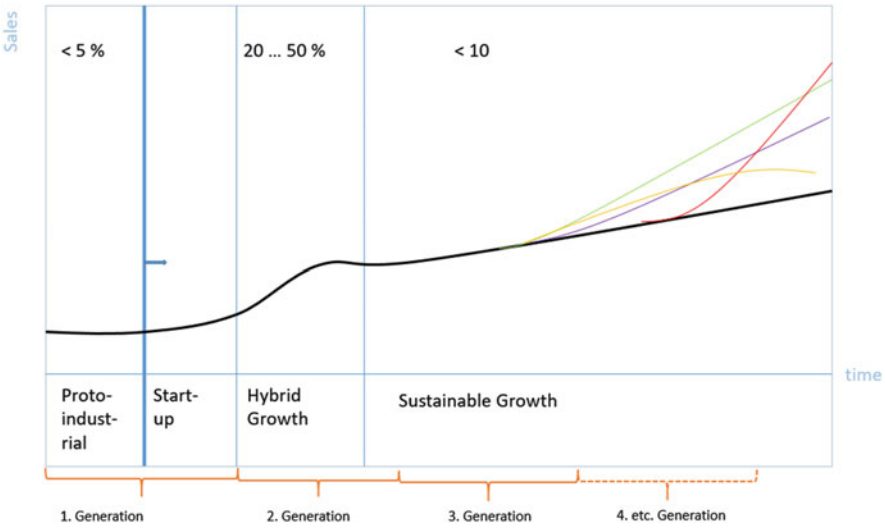

Fig. 5.1 Life cycle. Source: Authors' own figure

1991, the Soviet Republic was finally dissolved and the Eastern markets were opened.

The fifth phase covers the period from 1991 to 2014. In the 1990s, the European economy weakened. At first, Germany could compensate for this downturn with the reunification boom. Subsequently, the economic situation in Germany also weakened.

Considering all the political as well as generational factors and referring back to the life cycle theory, the following phase model could be proposed (Fig. 5.1).

To illustrate the phase theorem, the example of the company Merck is used:

In the year 1668, the Merck family had a small pharmacy with three employees. After a pioneering invention in the field of Alkaloids by Emmanuel Merck, the pharmacy started to grow, and during the second generation the pharmacy developed into an enterprise with an industrial production of pharmaceuticals and chemicals. Over the years, the enterprise expanded and developed into a multinational, well-established business group.

The Merck Story is the narrative of a nearly 350-year-old German family-owned business. There are several more old companies that can look back on a colorful past,

starting with a small craftsman shop, a pharmacy or as a self-employed merchant. All of these stories have one thing in common, they all started small and have developed into a long-lasting family business. In most cases, the second generation started to establish organizational structures after the pioneering innovation of the founder.

5.2 First Generation's Willingness to Grow

The first generation has a higher entrepreneurial orientation[1] than the later generations, and thus the first generation has a higher capacity for growth (Cromie, Stevenson, & Monteith, 1995; Dunn, 1995) and correspondingly a higher growth rate (Reid, Dunn, Cromie, & Adams, 1999).

The centralized authority of the founder (Gedajlovic, Lubatkin, & Schulze, 2004) characterizes the strategic decisions of the first generation. This is followed either by excessive risk-taking or by a strong aversion to risk in order to keep the company's assets (Casillas, Moreno, & Acedo, 2010).

In the first generation a reluctance of the founder to give away his/her "power" can be detected (Gedajlovic et al., 2004; Gersick, Davis, Hampton, & Lansberg, 1997). In this context, the resistance/dislike of succession plans of the founder's generation should be named (Davis & Harveston, 1998; Sonfield & Lussier, 2004).

Davidsson (1991), Westhead and Cowling (1997), Delmar and Davidsson (1999), and Delmar and Wiklund (2003) (SME Managers) particularly address the growth willingness of the founding generation. Not all entrepreneurs have growth as a corporate goal (Ambrose, 1985; Wiklund, Davidsson, & Delmar, 2003). The profit maximization is not the only goal of family entrepreneurs (Chrisman, Chua, & Sharma, 2005; Westhead & Cowling, 1997; Westhead & Howorth, 2006). The latter study shows that companies in the first generation and businesses where few managers are part of the family prefer "rational" objectives rather than family goals. As the number of shareholders rises, the focus shifts to family-specific objectives (Dyer & Handler, 1994). In the earlier literature, there is a distinction between the business-first and family-first mentality (Singer & Donahu, 1992; Ward, 1987). Dunn (1995) states that having the characteristics that are important for growth is more likely for the business-first company. Donckels and Fröhlich (1991) point out that family-first companies are resistant/persistent and have a more conservative attitude towards growth than business-first businesses. Subsequent literature reveals that the terms family-first and business-first are not static concepts, but can change within the company over time (e.g. Martin & Lumpkin, 2003; Reid et al., 1999).

[1] See Casillas and Moreno (2010) for an overview of the relationship between the entrepreneurial orientation and growth of family firms. The authors conclude that family involvement has a positive influence on the innovation capabilities (Moreno & Casillas, 2008) and the competitive aggressivity, but has a negative impact on risk propensity.

Note: Profit maximization as a target does not promote growth as any growth strategy has the tendency to reduce short-term profitability. Further profit maximization tentatively leads to an increasing risk assumption that might jeopardize longevity.

So far there have been few studies that deal with the impact of the objectives on the company's performance (Frese, Krauss, & Friedrick, 2000; Seijts, Latham, Tasa, & Latham, 2004). Lee and Marshall (2013) examine how the goal orientation of family entrepreneurs affects the company's performance. The authors note that the goals "good reputation" and "growth" have a positive effect on the company's performance.

The transition from the first to the second generation can promote growth and strategic innovations (Zahra, 2005). However, during generational transitions (first to second), negative effects on strategic planning can occur (Cater & Schwab, 2008; Chrisman, Steier, & Chua, 2006).

5.3 Second Generation's Developmental Needs

Having described the first generation's willingness to grow, the developmental needs of the second generation are explained in terms of: Need, Willingness, Capabilities and Options (Fig. 5.2).

5.3.1 Need

The necessity to grow has an organizational as well as an individual dimension. On the organizational level, the growth of the whole industry plays an important role (McGrath, 2012) and drives the need to grow the business. The industry growth is an important benchmark for the thresholds for growth. Thus, the need to grow is determined by the threshold of 0.8 of the respective industry growth. Another driver

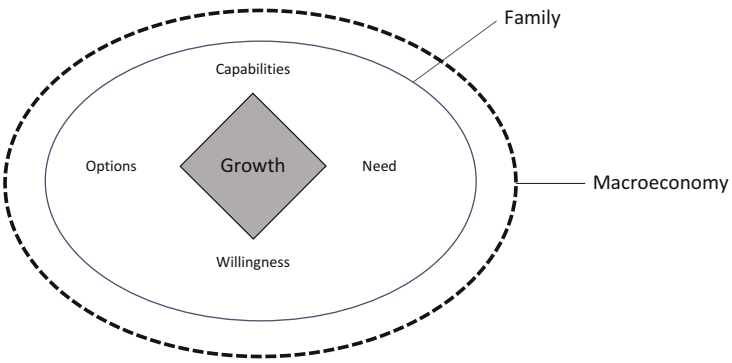

Fig. 5.2 Growth diamond. Source: Authors' own figure

of the necessity to grow are the geographical dynamics of the respective industries. The overall macroeconomic situation determines the need to grow continuously.

From the business perspective, the most important benefit of growth is the gain of stability and thereby sustainability. These can be based either on a larger market share in a product-market-sector or—even more importantly—on a diversification into several business activities. A long-term analysis of companies in the state of Baden–Württemberg between 1940 and 2010 shows that all companies with more than three subsidiaries, i.e. diversified activities, survived over these 70 years (Ehrhardt & Nowak, 2011).

On an individual level (family level), the necessity to grow is driven by family-specific issues such as mode of inheritance (Fittko & Kormann, 2014) and shareholder expansion. As the number of family members increases, there is a greater need for the business to grow in order to satisfy the demands of all family members. On the one hand, this is financial compensation in form of dividends etc., on the other hand this is the opportunity of an active career in the family business. As the business grows and develops further business divisions, it can offer any suitable member of family a job opportunity. The increased demand for dividends can increase the need to grow, but this demand could also be a threat to the company as it depletes the financial resources that are dedicated to financing the aspired growth.

The mode of inheritance is a further driver of the necessity to grow, as an increased shareholder base or the payout of shareholders can be the outcome. If the business is transferred to all heirs, the shareholder base expands and the issues stated above arise: The increased demand for dividends and the possibility of an active career in the family business. If it is the case that the business is bequeathed to one child, the shares of the other heirs must be financially compensated, which indeed reduces the financial scope of the business's potential growth opportunities.

Therefore, transferring the business to one child only significantly curbs the desired growth. It is a fact that there is no old and large company in the sole ownership of a fourth-generation owner (Fittko & Kormann, 2014). Those companies that are in the sole ownership of one person are comparatively small, such as Faber Castell, traditional hotels or the famous vineyards. Concentrated ownership requires cash outflow to compensate the heirs excluded from the inheritance of the business shares. According to German laws, this is half the value of the estate compared to the state of intestacy. But this half is to be paid in cash. This cash comes from the after tax profit retained in the company. This cash outflow reduces the growth potential by one-half or two-thirds.

Practical Implications

As a consequence, the founder should anticipate the succession management as it can have a tremendous impact on the second generation's need to grow. The second generation should align its growth to the industry situation using the above-mentioned corridor as a potential guideline.

5.3.2 Options

Following this elaboration on the growth needs of the family business, this section will focus on the growth options of the business that arise in the second or subsequent generations. A distinction can be made between internal and external opportunities. The internal opportunities to grow are the innovation potential as well as the amount of and access to financial resources such as reinvestment potential. External growth opportunities arise from changes in the market/product or the macroeconomic cycles and trends. During the last 40 years, German industrial companies have found their growth almost exclusively in export markets (Conrad, 2013). The reduction of the time-to-market process and the contraction of the innovation—substitutions-curve open new growth opportunities. Taking over the market shares of declined firms in the respective industry enables new growth opportunities. Joint ventures, alliances and networks, especially in an international context, yield opportunities for growth.

Practical Implications
Search constantly for internal and external opportunities for growth, consider your own strengths and weaknesses, as well as the macroeconomic surroundings as these are the starting points for any growth. Maintaining contact with an external network and building up partnerships could help to overcome any weaknesses.

5.3.3 Capabilities

To pursue the above-mentioned options, special capabilities are needed. One of the most important factors influencing the capabilities for growth are the human resources (Penrose, 1959). The willingness to take risks and a proactive orientation, especially of the top management team, are key drivers of growth. Additionally, it is important to have the capability to communicate and implement the decisions derived from the entrepreneurial orientation to the employees—the leadership style. Besides human resources, organizational capabilities play an important role in the growth process, such as the time of adaption to external and internal changes, as well as financial stability.

One favored and commonly-used step to enhance the financial capabilities for growth is an IPO. Our research reveals that an IPO is not needed to grow into a large company. Empirical evidence shows that there are three times more non-listed family-owned businesses with sales of more than EUR 1 billion than listed ones. Furthermore, the growth rate of non-listed family-owned business is higher than that of listed family-owned businesses and public companies. It is a fact that the higher dividend quota of listed companies reduces a sustainable growth rate. Therefore, the absolute amount of retained earnings in a non-listed family-owned business is higher than in a listed family-owned business—all other parameters being equal. Further, the profit pressure by non-family shareholders might reduce the capability for innovative and risky projects.

Practical Implications

Ensure financial liquidity and the realization of proactive, innovative and risk oriented behavior.

5.3.4 Willingness

The last point to discuss is the willingness to grow, arising from personal experience, characteristics and the surroundings that shape the goal-setting concerning growth.

Expected outcomes of growth strategies influence the growth willingness. The motivating forces are the monetary reward and increased independence (Davidsson, 1989). Personal experience in other growth-orientated companies, as well as the personal experience of mentors and within networks can facilitate the decision-making in one's own business. Characteristics such as entrepreneurial orientation (innovative, proactive, risk taking) are important drivers of growth in business. The personal experience and the characteristics are shaped by the family and their goals, needs and concerns. Especially for the second generation the goals of the founder' generation are still strongly prevalent. Many founders decisively convey and assert their attitudes, strategies and goals to the offspring who succeed them. Due to the strong presence of the founder, it is challenging for the successor to establish his/her own attitudes and goals in the business strategy. This is one of the reasons why they prefer the sole ruler principle also for the next generation. Another reason for these strong convictions is the wish to continue the goal of double-digit growth in subsequent generations.

Having analysed the 350 largest and oldest German family businesses, we have not found one company that was able to achieve double-digit growth over two generations or more. With the exception of the American oil companies—which had their sales growth based on rising oil prices and mergers—there are hardly any companies at all which were able to achieve a double-digit rate over 100 years (Chap. 4). In Germany, Robert Bosch comes closest to this with some 9% average growth rate over 125 years. In the USA, Koch Industries and Mars might be a case in point.

Potential causes of this observed phenomenon could be the problem of overstretching the organization, as a real growth rate beyond 10% or more requires increasing the management at least by a factor of two each decade.

Another reason are the financing mechanics of growth. The first generation lived frugally and invested the full cash flow into expanding the business. In the second and subsequent generation, the growth is reduced (compared to first generation growth). In the second generation, the factories and business assets invested by the first generation have to be renewed, refurbished and so forth. Therefore, the cash

flow has to be split between renewal without growth and growth investments.[2] Furthermore, the second generation might follow a more cautious business strategy. This is very justified to avoid the high exit rates based on the "Liability of newness" (Stinchcombe, 1965).

Practical Implications

Gain experience from other growth-orientated companies by working there as an employee or on the advisory board.

Be careful in setting quantitative goals, specifically be aware of basing targets on the high targets of the high growth record of the first generation. Rather shape the growth orientation in qualitative terms. Growth is an evolutionary development.

5.4 Viable Growth Path: The Seibold–Lantelme–Kormann-Formula (SLK-Formula)

5.4.1 Growth Corridor

More than 20% of German family-owned enterprises are older than 120 years. Achieving such an age requires different stages of development as outlined in the previous chapter. Passing through the thresholds of the first and second generation and having developed into a mature business is a remarkable effort for a company. Combining the findings from the growth rates of the 500 biggest family-owned companies and the results of the analyses of the growth history (Seibold, 2017a, 2017b) with an extensive data analysis of the 10,000 German family enterprises, a sustainable growth path could be suggested for third and onward generations.

The upper limit for the second and onward generation ranges between 8 and 10% or 1.5 times the overall growth rate of the respective industry. According to an analysis by Seibold (2017b), examining the 100 biggest German family enterprises, 20% of the analysed businesses show a CAGR of more than 10% over a period of 11 years. The preconditions and roots of this growth spurts are examined in a different research project.

The lower limit of the viable growth corridor is determined by the market-influenced productivity-improvement that is itself dependent on the respective industry and know-how. This is the logical prerequisite for survival as otherwise the company would shrink due to rising labor costs. Undoubtedly, there are businesses that survive without growth and remain small.

The following reasons could be assumed examining over 1000 small (<60 Million) and old (>125 years) businesses:

[2]Empirical observation in action research as Board Member. This effect is similar to the famous Lohman–Ruchti-Effect explaining the capacity extension by immediately reinvesting the cash flow from depreciation which levels off in subsequent periods (Ruchti, 1953).

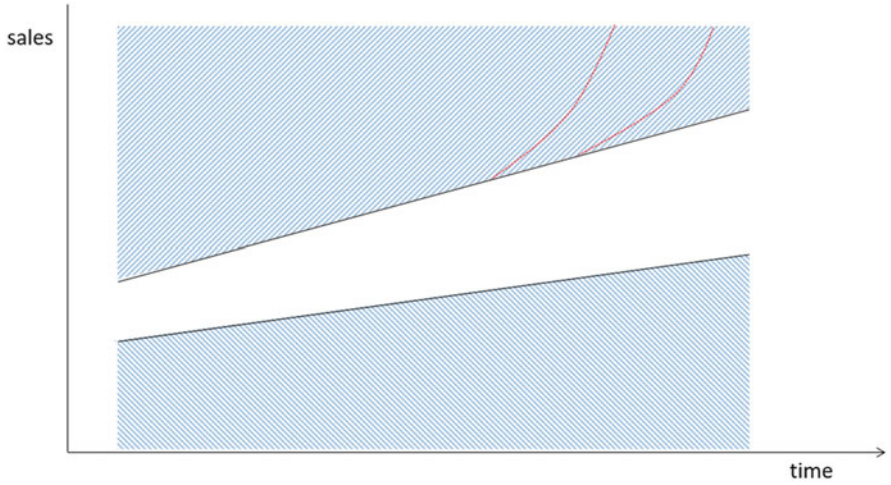

Fig. 5.3 The long-term viable growth corridor. Source: Authors' own figure

1. Price increase
2. Owner-dependence
3. Regional focus
4. Niche market

In the first case the business can raise its price due to a unique location or unique product, as some hotels or luxury brands have done. Zoos, luxury wineries and breweries could also survive without growth but by rising prices. Considering case two, one can think of an owner managed craftsman business which has strong regional focus. Porcelain manufacturers can also survive as they operate in a niche market, although the porcelain industry is almost non-existent in Germany today.

As the long-term growth corridor has an upper limit, the achievable size of a family-owned business is to a larger extent determined by the size achieved during the first generation or early in the second generation at the latest. Unless the founder-entrepreneur emerges from the stage of self-employed or small-shop activity to the size and organization of an enterprise, the ongoing development of the business is not assured. Thus, reaching the stage of an enterprise early in the second generation is fundamental (Flamholtz, 1986).

As the company matures, organizational routines are established, and markets are saturated. In this life cycle phase, growth rates often stagnate or decline. However, some mature and well-established firms show growth spurts (red dotted line in Fig. 5.3) in this stage of the life cycle. Examining the 100 biggest family-owned companies we see that 20% of them showed growth spurts even in later generations, primarily in the third generations, but some even in later generations (Seibold, 2017a, 2017b).

Up until now, we have only preliminary indications on the causes enabling such mature companies to spurt in terms of growth. One must assume that later acceleration of the growth development requires an increased entrepreneurial effort. Typically, it implies reaching out to "new" areas—which include new knowledge bases and the innovation of new business models. We can also observe opportunistic acquisitions of available unrelated companies—thereby opening up new routes towards further development.

Pursuing such growth initiatives is a long-term effort. A long-term perspective by the top management supports this.

For non-family executives the expectation of a long tenure is necessary to create the long-term perspective. Combining the long tenure with an appropriate incentive system and virtual share options would lead to higher commitment and support the realization of entrepreneurial orientation.

The long tenure is equally important when employing family members. Family members in management or on the Board with emotional commitment and entrepreneurial attitude can be vital to promote the renewal.

Besides willingness, financial resources are important to promote growth spurts. Therefore, freedom from shareholder value pressure by financial markets is supportive.

The search for growth opportunities is an emerging field with intensified focus in practice and science. Research and consulting topics such as innovation strategy, design thinking, intrapreneurship, reorganizing the innovative potential of organization (Laloux, 2014) are indicators of an increased emphasis on strategy.

All these trends and initiatives could be interpreted as efforts to integrate entrepreneurship on the management level. These hypotheses will be further explored in our research.

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Continuous Development from Steady-State to Critical Disruptions

6

6.1 The Stages of Continuous Development

We summarize the "normal" development of an established—beyond "Start-Up"—business under the term "Continuous Development". This implies the following characteristics (Fig. 6.1).

- Momentum of existing business activities
- Established organization
- Value of an enterprise that could be increased or diminished.

There is a vast body of knowledge on strategies for a given, sustainable business model as well as the adjustment to changing, evolutionary requirements. We cannot add to the doctrines of these standard strategies as developed by the "Design Schools of Strategy" (Mintzberg, Ahlstrand & Lampel, 1998).

Experience in the markets has proven that there is hardly any given business model which is sustainable forever. Competition, demand shifts and macroeconomic shifts pose new challenges that jeopardize a seemingly proven strategy. Research has addressed these problems in recent topics such as innovation strategy, design of change process, description of entrepreneurial attitudes and suggestions for their development. We cannot contribute any findings to this body of strategic insight in the context of this book.

It is, however, worthwhile to note that all strategies for the continuous positive development require a *strategic capability* of the enterprise. The enterprise has to be able to develop and implement an appropriate strategy. This has the following conditions precedent:

- Stable group of owners
- Qualified management team
- Human and financial resources for implementing a strategy.

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https://doi.org/10.1007/978-3-030-04101-4_6

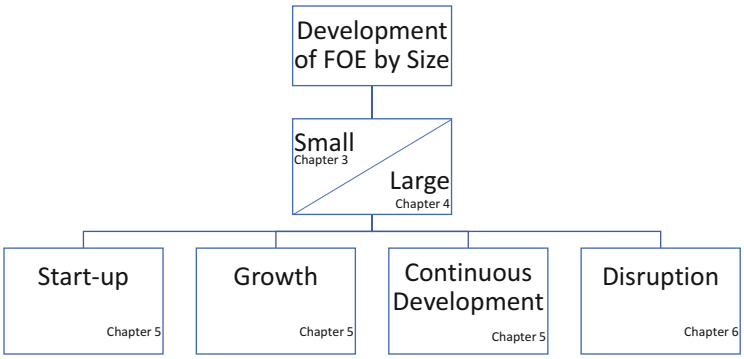

Fig. 6.1 Strategy stages. Source: Authors' own figure

There must be the capability to response to a challenge—however disruptive it may be—in an organized, resourceful strategic thrust in order to continue a positive development.

In the following chapter we will focus on the path opposite to growth as well as to continuous, positive development. The opposite is the disruption of the previous continuity, the disappearance and the downfall. In the case of family companies, the loss of independence, i.e. the loss of the decisive family influence, is also a form of disappearance of the family enterprise. At the beginning of such a negative development there are critical incidents ("Störgrößen", see Kormann, 2017).

Often even a serious crisis can be overcome by good management—sometimes with some good luck. Yet, even then, the crisis will most likely leave some marks in the financing structure, in the reduced scope of activities, in changed attitudes versus risk or increased appreciation of independence. All these events are collectively referred to as "disruptions".

As a *disruption* we label (a) an event relevant for the development of the enterprise which (b) brings a significant change in the *requirements* for the business system which (c) exceeds the available *capabilities* of the business system for an adequate response or adaption and (d) therefore leads to *frictions* which seriously affect (e) the operative performance and/or (f) the strategic maneuverability of the enterprise. In many cases, said significant changes could be foreseen by a mindful management. If so, the capability to respond adequately is certainly increased. Other disruptive events are perhaps beyond a reasonable foresight. The friction lies in the difference between challenge and response. We are used to seeing such events primarily in the context of business operation. In the family business we also have to take the owning family into account. In the family, too, significant new challenges might arise which for want of an adequate response (financial resources, conflict management) can lead to disruptions that rock the whole system of the family business. Then there is an additional category of mismatch: The violation of legal or moral requirements by the management or by the owners. The root cause is not lack of capabilities but lack of appropriate attitudes or morals.

The term disruption is close to the terms “crisis” and other terms with a meaning similar to “crisis”. In the prevailing understanding, crisis includes a high degree of existence-threatening danger (e.g. Krystek, 1987, p. 6 f.) or—as a matter of definition—even the liquidation or termination of market activities (Schulenburg, 2008, p. 1). We address the phenomenon from a broader perspective. As we concentrate the analysis on family enterprises, we also include cases where the family leaves the still viable enterprise due to conflicts, shareholder exits or loses the company by a voluntary sale. Further, we want to highlight the ways and means of successfully coping with a crisis and therefore securing the viability of the enterprise.

Respecting the vagueness of the linguistic practice, it might be advisable to design a scale of increasing impact of negative events:

- Disturbance—any negative influence on a target-oriented activity.
- Discontinuity as a mismatch between changing external requirements and internal capabilities to respond to these requirements.
- Conflict—disagreement on targets or on ways and means to pursue agreed targets.
- Disruption—as specified above.
- Crisis—clearly dangerous event which could be existence-threatening without appropriate reaction.
- Catastrophy—externally induced disastrous and extremely damaging event.

(a) Extant Research

There is abundant literature with advice on how to become successful. There is a by far smaller body of research on the causes of downfall and on avoiding this fate.

Any inquiry in the realm of our topic has to start out from the literature on crisis and the crisis strategy of an enterprise. There are numerous streams of research explaining the causes of crises (for a comprehensive review Braun & Latham, 2010; Schulenburg, 2008). Rindfleisch finds that this research is insufficient as it deals more with symptoms than with causes, is not well structured and does not lead to conclusive advice (Rindfleisch, 2011, p. 127 f.).

In summary, one can state that the extant literature provides a broad range of contributions to the subject. However, there is no comprehensive research on the entirety of the phenomenon, but a multitude of specific research streams and empirical perspectives. We refer to selected examples of this research when describing specific elements of the grid of disruptions.

(b) Intended Contribution

Here we contribute to the research that describes and structures the phenomenon of critical developments. The following specific elements characterize this approach:

- Focus on family enterprises: This means the inclusion of critical developments originating in the sphere of the owners of family enterprises.

- Expanding the phenomenon beyond the existence-threatening crisis to the serious disturbance affecting the development of an enterprise.
- Structuring the phenomenon in such a way that each observed case of disturbance can be allocated to one element of the systematic grid describing the causes. To do this, we follow a hierarchical structure in categorizing the phenomenon according to the design criteria: "mutually exclusive and collectively exhaustive" elements of description (Minto, 2009; Saunders, Lewis, & Thornhill, 2016, p. 608 ff.).
- Structuring the phenomenon in such a way that the design of preventive and curative measures is facilitated.

On the level of a sufficiently detailed breakdown of the phenomenon we might be able to allocate specific root causes, which explain the observed cause-effect-relation. Filling up such an all-encompassing chart requires reference to secondary data and meta-analyses of extant research. Due to the availability of research, we can only achieve a patchwork of insights: Some sectors are sufficiently covered by extant research, some sectors can be partially filled by plausible delineations, some sectors are still empty and need further research.

The practicability of this structure has to be tested in further empirical explorations. The hierarchical structure allows the allocation of an observed case already based on few data or qualitative information.[1]

6.2 The Two Perspectives: Form and Origin of Disruptive Development

We examine the universe of possible critical developments from two perspectives. First, we analyse the *form of the disruptive development*: Continuation of the enterprise, merger with another enterprise and forming a new merged entity or disappearance of the enterprise. Under the denominator of a "downfall" we here summarize not only the outright liquidation but also the distressed acquisition and the distressed merger. Quite often the emergency sale to a private equity fund which focuses on "special situations" or "restructuring" is just a precursor to a subsequent liquidation.

The second perspective highlights the *origins of the disruption*: Environment-induced, business-induced and owner-induced. This latter differentiation is not completely deterministic, but in most cases, it should be sufficiently clear where the origin of a disruptive event can be found: External environment, business-induced factors or owner-induced factors. Then we allocate root causes to these segments, which are identified in extant research or experts' writings. We try to handle a lack of financial funds as an effect rather than a root cause (with few exceptions). In the subsequent analysis we briefly review by which instruments the

[1] The allocation of one case to one of the archetypes as described by Hauschildt et al. (2005) would require in-depth insight that is not available for a high number of cases.

