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**HOLISTISKA KONKURENTSPĒJĪGAS STRATĒGISKĀS VADĪBAS
MODEĻA IZVEIDOŠANA**

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ANNOTATION

This dissertation is finalized by Qeis Kamran, who has firsthand experiences as a global entrepreneur, manager, consultant and academic in designing and applying strategy models.

The world of competitive strategy has become too complex to be dealt with by the use of contemporary models, insights doctrines and current scientific worldview in the field. The limited depth, breadth and acuity of the models, whereby organizational strategies are constructed have been responsible for some of the most damaging corporate failures as the cases of “*Long-Term Capital Management*”, “*Lehmann’s Brothers*”, “*Nokia*”, “*Motorola*” and the recent “*Volkswagen Case in US*”, “*Toshiba Corporations*” and “*Samsung*” have revealed, just to name a few. Not only have the crises disrupted diverse companies and industries, but above all, they have challenged even the most powerful doyen of strategy, namely Michael Porter’s and his co-founded consultancy firm “*The Monitor Group*” to apply for bankruptcy. Thus, the strategic battles and challenges of the future will be fought beyond the boundaries of Porterian linear industry-in views, of mere economic dimensions of organizations realities and having a reductionist view of the role of organizational structure based on the era of continuity, where growth, vertical integration and diversification were the most essential challenges business managers had to deal with.

The dissertation is concerned with the analysis and critique of “*The Five Forces Model*” as one of the major contributions to the field of “*Competitive Strategy*” as coined by Porter. Based on the development of the “*Sixth Force Model*” by the author and validated by a large sample of empirical study, it is to deliver a vital critique of the “*FFM-Five Forces Model*” framework, and to suggest an extended and more robust model that meets the necessities of our contemporary era. Furthermore, it is to be examined, if Chandler’s thesis “*Structure follows strategy*”, whereupon the field of competitive strategy has been constructed as its foundation, is still an accurate worldview. Thus, constructing robust models for the field require the examination of Chandlerian dimension of strategic thought. Based on this, the dissertation has developed a new model of competitive strategy, which addresses the major challenges the field needs to cope with. The author has designed a new and more adequate model based on sciences of system theory and cybernetics that answers the challenges that this era of turbulence and complexity requires. This Model has been coined by the author as the “*Six Forces Model*”.

Keywords: Strategy, Five Forces Model, Structure, Cybernetics, Holism, and Complexity

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LIST OF ABBREVIATIONS

| | |
|--------------------|---|
| AAE | Average of Absolute Evaluations |
| BA | Business Administration |
| BATNA | Best Alternative to a Negotiated Agreement |
| BMI | Business Model Innovation |
| CA | Competitive Advantage |
| CEO | Chief Executive Operator |
| CS & SM | Competitive Strategy and Strategic Management |
| FFM | Porter's FFM |
| GVC | Global Value Chains |
| HC | Human Capital |
| IE | Industry Economics |
| IMPVALPE | Importance Valuation PESTLE |
| IMPVALSFM | Importance Valuation SFM |
| IMPVALSW | Importance Valuation SWOT |
| IMPVALVC | Importance Valuation Value Chain |
| IO | Industrial Organization |
| JIT | Just in Time |
| MBM | Model Based Management |
| MNC | Multinational Corporation |
| PLG | Peter Lacke Group |
| PRE | Partial Relative Evaluations |
| Q | Question |
| QUAL | Qualitative |
| QUAN | Quantitative |
| R&D | Research and Development |
| RBV | Resource Based View |
| RIM | Research in Motion |
| SAE | Sum of Absolute Evaluations |
| SCA | Sustainable Competitive Advantage |
| SDL | Service Dominant Logic |
| SFM | Six Forces Model |
| SFM-FFM | Difference between SFM Scoring Values and FFM Scoring Values |
| SFM-PE | Difference between SFM Scoring Values and PESTLE Scoring Values |
| SFM-SW | Difference between SFM Scoring Values and SWOT Scoring Values |

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| SFM-VC | Difference between SFM Scoring Values and Value Chain Scoring Values |
| SGMM | St. Galler Management Model |
| SME | Small and Medium-sized Enterprise |
| T & MRM | Triangulation and Mixed Research Method |
| TQM | Total Quality Management |
| VCM | Value Chain Model |
| ZOPA | Zone of Possible Agreement |