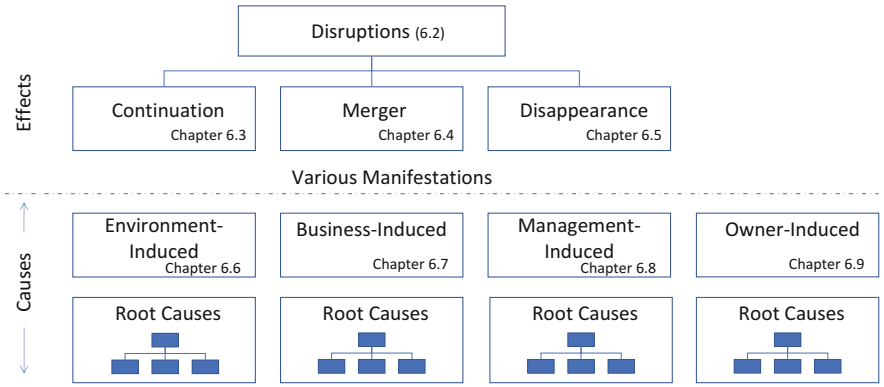

Fig. 6.2 The universe of disruptions. Source: Authors' own figure

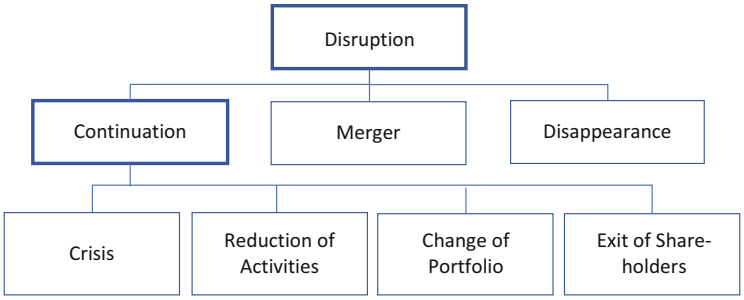

Fig. 6.3 Disruptions with continuation of the enterprise. Source: Authors' own figure

identified disruptive events can be contained or compensated. In conclusion we summarize our reflections by identifying some major consequences for the strategy of the family and its business. Figure 6.2 illustrates the overall approach and the two perspectives.

As there is no comprehensive research on the entirety of the phenomenon, we cover the specific literature in the subsequent relevant chapters.

6.3 Form of Disruptions with Continuation of the Enterprise

(a) Relevance and Overview

Disruptions that can be coped with by good management or good luck can comprise an almost indefinite variety of cases. Figure 6.3 depicts the perhaps most typical cases which have a significant impact on the future development of the enterprise.

Disruptions with the continuation of the enterprise are not spectacular. On the surface there is no turmoil. From the outside the severity of the disruption is difficult to assess. Could superior management solve the problems? Or are there delayed

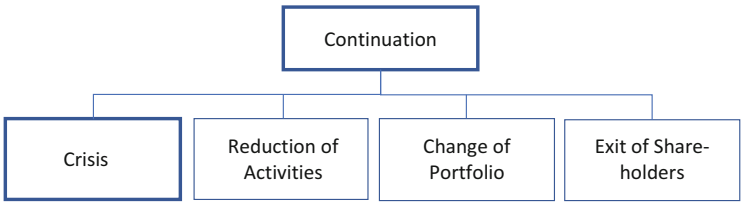

Fig. 6.4 Continuation after crisis. Source: Authors' own figure

effects of substantial losses? The controversy on the strategy leading to the disruption could be followed by a delayed exit of a shareholder. Often the survival can only be secured by the sale of some valuable assets or business divisions. Thus, we can only design a preliminary survey of potential forms of disruptive events with continuation of the enterprise as shown in Fig. 6.4.

(b) Crisis and Survival

Economic history indicates that each generation suffers at least one major disruption resulting from an external factor such as global landslides, economic depressions or industry turmoil.

> In 1926 the revaluation of the Reichsmark led to a 50% reduction of the employees of Robert Bosch. This recession eliminated more than half of the active 65 automobile manufacturers in Germany (Bähr & Erker, 2013, p. 118).
>
> The Great Depression in 1929 and the following years are still in our collective memory. After the Second World War there have been the Oil Crisis, the Latin America Crisis, the Mexican, Brazil, Argentina Crisis, the Far East Crisis and so on, the Subprime Crisis, the Euro Crisis (on the recent crisis of the world economy see for example Roubini & Mihm, 2010).

It is plausible to assume that at any point in time some kind of crisis is looming. In addition, there are crisis situations of internal origin.

In such a crisis situation a specific form of management is of essence. The "art" of crisis management is a subject in general management literature (see below Sect. 6.5). There is also research of the specific aspects of crisis management in the realm of family enterprises (Rüsen, 2009; Vieira, 2014).

(c) Concentration of Activities to a Defendable Position

One of the commandments in crisis management is "Stop the bleeding" of ongoing losses. Loss activities that cannot be restructured to a minimum profitability in a reasonable time span have to be dismantled by restructuring, selling or closing down (Fig. 6.5).

Further, the adaption to a declining industry requires the enterprise to reduce the scope of its activities. The analysis of individual histories of old family companies

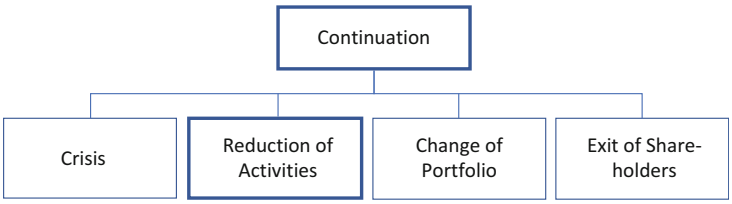

Fig. 6.5 Continuation after reduction of activities. Source: Authors' own figure

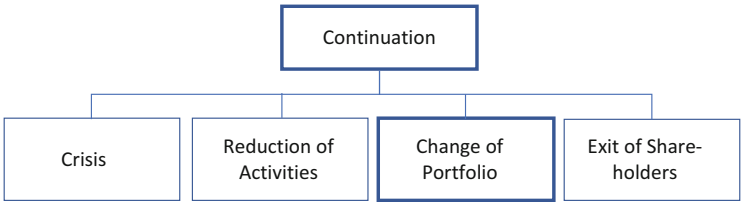

Fig. 6.6 Continuation after change of portfolio. Source: Authors' own figure

again and again show strategic moves aimed at finding defendable segments in declining markets. Harrigan (1980) describes the strategic options in declining industries such as electronic receiving-tubes, synthetic Soda-Ash, baby food, electric percolator coffee-maker, cigar, rayon, acetylene.

(d) Change of Portfolio

In the strategy of the group of large public companies such as General Electric or Siemens, the replacement of some critical segments of the business portfolio by more attractive segments is a standard practice. The theoretical model for such a step is the famous grid designed by Boston Consulting Group. The commandment is to get rid of "Dog Businesses" and exchange them for "Star Businesses" (Henderson, 1970). In the realm of family enterprises, we have only rare cases of such a strategy (Fig. 6.6).

The most prominent case is most likely the strategy of the Reimann family. Their Major Domus, Peter Harf, an ex-BCG partner, started out with a portfolio of base chemicals and gradually replaced them by a variety of modern businesses such as perfumes and coffee. However, this shift in strategy was apparently not based on an economic necessity or disruption. Another point in case was the sale of "Jacobs Kaffee" to Nestle by the Jacobs family and the reinvestment in the employment agency and chocolate industry. Of course, the enormous upswing of the coffee industry after the Starbuck success was perhaps not foreseeable.

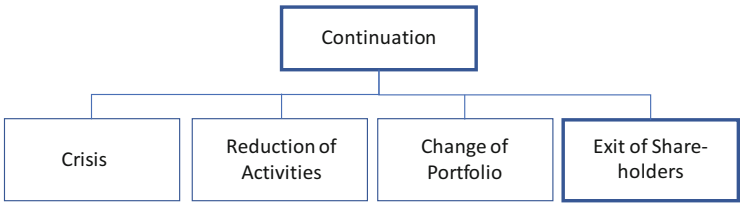

Fig. 6.7 Continuation after exit of shareholders. Source: Authors' own figure

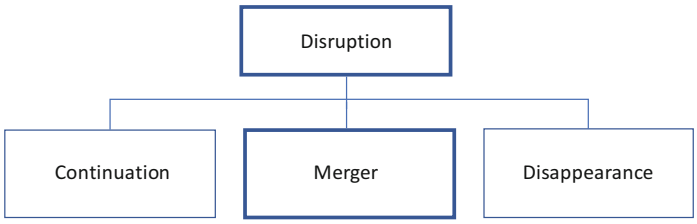

Fig. 6.8 Disruption with merger of the enterprise. Source: Authors' own figure

(e) Exit of Shareholders

One of the classical causes of disruption with continuation is the exit of one or several shareholders. Redlefsen (2004) analyses perhaps all the important exit cases among large German family enterprises happening between 1990 and 2002. He finds that in just one case the exit led to the downfall of the enterprise by selling it to a financial investor (Redlefsen, 2004, p. 207). In all other cases the company survived. The survival was, however, in some cases only achieved by the split-up of the business as in the cases of Bahlsen, Tchibo, Voith, Merkle-Group (Fig. 6.7).

6.4 Form of Disruptions with Mergers of Family Enterprises

We separate mergers as a special phenomenon. It is an ambiguous move. The initial and dominant intention is certainly to achieve a significant step of growth: The merged company is bigger and has a higher market share. The trade-off is, however, the loss of independence at least for one owner-group, but most likely for both owning families of the two merged companies (Fig. 6.8).

The empirical evidence indicates that it is safe to assume that the combination of two independent owners will be dissolved by one owner-group that then captures the dominant power again. This is definitely the case when a family company enters a joint venture with a larger public company. In almost all the known cases, the original owner family acquires the other shares in the joint venture again after some time. Thus, it becomes a wholly independent, family-owned company again, see Table 6.1.

Table 6.1 Failed joint ventures and mergers of family-owned enterprises with other partners[a]

Nixdorf	+	Siemens	→ Resale
Dr. Hell	+	Siemens	→ Downfall
Bosch[b] Haushaltsgeräte	+	Siemens Haushaltsgeräte	→ Reacquisition
FII Group	+	Thomas Cook	→ Sale → Reacquisition
Hansen & Rosenthal	+	Wasag Chemie	→ Reacquisition
Fritsch-Albert	+	Shell	→ Reacquisition
Müller Umwelttechnik	+	Faun	→ Reacquisition
IDS Scheer	+	Software AG	→ Reacquisition
Karlsberg	+	Heineken	→ Reacquisition
Hoffmeister	+	Philips	→ Reacquisition
Dinkelacker–Schwabenbräu	+	Inbev	→ Reacquisition
Grillo Werke	+	Metallgesellschaft	→ Reacquisition
Messer	+	Hoechst	→ Reacquisition
Kühne & Nagel	+	Lonroh	→ Reacquisition
Distl	+	Rohde & Schwarz	→ Reacquisition
Schloemann Siemag	+	MAN + Siemens	→ Reacquisition
Bertelsmann	+	Frère + Desmarais	→Reacquisition
Dräger Medical	+	Siemens	→ Reacquisition
Otto Versand	+	WAZ + Hamburger Vereinsbank	→ Reacquisition
Wacker Chemie	+	Hoechst	→Reacquisition + IPO

Source: Authors' own table

[a]This collection is anecdotic evidence based on personal interviews with the family owners as well as some newspaper reports.

[b]Bosch is considered a family enterprise in this context. This can be debated but certainly Bosch is no public company.

With two merged *family companies* we have a similar situation on the shareholder level as with a tribe organization in a family enterprise. Certainly, it is even more complicated as these are not two tribes with the same family origin.

These constellations are prone to conflicts and sooner or later there will be a joint exit by going public or by selling the business to a third party.

6.5 Form of Disruptions with Disappearance of the Family Enterprise

(a) Relevance and Overview

The obvious routes of disappearance are as follows (Fig. 6.9):

- In case of a listed family enterprise, the gradual dissolution of a previous family majority can lead to a loss of the family business character (see below Sect. 6.11).

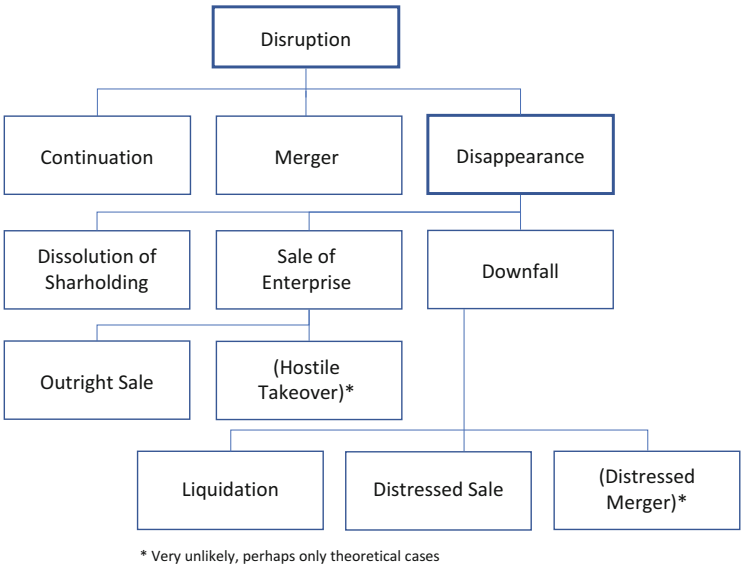

Fig. 6.9 Cases of disappearance of family-owned enterprises. Source: Authors' own figure

- The sale of the enterprise in an orderly M&A-transaction. This could comprise one of the following cases:
  - Hostile takeover when the family has already lost the majority in a listed company (see the example of Vossloh) or when the family shareholders are not strongly "united".
  - The sale of the business in order to generate liquid funds. This can be triggered by various factors:
    (a) Lack of qualified successors
    (b) Facilitating an inheritance scheme
    (c) Transfer to a philanthropic trust.
- And finally: The downfall—as exit of the enterprise—is in the focus of Lantelme's work, as described in the following section.

(b) Lantelme's Research on Downfall of Companies

Lantelme (see above Chap. 4) wrote a master thesis on "The Rise and Downfall of Germany's Largest Family and Non-Family Businesses: A Historical Study and Strategic Analysis from 1971 to 2011". This thesis was published in 2017 in the BestMasters of Springer Gabler. In this landmark study, he analyzes the development of the 148 largest German companies from 1971 until 2011. In addition to investigating the growth rates, he also explores the exit rates and the reasons for the disappearance of these companies. The results show a superior vitality of the family enterprises versus public companies. Only one third of the public companies

Table 6.2 Forms of disappearance of family enterprises between 1971 and 2011

Category	Listed	Non-listed	Total	%
Downfall				
– Liquidation	1	2	3	6
– Distressed sale	1	5	6	13
– Distressed merger	0	0	0	0
Sale of the enterprise				
– Sale	1	8	9	20
– Hostile takeover	0	0	0	0
Merger	0	6	6	13
Surviving	2	20	22	48
Total	5	41	46	100

Source: Authors' own table

survived the 40 years as independent enterprises versus about half of the family companies that achieved the same (Lantelme, 2017, p. 68).

He further differentiates the forms of the disappearance of both public and family enterprises. In Table 6.2, we pick up the results for family enterprises.

The frequency of distressed sales is plausible in view of the various interests of the owning family:

- A family owner typically does not have the experience of restructuring management. Therefore, the sale of an ailing business to a private equity fund specialized on restructuring situations reflects an attitude of responsibility.
- The owner tries to protect his personal reputation by not being the responsible CEO at the time of the liquidation of the enterprise.
- Selling even at a very low price is better than liquidation with the certain loss of any equity value.

Further, the absence of distressed mergers is not surprising. Who wants to merge with an ailing partner? It is further understandable that there is no hostile takeover as the ownership of a family makes a takeover bid less than promising.

6.6 Origins of Environment-Induced Disruptions

In order to further explore the causes of disappearance, we have to move on to the second perspective: The root cause of disruptions differentiated by area of origin (Fig. 6.10).

(a) Relevance and Overview

The origins of the potential disruptions can be structured: Environment-induced, business-induced and owner-induced disruptions. Of course, any one of these origins

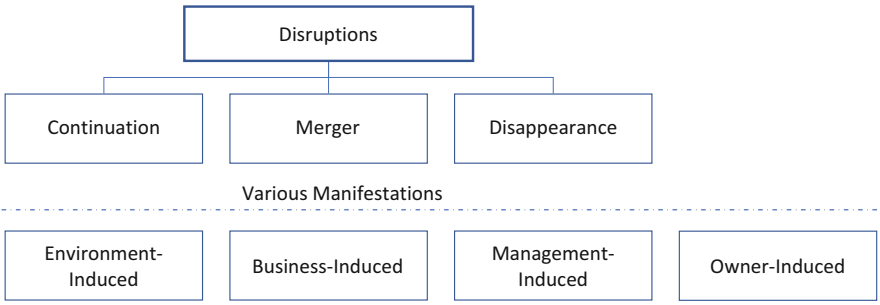

Fig. 6.10 The universe of disruptions: the origins. Source: Authors' own figure

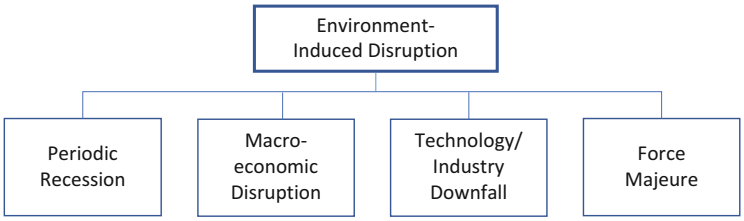

Fig. 6.11 Environment-induced disruptions. Source: Authors' own figure

of disruptions can be relevant in each of the above-mentioned forms, i.e. continuation, merger and disappearance.

Let us begin by looking at the disruptions with an external origin.

The relevant environments for the family-owned enterprises are the natural environment, the political conditions, the macroeconomic development, here specifically also the currency development, and the life cycle of the technology and its related industry. We subdivide these influences into the factors as shown in Fig. 6.11 and briefly described them as follows:

- Recessions as a regular phenomenon of the economic cycle.
- Extraordinary disruptions in the economic environment:
  - Macroeconomic crisis such as a country crisis.
  - The end of a long-lasting, secular upswing such as the "Trente Glorieu ses" (1945–1973) after the Second World War. The potential end of the current global boom is also likely to come as a surprise.
- End of the life cycle of a technology and thereby the industry based on that technology as described by Harrigan (1980).
- War, rebellion, acts of terrorism, disasters by forces of nature and other cases of Force Majeure.

All these disruptive developments have their origin outside the influence of the family enterprise. They all affect companies in one region or one industry. To some extent this general impact generates compensating forces which mitigate the

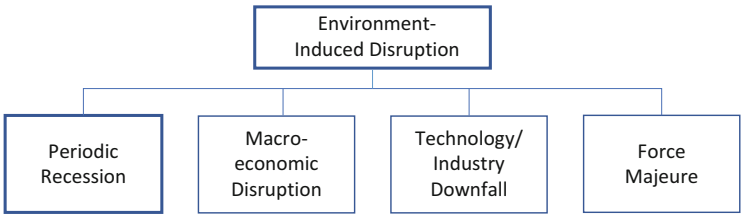

Fig. 6.12 Macroeconomic disruption. Source: Authors' own figure

consequences. All factors that affect all companies in one industry do not change the competitive position. Rather, these negative influences tend to reduce the intensity of competition: If things go badly anyway one should not aggravate the external influences by internal rivalry. In some cases, the general impact could lead to supportive governmental programs. With the exception of the normal recession these externally originated events are hardly or not at all foreseeable.

(b) Disruptions Induced by Recession

The most mundane, externally induced disruption is the periodic recession (Fig. 6.12).

Recessions do have a surprising regularity. In the phase of early industrialization already, we have the following years of the turning point between booms and grave recessions, also called "depression": 1857, 1868, 1873, 1882, 1890, 1900, 1907, 1913, 1920, 1929/30 (Jacob, 1967, p. 1). With one exception of a distance of 11 years, the cycle is shorter than one decade. This pattern continues after the Second World War: 1971, 1981, 1991, 2001, 2008.[2]

There is some literature on recession management (Colvin, 2010; Gulati, Nohria, & Wohlgezogen, 2010; Kambil, 2008; King & Cushman, 1997; Knoop, 2010; Kormann, 2011a; Mette, 1999; Navaro, 2006, 2009, Rigby, 2009; Rüdiger, Ortiz, & Gonzales, 2016; Wimmer, 2011). Yet, considering the frequency and impact this is certainly not sufficient, specifically as recession management is not the same as general crisis management. Recession is foreseeable and the task is to cope with losses but to secure the strategic position for the subsequent upswing. Crisis management, on the other hand, deals with an existence-threatening situation without knowing if and when the threatening danger will be dissolved or disappear.

There is also a range of publications on crisis management (Hauschildt, 2000, 2004, 2006; Krystek, 1987; Krystek & Moldenhauer, 2007; McKiernan, 2003; Mitroff, 1988, 2004; Roux-Dufort, 2000). But certainly, we do not yet have sufficient research on the prerequisites, proven tools and desirable results of crisis management. Macroeconomic research strives to isolate patterns of economic upswing and downturn (Gordon, 2016; Landes, 1999; Maddison, 2007). One

[2]Data as per statistics of order entry of VDMA, German association of machinery and plant equipment companies.

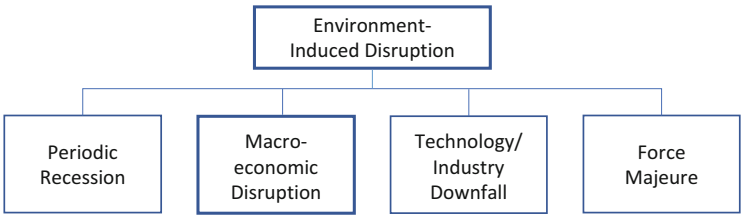

Fig. 6.13 Periodic recession. Source: Authors' own figure

famous example is the pattern of the Kondratieff-Cycle (Nefiodow, 2006; Solomon, 1988). Even if such regularities are plausible in the long term, this knowledge does not help to forecast the short- and medium-term.

(c) Disruptions Induced by Macroeconomic Changes

The disruptions resulting from macroeconomic developments (Fig. 6.13) are—most likely—not or hardly ever foreseeable. The only reliable assumption is that a period without surprises and severe downswings cannot continue forever. History shows that at least every second generations if not every generation experiences a major, unexpected disruption in their economic or political environment. Just recall the various regional crises in the developing world mentioned above. It would be courageous to assume that even China could fully develop without a critical disruption. Also in the developed world we see long periods of upswings which come to an end. The above-cited "Trente Glorieuses" after the Second World War were such a period. Most likely, the present generation seems to be enjoying such a long upswing, too. One can foresee that a downturn development will happen, but most likely not "when". The years before the downswing are the best ones in a long row. Thus, when the downturn comes, crisis management is needed.

(d) Technology Substitution and Industry Downfall

Each and every technology has been and will be substituted by a more advanced one at some point of time. Harrigan (1980), a dated piece of research, however still enlightening, describes various cases of such technology substitutions, the subsequent downfall of a whole industry and the advisable strategies in view of this challenge. The dynamics are fairly well researched (Christensen, 1997; Gälweiler, 1990, p. 251 ff.), however, this research has hardly arrived in practice yet. The discussions and strategic delays in the adaption to electromobility prove how much time elapses between insight and implementation. Some of the proven insights are (Fig. 6.14):

- Each technological development follows an S-curve with a slow start, an upswing with double-digit growth rates and a subsequent mature phase of slow growth until stagnation steps in. After shrinking to a fraction of the previous market, a

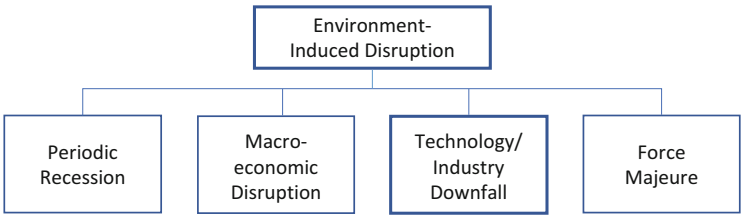

Fig. 6.14 Technology/industry-induced downfall. Source: Authors' own figure

stage of petrification might follow. A new start—but in a different consumer segment—can be possible but cannot be taken for granted. The reappearance of bicycles as a sport article might be a point in case.

- The substituting technology is based on a different know-how and different resources (steam vessel versus sailing ship; diesel-electric or electric locomotives versus steam locomotives, Apple PC-technology versus Nokia telephone expertise).
- Initially, the substituting technology has an inferior cost-benefit-relation than the currently dominating technology. However, the Experience Curve will soon reduce the cost level of the upcoming technology.
- The end product is fully affected by technological substitution. The producer needs a complete overhaul of the resource base.
- The suppliers of parts for this end product have a different risk profile. They have a double risk of substitution. Gälweiler (1990, p. 255 ff.) has illustrated that by the example of a supplier of typewriter components: The component can be substituted by another component-technology. Or: the second risk lies in the substitution of the end product (e. g. typewriter) by another technology (PC), which does not need the said component any more. However, this increased "double" risk is compensated for by the applicability of the component technology to other end products.
- The current wave of new digital technologies and digital business models might lead to new cases of downfallen business models and whole industries (see McAfee & Brynjolfsson, 2017; Thiel, 2014). Typically, these cases can only be identified and researched in hindsight.

Crisis management might be needed to cope with the initial shock of a technological disruption, but it would not be sufficient. Innovation management is needed to prepare for this kind of disruption.

(e) Force Majeure

The disruptions caused by events that can be summarized under the label of Force Majeure comprise a variety of subcategories as indicated in Fig. 6.15 below.

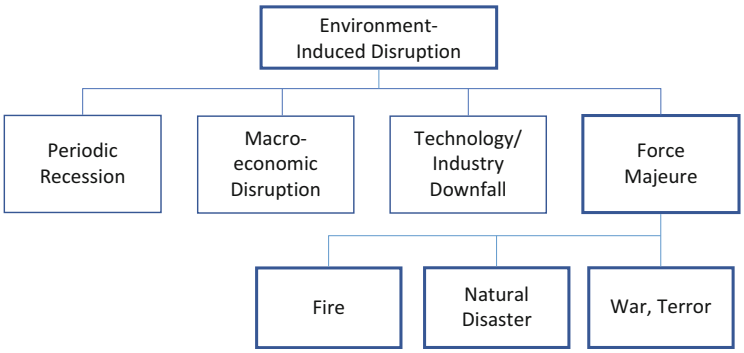

Fig. 6.15 Disruptions caused by Force Majeure. Source: Authors' own figure

Disasters, events of Force Majeure, which threaten the existence of a business establishment, are normally outside the perspective of corporate planning. 9/11 brought such events to centerstage (Bazerman & Watkins, 2004). And, of course, there are concepts how to prepare for and how to recover from such events (Barnes, 2001).

From today's perspective, it might be reasonable to exclude war as a risk of Force Majeure for Mid-Europe. But one needs to recall that for the previous generation of family business owners it was a logical aim to have a subsidiary in Switzerland and sufficient real-estate investments in Canada to qualify for a resident's permit in case of a Russian invasion. It can only be hoped that the next generation in Europe does not need to worry about such threats again. However, for a Chinese entrepreneur or the business owner somewhere in the Middle East, states bordering to Russia or in African countries, such considerations remain relevant. In an analysis of the reasons for the downfall of large Germany family enterprises between 1971 and 2011 (Greussing, 2017), not one case was identified in which a Force Majeure event had caused the downfall of a company.

6.7 Origins of Business-Induced Disruptions

(a) Relevance and Overview

Obviously, the business-induced disruption is of utmost relevance. Surprisingly the research on this phenomenon is emerging but still rather limited.[3] The difficulty of any research is the fact that downfallen companies do not provide the opportunity to do qualitative interviews. The files and documentation provided by the receivers are

[3]There is an emerging field of research on the phenomenon of "failure" and "crisis" caused by internal corporate factors, see van Laak (1999), Finkelstein (2003), Mittelstaedt (2005), Chatterjee (2005), Grape (2005), Carroll and Chunka (2008), Hubbard (2009), Kormann (2011b), Schulze (2011), Köhler and Rossfeld (2012), Kunert (2016).

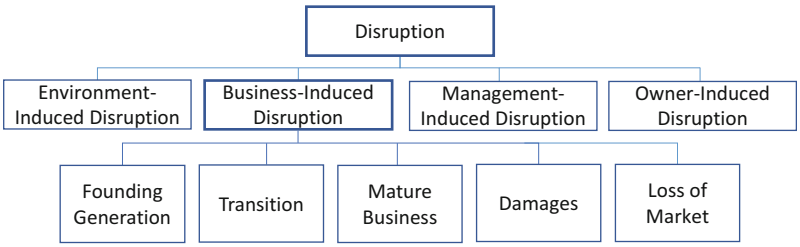

Fig. 6.16 Business-induced disruptions. Source: Authors' own figure

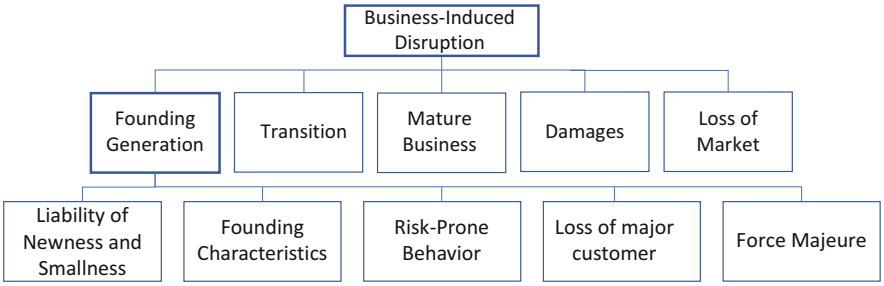

Fig. 6.17 Disruptions during the founding generation. Source: Authors' own figure

typically not sufficiently explicative on the economic causes of the decay. The empirical research describes to a large extent symptoms only (such as liquidity squeeze) and not the causes (Rindfleisch, 2011). When causes are listed the wide variety of potential causes presents a further difficulty for a meaningful interpretation. We try to cope with this variety of causes by separating meaningful groupings as shown in Fig. 6.16.

First, we differentiate the root causes according to the phases of the life cycle which are: Founding generation, transition and mature business. All these root causes are somehow linked to strategy, and strategy is the outcome of the management process. Therefore, it is debatable if a separation of these business-based causes from management-induced causes is possible. For practical reasons we distinguish these two categories.

(b) Disruptions in the Founding Generation

Early research identified root causes of disruptions that are specific to the first decades of a newly established business. Further, some just recently detected dangerous phenomena are more likely in a situation where the sole owner is also the dominant executive of a still small enterprise. Figure 6.17 depicts the most relevant disruptive causes in the founding generation.

In the first generation the business is a young, weak and small business unit. Research has characterized the phenomena as Liability of Newness (Hannan &

Freeman, 1984; Stinchcombe, 1965; Woywode, 2006) and Liability of Smallness (Amburgey, Dacin, & Kelly, 1994; Brüderl, Preisendörfer, & Ziegler, 1992; Harhoff, Stahl, & Woywode, 1998; Wholey, Christianson, & Sanchez, 1992; Woywode, 2004). New enterprises do not have the experience of seasoned managers, do not have the reputation with and the trust of their environment, do not have the financial reserves. Under this subheading we would also summarize the typical financial bottlenecks of the high growth rates in the early phase of the business development. There is hardly any research on the likely survival rate of family enterprises—with the exception of the often-quoted statistic reported by Ward (2011).

For most of the following assumptions the research by Woywode (2004, 2006) is an important gateway to extant research and empirical evidence. In this context we cover just some of the more relevant theories. Anyway—as already said—the research on downfall lags behind the research on success. The Liability of Newness as identified by Carroll (1984) and Stinchcombe (1965) is very plausible. New start-ups have to go through an Experience Curve to learn to survive. The finding that in the first year the probability of surviving is higher than in the following few years is not really contradictory. It might be due to the subsequently explained, higher vitality of very small companies.

The Liability of Smallness describes the plausible assumption that—everything else being comparable—smaller companies are more vulnerable and have a lower probability of surviving than larger companies. Aldrich and Auster (1986) elaborate on the likely reasons for this hypothesis: Economics of scale of larger companies, lower attractiveness for human and financial resources. This hypothesis is confirmed in research by Brüderl et al. (1992).

More recent studies find a non-monotonic relationship: There is an increase in the downfall risk from very small businesses to medium-sized companies of about 30 employees (Harhoff et al., 1998; Woywode, 2004) and then a constant decrease in the downfall risk of larger enterprises. This is plausible. Below 30 employees (about EUR 5–7 Million sales in manufacturing or EUR 15 Million sales in trading) there is the domain of craft shops and stand-alone retailers. They do not yet have ample administrative structures and can gradually adjust their staff capacity to sales as there is just a limited degree of specialization.

A distinct stream of research explores certain characteristics of the founding person and the circumstances of founding as determinants of the viability of the newly-established business. In this context, focusing on the mature enterprise, we can only give a reference to the major publications, i.e. Carroll, Delacroix, and Goodstein (1988), Tucker, Singh, Meinhard, and House (1988), and Stinchcombe (1965). This stream of research is continued in the increased inquiry into the nature of entrepreneurship (Sarasvathy, 2008) and the conditions enabling a successful build-up of a large enterprise within one generation (Villette & Vuillermot, 2009).

The recent research on the impact of behavioral dispositions of the entrepreneur are specifically relevant for the phase of the first generation. Here we often find the founder as the sole or at least dominating shareholder, chairman and CEO. As governance structures do not exist or are deficient, there is no check on

overconfidence and escalation of commitments in pursuing too risky strategies. In small enterprises the loss of a major customer (OEM in the automotive industry, large retail chain) is an existence-threatening risk. A large company can most likely cope with such events. The same might be true regarding the risks of Force Majeure such as fire.

(c) Disruption During the Transition Phase

The transfer of the family business from one generation to the next is one of the prime areas of family business research. We cannot add to this body of knowledge in the context of this book. In order to structure all major reasons for disturbance we will only list keywords outlining the disruptions in the process. The most obvious problem is given if there is no successor, perhaps no successor at all or no qualified or no interested sibling. This is specifically a potential root case for the disappearance of small businesses. If the business is large enough to be able to afford a professional management, the situation is better. If there is no successor a small craft shop has to be liquidated or sold off—at rather low prices. If there is no successor for the management position, there is still the option that the family maintains the owner position and hires a non-family executive. We estimate that the threshold for such a concept is a size in the vicinity of EUR 7–10 Million sales (Fig. 6.18).

In the preparation and implementation of the transfer from one generation to the next, the question arises if the multi-shareholder group should be organized in branches of the family. Such a tribe organization is a conflict-prone design (Ammer, 2017; Kormann, 2012; von Schlippe, Groth, & Rüsen, 2017). The disadvantages of this structure have a specific impact if a conflict leads to the exit of some shareholders. These shareholders then initiate the exit of the whole family branch which holds perhaps one third of the equity. Such an exit could then lead to a decisive weakening of the financial basis of the family enterprise. These few aspects certainly do not yet cover the full range of difficulties that can arise in the context of transition of ownership.

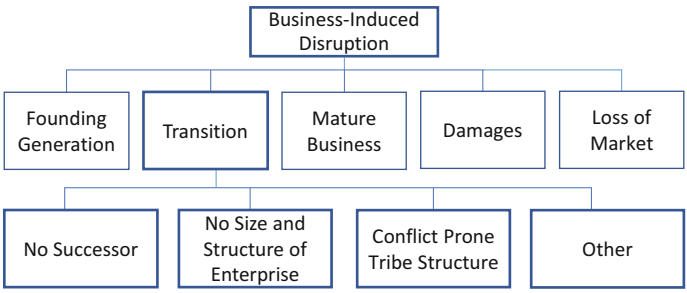

Fig. 6.18 Business-induced disruptions during the transition phase. Source: Authors' own figure

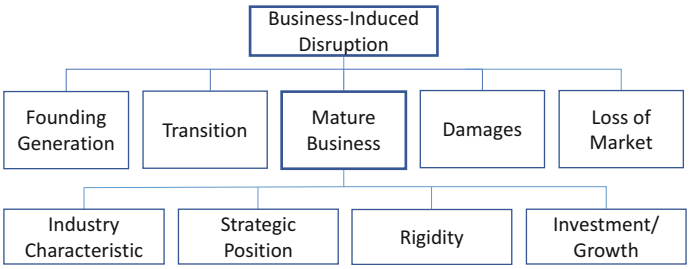

Fig. 6.19 Disruption in the mature phase. Source: Authors' own figure

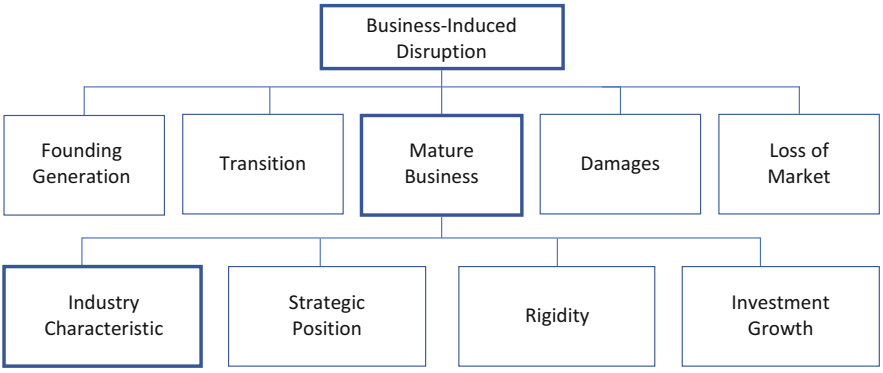

Fig. 6.20 Disruptions caused by industry characteristics. Source: Authors' own figure

(d) Business-Induced Disruptions in the Mature Phase

In the mature phase, the enterprise is old enough and large enough to be beyond the risks of newness and smallness. The size and diversification of the operations seem to protect it also against existence-threatening risks of fire and forces of nature. With these exemptions, however, the mature enterprise faces the full range of risks as illustrated in Figs. 6.19 and 6.20.

(e) Disruptions Caused by Industry Characteristics

The subheading "Industry characteristics" indicates that mature enterprises most likely act in mature markets. Some of these markets have an inherent high-risk profile. One of the industries with high risk is the pharmaceutical industry or manufacturers of medical devices (such as heart controllers). The product liability could lead to enormous damage and penalty payments. Typically, this risk is balanced by high profit margins in the ongoing business. Another high-risk market is the market of large equipment projects such as power stations, aircraft programs,

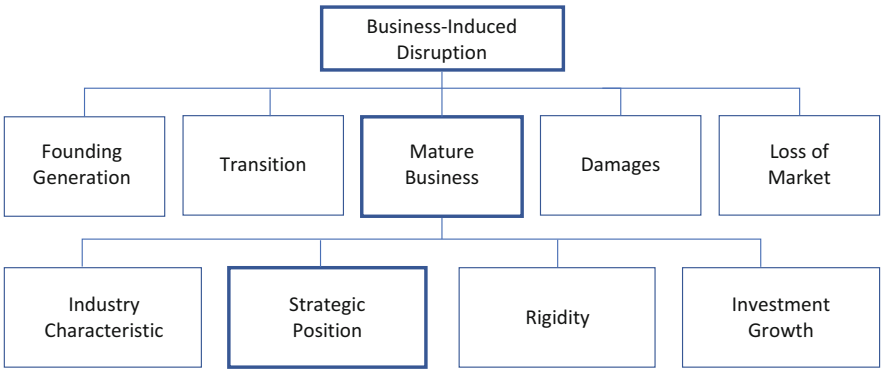

Fig. 6.21 Disruptions caused by non-viable strategic position. Source: Authors' own figure

chemical plants, paper mills, engineered civil construction projects. These markets are highly cyclical and have high technical and commercial risks. They have an oligopolistic market structure, nevertheless the high order value leads to an intense competition in pricing, contract terms and technical terms. The survival of enterprises in such markets can only be secured by a diversified portfolio of more stable business models. Building up such a portfolio is already a program of the specific enterprise strategy. The strategy is now the prime aspect in reviewing the risks of mature businesses (Fig. 6.21).

There is empirical evidence that in mature, oligopolistic markets only a limited circle of suppliers can survive profitably in the long run. Small suppliers with a marginal market share have to exit the market. The theorem is elaborated on by Henderson (1976) and it might be worthwhile to cite the original wording:

> A stable competitive market never has more than three significant competitors, the largest of which has no more than four times the market share of the smallest.
>
> The following conditions create this rule:
>
> - A ratio of 2 to 1 in market share between any two competitors seems to be the equilibrium point at which it is neither practical nor advantageous for either competitor to increase or decrease share. This is an empirical observation.
> - Any competitor with less than one-quarter the share of the largest competitor cannot be an effective competitor. This, too, is empirical but is predictable from experience curve relationships.
>
> Characteristically, this should eventually lead to a market-share ranking of each competitor one-half that of the next larger competitor, with the smallest no less than one-quarter the largest.

Of course, according to this rule Apple did not stand a chance against Nokia unless there is some kind of genius as the leader in charge of the smaller operation. If he finds a new technological route to bypass the dominating market leader, then the small one changes the rules. But it is kind of risky, too, to build a strategy on the outstanding qualities of one protagonist only.

The strategic position can be specifically critical when the entry barriers into a very promising industry are low, such as airlines. The leasing companies finance the high investment, but the exit barriers are very high as the lease contracts can be terminated only with high exit penalties (Jarillo, 2003, p. 55 f.). Air Berlin was a "family enterprise" (as well as Air Niki of Lauda Air) at its beginning.

An enterprise facing the risk of being locked in a non-viable strategic position could try to escape this fate by moving to defendable niche markets or creating new market niches. Many enterprises, however, are not able to demonstrate such a flexibility and creativity. Research has identified some general tendencies or myopia that lead the enterprises to downfall.

(f) Disruptions Caused by "Liability of Aging" and "Rigidity"

The *liability of aging* covers a variety of factors. This pattern is again elaborated on by Carroll (1984). Adizes (1979), March (1995), and Quinn and Cameron (1983) describe deficiencies of aging, inflexible organizations which are unable to adjust to dynamic external developments. The "Innovator's Dilemma" is a similar phenomenon (Christensen, 1997).

All these tendencies of aging or of a path-dependent deterioration can be seen as cases of *rigidity*. By the root cause "rigidity" we refer to the recent research on causes of bankruptcy which is covered in the doctoral thesis of Rindfleisch (2011). She uses the term rigidity to characterize a phenomenon that can be described as a subcategory of disruptions as defined above: A mismatch between changing requirements and the capability of the organization to respond to these challenges. The following additional features qualify rigidity as a special case of disruption: The mismatch is based on deficiencies or mistakes in the management of the enterprise. This perspective also includes an ongoing declining process of the whole organization (Fig. 6.22).

This extended process leads to the phenomenon of path-dependency in the decline. If the enterprise moves downhill for too long, it passes the point of no return to profitability and sustainability. The dangerous aspect of such a process is

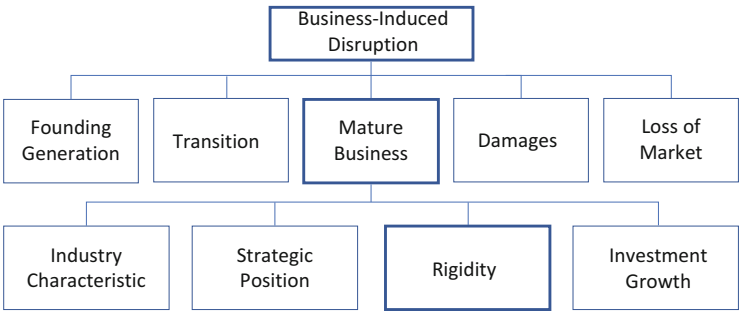

Fig. 6.22 Disruptions caused by rigidity. Source: Authors' own figure

the fact that it can be a slow, creeping deterioration. There is no apparent decision required to start such a process. On the contrary, the delay or lack of decisions is one of the causes of decline (in contrast to the "major mistake" as root cause, see below).

Causes and Areas of Rigidity

Typically, the specific area of mismatch is described by pinpointing one of the factors of profitability (Buzzell & Gale, 1987).

- Quality of the product or services influencing achievable price level and sales volume.
- Competitive cost level as determined by factor prices and factor productivity.
- Selectivity in the marketing strategy by targeting specific market segments. (It is not advisable to try to penetrate a low-price market-segment with a high-end quality product).
- Change in the prevailing technology of the market.

These requirements of the markets often follow some generic trends:

- Increased standardization of the major market segment, which gives the supplier with the higher aggregate volume a cost advantage over the life cycle.
- In the end there is only room for a few oligopolistic suppliers (rule of three to four viable suppliers, see above e) and Henderson, 1976).
- The famous "Hidden Champions" are the viable suppliers with a number 1–3 position in small world markets (Simon, 2007).

These few generic examples should just illustrate that one has to find out what is the root cause of the mismatch between requirements and responsiveness. All efforts to reduce costs will be in vain if the problem is a mismatch in terms of quality or price-level.

Rigidity is caused by an enterprise not moving enough or not fast enough. The opposite of premature or too rapid growth with too high investment can lead to disruptions as well. Specifically, midsized companies with overly-ambitious growth strategies can run into trouble. The risk of such growth strategies is exacerbated when large capital investment programs of new facilities (green field factories) or acquisitions of entire companies are involved (Fig. 6.23).

(g) Disruptions Caused by Damages and Loss of Market

There is a category of risks that can affect some businesses at any stage of their development. Primarily mature, rich enterprises are a prime target for damage litigations. Damages in product liability litigations can in some jurisdictions—such as USA—destroy an enterprise.

The litigations connected with asbestos cement are well known examples.

The air-bag product liability caused the bankruptcy of TAKATA.

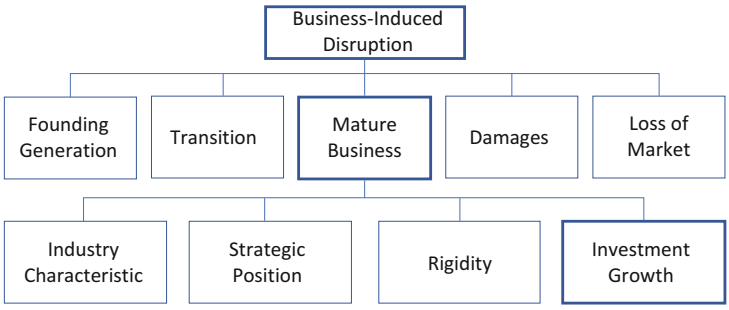

Fig. 6.23 Disruptions caused by investment of high growth. Source: Authors' own figure

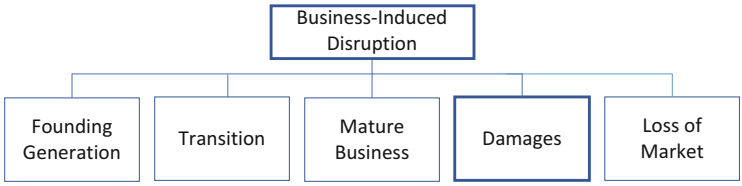

Fig. 6.24 Disruptions caused by damage payments. Source: Authors' own figure

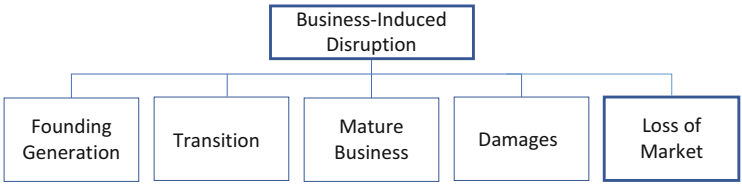

Fig. 6.25 Disruptions caused by loss of market. Source: Authors' own figure

The management of enterprises with risk-prone products has to deploy utmost diligence in securing quality design and quality control. Compromises or deficiencies in this respect would not fall under the category of business-induced disruptions but should rather be labeled as management-induced disruptions (Fig. 6.24).

Even if a product liability case does not lead to the illiquidity of the enterprise, it could lead to customers losing trust in the product or services. With products and services for which trustworthiness is essential, such a loss of trust is lethal (Fig. 6.25).

Perrier Mineral Water had a product recall due to the contamination of the water by some spurs of machine oil. This case was extremely well managed. No damages had to be paid. But the brand lost its image, sales shrunk and finally the business was sold to Nestle.

A German law firm of high reputation was sued by a client for a misleading legal opinion. The law firm lost its reputation and was liquidated. Later on the law firm could prove that the legal opinion was correct. But this was too late.

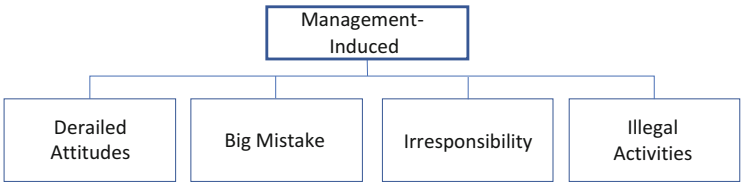

Fig. 6.26 Management-induced disruptions. Source: Authors' own figure

6.8 Origins of Management-Induced Disruptions

(a) Relevance and Overview

We find it appropriate to treat business-induced disruptions as a distinct category—different from management-induced disruptions. The business-induced disruptions are risk phenomena that are inherent to the industry, the strategic position, the long-term development. These conditions are risky independent of the persons involved. In the category of the management-induced disruption the problem is the person of the manager—not the industry or any condition independent of a specific individual. The person of the manager implies certain attitudes, competencies, decision heuristics and certain values.

The still limited status of research allows just a fairly tentative categorization of these elements as shown in the following Fig. 6.26.

(b) Disruptions Caused by Derailed Attitudes

The attitudes which executives are supposed to have imply the risk that these attitudes may derail and then have a dangerous effect on the enterprise (e.g. Kets de Vries & Engellan, 2010, p. 198 ff.). The research on the dangerous attitudes of overconfidence is meanwhile well known (Kahneman, Lovallo, & Sibony, 2011; in our context specifically Kaplan, Klebanov, & Sorensen, 2012; Malmendier & Tate, 2015). Besides the overconfidence there is the tendency to the escalation of commitment ("Throwing good money after bad"—see Bazerman, Giuliano, & Appelman, 1984; Staw, 1981, 1997) or hubris (Hiller & Hambrick, 2005). A summary of the problem is provided by Meyer and Zucker (1989) "Permanently failing organization" (Fig. 6.27).

(c) Disruptions Caused by Big Mistakes

Rigidity leads to decay due to the lack of timely actions. On the other hand, there are situations where one wrong action can cause an existence-threatening danger (Kormann, 2011b). These cases comprise patterns such as (Fig. 6.28):

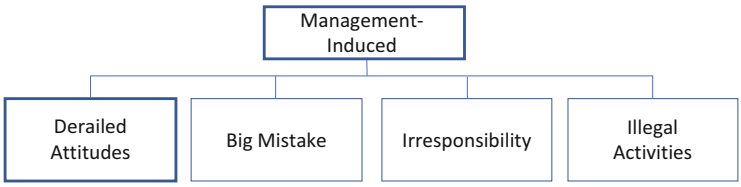

Fig. 6.27 Disruptions caused by derailed attitudes. Source: Authors' own figure

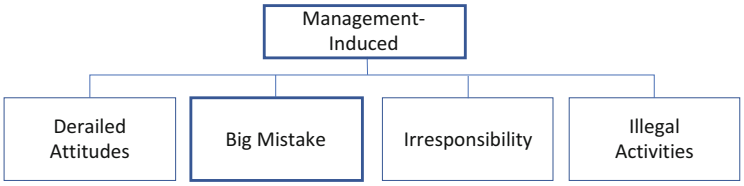

Fig. 6.28 Disruptions caused by big mistakes. Source: Authors' own figure

- Decisions that cannot be corrected any more. Forming joint ventures, long-term cooperation contracts, the acquisition of companies which cannot be sold again to other parties—these are relevant examples. Making a big mistake in these decisions can have existence-threatening consequences, as they cannot be corrected any more.
- Decisions that are a "first time"—event for the relevant company. Whatever is done first is an area in which the executive team does not have any experience yet. This increases the risk of a wrong decision significantly.
- Decisions that involve high investments are inherently riskier than decisions about smaller sums of money.
- Decisions that significantly concern personal interests of a member of the executive team (agency problem).
- Decisions that could be significantly affected by behavioral deficiencies of the executives such as overconfidence, hybris.

All these categories require certain measures in the governance process to ensure the quality of the decision and to limit the risk exposure. The review of these items leads us to conclude that the decision on a major acquisition can involve all those listed elements of potential mistakes:

- Decision might not be corrected any more.
- The buyer has no experience with deals of this size, with the details of the industry of the acquired company a. s. f.
- High financial commitments.
- High involvement of personal interest (capital gains on shares and options, increased remuneration for executive position in a larger company).

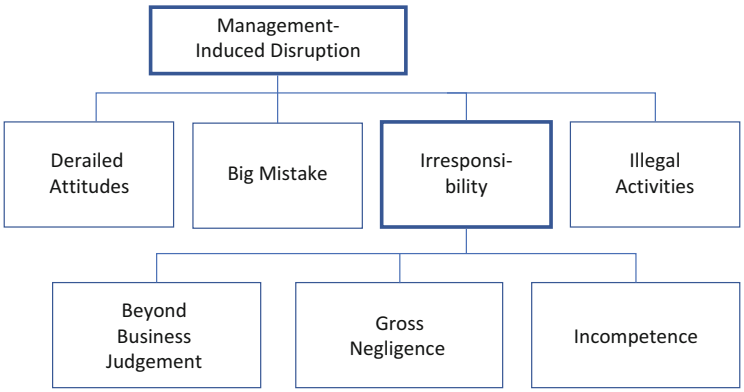

Fig. 6.29 Disruptions caused by irresponsibility. Source: Authors' own figure

- High influence of behavioral deficiencies (overconfidence, hybris, risky shift in group decisions).

It might therefore make sense to include "large acquisitions" as a separate category of risk.

(d) Disruptions Caused by Irresponsibility

In the context of risk management, the laws have stipulated a minimum requirement for the decision-making in public companies (Aktiengesellschaften). The Management Board (Vorstand) is liable for negligence. Further, the laws specify rules for "good business judgement". In view of these legal stipulations the management cannot be held liable for a negative outcome of a decision as long as the requirements of good business judgement are observed (Fig. 6.29).

(e) Disruptions Caused by Illegal Actions

One would think that illegal actions could not be found within family businesses as they follow the ideal of longevity. The cases of outright illegal actions are rare but there are owners who commit crimes or tolerate illegal behavior. And there is a wide variety of illegal actions as shown in Fig. 6.30.

An opportunistic sample of famous cases between 1980 and 2000 of irresponsibility and illegal actions in Germany (Schmeh, 2002) shows that these cases are not that seldom.

Cases of irresponsibility were apparently the root cause of the downfall of Metallgesellschaft (1995), and Philipp Holzmann (1999), both public companies.

Illegal actions were involved in the downfall of Neue Heimat (1992), owned by German Unions, Coop (1988), Südmilch (1993), Bremer Vulkan (1995) and the family companies IBH (Esch, 1983), Jürgen Schneider Real Estate Development (1994), Balsam (1994), Flowtex (2000).

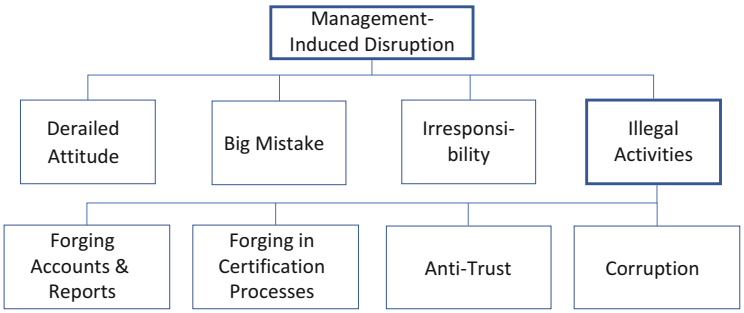

Fig. 6.30 Disruptions caused by illegal activities. Source: Authors' own figure

A specific risk in industries characterized by family businesses is the violation of anti-trust regulations (price-fixing). Owners have good contacts to each other. Typically, they do not follow aggressive competitive strategies but rather adhere to a strategy of stable, good prices. However, the laws have changed, they are strict in this respect and there is zero tolerance. The penalties can threaten the existence specifically in cases of repeated violations or in combination with other difficulties or mismanagement.

The old family company PRYM was initially fined by two times 10% of sales for continued price fixing. The old family company ZIEGLER, firefighting equipment, declared bankruptcy after being fined for price fixing and having suffered additional difficulties.

6.9 Origins of Owner-Induced Disruptions

(a) Relevance and Overview

In the context of our proceedings the family-related issues are of specific relevance. However, the often-quoted conflicts in the family are a fairly rare decisive case. More often the root causes are not conflicts among various members of the owner group, but just the specific requests of one member of the owner group. Likewise, the survey by Redlefsen (2004) shows that "personal reasons" of one individual shareholder are the most often quoted causes for an exit of shareholders (Fig. 6.31).

(b) Relevant Extant Research

The literature on company statutes and shareholder agreements provides a rich source of critical factors that could lead to conflicts and *separations* among the shareholder group. We refer to Kirchdörfer and Kögel (2000), Lange (2005), Lohse (2005), Wimmer, Dohmayer, Oswald, and Vater (2005), Lutter (2010), May (2012), Kalss and Probst (2013), Ebel (2014), Hennerkes and Kirchdörfer (2015), and Lutz (2017). The consolidated professional expertise of these authors enumerates the

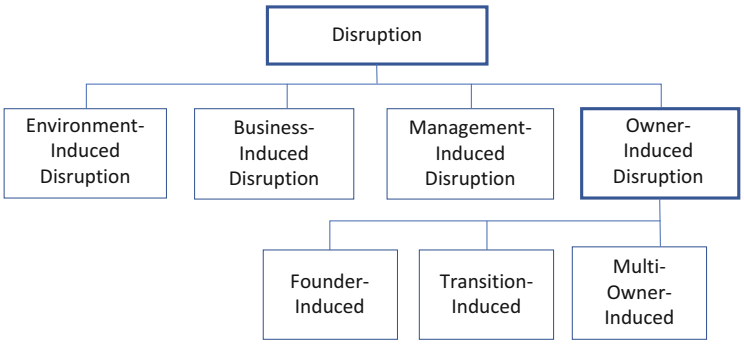

Fig. 6.31 Disruptions caused by owners. Source: Authors' own figure

most frequent or most dangerous critical events in a shareholder relationship as consolidated professional expertise. This stream of publications is complemented by a growing and well-grounded field of research on the legal aspects of conflicts in family businesses or—in legal terminology—of "companies with a closed circle of shareholders" (Wedemann, 2013). We refer to Lutz "Der Gesellschafterstreit—in der GbR, Part G, OHG, KG GmbH & Co. KG und GmbH "published in the 4th edition (2014), Bachmann, Eidenmüller, Engert, Fleischer, and Schön (2012) and Wedemann (2013).

In this context reference is also to be made to the sociological analysis of the typical conflict constellations in family businesses as documented in Kormann (2018), von Schlippe et al. (2017), and von Schlippe (2014).

An important contribution to the qualitative as well as quantitative analysis of separation factors is the monography by Redlefsen (2004) on the exit of shareholders from family businesses. He analyses the ramifications of the exit of shareholders from large family companies in Germany: The frequency, the root causes and the consequences for the owners' group as well as for the businesses.

In summary there is a broad basis of research on the negative factors jeopardizing the cohesion of the owners' group of family businesses. However, these catalogues of dangerous events do not offer a systematic structure of the phenomena. Further, they do not provide empirical evidence of the frequency of the respective elements. There are several approaches conceivable to identify possible root causes for owner-induced disruptions. It seems advisable to treat the issue of succession as a distinct factor as it is widely dealt with in research and contingent upon specific influencing factors. Thus, we have first a segmentation between (a) single (founding)—owner-induced, (b) succession-induced and (c) multi-owner-induced disruptions.

More recently there has been a growing body of research on the factors creating the *cohesion of the owners'* group. Strengthening the cohesion is obviously also important as a preventative measure for coping with conflicts. Pieper (2007) broke ground with his monography "Mechanism to Assure Long-Term Family Business Survival". Kormann (2018) expanded on some of the instruments proposed by Pieper. With the research movement on Social Emotional Wealth (Gómez-Mejía,

Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007) the aspect of cohesion between owners and their business as well as among the owners themselves has taken center stage in research on family business.

(c) Founding- or Single-Owner-Induced Disruptions

As we posit in Sect. 5.2, the challenge in the first generation is to reach the size and organization of an enterprise. An enterprise is more than just the activity based on one person. An enterprise can be led by a professional manager, too. If this development is not achieved by the founder, then the continuation depends on the possibility of finding a successor who assumes the role of the founder. Otherwise, the business will come to an end with the exit of the founder.

The founder may terminate his or her business activity by a sale. This decision might be influenced by the lack of a successor. Other motives are frequently the wish to have liquid financial means for structuring the transfer of wealth to siblings, to finance philanthropic schemes, to live a comfortable life or to combine a mixture of all the above.

(d) Transition

We will not address this issue as there is abundant literature on this theme available. However, one has to note that there is a mismatch between this literature and its relevance for the owner's decisions in reality. The decisions in the individual case seem to be completely contingent on peculiar circumstances and the subjective decision criteria of the owner.

(e) Multi-Owner-Induced Disruptions

Our specific interest is in the root causes of disruptions in multi-generation, multi-owner situations. The categories of root causes can be delineated from the extant research on the conditions enhancing the cohesion. This research on the positive preconditions for sustainability is enriched by Pieper (2007), the school of the construct of Socioemotional Wealth, the research on family constitutions and the writings on conflict containment (von Schlippe, 2014; von Schlippe et al., 2017). Kormann (2018) summarizes the basis for the sustainability of the owner's family in four pillars:

- Cohesion forces
- Reduced separation forces
- Effective separation hurdles or even unsurpassable barriers
- Successful conflict management

The root causes of the separation factors can to some extent be delineated as negative contrast to these positive prerequisites for cohesion (Fig. 6.32).

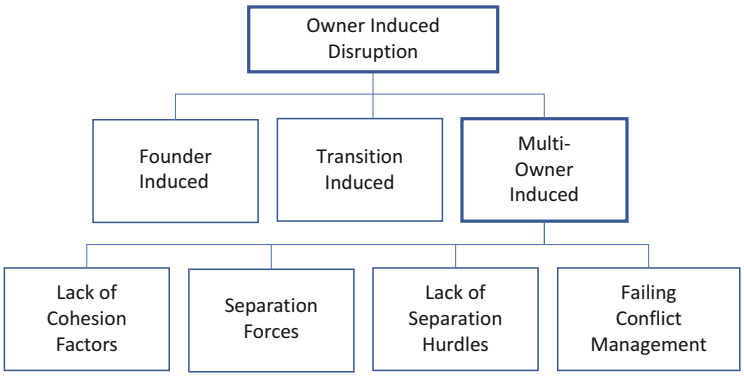

Fig. 6.32 Owner-induced disruptions by phase of development. Source: Authors' own figure

(f) Cohesion Factors as per Pieper and the Socioemotional Wealth Theory

The cohesion factors are described in a convincing concept together with rich examples by Pieper (2007), see Table 6.3 for a summary. Kormann (2018) expands some aspects further, specifically concerning the financial benefits, the inheritance strategy and the importance of the family and business history.

During the last decade the Theory of Socioemotional Wealth, together with the Theory of Emotional Value, has created a vast body of empirical evidence. Table 6.4 summarizes the most important aspects.

(g) Separation Factors

We call "Separation Factors" those elements in the relationship between the shareholders themselves and between shareholders and their business that could induce shareholders to exit the owners group or to sell the whole business. Following how Pieper differentiates the origin of cohesion factors, we distinguish the following separation factors (Table 6.5):

- family emotions
- family financials
- business financials
- business emotions

and we add the dimensions of conflicts of interests resulting from:

- principal–principal relation among shareholders
- principal–agent relation with a shareholder or even a non-family executive as agent.

Table 6.3 Summary of the cohesion factors as per Pieper (2007)

Cohesion dimension	Cohesion enhancing mechanisms
Dimension 1: Family Emotional Cohesion	Regular meeting Celebrating milestones and accomplishments Luxurious, interesting or exotic settings for family meetings Good parenting and familial relationships Interesting personalities Having fun together Birthday calendars Family history (written or video graphic) Photographic and video graphic albums etc. Family name Philanthropy
Dimension 2: Family Financial Cohesion	Money and other material objects Money for education Trust funds or other spending accounts Elevated life style Intra-family lending Inheritances More explicit rules and precise application about how the resources are distributed (like education policies or family venturing policies)
Dimension 3: Business Financial Cohesion	Dividends Salaries in excess of market ages Perquisites Investing and business opportunities Pool contracts Shareholder agreements
Dimension 4: Business Emotional Cohesion	Newsletters and other regular communication between business and family Corporate news, corporate press releases Governance bodies as mediators for information between family and business Family gatherings around the business Celebration of special corporate anniversaries Next generation training and meetings Internships Plant tours Quality products Company name and logo Philanthropy Corporate Social Responsibility Archives, museums (Business and other), monuments, portraits, busts, and movies Family business legacy

Source: Authors' own table

Such groupings of the root causes of owner-induced separation factors could be useful in the development of concepts to contain these negative forces. Financial issues have to be solved by financial measures. Emotional issues require

Table 6.4 Elements of socialemotional wealth (FIBER-Modell, Cennamo, Berrone, Cruz, & Gómez-Mejía, 2012)

• Family control and influence
• Identification of family members with the firm
• Binding social ties
• Emotional attachment of family members
• Renewal of family bonds to firm through dynastic succession

Table 6.5 List of separation factors

Dimension of separation tendency	Exacerbating factor
Family emotions	Lack of family identity Personal rivalry Different lifestyles Different values Unequal parental affection
Family financials	Unequally distributed inheritance Other personal interests (investments, philanthropy) Different perception of the need to grow
Business Financial Benefits	No sufficient profit distribution Concerns about sustainable strategy Different perception of need to grow
Business Emotions	Refusal of "Voice" Insufficient minority rights Overly restrictive contractual ties Destructing the good reputation of the enterprise = Destruction of Socioemotional Wealth
Principal–principal conflicts	Insufficient minority rights Wide difference in percentage of shares held Unfair exit conditions
Principal–agent conflicts	Doubts about qualification of agent Doubts about loyalty to family business concept

Source: Authors' own table

improvements in the emotional relationship. Conflicts of interests can only be reduced by improved governance.

(h) High or Low Separation Hurdles[4]

Separation hurdles prevent or delay an otherwise intended separation. These factors can take several forms:

[4]Redlefsen (2004), p. 92 ff. refers to "Ausstiegsbarrieren".

- High taxes connected with a separation.
- High discounts on the fair value of the shares in the sell-and-buy-agreements governing the exit.
- A legal form that does not provide the exit option such as a SE or AG, of course non-listed.
- Long fixed duration periods for the shareholder agreements (30 years).
- But also, excellent profits of the family business which could not be matched by another income source.

There are cases of hot conflicts among owners over decades that, however, did not ultimately lead to a separation because the hurdles were that high. Even if relevant provision could not prevent a final separation, they could help to gain time and to facilitate a smoother exit process.

On the other hand, there are constellations that reduce the hurdle to an exit:

- A legal form that does not allow the exclusion of termination rights such as partnerships.
- Repeated cases of exiting shareholders during subsequent generations (Redlefsen, 2004, p. 187 f.).
- The listing of the shares.

(i) The Concept of Interlocking Factors Supporting or Reducing Cohesion

The above-explained factors, which either support or reduce the cohesion among the shareholder group, lead to the following summary (Fig. 6.33).

6.10 The Summary of Empirical Incidence on Root Causes

(a) The Basis of the Research

Lantelme (2017) analyses the downfall of large family companies versus large public companies. Greussing (2017) follows by analysing the root causes of the downfallen family enterprises covered in Lantelme's study and added the case of Schlecker. In the subsequent figures, we factor Greussing's findings into our frames of root causes. Greussing focuses on the cases of disappearance only and does not include disruptive events with continuation. All these cases are large enterprises. She differentiates the causes of downfall into the origin of the disappearance. Figure 6.34 reports her findings on the 24 cases.

This is a remarkable finding. In the research on family business we find an emphasis on the frictions among the family members. It is important to realize that 40% of the cases perish due to problems in the business and in the management. These business problems are, however, often accompanied by conflicts in the owner group.

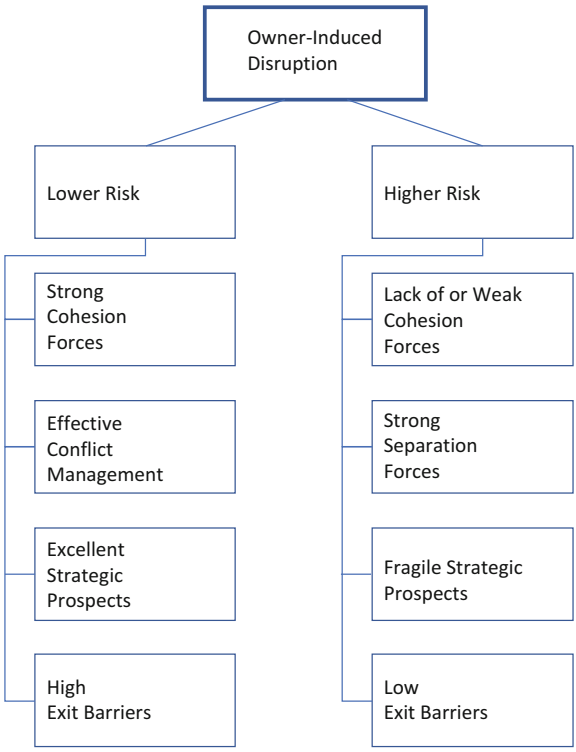

Fig. 6.33 Stability against owner-induced disruption. Source: Authors' own figure

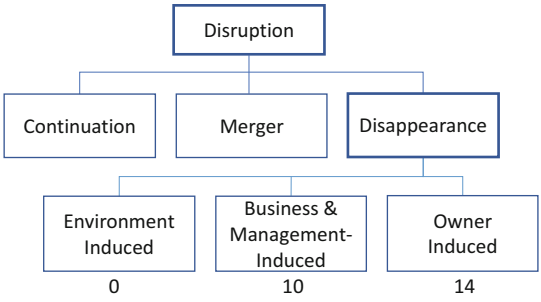

Fig. 6.34 Disruptions with disappearance of the enterprise. Source: Authors' own figure

(b) The Business-and Management-Induced Causes

As mentioned, Greussing does not find a downfall due to fire or other causes of Force Majeure. We assume that this can be explained by the selection of large enterprises only. Even more surprising is the fact that there is no downfall due to the elimination of complete technologies or industries. Such environment-induced disruptions happened in reality during the period 1971–2001.

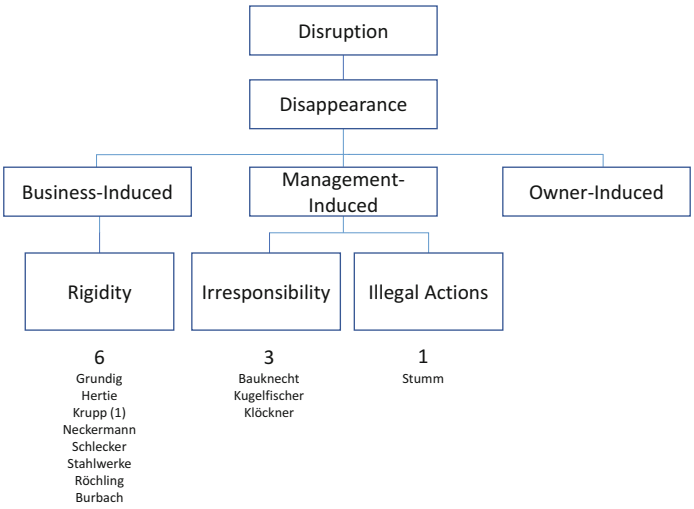

Fig. 6.35 Disruption with disappearance: business- or management-induced. Source: Authors' own figure

A well-known example is the elimination of analogous telecommunication by digital technologies. These disruptions, however, eliminated only major divisions of public companies, such as SIEMENS, but apparently not a family enterprise in its entirety.

The ten cases of business-induced disappearances are further differentiated as shown in Fig. 6.35.

Greussing interprets the cases of downfall in mature businesses (without irresponsible and illegal actions) with "rigidity" as the decisive cause, see the explanation of *rigidity* above in 6.7 (f).

As Greussing's database is restricted to large enterprises, the irresponsible and illegal actions are certainly underrepresented. A random selection of the downfall of smaller companies provides more examples of those critical categories (Schmeh, 2002): Südmilch, Jürgen Schneider's Real Estate Development, Balsam, Flowtex.

(c) The Owner-Induced Causes

Greussing differentiates owner-induced causes of downfall as shown in Fig. 6.36.

In the context of this overview it is not essential to dive deeply into the explanation of all these categories. The important aspect is, however, that in these large enterprises the general conflict among the owners is only rarely the decisive reason. Plans for the personal investment strategy or plans for different deployment of wealth altogether are more often the reason for abandoning the family business.

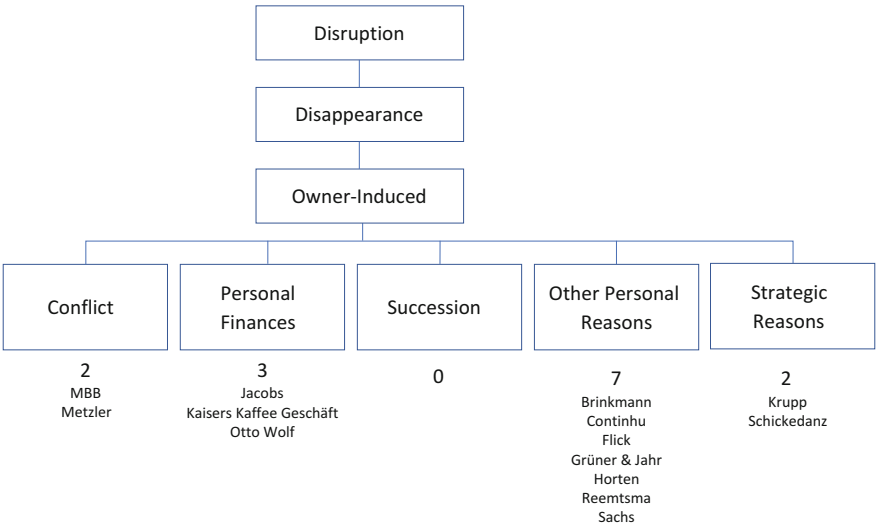

Fig. 6.36 Disruption with disappearance: owner induced. Source: Authors' own figure

(d) Analysis of the Cases of Shareholder Exit by Redlefsen

Another approach to the root causes of owner-induced disruptions is provided by Redlefsen (2004) in his doctoral thesis "Der Ausstieg von Gesellschaftern aus großen Familienunternehmen" ("The Exit of Shareholders from Large Family Enterprises"). He analyses 33 exit events among the large German family enterprises in the period between 1960 and 2002. The majority of the cases cover the period from 1990 to 2002 (26 cases, see Redlefsen, 2004, p. 86). He identifies root causes, analyses the ramifications of the exit and specifies the survival rate. Some of the remarkable findings are as follows (Table 6.6).

Only in one of these 33 cases has the exit of shareholders led to the sale of the whole enterprise (Redlefsen, 2004, p. 184). In all other cases the enterprise survived. This survival, however, includes cases such as Bahlsen, where the company was split up into two separate companies, or Voith, where the assets swap between remaining shareholders and exiting shareholders cut the equity into half.

(e) The Different Root Causes in Medium-Sized Companies as Analysed by Prigge

As Greussing covers large enterprises only, one has to ask if this selection is typical of all enterprises. We assume that the owner-induced cases are typical of all categories of multi-generation settings. However, there is evidence that smaller enterprises have at least additional frequent causes leading to disappearance and downfall.

In his master thesis, Prigge (2016) analyses a data set on the downfall of German Hidden Champions. This data set was collected by Venohr from business news

Table 6.6 Reasons of shareholder exit as per Redlefsen (2004, p. 197)

Answers indicating as "very important reason"	
Private wealth planning (of one shareholder)	12
Appointment of members to the governance institutions	7
Business strategy	6
Conflicts in the family	5
Performance of the enterprise	2
Profit distribution	2
Reporting of the enterprise	0
Management remuneration	0

Source: Authors' own table

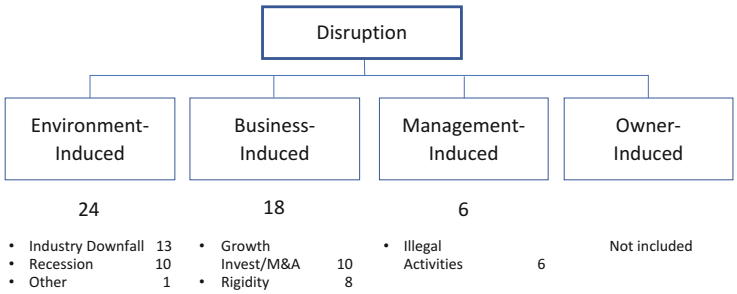

Fig. 6.37 Various causes of disruptions in SME. Source: Authors' own figure

between 1996 and 2015 in an opportunistic approach. Altogether 104 cases can be analysed in our context.[5] All these companies were leading in their product market segment, therefore the category "Strategic Position" should not be marked as relevant cause (Fig. 6.37).

This analysis of medium-sized enterprises (below EUR 400 Million sales) confirms that Force Majeure is not a factual existence-threatening danger. On the other hand, industry downfall, recessions (2008 ff.), as well as over-ambitious investments for growth projects or M&As are a more frequent existence-threatening risk for medium-sized enterprises.

Here we do not see owner-induced downfalls. It should be noted, however, that the full sample includes a high ratio of bankruptcy cases under the ownership of private equity funds. Apparently, the family owners sold the struggling business to these funds. There are also four cases included where the funds are blamed for having taken out too much cash and thereby having caused the illiquidity.

[5]Financial difficulties, for example, cannot be incorporated into the here proposed grid of causes. Also, there are more than 20 cases which have "other causes" or could not be analysed.

Table 6.7 Root causes of disappearance: family-owned versus public enterprises

	Family enterprises	Public enterprises listed	Public enterprises non-listed
Survival	50%	49%	14%
Business-induced downfall	20%	6%	43%
Business-induced sale	–	26%	43%
Owner-induced sale	20%	20%	–
Owner-induced downfall	10%	–	–
Total	100% N = 46	100% N = 35	100% N = 21

Source: Authors' own table based on Lantelme (2017), Greussing (2017), and Frericks (2018)

6.11 The Different Reasons for Disappearance in Family and Public Enterprises

(a) Research on the Origins of Downfall of Public Companies

Frericks (2018) continues the above-mentioned research stream by analysing the root causes of the disappearance of public enterprises. The detailed report on his findings is beyond the scope of this book. Just summarizing his findings one has to state that conflicts among owners are no relevant root cause. The dominant causes are business-induced. However, there is an additional, specific influence of "Political Reasons" especially in the industry of power generation and distribution.

(b) The Consolidation of Research on Root Causes in Family and Public Enterprises

We will now try to combine the analyses of Lantelme, Greussing and Frericks (with rounded percentages) in order to identify differences in the patterns of disappearance. In publicly listed enterprises with a scattered shareholder structure there are no owner-induced effects. The combination leads to the results shown in Table 6.7.

(c) The Strange Cases of Listed Family Enterprises

In the course of the analysis of the disruptions and disappearance of family companies, a strange observation has emerged: After some time, *all* listed family enterprises disappear as family businesses. Either the family participation shrinks to a small portion without special influence or the enterprise disappears completely as it was sold or went bankrupt. The second case covers the sale of a—remaining—shareholding by the founding family.

One can state the surprising fact with some reliability: There are no family enterprises that have been listed for longer than 50 years. There were however, listed family companies already in the nineteenth century.

Table 6.8 IPOs between 1960 and 1980 according to Schürmann (1980) and Status 2016

Enterprise	IPO year	Status today
G. M. Pfaff AG	1960	Out of business
Pschorr Bräu AG	1961	Sold to Schörghuber
Westag Getalit AG	1961	Public Comp. (89% widely held)[a]
Pegulan AG	1963	Not listed anymore
Neckermann Versand KGaA	1963	Sold to Karstadt
Braun AG	1964	Sold to Gillette and Horten
Investitions- und Handelsbank AG	1961	Sold to Hessische Landesbank
Hussel Holding AG	1966	Not listed anymore
Triumph International AG	1971	Unclear situation, practically no activity at stock market
Dyckerhoff & Widemann	1972	Not listed anymore
Herlitz AG	1977	Liquidated
Progress-Werke AG	1977	Listed and active
Leffers AG	1978	Sold to Karstadt/Quelle; liquidated
Drägerwerk AG	1979	Listed and active

Source: Authors' own table
[a]As per "Börse Online", indication of "Free Float".

Certainly, significant research will be required to identify the root causes of this phenomenon. One tentative explanation could be that the listed family enterprise combines the reasons for and the likelihood of a downfall of the two categories: Family enterprise and public company. The phenomenon of the diminishing rate of family ownership in a listed family enterprise is documented for all financial markets (Foley & Greenwood, 2010; Franks, Mayer, & Rossi, 2007; Franks, Mayer, Volpin, & Wagner, 2012; Klasa, 2007). The time span for this effect still needs to be calibrated, as to our current knowledge it covers a span of 60–80 years.

In a book intended to promote "Going Public" (1980), Schürmann lists quite a few family enterprises that went public in the years between 1960 and 1980. The survival rate as family enterprise can be indicated as follows (Table 6.8).

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7 Conclusion: Orientation Regarding Direction of Future Research and Strategies for Supporting Longevity

7.1 Need for Further Research

The positive development of growth and the negative downfall of family businesses covers the extremes of any potential path of the company through time. At the current stage of research and in a limited effort as documented here, such a comprehensive topic can only be structured into the relevant subheadings.

The next projects of the Research Initiative on Family Business Strategy to which the editors of this volume belong will explore questions such as:

- Drivers for hybrid growth, which are investigated by Laura K.C. Seibold in her dissertation with the working title "Growth of Family Firms"
- Root causes of disappearance of public enterprises, which are investigated by Sebastian Frericks in his Master Thesis, University Leipzig, 2018.
- Root Causes of disappearance of listed family enterprises which are investigated by Kirsten Stotmeister, Sandra Rosse, Sebastian Frericks, & Daniel Henssler.

Indefinite but rewarding work seems necessary to further explore root causes of downfall of any enterprise. Nevertheless, it is appropriate to dare some conclusions as outlined in the following reflections.

7.2 Differentiation of Research on Family-Owned Enterprises

As a conclusion of the ongoing research on family businesses it can be stated that this category comprises a wide variety of forms and constitutions of an enterprise (Sharma, Melin, & Nordqvist, 2014). The data compiled in this paper contributes to this quest for differentiation in some important respects. In terms of growth development, we find a clear distinction between the need for and the fact of high growth in the first generation and the development during the subsequent generations. The

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"Strategies in Practice" as well as the maxims of a strategic logic during the start-up phase are different, compared to the prevailing logic during the subsequent generations.

A similar differentiation can be stated for the risk of disruptions and downfall. Liability of Newness and Liability of Smallness are dangers for the first generation only. The transition phase to the next generation is a widely discussed problem area. The rigidity risk and the acquisition risk are a special feature of the mature enterprise.

These are indications that both the owner strategy as well as the business strategy are to be differentiated from generation to generation. This segmentation comes on top of the advisable differentiation according to the characteristics of the industry and the stage of development of the enterprise.

7.3 Tentative Conclusions on Preconditions for Sustainability

The analysis presented here helps to develop criteria that need to be met in order for a sustainable development to happen.

First, there is the requirement for a stable ownership group. We provide a comprehensive concept of the preconditions for this stability, i.e.

- Sufficient cohesion forces
- Limited separation forces
- Effective conflict management
- Separation barriers or at least hurdles as fail-safe protection
- Effective governance to control principal–principal and principal–agent conflicts

Second, maintaining a minimum profitability is vital for the economic survival of the enterprise.

Third, the enterprise has either to be in a position to raise the prices for its output regularly in line with increases in factor costs (such as personnel expenses), or it has to achieve a certain minimum growth. Profit is thus the prerequisite for growth and growth the prerequisite for maintaining a certain profit level.

However, profitability is a complex result of many causes. One cannot influence profits directly, one can only influence profit-relevant cause factors. The decay of a family enterprise is not caused by a profit level that is lower than that of a competitor. Most family business owners do not even know what their relative profitability position is compared to that of the competitors. As long as the profitability is "sufficient" by some standard, they will hold on to their family enterprise. This might be different with the shareholders of public companies. For them a relative lagging behind the competitors might be sufficient to terminate the relationship of a loyal shareholder and sell the shares to a hostile bidder.

7.4 The Connections Between Growth and Disappearance

The rate of public companies (50%) which are sold to new owners seems to be high by all standards. Yet, it might be necessary that many companies need to disappear in order to allow some surviving companies to grow well above the growth rate of GDP or industry markets.

From this perspective the strategic crossroad is between companies in one industry which buy other companies and those which are sold—sooner or later.

7.5 Conclusion for the Priorities in Strategy

When we try to boil down the strategy to the very basic options, then we arrive at the quest for either stability or profitability or growth as the overriding objectives. None of them should be pursued at maximum intensity: Stability could degenerate to rigidity, profit drive could lead to the acceptance of excessive risks and extremely high growth will lead to an overstretching of the resources.

Accepting this moderation, the following priorities in the strategic thrusts of family enterprises are plausible:

1. Stability of the shareholder group has first priority. Otherwise, one cannot plan a long-term strategy for the business.
2. Growth as second priority.
3. Profitability as third priority.

The priorities in a public company are similar in that stability of the shareholder structure is of utmost importance. Certainly, also smaller investments of hedge funds or shareholder activists will be closely monitored. Such new powerful actors are generally not welcome by the management nor by the supervisory committee. When an investor approaches the level of significant shareholding or the threshold for a mandatory takeover bid (30%),[1] then this will be an alarming signal for the incumbent executive team.

The next priority in a public company is the development of the share prices as the key indicator of shareholder value. In the theory of valuation, the growth expectation should be at least of equal importance as the short-term profit expectation. There are, however, some plausible arguments that for the public company short-term profit is of higher importance than long-term growth:

- Longer-term effects are significantly discounted to Net Present Value.
- Growth initiatives require investments upfront. These are negative cash flows reducing Net Present Value.

[1] In Germany this is the threshold which triggers a mandatory takeover bid.

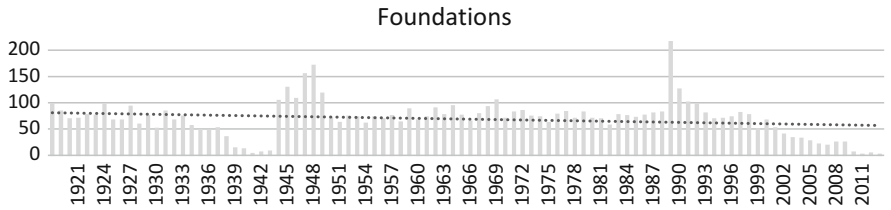

Fig. 7.1 Foundations. Source: Authors' own figure

- The future benefits of growth initiatives have a reduced probability, whereas short-term profits do not need to be discounted by probability, they are real.
- For profitability there are fairly reliable benchmarks in the industry peer group. This is not the case for longer-term growth rates. Any lagging behind in profitability will have an immediate negative effect on share valuation.

It seems to be plausible that the "Laws of the Marketplace" are the same for public companies as well as for family enterprises. Therefore, at least the priorities in the business strategy should be the same in both categories of companies. In all likelihood, they are different. And this difference might be the explanation for the different growth rates and the different survival rates of public and family-owned companies.

7.6 Future of German Family Enterprises

The current structure of family enterprises is diverse and complex. This book has tried to paint a picture of the developmental factors and needs to establish such a unique structure. How can such a structure sustain and further develop over the next centuries?

A historical analysis of surviving family business foundations from 1919 until 2014 shows that approximately 70 new businesses must be founded every year so that the German structure of family business can survive (Fig. 7.1).

Founding an enterprise bears many risks and challenges. There is a huge body of scientific research as well as many guidebooks how to build a business and become a successful leader. Besides the personal attributes and the courage to start a business, the economic and political conditions should support the potential founders. As elaborated in Chap. 5, there are many obstacles to pass in the transition from an entrepreneur to an enterprise. A study of over 100-year-old companies shows that double digit growth is needed during the first generation to sustain and become a huge company. Some selected examples of huge German firms are given below (Table 7.1).

To achieve such a double-digit growth an incremental innovation is needed.

At the beginning of the studied company's history there are product innovations: At Merck, the production of highly pure alkaloids lays the foundation for further

Table 7.1 Double digit growth

Rank according to sales 2014	Company	CAGR in the first generation (%)	Sales 2014 in EUR (Million)
1	Bosch	33.3	48,951
2	Henkel	18.6	16,428
3	Boehringer	12.8	13,317
4	Merck	10.2	11,291

development. B.BRAUN evolves from the industrial production of catgut into an industrial enterprise. The development of Henkel's bleaching soda encourages the development of the company. The further development of the magnetic detonator enables Bosch to grow its business.

All key innovations have led to long-term growth. The further development of innovations has helped companies to establish themselves on the market. Today, in the age of digitalization, process innovations and business model innovations are needed besides product innovation to build a new business.

The early geographical expansion was one of the key drivers of growth in the first generation for the above-mentioned multi-generational family businesses.

This work should encourage people to pursue their business ideas and spread them over geographical borders at an early stage.

Reference

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Appendix

8

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Table 8.1 List of Investigated Family Enterprises by Growth Rate (2010)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0+3; 2010)	Industry
1	SOLARWATT AG	1993	385	40.43%	I
2	Enercon GmbH	1984	3,570	36.47%	I
3	Ströer Out-of-Home Media AG	1990	531	35.45%	I
4	Asklepios Kliniken GmbH	1984	2,305	34.01%	I
5	BMV Mineralöl Versorgungsgesellschaft mbH	1986	1,261	33.71%	I
6	TRIMET ALUMINIUM AG	1985	871	30.01%	I
7	SMA Solar Technologies AG	1981	1,920	29.07%	I
8	Schön Klinik Verwaltung GmbH	1985	558	27.52%	I
9	MEDION AG	1982	1,007	27.07%	I
10	CRONIMET Holding GmbH	1980	1,400	26.54%	I
11	KOHL MEDICAL AG	1979	1,008	24.17%	I
12	B. & C. Tönnies Fleischwerk GmbH & Co. KG	1971	4,300	23.65%	I
13	Centrotec Sustainable AG	1981	480	22.61%	I
14	HERRENKNECHT AG	1977	952	22.35%	I
15	Krüger GmbH & Co. KG	1971	1,580	20.35%	I
16	Centrotherm photovoltaics AG	1976	624	20.04%	I
17	Fielmann AG	1972	1,159	19.88%	I
18	Gerry Weber International AG	1973	622	18.33%	I
19	Heitkamp & Thumann KG	1978	280	18.18%	I
20	GOLDBECK GmbH	1969	1,050	18.07%	I
21	Damp Holding AG	1973	504	17.62%	I
22	Peri-Werk Artur Schwörer GmbH & Co. KG	1969	825	17.34%	I
23	Conditorei Coppenrath & Wiese GmbH & Co. KG	1975	340	17.26%	I
24	Alba AG	1968	921	17.24%	I
25	P-D management Industries-Technologies GmbH	1976	285	17.14%	I
26	Wortmann Schuh-Holding KG	1967	950	16.92%	I
27	Horstmann Gruppe Bielefeld	1975	300	16.82%	I
28	Marquard & Bahls Aktiengesellschaft	1947	12,588	16.49%	I
29	Friedhelm Loh Stiftung & Co. KG	1961	1,800	16.41%	I
30	RATIONAL AG	1973	350	16.40%	I
31	VEKA AG	1969	601	16.39%	I
32	ebm-Papst Gruppe	1963	1,311	16.30%	I
33	INA-Holding Schaeffler KG	1946	9,500	15.71%	I
34	ifm electronic GmbH	1969	470	15.66%	I
35	Lindner Holding KGaA	1965	770	15.59%	I
36	Fritz Dräxlmaier GmbH & Co. KG	1958	1,750	15.40%	I
37	Adolf Würth GmbH & Co. KG (Würth-Gruppe)	1945	8,633	15.29%	I
38	Zollner Elektronik AG	1965	685	15.28%	I
39	Gauselmann-Gruppe	1957	1,540	14.83%	I
40	Tele-München Fernseh-GmbH & Co. Produktionsgesellschaft	1970	313	14.82%	I
41	Wernsing Feinkost GmbH	1962	750	14.56%	I
42	Hager SE	1955	1,420	14.12%	I
43	KRONES AG	1951	2,173	14.04%	I
44	GP Günter Papenburg AG	1963	530	13.98%	I
45	Hobby-Wohnwagenwerk Ing. Harald Striewski GmbH	1967	331	13.95%	I
46	Sarstedt AG & Co.	1961	645	13.90%	I
47	Putzmeister Holding GmbH	1958	900	13.88%	I
48	Schüco International KG	1951	1,926	13.80%	I
49	Berner GmbH	1957	948	13.74%	I
50	Biotronik SE & Co. KG	1963	455	13.59%	I
51	Schörghuber Stiftung & Co. Holding KG	1954	1,120	13.38%	I
52	Einhell Germany AG	1964	365	13.31%	I
53	AUMA Riester Verwaltungsgesellschaft mbH	1964	360	13.28%	I
54	Rethmann AG & Co. KG	1934	9,300	13.26%	I
55	apetito-Gruppe	1958	670	13.21%	I
56	Agrarfrost GmbH & Co. KG	1967	250	13.17%	I
57	Wirtgen GmbH	1961	475	13.16%	I
58	Lapp Holding AG	1957	633	12.84%	I
59	H Y D A C Technology GmbH	1963	330	12.79%	I
60	Körber AG	1946	1,747	12.59%	I
61	Südpack Gruppe	1964	270	12.54%	I
62	Gausepohl Fleisch GmbH	1957	500	12.32%	I
63	Knauf Gips KG	1932	5,500	12.16%	I
64	Hörmann Holding GmbH & Co. KG	1955	561	12.14%	I
65	Mann + Hummel Holding GmbH	1941	2,180	12.10%	I
66	DKV EURO SERVICE GmbH & Co. KG	1934	4,321	12.09%	I
67	STO AG	1955	541	12.06%	I
68	Dr. Johannes Heidenhain GmbH	1948	1,000	11.93%	I
69	Jakob Müller GmbH & Co. KG	1946	1,200	11.91%	I
70	Schütz GmbH & Co. KGaA	1958	365	11.84%	I
71	Wepa Papierfabrik P. Krengel GmbH & Co. KG	1948	950	11.83%	I
72	M U L T I V A C Sepp Haggenmüller GmbH	1961	262	11.74%	I
73	Storopack Hans Reichenecker GmbH	1959	299	11.60%	I
74	Grünenthal Pharma GmbH & Co. KG	1946	910	11.41%	I
75	GETRAG Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie. KG	1935	2,500	11.41%	I
76	Hoyer GmbH Internationale Fachspedition	1946	904	11.40%	I
77	Dachser GmbH & Co. KG	1930	3,800	11.35%	I
78	Neue Dorint GmbH	1959	265	11.33%	I
79	H. Gautzsch GmbH & Co. KG	1957	310	11.27%	I
80	Max Weishaupt GmbH	1952	483	11.25%	I
81	Berger Holding GmbH	1955	360	11.20%	I
82	Karl Storz GmbH & Co. KG	1945	870	11.17%	I
83	WAGO Kontakttechnik GmbH & Co. KG	1951	503	11.15%	I

(continued)

Table 8.1 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0+3; 2010)	Industry
84	WAREMA Renkhoff SE	1955	351	11.15%	I
85	Willi Betz Unternehmensgruppe	1945	850	11.13%	I
86	WOCO GmbH & Co. KG	1956	310	11.08%	I
87	Hans Geis GmbH & Co. Internationale Spedition	1948	631	11.07%	I
88	Sick AG	1946	749	11.06%	I
89	nobilia-Werke J. Stickling GmbH & Co. KG	1945	783	10.98%	I
90	fischerwerke GmbH & Co. KG	1948	582	10.92%	I
91	PHW-Gruppe LOHMANN & Co. AG	1932	2,100	10.75%	I
92	Heinrich Schmid Gruppe	1955	284	10.71%	I
93	Fritz Winter Eisengießerei GmbH & Co. KG	1951	400	10.71%	I
94	Stulz Holding GmbH	1947	550	10.66%	I
95	Alfred Kärcher GmbH & Co. KG	1935	1,526	10.65%	I
96	Heinrich J. Kesseböhmer KG	1954	295	10.61%	I
97	Mahle GmbH	1920	5,261	10.60%	I
98	SEW-EURODRIVE GmbH & Co. KG	1931	2,000	10.55%	I
99	Siegfried Jacob Metallwerke GmbH & Co. KG	1953	308	10.53%	I
100	Neumann Gruppe GmbH	1934	1,500	10.50%	I
101	Fuchs Gewürze GmbH	1952	330	10.50%	I
102	ACO Severin Ahlmann GmbH & Co. KG	1946	545	10.49%	I
103	Trox GmbH	1951	350	10.45%	I
104	Refratechnik Holding GmbH	1950	365	10.37%	I
105	Aluminiumschmelzwerk Oetinger GmbH	1946	500	10.34%	I
106	CHT/BEZEMA-Gruppe	1953	265	10.22%	I
107	STIHL Holding AG & Co. KG	1926	2,363	10.21%	I
108	Nagel Logistik Holding GmbH & Co. KG	1935	1,135	10.21%	I
109	Malerwerkstätten Heinrich Schmid GmbH & Co. KG	1952	284	10.20%	I
110	Wika Alexander Wiegand SE & Co. KG	1946	460	10.19%	I
111	Wanzl Metallwarenfabrik GmbH	1947	420	10.17%	I
112	Rohde & Schwarz GmbH & Co. KG	1933	1,300	10.17%	I
113	Lenze SE	1947	417	10.16%	I
114	FUCHS PETROLUB AG	1931	1,459	10.10%	I
115	Sennheiser electronic GmbH & Co. KG	1945	468	10.08%	I
116	THIMM Holding GmbH & Co. KG	1949	333	10.04%	I
117	Köster AG	1938	800	10.04%	I
118	Hörmann KG	1935	1,000	10.02%	I
119	Biotest AG	1946	413	10.00%	I
120	Klaus Faber AG	1950	300	10.00%	I
121	Brose Fahrzeugteile GmbH & Co. KG	1919	3,474	9.98%	I
122	Robert Bosch GmbH	1886	47,259	9.98%	I
123	Gabor Shoes AG	1949	319	9.96%	I
124	Dr. Alexander Wacker Familiengesellschaft mbH	1914	4,748	9.88%	I
125	HARTING KGaA	1945	413	9.86%	I
126	Schmolz & Bickenbach KG	1919	3,119	9.85%	I
127	Schnellecke Group AG & Co. KG	1939	632	9.79%	I
128	Festo AG & Co. KG	1925	1,800	9.74%	I
129	Bürkert Verwaltungs-Gesellschaft mbH	1946	345	9.68%	I
130	Haribo GmbH & Co. KG	1920	2,426	9.63%	I
131	Big Dutchman International GmbH	1938	600	9.59%	I
132	Hirschvogel Holding GmbH	1938	600	9.59%	I
133	Otto Fuchs KG	1919	2,421	9.54%	I
134	Vetter Pharma-Fertigung GmbH & Co. KG	1945	338	9.51%	I
135	Meffert AG Farbwerke	1947	288	9.49%	I
136	Westfalen AG	1923	1,668	9.44%	I
137	TRUMPF GmbH & Co. KG	1923	1,663	9.44%	I
138	NDW Beteiligungsgesellschaft mbH	1929	1,050	9.42%	I
139	E.G.O. Blanc und Fischer & Co. GmbH	1931	865	9.36%	I
140	ROTO FRANK AG	1935	609	9.27%	I
141	Wilhelm Hoyer KG	1924	1,341	9.26%	I
142	Schwing GmbH	1934	640	9.24%	I
143	HOCHLAND SE	1927	1,055	9.23%	I
144	Deutsche See GmbH	1939	420	9.14%	I
145	Wolf & Müller Holding GmbH & Co. KG	1936	500	9.08%	I
146	Phoenix Contact GmbH & Co. KG	1923	1,250	9.07%	I
147	Claas KG aA	1913	2,476	9.04%	I
148	Max Aicher Gruppe	1924	1,100	9.00%	I
149	riha Richard Hartinger Getränke GmbH Co. Handels-KG	1934	530	8.96%	I
150	Max Bögl Bauunternehmung GmbH & Co. KG	1929	750	8.96%	I
151	KARL MAYER Textilmaschinenfabrik GmbH	1937	424	8.94%	I
152	Viessmann Werke GmbH & Co. KG	1917	1,700	8.93%	I
153	Knorr-Bremse AG	1905	3,700	8.87%	I
154	AL-KO Kober AG	1931	605	8.85%	I
155	Dr. August Oetker KG	1891	9,457	8.84%	I
156	Rudolf Wild GmbH & Co. KG	1931	598	8.83%	I
157	Ehrmann AG	1929	685	8.83%	I
158	Behr GmbH & Co. KG	1905	3,349	8.76%	I
159	Kamax-Werke Rudolf Kellermann GmbH & Co. KG	1935	430	8.75%	I
160	C.H. Boehringer Sohn AG & Co. KG	1885	12,586	8.73%	I
161	WKW Automotive	1940	296	8.70%	I
162	Linde + Wiemann GmbH-KG	1939	310	8.66%	I
163	Häfele GmbH & Co. KG	1923	881	8.62%	I
164	KAEFER Isoliertechnik GmbH & Co. KG	1918	1,200	8.59%	I
165	Zott Beteiligungs-GmbH	1926	700	8.59%	I
166	heristo holding GmbH	1913	1,600	8.54%	I
167	Krieger-Gruppe	1910	1,936	8.53%	I

(continued)

Table 8.1 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0+3; 2010)	Industry
168	H&R WASAG Aktiengesellschaft	1919	1,057	8.52%	I
169	Fritz Schäfer GmbH	1937	318	8.50%	I
170	hülsta-werke Hüls GmbH & Co. KG	1940	254	8.45%	I
171	Hella KGaA Hueck & Co.	1899	3,550	8.41%	I
172	Hans Segmüller Polstermöbelfabrik GmbH & Co. KG	1925	648	8.40%	I
173	Henkel AG & Co. KGaA	1876	15,092	8.38%	I
174	Leopold Kostal GmbH & Co. KG	1912	1,450	8.36%	I
175	Diehl Stiftung & Co. KG	1902	2,725	8.34%	I
176	HYMER AG	1923	695	8.32%	I
177	Friedrich Boysen GmbH & Co. KG	1921	740	8.24%	I
178	Miele & Cie. KG	1899	2,830	8.19%	I
179	GROB-WERKE GmbH & Co. KG	1926	500	8.14%	I
180	Nolte moebel-industrie Holding GmbH & Co. KGaA	1923	599	8.13%	I
181	Reinert Beteiligungsgesellschaft mbH	1931	350	8.08%	I
182	Detlef Hegemann Aktiengesellschaft	1914	1,000	8.08%	I
183	Hama Hamaphot Hanke & Thomas GmbH & Co.	1923	571	8.07%	I
184	Hipp GmbH & Co. Vertrieb KG	1932	310	7.99%	I
185	Webasto AG	1901	2,000	7.97%	I
186	Marquardt GmbH	1925	464	7.96%	I
187	Melitta Unternehmensgruppe Bentz KG	1908	1,301	7.96%	I
188	Franz Beteiligungsgesellschaft mbH	1924	491	7.96%	I
189	KATHREIN-WERKE KG	1909	1,135	7.88%	I
190	Muhr und Bender KG	1916	744	7.87%	I
191	Küster Holding GmbH	1926	400	7.85%	I
192	Dr. Theodor Stiebel Werke GmbH & Co. KG	1924	450	7.84%	I
193	August Storck KG	1903	1,500	7.79%	I
194	Georg Fritzmeier / GmbH & Co.	1926	380	7.78%	I
195	KAESER KOMPRESSOREN GmbH	1919	573	7.78%	I
196	Rösler Oberflächentechnik GmbH	1933	250	7.77%	I
197	Unternehmensgruppe Theo Müller GmbH & Co. KG	1896	2,200	7.76%	I
198	Otto Bock HealthCare GmbH	1919	557	7.74%	I
199	Gegenbauer Holding SA & Co. KG	1925	388	7.73%	I
200	Vaillant GmbH	1894	2,314	7.70%	I
201	Steil Holding GmbH	1924	400	7.69%	I
202	TTS Tooltechnix Systems Holding AG	1925	372	7.68%	I
203	metabo AG	1924	388	7.65%	I
204	Benteler AG	1876	6,105	7.64%	I
205	AUNDE Gruppe	1899	1,600	7.62%	I
206	Läpple AG	1919	480	7.56%	I
207	HERAEUS HOLDING GmbH	1851	22,025	7.53%	I
208	Bernard Krone Holding GmbH & Co. KG	1906	970	7.52%	I
209	DORMA Holding GmbH & Co. KGaA	1908	856	7.51%	I
210	Huf Hülsbeck & Fürst GmbH & Co. KG	1908	847	7.50%	I
211	Dr. Schneider Kunststoffwerke GmbH	1927	280	7.45%	I
212	Bauerfeind AG	1929	250	7.45%	I
213	Siegwerk GmbH & Co. KG	1906	874	7.41%	I
214	Friedrich Zufall GmbH & Co. KG	1928	254	7.40%	I
215	Johann Hay GmbH & Co. Automobiltechnik	1925	300	7.40%	I
216	Drägerwerk AG & Co. KGaA	1889	2,177	7.38%	I
217	Nehlsen AG	1923	300	7.26%	I
218	Merz GmbH & Co. KGaA	1908	673	7.25%	I
219	Krohne Messtechnik GmbH & Co. KG	1921	331	7.24%	I
220	Gebr. Nölke GmbH & Co. KG	1924	273	7.21%	I
221	Dürr Aktiengesellschaft	1895	1,261	7.18%	I
222	SCHOKINAG Schokolade-Industrie Herrmann GmbH & Co. KG	1923	280	7.17%	I
223	Scholz AG	1872	4,000	7.12%	I
224	Voith AG	1867	5,198	7.12%	I
225	AKG Gruppe	1919	324	7.09%	I
226	ARBURG GmbH & Co. KG	1923	260	7.08%	I
227	SIEGENIA-AUBI KG	1914	409	7.05%	I
228	Vorwerk & Co. KG	1883	2,025	7.04%	I
229	Index-Werke GmbH & Co. KG Hahn & Tesskz	1914	400	7.03%	I
230	Messer Holding GmbH	1898	909	7.02%	I
231	Schottel GmbH	1921	270	6.99%	I
232	Optima-Maschinenfabrik Dr. Bühler GmbH & Co.	1922	252	6.97%	I
233	Deutsche Amphibolin-Werke von Robert Murjahn Stiftung & Co. KG	1895	1,000	6.96%	I
234	VIEGA GmbH & Co. KG	1899	798	6.94%	I
235	Günther Reh AG	1920	267	6.92%	I
236	BPW bergische Achsen KG	1898	810	6.90%	I
237	TRILUX GmbH & Co. KG	1912	390	6.88%	I
238	B. Braun Melsungen AG	1864	4,423	6.88%	I
239	Leonhard Weiss GmbH & Co. KG	1900	680	6.83%	I
240	Mewa Textil/Service AG	1908	448	6.82%	I
241	Gretsch-Unitas GmbH	1907	463	6.80%	I
242	Käserei Champignon Hofmeister GmbH & Co. KG	1908	440	6.80%	I
243	multiline Textil GmbH	1885	1,365	6.78%	I
244	Ahlers AG	1919	251	6.78%	I
245	Kromberg & Schubert GmbH & Co. KG Kabel/Automobiltechnik	1902	550	6.72%	I
246	Hellmann Worldwide Logistics GmbH & Co. KG	1871	2,400	6.68%	I
247	Joh.Winklhofer Beteiligungs GmbH & Co. KG	1916	250	6.60%	I
248	Alfred Ritter GmbH & Co. KG	1912	300	6.59%	I
249	PLURADENT AG & Co. KG	1915	256	6.58%	I
250	Maschinenfabrik Alfing Kessler GmbH	1911	306	6.56%	I
251	FROSTA AG	1905	393	6.52%	I
252	Ziehl-Abegg AG	1910	310	6.52%	I

(continued)

Table 8.1 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0+3; 2010)	Industry
253	Seyfert GmbH	1912	282	6.52%	
254	Freudenberg & Co. KG	1849	5,481	6.51%	
255	Felix Schoeller Holding GmbH & Co. KG	1895	624	6.51%	
256	Schmitz Cargobull AG	1892	666	6.44%	
257	Hettich Holding GmbH & Co. oHG	1888	780	6.42%	
258	Johannes Reifenhäuser Holding GmbH & Co. KG	1911	266	6.41%	
259	ZENTIS GmbH & Co. KG	1893	611	6.41%	
260	Steuler-Industriewerke GmbH	1908	300	6.39%	
261	Fiege Stiftung & Co. KG	1873	1,487	6.38%	
262	Harry Brot GmbH	1890	669	6.36%	
263	Ernst Klett AG	1897	465	6.32%	
264	Eberspächer Holding GmbH & Co. KG	1865	1,934	6.30%	
265	NORD-SCHROTT GmbH & Co. KG	1898	420	6.27%	
266	MERCK KGaA	1827	9,290	6.21%	
267	KLENK HOLZ AG	1904	300	6.20%	
268	Georgsmarienhütte Holding GmbH	1856	2,404	6.17%	
269	Leonhard Kurz Stiftung & Co. KG	1892	487	6.16%	
270	Getreide AG	1872	1,152	6.14%	
271	frischli Milchwerke GmbH	1901	321	6.14%	
272	ALLGAIER WERKE GmbH	1906	254	6.12%	
273	Fränkische Rohrwerke Gebr. Kirchner GmbH & Co. KG	1906	252	6.11%	
274	Leistritz AG	1905	260	6.10%	
275	MEGGLE AG	1882	700	6.09%	
276	ElringKlinger AG	1879	796	6.09%	
277	J. Bauer GmbH & Co. KG	1887	548	6.07%	
278	Bahlsen GmbH & Co. KG	1889	501	6.06%	
279	WILO SE	1872	1,021	6.05%	
280	Papierfabrik Palm GmbH & Co. KG	1872	1,000	6.03%	
281	Bischof + Klein GmbH & Co. KG	1892	420	6.02%	
282	WITTE Automotive GmbH	1899	309	6.01%	
283	Gühring OHG	1898	311	5.98%	
284	PUTSCH GmbH & Co. KG	1871	970	5.98%	
285	Karlsberg Brauerei KG Weber	1878	670	5.92%	
286	Rafi GmbH & Co. KG	1900	268	5.92%	
287	Heller GmbH	1894	339	5.90%	
288	Hugo Kern und Liebers GmbH & Co. KG	1888	430	5.89%	
289	Pampus Industriebeteiligungen GmbH & Co. KG	1856	1,591	5.88%	
290	G. Siempelkamp GmbH & Co. KG	1883	494	5.83%	
291	Giesecke & Devrient Holding GmbH	1852	1,688	5.81%	
292	Wilh. Werhahn KG	1842	2,433	5.78%	
293	Haver & Boecker	1887	373	5.73%	
294	Pfeifer & Langen KG	1870	730	5.73%	
295	Heitkamp BauHolding GmbH	1892	300	5.71%	
296	Witzenmann GmbH	1885	395	5.71%	
297	Geobra Brandstätter GmbH & Co. KG	1876	559	5.70%	
298	Bohnhorst Agrarhandel GmbH	1882	439	5.70%	
299	Amazonen-Werke H. Dreyer GmbH & Co. KG	1883	405	5.67%	
300	Germanischer Lloyd AG	1867	741	5.65%	
301	Sartorius AG	1870	659	5.65%	
302	O. & L. Sels GmbH & Co. KG	1890	300	5.64%	
303	H. Kemper GmbH & Co. KG	1888	317	5.62%	
304	Albert Handtmann Holding GmbH & Co. KG	1873	490	5.51%	
305	Borgers AG	1866	627	5.50%	
306	Eckes Granini Gruppe	1857	852	5.47%	
307	Ravensburger AG	1883	313	5.45%	
308	Mast-Jägermeister AG	1878	375	5.44%	
309	Leitz-Gruppe	1876	400	5.44%	
310	EUROKAI KGaA	1865	600	5.44%	
311	Krauss-Maffei Wegmann GmbH & Co. KG	1838	1,565	5.41%	
312	SMS GmbH	1819	3,036	5.39%	
313	Maschinenfabrik Reinhausen GmbH	1868	500	5.38%	
314	KWS SAAT AG	1856	754	5.36%	
315	Franz Haniel & Cie. GmbH	1756	27,432	5.34%	
316	Wieland-Werke AG	1820	2,653	5.33%	
317	Windmöller & Hölscher KG	1869	440	5.31%	
318	Waskönig+Walter Kabel-Werk GmbH	1873	374	5.30%	
319	Gustav Stabernach GmbH	1879	300	5.29%	
320	F. S. Fehrer GmbH & Co. KG	1875	340	5.28%	
321	Wrede Industrieholding GmbH & Co. KG	1880	270	5.24%	
322	Bizerba GmbH & Co. KG	1868	400	5.21%	
323	DIEFFENBACHER GmbH Maschinen- und Anlagenbau	1873	330	5.20%	
324	H. Stoll GmbH & Co. KG	1873	329	5.20%	
325	Schwanhäußer Industrie Holding GmbH & Co. KG	1865	396	5.13%	
326	SCHWENK Zement KG	1847	712	5.11%	
327	GEZE GmbH	1863	400	5.09%	
328	DALLI-WERKE GmbH & Co. KG	1845	725	5.08%	
329	LEIPA Georg Leinfelder GmbH	1847	660	5.06%	
330	Johann Bunte Bauunternehmung GmbH & Co. KG	1872	277	5.04%	
331	KEMNA BAU Anreaea GmbH & Co. KG	1867	320	5.02%	
332	Stute Gruppe	1853	495	5.00%	
333	Ireks GmbH	1856	430	4.97%	
334	Scheidt & Bachmann GmbH	1872	254	4.97%	
335	Veritas AG	1849	505	4.93%	
336	GRIESSON de Beukelaer GmbH & Co. KG	1850	477	4.91%	

(continued)

Table 8.1 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0+3; 2010)	Industry
337	Groz-Beckert KG	1852	433	4.89%	I
338	Schuler AG	1839	650	4.89%	I
339	Aerzener Maschinenfabrik GmbH	1864	290	4.88%	I
340	Lohmann GmbH & Co. KG	1851	424	4.86%	I
341	Hamberger Industriewerke GmbH	1866	260	4.84%	I
342	Grillo-Werke AG	1842	539	4.83%	I
343	Gebr. Röchling KG	1822	1,003	4.82%	I
344	Hassia Mineralquellen GmbH & Co. KG	1864	250	4.77%	I
345	Bitburger Holding GmbH	1817	1,000	4.74%	I
346	SIMONA AG	1857	267	4.67%	I
347	Ferdinand Bilstein GmbH & Co. KG	1844	280	4.45%	I
348	DÖHLER GmbH	1838	305	4.40%	I
349	Develey Holding GmbH & Co. Beteiligungs KG	1845	250	4.39%	I
350	MEYER NEPTUN GmbH	1795	950	4.38%	I
351	Köhler Holding GmbH & Co. KG	1807	640	4.35%	I
352	Krombacher Brauerei Bernhard Schadeberg GmbH & Co. KG	1803	647	4.30%	I
353	Kirchhoff Gruppe	1785	870	4.22%	I
354	UVEX WINTER HOLDING GmbH & Co. KG	1826	304	4.21%	I
355	Duravit Gruppe	1817	328	4.13%	I
356	C. & A. Veltins GmbH & Co. KG	1824	268	4.11%	I
357	MHM Holding GmbH	1765	698	3.90%	I
358	Villeroy & Boch AG	1748	714	3.76%	I
359	Warsteiner Brauerei Haus Cramer KG	1753	563	3.71%	I
360	Europa-Park Freizeit- und Familienpark Mack KG	1780	309	3.69%	I
361	Faber-Castell AG	1761	451	3.68%	I
362	H. Butting GmbH & Co. KG	1777	250	3.56%	I
363	Möller Group GmbH & Co. KG	1762	307	3.53%	I
364	Oettinger Brauerei GmbH	1731	420	3.43%	I
365	Zollern GmbH & Co. KG	1708	498	3.35%	I
366	Aachener Printen- und Schokoladenfabrik Henry Lambertz GmbH & Co. KG	1688	536	3.26%	I
367	M. DuMont Schauberg GmbH & Co. KG	1620	705	3.04%	I
368	William Prym GmbH & Co. KG	1530	360	2.62%	I
1	HK Food GmbH	2007	930	31396.00%	F
2	ATON GmbH	2001	1,701	151.34%	F
3	Delton AG	1989	1,550	41.15%	F
4	maxingvest ag	1949	9,995	16.57%	F
5	ARAG Aktiengesellschaft	1935	1,490	10.62%	F
6	KNAUF INTERFER SE	1932	894	9.51%	F
7	M.M.Warburg & Co. Gruppe KGaA	1798	8,008	5.49%	F
8	B.Metzler seel. Sohn & Co. KGaA	1674	3,742	3.79%	F
9	Joh. Berenberg, Gossler & Co. KG	1590	3,242	3.31%	F
1	Deutsche Vermögensberatung Holding GmbH	1975	1,066	21.39%	M
2	Axel Springer AG	1946	2,894	13.51%	M
3	Verlagsgruppe Georg von Holtzbrinck GmbH	1948	2,255	13.46%	M
4	Westdeutsche Allgemeine Zeitungsverlag GmbH & Co. KG Zeitschriften- und Beteiligungs KG	1948	1,250	12.35%	M
5	Medien Union GmbH Ludwigshafen	1945	560	10.39%	M
6	Hubert Burda Media Holding GmbH & Co. KG	1908	1,721	8.26%	M
7	VEM Vermögensverwaltung GmbH	1886	1,813	7.08%	M
8	Bertelsmann AG	1835	15,800	6.76%	M
9	Bauer Media Group	1875	2,029	6.70%	M
10	Verlagsgesellschaft Madsack GmbH & Co. KG	1893	536	6.29%	M
1	Nordbayerische Zeitungs und Zeitschriftenzustellgesellschaft mbH	Missing	1,119	Missing	Missing
2	DAUN & Cie. Aktiengesellschaft	Missing	930	Missing	Missing
3	Mühlen Gruppe (Mühlen ApS & Co. KG)	Missing	800	Missing	Missing
4	BAUKING AG	Missing	692	Missing	Missing
5	Gebr. Brass GmbH	Missing	400	Missing	Missing
6	SURTECO SE	Missing	389	Missing	Missing
1	RMM Metallhandel GmbH	1997	985	72.05%	R&W
2	PCC SE	1993	580	44.32%	R&W
3	Fressnapf Tiernahrungs GmbH	1990	1,278	42.22%	R&W
4	API Computerhandels GmbH	1994	312	41.57%	R&W
5	Anton Schlecker e.K.	1975	6,550	28.26%	R&W
6	Metro AG	1963	67,258	26.93%	R&W
7	dm-drogerie markt GmbH & Co. KG	1973	5,650	26.03%	R&W
8	Alnatura Produktions- und Handels GmbH	1984	399	24.56%	R&W
9	Dirk Rossmann GmbH	1972	4,084	24.15%	R&W
10	Wellergruppe GmbH & Co. KG	1979	830	23.34%	R&W
11	NEW YORKER SE	1971	1,300	19.72%	R&W
12	POCO-Domäne Holding GmbH	1972	750	18.44%	R&W
13	S. Oliver Bernd Freier GmbH & Co. KG	1969	1,137	18.31%	R&W
14	Rutronik Elektronische Bauelemente GmbH	1973	564	18.00%	R&W
15	Tessner Holding KG	1969	880	17.53%	R&W
16	bofrost Josef H. Boquoi Deutschland West GmbH & Co. KG	1966	1,205	17.19%	R&W
17	Otto GmbH & Co. KG	1949	11,404	16.83%	R&W
18	Hellweg Die Profi Baumärkte KG	1971	502	16.68%	R&W
19	MKD Vermögensverwaltungs Beteiligungs GmbH	1971	502	16.68%	R&W
20	Ernsting's family GmbH & Co. KG	1967	699	16.05%	R&W
21	Porta Holding GmbH & Co. KG	1965	842	15.83%	R&W
22	Schwarz-Gruppe	1930	60,000	15.35%	R&W
23	tedox KG	1972	280	15.24%	R&W
24	Müller Ltd. & Co. KG	1953	2,429	14.76%	R&W
25	Handelsgesellschaft Peter Cremer GmbH	1946	2,740	13.41%	R&W
26	Bijou Brigitte modische Accesoires AG	1963	378	13.13%	R&W

(continued)

Table 8.1 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0+3; 2010)	Industry
27	Schüller Möbelwerk KG	1965	260	12.71%	R&W
28	Aldi-Gruppe	1913	50,000	12.55%	R&W
29	Jibi Handel GmbH & Co.	1962	296	12.27%	R&W
30	tegut … Gutberlet Stiftung & Co.	1947	1,150	12.01%	R&W
31	finke Das Erlebnis-Einrichten GmbH & Co. KG	1959	282	11.47%	R&W
32	WIV Wein International AG	1953	450	11.29%	R&W
33	K + K Klaas & Kock B.V. & Co. KG	1950	530	11.08%	R&W
34	Dehner GmbH & Co. KG	1947	601	10.82%	R&W
35	Wessels + Müller AG	1945	650	10.65%	R&W
36	NORMA Lebensmittelfilialbetrieb GmbH & Co. KG	1921	3,124	10.05%	R&W
37	EUROPART Holding GmbH	1948	330	9.88%	R&W
38	Heinrich Schmidt Holding GmbH & Co. KG	1947	355	9.87%	R&W
39	Einrichtungshaus Ostermann GmbH & Co. KG	1949	301	9.85%	R&W
40	Feneberg Lebensmittel GmbH	1947	320	9.68%	R&W
41	Gottfried Schultz GmbH & Co. KG	1932	993	9.66%	R&W
42	Heinrich Deichmann-Schuhe GmbH & Co. KG	1913	3,930	9.57%	R&W
43	Helm AG	1900	7,957	9.29%	R&W
44	Stahlgruber Otto Gruber AG	1923	1,078	8.88%	R&W
45	Josef Marschall GmbH	1933	454	8.63%	R&W
46	KATAG AG	1923	803	8.51%	R&W
47	Conrad Electronic SE	1923	750	8.42%	R&W
48	AVAG Holding Aktiengesellschaft	1915	1,170	8.33%	R&W
49	Rudolf Wöhrl AG	1933	362	8.30%	R&W
50	Fruchtimport van Wylick GmbH	1937	250	8.13%	R&W
51	WASGAU Produktions & Handels AG	1925	480	8.01%	R&W
52	Bartels-Langness Handelsgesellschaft mbH & Co. KG	1892	3,000	7.83%	R&W
53	Bruno Bader GmbH & Co. KG	1929	322	7.80%	R&W
54	MAHAG Münchener Automobil-Handel Haberl GmbH & Co. KG	1923	447	7.76%	R&W
55	Dohle Handelsgruppe Holding GmbH & Co. KG	1901	1,400	7.61%	R&W
56	Peek & Cloppenburg KG	1901	1,100	7.36%	R&W
57	Brüder Schlau GmbH & Co. KG	1921	350	7.31%	R&W
58	Peicher + Völlm Holding GmbH	1922	315	7.25%	R&W
59	Westmetall GmbH & Co. KG	1919	330	7.11%	R&W
60	Hornbach Holding Aktiengesellschaft	1877	3,017	7.11%	R&W
61	Biesterfeld AG	1906	645	7.09%	R&W
62	Bier-Hövelmann GmbH & Co. KG	1905	650	7.05%	R&W
63	Hugo Pfohe GmbH	1919	300	7.00%	R&W
64	Hermann Schröer-Dreesmann e.K.	1921	270	6.99%	R&W
65	HALL Tabakwaren e.K.	1903	645	6.93%	R&W
66	Tengelmann Warenhandelsgesellschaft KG	1847	10,520	6.88%	R&W
67	Gebr. Heinemann	1879	2,000	6.85%	R&W
68	Richter + Frenzel GmbH & Co. KG	1895	890	6.85%	R&W
69	Albert Reiff GmbH & Co. KG	1910	380	6.75%	R&W
70	Beiselen GmbH	1890	1,000	6.73%	R&W
71	OBO BETTERMANN GmbH & Co. KG	1911	348	6.70%	R&W
72	Iwan Budnikowsky GmbH & Co. KG	1912	324	6.68%	R&W
73	ATR Landhandel GmbH & Co. KG	1896	650	6.60%	R&W
74	Dodenhof Kaltenkirchen KG	1910	250	6.29%	R&W
75	Adolf Präg GmbH & Co. KG	1904	262	6.06%	R&W
76	Carl Spaeter GmbH	1875	848	6.00%	R&W
77	Löhr & Becker AG	1892	400	5.98%	R&W
78	GLOBUS Holding GmbH & Co. KG	1828	5,900	5.97%	R&W
79	Zurbrüggen Wohn-Zentrum GmbH	1900	256	5.87%	R&W
80	Heinrich Hugendubel GmbH & Co. KG Buchhandlung und Antiquariat	1893	302	5.76%	R&W
81	Alois Dallmayr KG	1870	631	5.62%	R&W
82	Fahrzeug-Werke Lueg AG	1868	601	5.52%	R&W
83	GELITA AG	1875	438	5.48%	R&W
84	Görtz GmbH	1875	415	5.44%	R&W
85	REISSER AG	1871	398	5.29%	R&W
86	Georg Jos. Kaes GmbH	1865	484	5.28%	R&W
87	HANDELSHOF Management GmbH	1841	670	4.94%	R&W
88	J. Bünting Beteiligungs AG	1806	1,800	4.87%	R&W
89	Koch, Neff & Volckmar GmbH	1829	574	4.63%	R&W
90	Gebrüder Lotter KG	1840	300	4.42%	R&W
91	Ratio Handel GmbH	1774	870	4.09%	R&W
92	C. Melchers GmbH & Co. KG	1806	356	4.03%	R&W
1	Renta Personal-Leasing GmbH	1984	5,028	38.43%	S
2	CTS EVENTIM AG	1989	520	33.27%	S
3	FTI Touristik GmbH	1983	1,066	28.50%	S
4	CHG Meridian Deutsche Computer Leasing Aktiengesellschaft	1979	809	23.23%	S
5	Alltours Flugreisen GmbH	1974	1,170	21.09%	S
6	Dussmann AG & Co. KGaA	1963	1,567	16.76%	S
7	AVECO Holding Aktiengesellschaft	1965	1,170	16.72%	S
8	Maritim Hotelgesellschaft mbH	1969	445	15.50%	S
9	persona service Verwaltungs AG & Co. KG	1967	470	14.93%	S
10	FERCHAU Engineering GmbH	1966	300	13.37%	S
11	STUDIOSUS REISEN MÜNCHEN GmbH	1954	391	11.19%	S
12	Götz-Management-Holding AG	1949	254	9.54%	S
13	Kötter Services	1934	303	8.14%	S
14	Klüh Service Management GmbH	1911	633	7.36%	S
15	Piepenbrock Unternehmensgruppe GmbH & Co. KG	1913	362	6.86%	S

I: Industrial companies; F: Banks and other financial companies; M: Media companies; R&W: Retail and wholesale companies; S: Service provoiders

Table 8.2 List of investigated family enterprises grouped century of foundation

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0 + 3; 2010)
Family businesses with year of foundation after 1981				
1	SOLARWATT AG	1993	385	40.43%
2	Enercon GmbH	1984	3570	36.47%
3	Ströer Out-of-Home Media AG	1990	531	35.45%
4	Asklepios Kliniken GmbH	1984	2305	34.01%
5	BMV Mineralöl Versorgungsgesellschaft mbH	1986	1261	33.71%
6	TRIMET ALUMINIUM AG	1985	871	30.01%
7	SMA Solar Technologies AG	1981	1920	29.07%
8	Schön Klinik Verwaltung GmbH	1985	558	27.52%
9	MEDION AG	1982	1007	27.07%
10	Centrotec Sustainable AG	1981	480	22.61%
			Average:	31.63%
Family businesses with year of foundation between 1971 and 1980				
1	CRONIMET Holding GmbH	1980	1400	26.54%
2	KOHL MEDICAL AG	1979	1008	24.17%
3	B. & C. Tönnies Fleischwerk GmbH & Co. KG	1971	4300	23.65%
4	HERRENKNECHT AG	1977	952	22.35%
5	Krüger GmbH & Co. KG	1971	1580	20.35%
6	Centrotherm photovoltaics AG	1976	624	20.04%
7	Fielmann AG	1972	1159	19.88%
8	Gerry Weber International AG	1973	622	18.33%
9	Heitkamp & Thumann KG	1978	280	18.18%
10	Damp Holding AG	1973	504	17.62%
11	Conditorei Coppenrath & Wiese GmbH & Co. KG	1975	340	17.26%
12	P-D management Industries-Technologies GmbH	1976	285	17.14%
13	Horstmann Gruppe Bielefeld	1975	300	16.82%
14	RATIONAL AG	1973	350	16.40%
			Average:	19.91%
Family businesses with year of foundation between 1961 and 1970				
1	GOLDBECK GmbH	1969	1050	18.07%
2	Peri-Werk Artur Schwörer GmbH & Co. KG	1969	825	17.34%
3	Alba AG	1968	921	17.24%
4	Wortmann Schuh-Holding KG	1967	950	16.92%
5	Friedhelm Loh Stiftung & Co. KG	1961	1800	16.41%
6	VEKA AG	1969	601	16.39%
7	ebm-Papst Gruppe	1963	1311	16.30%
8	ifm electronic GmbH	1969	470	15.66%
9	Lindner Holding KGaA	1965	770	15.59%

(continued)

Table 8.2 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0 + 3; 2010)
10	Zollner Elektronik AG	1965	685	15.28%
11	Tele-München Fernseh-GmbH & Co. Produktionsgesellschaft	1970	313	14.82%
12	Wernsing Feinkost GmbH	1962	750	14.56%
13	GP Günter Papenburg AG	1963	530	13.98%
14	Hobby-Wohnwagenwerk Ing. Harald Striewski GmbH	1967	331	13.95%
15	Sarstedt AG & Co.	1961	645	13.90%
16	Biotronik SE & Co. KG	1963	455	13.59%
17	Einhell Germany AG	1964	365	13.31%
18	AUMA Riester Verwaltungsgesellschaft mbH	1964	360	13.28%
19	Agrarfrost GmbH & Co. KG	1967	250	13.17%
20	Wirtgen GmbH	1961	475	13.16%
21	H Y D A C Technology GmbH	1963	330	12.79%
22	Südpack Gruppe	1964	270	12.54%
23	M U L T I V A C Sepp Haggenmüller GmbH	1961	262	11.74%
			Average:	14.78%
Family businesses with year of foundation between 1951 and 1960				
1	Fritz Dräxlmaier GmbH & Co. KG	1958	1750	15.40%
2	Gauselmann-Gruppe	1957	1540	14.83%
3	Hager SE	1955	1420	14.12%
4	KRONES AG	1951	2173	14.04%
5	Putzmeister Holding GmbH	1958	900	13.88%
6	Schüco International KG	1951	1926	13.80%
7	Berner GmbH	1957	948	13.74%
8	Schörghuber Stiftung & Co. Holding KG	1954	1120	13.38%
9	apetito-Gruppe	1958	670	13.21%
10	Lapp Holding AG	1957	633	12.84%
11	Gausepohl Fleisch GmbH	1957	500	12.32%
12	Hörmann Holding GmbH & Co. KG	1955	561	12.14%
13	STO AG	1955	541	12.06%
14	Schütz GmbH & Co. KGaA	1958	365	11.84%
15	Storopack Hans Reichenecker GmbH	1959	299	11.60%
16	Neue Dorint GmbH	1959	265	11.33%
17	H. Gautzsch GmbH & Co. KG	1957	310	11.27%
18	Max Weishaupt GmbH	1952	483	11.25%
19	Berger Holding GmbH	1955	360	11.20%
20	WAGO Kontakttechnik GmbH & Co. KG	1951	503	11.15%
21	WAREMA Renkhoff SE	1955	351	11.15%
22	WOCO GmbH & Co. KG	1956	310	11.08%
23	Heinrich Schmid Gruppe	1955	284	10.71%

(continued)

Table 8.2 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0 + 3; 2010)
24	Fritz Winter Eisengießerei GmbH & Co. KG	1951	400	10.71%
25	Heinrich J. Kesseböhmer KG	1954	295	10.61%
26	Siegfried Jacob Metallwerke GmbH & Co. KG	1953	308	10.53%
27	Fuchs Gewürze GmbH	1952	330	10.50%
28	Trox GmbH	1951	350	10.45%
29	CHT/BEZEMA-Gruppe	1953	265	10.22%
30	Malerwerkstätten Heinrich Schmid GmbH & Co. KG	1952	284	10.20%
			Average:	12.05%
Family businesses with year of foundation between 1941 and 1950				
1	Marquard & Bahls Aktiengesellschaft	1947	12,588	16.49%
2	INA-Holding Schaeffler KG	1946	9500	15.71%
3	Adolf Würth GmbH & Co. KG (Würth-Gruppe)	1945	8633	15.29%
4	Körber AG	1946	1747	12.59%
5	Mann + Hummel Holding GmbH	1941	2180	12.10%
6	Dr. Johannes Heidenhain GmbH	1948	1000	11.93%
7	Jakob Müller GmbH & Co. KG	1946	1200	11.91%
8	Wepa Papierfabrik P. Krengel GmbH & Co. KG	1948	950	11.83%
9	Grünenthal Pharma GmbH & Co. KG	1946	910	11.41%
10	Hoyer GmbH Internationale Fachspedition	1946	904	11.40%
11	Karl Storz GmbH & Co. KG	1945	870	11.17%
12	Willi Betz Unternehmensgruppe	1945	850	11.13%
13	Hans Geis GmbH & Co. Internationale Spedition	1948	631	11.07%
14	Sick AG	1946	749	11.06%
15	nobilia-Werke J. Stickling GmbH & Co. KG	1945	783	10.98%
16	fischerwerke GmbH & Co. KG	1948	582	10.92%
17	Stulz Holding GmbH	1947	550	10.66%
18	ACO Severin Ahlmann GmbH & Co. KG	1946	545	10.49%
19	Refratechnik Holding GmbH	1950	365	10.37%
20	Aluminiumschmelzwerk Oetinger GmbH	1946	500	10.34%
21	Wika Alexander Wiegand SE & Co. KG	1946	460	10.19%
22	Wanzl Metallwarenfabrik GmbH	1947	420	10.17%
23	Lenze SE	1947	417	10.16%
24	Sennheiser electronic GmbH & Co. KG	1945	468	10.08%
25	THIMM Holding GmbH & Co. KG	1949	333	10.04%
26	Biotest AG	1946	413	10.00%
27	Klaus Faber AG	1950	300	10.00%
28	Gabor Shoes AG	1949	319	9.96%

(continued)

Table 8.2 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0 + 3; 2010)
29	HARTING KGaA	1945	413	9.86%
30	Bürkert Verwaltungs-Gesellschaft mbH	1946	345	9.68%
31	Vetter Pharma-Fertigung GmbH & Co. KG	1945	338	9.51%
32	Meffert AG Farbwerke	1947	288	9.49%
			Average:	11.19%
Family businesses with year of foundation between 1931 and 1940				
1	Rethmann AG & Co. KG	1934	9300	13.26%
2	Knauf Gips KG	1932	5500	12.16%
3	DKV EURO SERVICE GmbH & Co. KG	1934	4321	12.09%
4	GETRAG Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie. KG	1935	2500	11.41%
5	PHW-Gruppe LOHMANN & Co. AG	1932	2100	10.75%
6	Alfred Kärcher GmbH & Co. KG	1935	1526	10.65%
7	SEW-EURODRIVE GmbH & Co. KG	1931	2000	10.55%
8	Neumann Gruppe GmbH	1934	1500	10.50%
9	Nagel Logistik Holding GmbH & Co. KG	1935	1135	10.21%
10	Rohde & Schwarz GmbH & Co. KG	1933	1300	10.17%
11	FUCHS PETROLUB AG	1931	1459	10.10%
12	Köster AG	1938	800	10.04%
13	Hörmann KG	1935	1000	10.02%
14	Schnellecke Group AG & Co. KG	1939	632	9.79%
15	Big Dutchman International GmbH	1938	600	9.59%
16	Hirschvogel Holding GmbH	1938	600	9.59%
17	E.G.O. Blanc und Fischer & Co. GmbH	1931	865	9.36%
18	ROTO FRANK AG	1935	609	9.27%
19	Schwing GmbH	1934	640	9.24%
20	Deutsche See GmbH	1939	420	9.14%
21	Wolf & Müller Holding GmbH & Co. KG	1936	500	9.08%
22	riha Richard Hartinger Getränke GmbH Co. Handels-KG	1934	530	8.96%
23	KARL MAYER Textilmaschinenfabrik GmbH	1937	424	8.94%
24	AL-KO Kober AG	1931	605	8.85%
25	Rudolf Wild GmbH & Co. KG	1931	598	8.83%
26	Kamax-Werke Rudolf Kellermann GmbH & Co. KG	1935	430	8.75%
27	WKW Automotive	1940	296	8.70%
28	Linde + Wiemann GmbH-KG	1939	310	8.66%
29	Fritz Schäfer GmbH	1937	318	8.50%
30	hülsta-werke Hüls GmbH & Co. KG	1940	254	8.45%
31	Reinert Beteiligungsgesellschaft mbH	1931	350	8.08%
32	Hipp GmbH & Co. Vertrieb KG	1932	310	7.99%

(continued)

Table 8.2 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0 + 3; 2010)
33	Rösler Oberflächentechnik GmbH	1933	250	7.77%
			Average:	9.68%
Family businesses with year of foundation between 1921 and 1930				
1	Dachser GmbH & Co. KG	1930	3800	11.35%
2	STIHL Holding AG & Co. KG	1926	2363	10.21%
3	Festo AG & Co. KG	1925	1800	9.74%
4	Westfalen AG	1923	1668	9.44%
5	TRUMPF GmbH & Co. KG	1923	1663	9.44%
6	NDW Beteiligungsgesellschaft mbH	1929	1050	9.42%
7	Wilhelm Hoyer KG	1924	1341	9.26%
8	HOCHLAND SE	1927	1055	9.23%
9	Phoenix Contact GmbH & Co. KG	1923	1250	9.07%
10	Max Aicher Gruppe	1924	1100	9.00%
11	Max Bögl Bauunternehmung GmbH & Co. KG	1929	750	8.96%
12	Ehrmann AG	1929	685	8.83%
13	Häfele GmbH & Co. KG	1923	881	8.62%
14	Zott Beteiligungs-GmbH	1926	700	8.59%
15	Hans Segmüller Polstermöbelfabrik GmbH & Co. KG	1925	648	8.40%
16	HYMER AG	1923	695	8.32%
17	Friedrich Boysen GmbH & Co. KG	1921	740	8.24%
18	GROB-WERKE GmbH & Co. KG	1926	500	8.14%
19	Nolte moebel-industrie Holding GmbH & Co. KGaA	1923	599	8.13%
20	Hama Hamaphot Hanke & Thomas GmbH & Co.	1923	571	8.07%
21	Marquardt GmbH	1925	464	7.96%
22	Franz Beteiligungsgesellschaft mbH	1924	491	7.96%
23	Küster Holding GmbH	1926	400	7.85%
24	Dr. Theodor Stiebel Werke GmbH & Co. KG	1924	450	7.84%
25	Georg Fritzmeier / GmbH & Co.	1926	380	7.78%
26	Gegenbauer Holding SA & Co. KG	1925	388	7.73%
27	Steil Holding GmbH	1924	400	7.69%
28	TTS Tooltechnix Systems Holding AG	1925	372	7.68%
29	metabo AG	1924	388	7.65%
30	Dr. Schneider Kunststoffwerke GmbH	1927	280	7.45%
31	Bauerfeind AG	1929	250	7.45%
32	Friedrich Zufall GmbH & Co. KG	1928	254	7.40%
33	Johann Hay GmbH & Co. Automobiltechnik	1925	300	7.40%
34	Nehlsen AG	1923	300	7.26%
35	Krohne Messtechnik GmbH & Co. KG	1921	331	7.24%

(continued)

Table 8.2 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0 + 3; 2010)
36	Gebr. Nölke GmbH & Co. KG	1924	273	7.21%
37	SCHOKINAG Schokolade-Industrie Herrmann GmbH & Co. KG	1923	280	7.17%
38	ARBURG GmbH & Co. KG	1923	260	7.08%
39	Schottel GmbH	1921	270	6.99%
40	Optima-Maschinenfabrik Dr. Bühler GmbH & Co.	1922	252	6.97%
			Average:	8.26%
Family businesses with year of foundation between 1911 and 1920				
1	Mahle GmbH	1920	5261	10.60%
2	Brose Fahrzeugteile GmbH & Co. KG	1919	3474	9.98%
3	Dr. Alexander Wacker Familiengesellschaft mbH	1914	4748	9.88%
4	Schmolz & Bickenbach KG	1919	3119	9.85%
5	Haribo GmbH & Co. KG	1920	2426	9.63%
6	Otto Fuchs KG	1919	2421	9.54%
7	Claas KG aA	1913	2476	9.04%
8	Viessmann Werke GmbH & Co. KG	1917	1700	8.93%
9	KAEFER Isoliertechnik GmbH & Co. KG	1918	1200	8.59%
10	heristo holding GmbH	1913	1600	8.54%
11	H&R WASAG Aktiengesellschaft	1919	1057	8.52%
12	Leopold Kostal GmbH & Co. KG	1912	1450	8.36%
13	Detlef Hegemann Aktiengesellschaft	1914	1000	8.08%
14	Muhr und Bender KG	1916	744	7.87%
15	KAESER KOMPRESSOREN GmbH	1919	573	7.78%
16	Otto Bock HealthCare GmbH	1919	557	7.74%
17	Läpple AG	1919	480	7.56%
18	AKG Gruppe	1919	324	7.09%
19	SIEGENIA-AUBI KG	1914	409	7.05%
20	Index-Werke GmbH & Co. KG Hahn & Tesskz	1914	400	7.03%
21	Günther Reh AG	1920	267	6.92%
22	TRILUX GmbH & Co. KG	1912	390	6.88%
23	Ahlers AG	1919	251	6.78%
24	Joh.Winklhofer Beteiligungs GmbH & Co. KG	1916	250	6.60%
25	Alfred Ritter GmbH & Co. KG	1912	300	6.59%
26	PLURADENT AG & Co. KG	1915	256	6.58%
27	Maschinenfabrik Alfing Kessler GmbH	1911	306	6.56%
28	Seyfert GmbH	1912	282	6.52%
29	Johannes Reifenhäuser Holding GmbH & Co. KG	1911	266	6.41%
			Average:	7.98%

(continued)

Table 8.2 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0 + 3; 2010)
Family businesses with year of foundation between 1901 and 1910				
1	Knorr-Bremse AG	1905	3700	8.87%
2	Behr GmbH & Co. KG	1905	3349	8.76%
3	Krieger-Gruppe	1910	1936	8.53%
4	Diehl Stiftung & Co. KG	1902	2725	8.34%
5	Webasto AG	1901	2000	7.97%
6	Melitta Unternehmensgruppe Bentz KG	1908	1301	7.96%
7	KATHREIN-WERKE KG	1909	1135	7.88%
8	August Storck KG	1903	1500	7.79%
9	Bernard Krone Holding GmbH & Co. KG	1906	970	7.52%
10	DORMA Holding GmbH & Co. KGaA	1908	856	7.51%
11	Huf Hülsbeck & Fürst GmbH & Co. KG	1908	847	7.50%
12	Siegwerk GmbH & Co. KG	1906	874	7.41%
13	Merz GmbH & Co. KGaA	1908	673	7.25%
14	Mewa Textil/Service AG	1908	448	6.82%
15	Gretsch-Unitas GmbH	1907	463	6.80%
16	Käserei Champignon Hofmeister GmbH & Co. KG	1908	440	6.80%
17	Kromberg & Schubert GmbH & Co. KG Kabel/Automobiltechnik	1902	550	6.72%
18	FROSTA AG	1905	393	6.52%
19	Ziehl-Abegg AG	1910	310	6.52%
20	Steuler-Industriewerke GmbH	1908	300	6.39%
21	KLENK HOLZ AG	1904	300	6.20%
22	frischli Milchwerke GmbH	1901	321	6.14%
23	ALLGAIER WERKE GmbH	1906	254	6.12%
24	Fränkische Rohrwerke Gebr. Kirchner GmbH & Co. KG	1906	252	6.11%
25	Leistritz AG	1905	260	6.10%
			Average:	7.22%
Family businesses with year of foundation between 1891 and 1900				
1	Dr. August Oetker KG	1891	9457	8.84%
2	Hella KGaA Hueck & Co.	1899	3550	8.41%
3	Miele & Cie. KG	1899	2830	8.19%
4	Unternehmensgruppe Theo Müller GmbH & Co. KG	1896	2200	7.76%
5	Vaillant GmbH	1894	2314	7.70%
6	AUNDE Gruppe	1899	1600	7.62%
7	Dürr Aktiengesellschaft	1895	1261	7.18%
8	Messer Holding GmbH	1898	909	7.02%

(continued)

Table 8.2 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0 + 3; 2010)
9	Deutsche Amphibolin-Werke von Robert Murjahn Stiftung & Co. KG	1895	1000	6.96%
10	VIEGA GmbH & Co. KG	1899	798	6.94%
11	BPW bergische Achsen KG	1898	810	6.90%
12	Leonhard Weiss GmbH & Co. KG	1900	680	6.83%
13	Felix Schoeller Holding GmbH & Co. KG	1895	624	6.51%
14	Schmitz Cargobull AG	1892	666	6.44%
15	ZENTIS GmbH & Co. KG	1893	611	6.41%
16	Ernst Klett AG	1897	465	6.32%
17	NORD-SCHROTT GmbH & Co. KG	1898	420	6.27%
18	Leonhard Kurz Stiftung & Co. KG	1892	487	6.16%
19	Bischof + Klein GmbH & Co. KG	1892	420	6.02%
20	WITTE Automotive GmbH	1899	309	6.01%
21	Gühring OHG	1898	311	5.98%
22	Rafi GmbH & Co. KG	1900	268	5.92%
23	Heller GmbH	1894	339	5.90%
24	Heitkamp BauHolding GmbH	1892	300	5.71%
			Average:	6.83%
Family businesses with year of foundation between 1881 and 1890				
1	Robert Bosch GmbH	1886	47,259	9.98%
2	C.H. Boehringer Sohn AG & Co. KG	1885	12,586	8.73%
3	Drägerwerk AG & Co. KGaA	1889	2177	7.38%
4	Vorwerk & Co. KG	1883	2025	7.04%
5	multiline Textil GmbH	1885	1365	6.78%
6	Hettich Holding GmbH & Co. oHG	1888	780	6.42%
7	Harry Brot GmbH	1890	669	6.36%
8	MEGGLE AG	1882	700	6.09%
9	J. Bauer GmbH & Co. KG	1887	548	6.07%
10	Bahlsen GmbH & Co. KG	1889	501	6.06%
11	Hugo Kern und Liebers GmbH & Co. KG	1888	430	5.89%
12	G. Siempelkamp GmbH & Co. KG	1883	494	5.83%
13	Haver & Boecker	1887	373	5.73%
14	Witzenmann GmbH	1885	395	5.71%
15	Bohnhorst Agrarhandel GmbH	1882	439	5.70%
16	Amazonen-Werke H. Dreyer GmbH & Co. KG	1883	405	5.67%
17	O. & L. Sels GmbH & Co. KG	1890	300	5.64%
18	H. Kemper GmbH & Co. KG	1888	317	5.62%
19	Ravensburger AG	1883	313	5.45%
			Average:	6.43%

(continued)

Table 8.2 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0 + 3; 2010)
Family businesses with year of foundation between 1871 and 1880				
1	Henkel AG & Co. KGaA	1876	15,092	8.38%
2	Benteler AG	1876	6105	7.64%
3	Scholz AG	1872	4000	7.12%
4	Hellmann Worldwide Logistics GmbH & Co. KG	1871	2400	6.68%
5	Fiege Stiftung & Co. KG	1873	1487	6.38%
6	Getreide AG	1872	1152	6.14%
7	ElringKlinger AG	1879	796	6.09%
8	WILO SE	1872	1021	6.05%
9	Papierfabrik Palm GmbH & Co. KG	1872	1000	6.03%
10	PUTSCH GmbH & Co. KG	1871	970	5.98%
11	Karlsberg Brauerei KG Weber	1878	670	5.92%
12	Geobra Brandstätter GmbH & Co. KG	1876	559	5.70%
13	Albert Handtmann Holding GmbH & Co. KG	1873	490	5.51%
14	Mast-Jägermeister AG	1878	375	5.44%
15	Leitz-Gruppe	1876	400	5.44%
16	Waskönig + Walter Kabel-Werk GmbH	1873	374	5.30%
17	Gustav Stabernach GmbH	1879	300	5.29%
18	F. S. Fehrer GmbH & Co. KG	1875	340	5.28%
19	Wrede Industrieholding GmbH & Co. KG	1880	270	5.24%
20	DIEFFENBACHER GmbH Maschinen- und Anlagenbau	1873	330	5.20%
21	H. Stoll GmbH & Co. KG	1873	329	5.20%
22	Johann Bunte Bauunternehmung GmbH & Co. KG	1872	277	5.04%
23	Scheidt & Bachmann GmbH	1872	254	4.97%
			Average:	5.91%
Family businesses with year of foundation between 1861 and 1870				
1	Voith AG	1867	5198	7.12%
2	B. Braun Melsungen AG	1864	4423	6.88%
3	Eberspächer Holding GmbH & Co. KG	1865	1934	6.30%
4	Pfeifer & Langen KG	1870	730	5.73%
5	Germanischer Lloyd AG	1867	741	5.65%
6	Sartorius AG	1870	659	5.65%
7	Borgers AG	1866	627	5.50%
8	EUROKAI KGaA	1865	600	5.44%
9	Maschinenfabrik Reinhausen GmbH	1868	500	5.38%
10	Windmöller & Hölscher KG	1869	440	5.31%
11	Bizerba GmbH & Co. KG	1868	400	5.21%

(continued)

Table 8.2 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0 + 3; 2010)
12	Schwanhäußer Industrie Holding GmbH & Co. KG	1865	396	5.13%
13	GEZE GmbH	1863	400	5.09%
14	KEMNA BAU Anreaea GmbH & Co. KG	1867	320	5.02%
15	Aerzener Maschinenfabrik GmbH	1864	290	4.88%
16	Hamberger Industriewerke GmbH	1866	260	4.84%
17	Hassia Mineralquellen GmbH & Co. KG	1864	250	4.77%
			Average:	5.52%
Family businesses with year of foundation between 1851 and 1860				
1	HERAEUS HOLDING GmbH	1851	22,025	7.53%
2	Georgsmarienhütte Holding GmbH	1856	2404	6.17%
3	Pampus Industriebeteiligungen GmbH & Co. KG	1856	1591	5.88%
4	Giesecke & Devrient Holding GmbH	1852	1688	5.81%
5	Eckes Granini Gruppe	1857	852	5.47%
6	KWS SAAT AG	1856	754	5.36%
7	Stute Gruppe	1853	495	5.00%
8	Ireks GmbH	1856	430	4.97%
9	Groz-Beckert KG	1852	433	4.89%
10	Lohmann GmbH & Co. KG	1851	424	4.86%
11	SIMONA AG	1857	267	4.67%
			Average:	5.51%
Family businesses with year of foundation between 1841 and 1850				
1	Freudenberg & Co. KG	1849	5481	6.51%
2	Wilh. Werhahn KG	1842	2433	5.78%
3	SCHWENK Zement KG	1847	712	5.11%
4	DALLI-WERKE GmbH & Co. KG	1845	725	5.08%
5	LEIPA Georg Leinfelder GmbH	1847	660	5.06%
6	Veritas AG	1849	505	4.93%
7	GRIESSON de Beukelaer GmbH & Co. KG	1850	477	4.91%
8	Grillo-Werke AG	1842	539	4.83%
9	Ferdinand Bilstein GmbH & Co. KG	1844	280	4.45%
10	Develey Holding GmbH & Co. Beteiligungs KG	1845	250	4.39%
			Average:	5.11%
Family businesses with year of foundation before 1840				
1	MERCK KGaA	1827	9290	6.21%
2	Krauss-Maffei Wegmann GmbH & Co. KG	1838	1565	5.41%
3	SMS GmbH	1819	3036	5.39%
4	Franz Haniel & Cie. GmbH	1756	27,432	5.34%
5	Wieland-Werke AG	1820	2653	5.33%
6	Schuler AG	1839	650	4.89%

(continued)

Table 8.2 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0 + 3; 2010)
7	Gebr. Röchling KG	1822	1003	4.82%
8	Bitburger Holding GmbH	1817	1000	4.74%
9	DÖHLER GmbH	1838	305	4.40%
10	MEYER NEPTUN GmbH	1795	950	4.38%
11	Köhler Holding GmbH & Co. KG	1807	640	4.35%
12	Krombacher Brauerei Bernhard Schadeberg GmbH & Co. KG	1803	647	4.30%
13	Kirchhoff Gruppe	1785	870	4.22%
14	UVEX WINTER HOLDING GmbH & Co. KG	1826	304	4.21%
15	Duravit Gruppe	1817	328	4.13%
16	C. & A. Veltins GmbH & Co. KG	1824	268	4.11%
17	MHM Holding GmbH	1765	698	3.90%
18	Villeroy & Boch AG	1748	714	3.76%
19	Warsteiner Brauerei Haus Cramer KG	1753	563	3.71%
20	Europa-Park Freizeit- und Familienpark Mack KG	1780	309	3.69%
21	Faber-Castell AG	1761	451	3.68%
22	H. Butting GmbH & Co. KG	1777	250	3.56%
23	Möller Group GmbH & Co. KG	1762	307	3.53%
24	Oettinger Brauerei GmbH	1731	420	3.43%
25	Zollern GmbH & Co. KG	1708	498	3.35%
26	Aachener Printen- und Schokoladenfabrik Henry Lambertz GmbH & Co. KG	1688	536	3.26%
27	M. DuMont Schauberg GmbH & Co. KG	1620	705	3.04%
28	William Prym GmbH & Co. KG	1530	360	2.62%
			Average:	4.21%

Table 8.3 List of Investigated Family Enterprises by Growth Rate (2006 vs. 2010)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0+3; 2010)	Total sales in 2006 (mEUR)	CAGR (t_0+3; 2006)	2006 > 2010
1	SOLARWATT AG	1993	385	40.43%	145	45.38%	Y
2	Enercon GmbH	1984	3,570	36.47%	1,900	40.72%	Y
3	Ströer Out-of-Home Media AG	1990	531	35.45%	440	45.75%	Y
4	Asklepios Kliniken GmbH	1984	2,305	34.01%	1,649	39.73%	Y
5	BMV Mineralöl Versorgungsgesellschaft mbH	1986	1,261	33.71%	2,137	46.86%	Y
6	TRIMET ALUMINIUM AG	1985	871	30.01%	530	33.85%	Y
7	Schön Klinik Verwaltung GmbH	1985	558	27.52%	344	30.84%	Y
8	MEDION AG	1982	1,007	27.07%	1,605	35.57%	Y
9	CRONIMET Holding GmbH	1980	1,400	26.54%	3,081	36.00%	Y
10	KOHL MEDICAL AG	1979	1,008	24.17%	706	26.73%	Y
11	Centrotec Sustainable AG	1981	480	22.61%	396	25.98%	Y
12	HERRENKNECHT AG	1977	952	22.35%	646	24.26%	Y
13	Krüger GmbH & Co. KG	1971	1,580	20.35%	1,183	22.01%	Y
14	Fielmann AG	1972	1,159	19.88%	793	21.18%	Y
15	Gerry Weber International AG	1973	622	18.33%	443	19.61%	Y
16	Heitkamp & Thumann KG	1978	280	18.18%	350	22.31%	Y
17	GOLDBECK GmbH	1969	1,050	18.07%	550	18.13%	Y
18	Damp Holding AG	1973	504	17.62%	420	19.40%	Y
19	Peri-Werk Artur Schwörer GmbH & Co. KG	1969	825	17.34%	922	19.88%	Y
20	Conditorei Coppenrath & Wiese GmbH & Co. KG	1975	340	17.26%	290	19.21%	Y
21	Alba AG	1968	921	17.24%	778	18.77%	Y
22	P-D management Industries-Technologies GmbH	1976	285	17.14%	333	20.48%	Y
23	Wortmann Schuh-Holding KG	1967	950	16.92%	625	17.57%	Y
24	Horstmann Gruppe Bielefeld	1975	300	16.82%	331	19.75%	Y
25	Marquard & Bahls Aktiengesellschaft	1947	12,588	16.49%	10,834	17.43%	Y
26	Friedhelm Loh Stiftung & Co. KG	1961	1,800	16.41%	1,789	18.05%	Y
27	RATIONAL AG	1973	350	16.40%	284	17.90%	Y
28	VEKA AG	1969	601	16.39%	691	18.90%	Y
29	ebm-Papst Gruppe	1963	1,311	16.30%	791	16.58%	Y
30	INA-Holding Schaeffler KG	1946	9,500	15.71%	8,314	16.61%	Y
31	ifm electronic GmbH	1969	470	15.66%	354	16.65%	Y
32	Lindner Holding KGaA	1965	770	15.59%	594	16.54%	Y
33	Fritz Dräxlmaier GmbH & Co. KG	1958	1,750	15.40%	1,550	16.54%	Y
34	Adolf Würth GmbH & Co. KG (Würth-Gruppe)	1945	8,633	15.29%	7,748	16.20%	Y
35	Zollner Elektronik AG	1965	685	15.28%	554	16.34%	Y
36	Gauselmann-Gruppe	1957	1,540	14.83%	1,007	15.14%	Y
37	Tele-München Fernseh-GmbH & Co. Produktionsgesellschaft	1970	313	14.82%	267	16.16%	Y
38	Wernsing Feinkost GmbH	1962	750	14.56%	575	15.32%	Y
39	Hager SE	1955	1,420	14.12%	1,069	14.69%	Y
40	KRONES AG	1951	2,173	14.04%	1,911	14.90%	Y
41	GP Günter Papenburg AG	1963	530	13.98%	612	15.85%	Y
42	Hobby-Wohnwagenwerk Ing. Harald Striewski GmbH	1967	331	13.95%	272	14.96%	Y
43	Sarstedt AG & Co.	1961	645	13.90%	460	14.38%	Y
44	Putzmeister Holding GmbH	1958	900	13.88%	903	15.18%	Y
45	Schüco International KG	1951	1,926	13.80%	1,306	14.08%	Y
46	Berner GmbH	1957	948	13.74%	717	14.31%	Y
47	Schörghuber Stiftung & Co. Holding KG	1954	1,120	13.38%	1,641	15.40%	Y
48	Einhell Germany AG	1964	365	13.31%	412	15.09%	Y
49	AUMA Riester Verwaltungsgesellschaft mbH	1964	360	13.28%	235	13.48%	Y
50	apetito-Gruppe	1958	670	13.21%	522	13.82%	Y
51	Agrarfrost GmbH & Co. KG	1967	250	13.17%	180	13.68%	Y
52	Wirtgen GmbH	1961	475	13.16%	370	13.81%	Y
53	Lapp Holding AG	1957	633	12.84%	610	13.92%	Y
54	H Y D A C Technology GmbH	1963	330	12.79%	236	13.19%	Y
55	Körber AG	1946	1,747	12.59%	1,573	13.31%	Y
56	Südpack Gruppe	1964	270	12.54%	228	13.40%	Y
57	Gausepohl Fleisch GmbH	1957	500	12.32%	352	12.59%	Y
58	Knauf Gips KG	1932	5,500	12.16%	4,600	12.60%	Y
59	Hörmann Holding GmbH & Co. KG	1955	561	12.14%	420	12.53%	Y
60	Mann + Hummel Holding GmbH	1941	2,180	12.10%	1,596	12.36%	Y
61	DKV EURO SERVICE GmbH & Co. KG	1934	4,321	12.09%	3,730	12.59%	Y
62	STO AG	1955	541	12.06%	855	14.17%	Y
63	Dr. Johannes Heidenhain GmbH	1948	1,000	11.93%	873	12.56%	Y
64	Jakob Müller GmbH & Co. KG	1946	1,200	11.91%	1,529	13.25%	Y
65	Schütz GmbH & Co. KGaA	1958	365	11.84%	400	13.16%	Y
66	M U L T I V A C Sepp Haggenmüller GmbH	1961	262	11.74%	237	12.63%	Y
67	Storopack Hans Reichenecker GmbH	1959	299	11.60%	285	12.58%	Y
68	Grünenthal Pharma GmbH & Co. KG	1946	910	11.41%	813	12.03%	Y
69	GETRAG Getriebe- und Zahnradfabrik Hermann Hagenmeyer GmbH & Cie. KG	1935	2,500	11.41%	2,322	11.98%	Y
70	Hoyer GmbH Internationale Fachspedition	1946	904	11.40%	837	12.08%	Y
71	Dachser GmbH & Co. KG	1930	3,800	11.35%	3,100	11.69%	Y
72	Neue Dorint GmbH	1959	265	11.33%	220	11.93%	Y
73	H. Gautzsch GmbH & Co. KG	1957	310	11.27%	224	11.52%	Y
74	Berger Holding GmbH	1955	360	11.20%	335	12.01%	Y
75	WAGO Kontakttechnik GmbH & Co. KG	1951	503	11.15%	387	11.49%	Y
76	WAREMA Renkhoff SE	1955	351	11.15%	268	11.50%	Y
77	Willi Betz Unternehmensgruppe	1945	850	11.13%	762	11.72%	Y
78	WOCO GmbH & Co. KG	1956	310	11.08%	614	13.66%	Y
79	Hans Geis GmbH & Co. Internationale Spedition	1948	631	11.07%	517	11.51%	Y
80	Sick AG	1946	749	11.06%	646	11.58%	Y
81	nobilia-Werke J. Stickling GmbH & Co. KG	1945	783	10.98%	618	11.32%	Y
82	fischerwerke GmbH & Co. KG	1948	582	10.92%	465	11.30%	Y
83	Heinrich Schmid Gruppe	1955	284	10.71%	231	11.16%	Y
84	Fritz Winter Eisengießerei GmbH & Co. KG	1951	400	10.71%	545	12.21%	Y
85	Stulz Holding GmbH	1947	550	10.66%	600	11.62%	Y
86	Alfred Kärcher GmbH & Co. KG	1935	1,526	10.65%	1,211	10.93%	Y
87	Mahle GmbH	1920	5,261	10.60%	4,314	10.87%	Y
88	SEW-EURODRIVE GmbH & Co. KG	1931	2,000	10.55%	1,500	10.72%	Y
89	Siegfried Jacob Metallwerke GmbH & Co. KG	1953	308	10.53%	225	10.71%	Y

(continued)

Table 8.3 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0+3; 2010)	Total sales in 2006 (mEUR)	CAGR (t_0+3; 2006)	2006 > 2010
90	Neumann Gruppe GmbH	1934	1,500	10.50%	1,281	10.88%	Y
91	Fuchs Gewürze GmbH	1952	330	10.50%	450	12.01%	Y
92	ACO Severin Ahlmann GmbH & Co. KG	1946	545	10.49%	506	11.11%	Y
93	Trox GmbH	1951	350	10.45%	299	10.95%	Y
94	Refratechnik Holding GmbH	1950	365	10.37%	295	10.74%	Y
95	Aluminiumschmelzwerk Oetinger GmbH	1946	500	10.34%	633	11.54%	Y
96	CHT/BEZEMA-Gruppe	1953	265	10.22%	282	11.20%	Y
97	STIHL Holding AG & Co. KG	1926	2,363	10.21%	2,019	10.54%	Y
98	Nagel Logistik Holding GmbH & Co. KG	1935	1,135	10.21%	1,200	10.92%	Y
99	Malerwerkstätten Heinrich Schmid GmbH & Co. KG	1952	284	10.20%	212	10.40%	Y
100	Wika Alexander Wiegand SE & Co. KG	1946	460	10.19%	418	10.75%	Y
101	Wanzl Metallwarenfabrik GmbH	1947	420	10.17%	292	10.22%	Y
102	Rohde & Schwarz GmbH & Co. KG	1933	1,300	10.17%	1,328	10.80%	Y
103	Lenze SE	1947	417	10.16%	529	11.37%	Y
104	FUCHS PETROLUB AG	1931	1,459	10.10%	1,323	10.53%	Y
105	Sennheiser electronic GmbH & Co. KG	1945	468	10.08%	357	10.29%	Y
106	THIMM Holding GmbH & Co. KG	1949	333	10.04%	237	10.13%	Y
107	Hörmann KG	1935	1,000	10.02%	1,000	10.63%	Y
108	Klaus Faber AG	1950	300	10.00%	308	10.83%	Y
109	Robert Bosch GmbH	1886	47,259	9.98%	43,684	10.26%	Y
110	Gabor Shoes AG	1949	319	9.96%	243	10.18%	Y
111	Dr. Alexander Wacker Familiengesellschaft mbH	1914	4,748	9.88%	3,337	9.91%	Y
112	HARTING KGaA	1945	413	9.86%	313	10.05%	Y
113	Schmolz & Bickenbach KG	1919	3,119	9.85%	3,517	10.49%	Y
114	Schnellecke Group AG & Co. KG	1939	632	9.79%	711	10.62%	Y
115	Festo AG & Co. KG	1925	1,800	9.74%	1,500	10.00%	Y
116	Bürkert Verwaltungs-Gesellschaft mbH	1946	345	9.68%	288	10.04%	Y
117	Hirschvogel Holding GmbH	1938	600	9.59%	441	9.69%	Y
118	Otto Fuchs KG	1919	2,421	9.54%	2,151	9.85%	Y
119	Westfalen AG	1923	1,668	9.44%	1,192	9.48%	Y
120	TRUMPF GmbH & Co. KG	1923	1,663	9.44%	1,645	9.91%	Y
121	NDW Beteiligungsgesellschaft mbH	1929	1,050	9.42%	1,149	10.08%	Y
122	E.G.O. Blanc und Fischer & Co. GmbH	1931	865	9.36%	915	9.98%	Y
123	ROTO FRANK AG	1935	609	9.27%	601	9.81%	Y
124	Wilhelm Hoyer KG	1924	1,341	9.26%	1,017	9.36%	Y
125	Schwing GmbH	1934	640	9.24%	754	10.05%	Y
126	HOCHLAND SE	1927	1,055	9.23%	927	9.54%	Y
127	Deutsche See GmbH	1939	420	9.14%	372	9.53%	Y
128	Wolf & Müller Holding GmbH & Co. KG	1936	500	9.08%	460	9.51%	Y
129	Phoenix Contact GmbH & Co. KG	1923	1,250	9.07%	941	9.16%	Y
130	Claas KG aA	1913	2,476	9.04%	2,350	9.40%	Y
131	Max Aicher Gruppe	1924	1,100	9.00%	785	9.01%	Y
132	riha Richard Hartinger Getränke GmbH Co. Handels-KG	1934	530	8.96%	609	9.71%	Y
133	Max Bögl Bauunternehmung GmbH & Co. KG	1929	750	8.96%	690	9.33%	Y
134	KARL MAYER Textilmaschinenfabrik GmbH	1937	424	8.94%	340	9.14%	Y
135	Viessmann Werke GmbH & Co. KG	1917	1,700	8.93%	1,400	9.12%	Y
136	Knorr-Bremse AG	1905	3,700	8.87%	3,121	9.06%	Y
137	AL-KO Kober AG	1931	605	8.85%	662	9.49%	Y
138	Dr. August Oetker KG	1891	9,457	8.84%	7,149	8.90%	Y
139	Rudolf Wild GmbH & Co. KG	1931	598	8.83%	514	9.11%	Y
140	Ehrmann AG	1929	685	8.83%	547	8.99%	Y
141	Behr GmbH & Co. KG	1905	3,349	8.76%	3,188	9.08%	Y
142	Kamax-Werke Rudolf Kellermann GmbH & Co. KG	1935	430	8.75%	398	9.16%	Y
143	C.H. Boehringer Sohn AG & Co. KG	1885	12,586	8.73%	10,574	8.88%	Y
144	WKW Automotive	1940	296	8.70%	263	9.06%	Y
145	Linde + Wiemann GmbH-KG	1939	310	8.66%	260	8.93%	Y
146	Häfele GmbH & Co. KG	1923	881	8.62%	720	8.80%	Y
147	KAEFER Isoliertechnik GmbH & Co. KG	1918	1,200	8.59%	940	8.70%	Y
148	Zott Beteiligungs-GmbH	1926	700	8.59%	620	8.88%	Y
149	heristo holding GmbH	1913	1,600	8.54%	1,340	8.72%	Y
150	Krieger-Gruppe	1910	1,936	8.53%	1,500	8.62%	Y
151	H&R WASAG Aktiengesellschaft	1919	1,057	8.52%	817	8.61%	Y
152	Fritz Schäfer GmbH	1937	318	8.50%	350	9.18%	Y
153	hülsta-werke Hüls GmbH & Co. KG	1940	254	8.45%	295	9.26%	Y
154	Hella KGaA Hueck & Co.	1899	3,550	8.41%	3,395	8.70%	Y
155	Hans Segmüller Polstermöbelfabrik GmbH & Co. KG	1925	648	8.40%	689	8.93%	Y
156	Henkel AG & Co. KGaA	1876	15,092	8.38%	12,740	8.51%	Y
157	Leopold Kostal GmbH & Co. KG	1912	1,450	8.36%	1,177	8.49%	Y
158	Diehl Stiftung & Co. KG	1902	2,725	8.34%	2,127	8.42%	Y
159	HYMER AG	1923	695	8.32%	763	8.88%	Y
160	GROB-WERKE GmbH & Co. KG	1926	500	8.14%	400	8.27%	Y
161	Nolte moebel-industrie Holding GmbH & Co. KGaA	1923	599	8.13%	570	8.48%	Y
162	Reinert Beteiligungsgesellschaft mbH	1931	350	8.08%	319	8.40%	Y
163	Hama Hamaphot Hanke & Thomas GmbH & Co.	1923	571	8.07%	476	8.24%	Y
164	Hipp GmbH & Co. Vertrieb KG	1932	310	7.99%	270	8.25%	Y
165	Webasto AG	1901	2,000	7.97%	1,555	8.02%	Y
166	Marquardt GmbH	1925	464	7.96%	414	8.23%	Y
167	Melitta Unternehmensgruppe Bentz KG	1908	1,301	7.96%	1,200	8.21%	Y
168	Franz Beteiligungsgesellschaft mbH	1924	491	7.96%	417	8.15%	Y
169	KATHREIN-WERKE KG	1909	1,135	7.88%	1,300	8.38%	Y
170	Muhr und Bender KG	1916	744	7.87%	710	8.19%	Y
171	Küster Holding GmbH	1926	400	7.85%	365	8.14%	Y
172	Dr. Theodor Stiebel Werke GmbH & Co. KG	1924	450	7.84%	381	8.03%	Y
173	August Storck KG	1903	1,500	7.79%	1,200	7.88%	Y
174	Georg Fritzmeier / GmbH & Co.	1926	380	7.78%	400	8.27%	Y
175	Rösler Oberflächentechnik GmbH	1933	250	7.77%	280	8.40%	Y
176	Unternehmensgruppe Theo Müller GmbH & Co. KG	1896	2,200	7.76%	2,135	8.03%	Y
177	Otto Bock HealthCare GmbH	1919	557	7.74%	430	7.79%	Y
178	Gegenbauer Holding SA & Co. KG	1925	388	7.73%	308	7.82%	Y
179	Vaillant GmbH	1894	2,314	7.70%	1,997	7.85%	Y
180	Steil Holding GmbH	1924	400	7.69%	478	8.33%	Y
181	TTS Tooltechnix Systems Holding AG	1925	372	7.68%	344	7.97%	Y
182	metabo AG	1924	388	7.65%	375	8.01%	Y

(continued)

Table 8.3 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0+3; 2010)	Total sales in 2006 (mEUR)	CAGR (t_0+3; 2006)	2006 > 2010
183	Benteler AG	1876	6,105	7.64%	5,598	7.81%	Y
184	AUNDE Gruppe	1899	1,600	7.62%	1,600	7.93%	Y
185	Bernard Krone Holding GmbH & Co. KG	1906	970	7.52%	978	7.85%	Y
186	DORMA Holding GmbH & Co. KGaA	1908	856	7.51%	767	7.71%	Y
187	Huf Hülsbeck & Fürst GmbH & Co. KG	1908	847	7.50%	740	7.67%	Y
188	Dr. Schneider Kunststoffwerke GmbH	1927	280	7.45%	244	7.66%	Y
189	Siegwerk GmbH & Co. KG	1906	874	7.41%	870	7.72%	Y
190	Friedrich Zufall GmbH & Co. KG	1928	254	7.40%	192	7.40%	Y
191	Johann Hay GmbH & Co. Automobiltechnik	1925	300	7.40%	226	7.40%	Y
192	Drägerwerk AG & Co. KGaA	1889	2,177	7.38%	1,801	7.47%	Y
193	Nehlsen AG	1923	300	7.26%	231	7.28%	Y
194	Krohne Messtechnik GmbH & Co. KG	1921	331	7.24%	266	7.32%	Y
195	Gebr. Nölke GmbH & Co. KG	1924	273	7.21%	300	7.71%	Y
196	Dürr Aktiengesellschaft	1895	1,261	7.18%	1,361	7.53%	Y
197	AKG Gruppe	1919	324	7.09%	250	7.11%	Y
198	ARBURG GmbH & Co. KG	1923	260	7.08%	327	7.74%	Y
199	Vorwerk & Co. KG	1883	2,025	7.04%	1,836	7.19%	Y
200	Index-Werke GmbH & Co. KG Hahn & Tesskz	1914	400	7.03%	400	7.35%	Y
201	VIEGA GmbH & Co. KG	1899	798	6.94%	726	7.12%	Y
202	Günther Reh AG	1920	267	6.92%	260	7.22%	Y
203	BPW bergische Achsen KG	1898	810	6.90%	743	7.09%	Y
204	TRILUX GmbH & Co. KG	1912	390	6.88%	314	6.94%	Y
205	Leonhard Weiss GmbH & Co. KG	1900	680	6.83%	530	6.85%	Y
206	Mewa Textil/Service AG	1908	448	6.82%	372	6.90%	Y
207	Gretsch-Unitas GmbH	1907	463	6.80%	450	7.06%	Y
208	multiline Textil GmbH	1885	1,365	6.78%	1,328	6.99%	Y
209	Ahlers AG	1919	251	6.78%	246	7.09%	Y
210	Kromberg & Schubert GmbH & Co. KG Kabel/Automobiltechnik	1902	550	6.72%	548	6.99%	Y
211	Hellmann Worldwide Logistics GmbH & Co. KG	1871	2,400	6.68%	2,600	6.95%	Y
212	Joh.Winklhofer Beteiligungs GmbH & Co. KG	1916	250	6.60%	200	6.64%	Y
213	Alfred Ritter GmbH & Co. KG	1912	300	6.59%	281	6.81%	Y
214	PLURADENT AG & Co. KG	1915	256	6.58%	230	6.75%	Y
215	FROSTA AG	1905	393	6.52%	307	6.53%	Y
216	Ziehl-Abegg AG	1910	310	6.52%	262	6.62%	Y
217	Seyfert GmbH	1912	282	6.52%	248	6.67%	Y
218	Freudenberg & Co. KG	1849	5,481	6.51%	5,053	6.63%	Y
219	Felix Schoeller Holding GmbH & Co. KG	1895	624	6.51%	699	6.87%	Y
220	Schmitz Cargobull AG	1892	666	6.44%	1,308	7.33%	Y
221	Hettich Holding GmbH & Co. oHG	1888	780	6.42%	621	6.44%	Y
222	Johannes Reifenhäuser Holding GmbH & Co. KG	1911	266	6.41%	289	6.79%	Y
223	ZENTIS GmbH & Co. KG	1893	611	6.41%	555	6.55%	Y
224	Steuler-Industriewerke GmbH	1908	300	6.39%	243	6.43%	Y
225	Fiege Stiftung & Co. KG	1873	1,487	6.38%	1,750	6.71%	Y
226	Ernst Klett AG	1897	465	6.32%	407	6.43%	Y
227	Eberspächer Holding GmbH & Co. KG	1865	1,934	6.30%	2,023	6.52%	Y
228	KLENK HOLZ AG	1904	300	6.20%	466	6.93%	Y
229	Georgsmarienhütte Holding GmbH	1856	2,404	6.17%	2,254	6.29%	Y
230	Leonhard Kurz Stiftung & Co. KG	1892	487	6.16%	410	6.22%	Y
231	frischli Milchwerke GmbH	1901	321	6.14%	285	6.26%	Y
232	ALLGAIER WERKE GmbH	1906	254	6.12%	242	6.32%	Y
233	Fränkische Rohrwerke Gebr. Kirchner GmbH & Co. KG	1906	252	6.11%	245	6.34%	Y
234	Leistritz AG	1905	260	6.10%	275	6.41%	Y
235	MEGGLE AG	1882	700	6.09%	559	6.10%	Y
236	Bahlsen GmbH & Co. KG	1889	501	6.06%	522	6.32%	Y
237	WILO SE	1872	1,021	6.05%	873	6.11%	Y
238	WITTE Automotive GmbH	1899	309	6.01%	321	6.29%	Y
239	PUTSCH GmbH & Co. KG	1871	970	5.98%	1,300	6.40%	Y
240	Karlsberg Brauerei KG Weber	1878	670	5.92%	614	6.04%	Y
241	Rafi GmbH & Co. KG	1900	268	5.92%	343	6.40%	Y
242	Heller GmbH	1894	339	5.90%	327	6.09%	Y
243	Hugo Kern und Liebers GmbH & Co. KG	1888	430	5.89%	404	6.04%	Y
244	G. Siempelkamp GmbH & Co. KG	1883	494	5.83%	412	5.87%	Y
245	Wilh. Werhahn KG	1842	2,433	5.78%	2,436	5.93%	Y
246	Haver & Boecker	1887	373	5.73%	308	5.76%	Y
247	Pfeifer & Langen KG	1870	730	5.73%	644	5.80%	Y
248	H. Kemper GmbH & Co. KG	1888	317	5.62%	340	5.89%	Y
249	Albert Handtmann Holding GmbH & Co. KG	1873	490	5.51%	430	5.58%	Y
250	Eckes Granini Gruppe	1857	852	5.47%	818	5.60%	Y
251	Ravensburger AG	1883	313	5.45%	282	5.54%	Y
252	Mast-Jägermeister AG	1878	375	5.44%	312	5.47%	Y
253	Leitz-Gruppe	1876	400	5.44%	590	5.93%	Y
254	EUROKAI KGaA	1865	600	5.44%	582	5.57%	Y
255	SMS GmbH	1819	3,036	5.39%	2,826	5.47%	Y
256	Maschinenfabrik Reinhausen GmbH	1868	500	5.38%	408	5.39%	Y
257	Franz Haniel & Cie. GmbH	1756	27,432	5.34%	27,740	5.44%	Y
258	Wieland-Werke AG	1820	2,653	5.33%	2,504	5.42%	Y
259	Windmöller & Hölscher KG	1869	440	5.31%	404	5.41%	Y
260	Waskönig+Walter Kabel-Werk GmbH	1873	374	5.30%	366	5.45%	Y
261	F. S. Fehrer GmbH & Co. KG	1875	340	5.28%	400	5.58%	Y
262	Wrede Industrieholding GmbH & Co. KG	1880	270	5.24%	257	5.37%	Y
263	Bizerba GmbH & Co. KG	1868	400	5.21%	410	5.39%	Y
264	SCHWENK Zement KG	1847	712	5.11%	765	5.29%	Y
265	GEZE GmbH	1863	400	5.09%	360	5.16%	Y
266	Johann Bunte Bauunternehmung GmbH & Co. KG	1872	277	5.04%	248	5.11%	Y
267	Stute Gruppe	1853	495	5.00%	469	5.10%	Y
268	Scheidt & Bachmann GmbH	1872	254	4.97%	227	5.04%	Y
269	GRIESSON de Beukelaer GmbH & Co. KG	1850	477	4.91%	402	4.93%	Y
270	Groz-Beckert KG	1852	433	4.89%	470	5.08%	Y
271	Schuler AG	1839	650	4.89%	563	4.92%	Y
272	Lohmann GmbH & Co. KG	1851	424	4.86%	385	4.92%	Y
273	Hamberger Industriewerke GmbH	1866	260	4.84%	237	4.92%	Y
274	Grillo-Werke AG	1842	539	4.83%	665	5.09%	Y
275	Gebr. Röchling KG	1822	1,003	4.82%	1,051	4.96%	Y

(continued)

Table 8.3 (continued)

#	Family business	Year of foundation (t_0)	Total sales in 2010 (mEUR)	CAGR (t_0+3; 2010)	Total sales in 2006 (mEUR)	CAGR (t_0+3; 2006)	2006 > 2010
276	Hassia Mineralquellen GmbH & Co. KG	1864	250	4.77%	255	4.92%	Y
277	Bitburger Holding GmbH	1817	1,000	4.74%	1,051	4.87%	Y
278	SIMONA AG	1857	267	4.67%	263	4.78%	Y
279	DÖHLER GmbH	1838	305	4.40%	271	4.43%	Y
280	Köhler Holding GmbH & Co. KG	1807	640	4.35%	601	4.40%	Y
281	Krombacher Brauerei Bernhard Schadeberg GmbH & Co. KG	1803	647	4.30%	573	4.32%	Y
282	UVEX WINTER HOLDING GmbH & Co. KG	1826	304	4.21%	268	4.23%	Y
283	C. & A. Veltins GmbH & Co. KG	1824	268	4.11%	270	4.21%	Y
284	MHM Holding GmbH	1765	698	3.90%	718	3.98%	Y
285	Villeroy & Boch AG	1748	714	3.76%	815	3.87%	Y
286	Warsteiner Brauerei Haus Cramer KG	1753	563	3.71%	535	3.75%	Y
287	H. Butting GmbH & Co. KG	1777	250	3.56%	395	3.84%	Y
288	Möller Group GmbH & Co. KG	1762	307	3.53%	455	3.76%	Y
289	William Prym GmbH & Co. KG	1530	360	2.62%	356	2.64%	Y
1	SMA Solar Technologies AG	1981	1,920	29.07%	194	22.13%	N
2	B. & C. Tönnies Fleischwerk GmbH & Co. KG	1971	4,300	23.65%	1,250	22.21%	N
3	Centrotherm photovoltaics AG	1976	624	20.04%	109	15.77%	N
4	Biotronik SE & Co. KG	1963	455	13.59%	265	13.51%	N
5	Rethmann AG & Co. KG	1934	9,300	13.26%	4,736	12.97%	N
6	Wepa Papierfabrik P. Krengel GmbH & Co. KG	1948	950	11.83%	328	10.61%	N
7	Max Weishaupt GmbH	1952	483	11.25%	265	10.88%	N
8	Karl Storz GmbH & Co. KG	1945	870	11.17%	521	11.00%	N
9	PHW-Gruppe LOHMANN & Co. AG	1932	2,100	10.75%	1,272	10.60%	N
10	Heinrich J. Kesseböhmer KG	1954	295	10.61%	168	10.26%	N
11	Köster AG	1938	800	10.04%	447	9.71%	N
12	Biotest AG	1946	413	10.00%	282	10.00%	N
13	Brose Fahrzeugteile GmbH & Co. KG	1919	3,474	9.98%	2,339	9.96%	N
14	Haribo GmbH & Co. KG	1920	2,426	9.63%	1,400	9.39%	N
15	Big Dutchman International GmbH	1938	600	9.59%	370	9.39%	N
16	Vetter Pharma-Fertigung GmbH & Co. KG	1945	338	9.51%	220	9.39%	N
17	Meffert AG Farbwerke	1947	288	9.49%	192	9.41%	N
18	Friedrich Boysen GmbH & Co. KG	1921	740	8.24%	480	8.09%	N
19	Miele & Cie. KG	1899	2,830	8.19%	1,879	8.09%	N
20	Detlef Hegemann Aktiengesellschaft	1914	1,000	8.08%	300	7.01%	N
21	KAESER KOMPRESSOREN GmbH	1919	573	7.78%	420	7.76%	N
22	Läpple AG	1919	480	7.56%	349	7.53%	N
23	HERAEUS HOLDING GmbH	1851	22,025	7.53%	12,080	7.31%	N
24	Bauerfeind AG	1929	250	7.45%	159	7.21%	N
25	Merz GmbH & Co. KGaA	1908	673	7.25%	475	7.17%	N
26	SCHOKINAG Schokolade-Industrie Herrmann GmbH & Co. KG	1923	280	7.17%	200	7.09%	N
27	Scholz AG	1872	4,000	7.12%	2,192	6.86%	N
28	Voith AG	1867	5,198	7.12%	3,739	7.08%	N
29	SIEGENIA-AUBI KG	1914	409	7.05%	300	7.01%	N
30	Messer Holding GmbH	1898	909	7.02%	630	6.92%	N
31	Schottel GmbH	1921	270	6.99%	150	6.58%	N
32	Optima-Maschinenfabrik Dr. Bühler GmbH & Co.	1922	252	6.97%	151	6.66%	N
33	Deutsche Amphibolin-Werke von Robert Murjahn Stiftung & Co. KG	1895	1,000	6.96%	738	6.93%	N
34	B. Braun Melsungen AG	1864	4,423	6.88%	3,321	6.86%	N
35	Käserei Champignon Hofmeister GmbH & Co. KG	1908	440	6.80%	275	6.57%	N
36	Maschinenfabrik Alfing Kessler GmbH	1911	306	6.56%	171	6.19%	N
37	Harry Brot GmbH	1890	669	6.36%	511	6.34%	N
38	NORD-SCHROTT GmbH & Co. KG	1898	420	6.27%	328	6.26%	N
39	MERCK KGaA	1827	9,290	6.21%	6,259	6.12%	N
40	Getreide AG	1872	1,152	6.14%	608	5.82%	N
41	ElringKlinger AG	1879	796	6.09%	528	5.94%	N
42	J. Bauer GmbH & Co. KG	1887	548	6.07%	282	5.68%	N
43	Papierfabrik Palm GmbH & Co. KG	1872	1,000	6.03%	760	6.00%	N
44	Bischof + Klein GmbH & Co. KG	1892	420	6.02%	303	5.93%	N
45	Gühring OHG	1898	311	5.98%	235	5.93%	N
46	Pampus Industriebeteiligungen GmbH & Co. KG	1856	1,591	5.88%	835	5.58%	N
47	Giesecke & Devrient Holding GmbH	1852	1,688	5.81%	1,297	5.78%	N
48	Heitkamp BauHolding GmbH	1892	300	5.71%	148	5.26%	N
49	Witzenmann GmbH	1885	395	5.71%	308	5.69%	N
50	Geobra Brandstätter GmbH & Co. KG	1876	559	5.70%	379	5.57%	N
51	Bohnhorst Agrarhandel GmbH	1882	439	5.70%	203	5.23%	N
52	Amazonen-Werke H. Dreyer GmbH & Co. KG	1883	405	5.67%	241	5.41%	N
53	Germanischer Lloyd AG	1867	741	5.65%	364	5.27%	N
54	Sartorius AG	1870	659	5.65%	521	5.64%	N
55	O. & L. Sels GmbH & Co. KG	1890	300	5.64%	185	5.40%	N
56	Borgers AG	1866	627	5.50%	479	5.45%	N
57	Krauss-Maffei Wegmann GmbH & Co. KG	1838	1,565	5.41%	959	5.23%	N
58	KWS SAAT AG	1856	754	5.36%	505	5.23%	N
59	Gustav Stabernach GmbH	1879	300	5.29%	171	4.99%	N
60	DIEFFENBACHER GmbH Maschinen- und Anlagenbau	1873	330	5.20%	263	5.18%	N
61	H. Stoll GmbH & Co. KG	1873	329	5.20%	241	5.11%	N
62	Schwanhäußer Industrie Holding GmbH & Co. KG	1865	396	5.13%	286	5.03%	N
63	DALLI-WERKE GmbH & Co. KG	1845	725	5.08%	564	5.04%	N
64	LEIPA Georg Leinfelder GmbH	1847	660	5.06%	497	5.00%	N
65	KEMNA BAU Anreaea GmbH & Co. KG	1867	320	5.02%	227	4.91%	N
66	Ireks GmbH	1856	430	4.97%	346	4.96%	N
67	Veritas AG	1849	505	4.93%	367	4.84%	N
68	Aerzener Maschinenfabrik GmbH	1864	290	4.88%	213	4.79%	N
69	Ferdinand Bilstein GmbH & Co. KG	1844	280	4.45%	202	4.35%	N
70	Develey Holding GmbH & Co. Beteiligungs KG	1845	250	4.39%	200	4.36%	N
71	MEYER NEPTUN GmbH	1795	950	4.38%	791	4.38%	N
72	Kirchhoff Gruppe	1785	870	4.22%	684	4.18%	N
73	Duravit Gruppe	1817	328	4.13%	262	4.09%	N
74	Europa-Park Freizeit- und Familienpark Mack KG	1780	309	3.69%	145	3.40%	N
75	Faber-Castell AG	1761	451	3.68%	336	3.62%	N
76	Oettinger Brauerei GmbH	1731	420	3.43%	309	3.36%	N
77	Zollern GmbH & Co. KG	1708	498	3.35%	345	3.26%	N
78	Aachener Printen- und Schokoladenfabrik Henry Lambertz GmbH & Co. KG	1688	536	3.26%	436	3.23%	N
79	M. DuMont Schauberg GmbH & Co. KG	1620	705	3.04%	557	3.01%	N

Y: CAGR (t_0+3; 2006) >= CAGR (t_0+3; 2010); N: CAGR (t0+3; 2006) < CAGR (t0+3; 2010)

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