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INTRODUCTION

Actuality of the Topic

While the demise of the global financial industry has been coined as financial crises, it has actually been a management crisis. Ten years have passed since the last global financial meltdown; however, the effects are still lingering and, in many cases, and affected economies, these crises will be still ongoing. Many scholars and historical figures such as Scholl-Latour (2013) "*The World out of Joint*" and Haas (2018) "*A World in Disarray*", speak of a break with the old order and the times of continuity as the cases of Brexit, the crises of the European Union (EU), the Euro currency crises and the rise of populism in Western politics reveal challenging the democratic Western order, all leading a structural shift towards a more turbulent and complex socio-economic environment. The refugee crisis hitting Europe and US has also displayed how fragile the unity even among the diverse ruling parties in Germany as one of the leading economies in the EU , but moreover it has created a constitutional crisis within the United States (U.S.) and has severely damaged the current government's reputation with allies and made many firms re-adjust their human-capital and talent sourcing policies. Not only are the firms challenged by the "*socio-metabolic regimes*", and the diverse external challenges as stated above, hitting the locally and globally (globally/transnationally) operating firms but moreover the structural weaknesses of the strategic models these firms are navigating with from an internal perspective as the cases of "*Long-Term Capital Management Group*" (LTCM) founded by two Nobel Prize laureates, "*Lehman's Brothers*" as one of the world's major financial institutions, General Motors one of the world's biggest carmakers, recently to cut 15 percent of its salaried workforce, laying off 25 percent of its executives, and "*The Monitor Group LLC*", co-founded by Michael Porter the doyen among business strategists, which filed for the U.S. 11th chapter of bankruptcy protection law on the 7th of November 2012, have revealed. The latest Volkswagen (VW) emission crisis has even displayed that Germany, as the leader in the high-quality car-making industry is suffering much from the linear and myopic competitive strategy and strategic management (CS & SM) models, applied within the firm, which are lacking diverse essential spheres as the normative sphere among ecological sphere and many more. The arrest of Samsung's chief as one of the largest Multi-National Corporations in the world in 2017 and of Nissan in 2018 over corruption charges reveal a very vital need for more holistic models for Multinational Corporations, on which the strategic navigation of the firm needs to be based in terms of a normative and ethical dimension of managerial practice.

In the viewpoint of the "... *time is out of joint*" reality of the contemporary global environmental landscape of business, this work analyzes and examines a highly relevant topic enabling the

strategist to obtain a holistic view and to act more efficiently and consciously by designing an adequate and vital model, whereupon a proactive strategic management can ensure organizational viability for the long run. The work also analyses the most essential Competitive Strategy and Strategic Management models and theories since the inception of the field and challenges these theories and models within the spectrum of business administration. The actuality of the topic can be underpinned as:

1. *There is a vital need to analyze and issue a scientific critique of Porter's Five Forces Model after 39 years (Porter, M. E., 1979; 1980; 1985; 2008a), hence according to K. Popper every scientific theory or model is only scientific, if it can hold the latest scientific debate, scrutiny but above all practical relevance.*
2. *The corporate collapses of diverse firms, institutions, corporations, regions, industries and economies, deliver solid evidence that the strategic model of Porter, starting with the Five Forces Model (FFM), need to be re-examined for the 21st century Competitive Strategy and Strategic Management needs and challenges.*
3. *The complexity and turbulence of the global markets require that Competitive Strategy and Strategic Management apply theories and develops models for businesses based on a holistic and systemic understanding of the interconnected, complex and globalized world. This research is designed to achieve a holistic model for strategy researchers and practitioners embracing a firm's total environment within the spectrum of business administration based on systems and cybernetics sciences.*

Aim and Tasks

The aim of the dissertation is to prove and substantiate the claim that the Porterian dimension of the Five Forces Model needs to be re-examined and extended and that the field of Competitive Strategy and Strategic Management needs to incorporate a much wider and holistic lens than the purely economic perspective that has occupied the field since its foundation. In order to achieve this objective, several tasks need to be accomplished:

1. *To conduct an in-depth research in the field of competitive strategy and strategic management and in particular to analyze Porter's work, which has defined the modern competitive strategy and strategic management framework and publications within a single scientific work.*
2. *To extend the current state of scientific thought and discourse in competitive strategy and strategic management and to conceptualize a suitable model for the state of practice.*
3. *To bridge competitive strategy and strategic management systems and cybernetics sciences by designing a holistic model and framework for managers and strategists.*
4. *To propose a more robust and holistic model by extending the state of science and practice and*

by constructing an adequate model and framework based on Ashby's Law, Beer's Viable System Model and Ulrich's scientific practice method.

5. *To fill the gap in research on how to ensure high-quality models in Competitive Strategy and Strategic Management.*

The dissertation will concentrate on Porter's Five Forces Model framework and contribute to extend the field. No research exists prior to this research in this regard to enhance Porter's work on a wider holistic *Weltanschauung* and to conduct the research by the contribution based on systems and cybernetics sciences.

Research Object

The theoretical and practical aspects of the field of Competitive Strategy and Strategic Management based on the framework of Porter's Five Forces Model.

Research Subject

The subject of the research is to strengthen the Porter's Five Forces Model with additional dimensions.

Tests and Research Questions

1. *How can the strategists' effectiveness and firms' viability be improved by means of applying holistic models in business administration?*
2. *Does the use of specific strategy models make a difference?*
3. *How can strategy models be designed for higher managerial effectiveness?*
4. *How can models be validated and improved for more efficiency in the strategy development of business administration?*

The test derived from the research questions is the following:

1. *Is the Six Forces Model (SFM) superior to the Five Forces Model in terms of strategy development advantages?*
2. *Is the superiority of the Six Forces Model based on the interdisciplinary nature of its layers and their multidimensionality?*
3. *Do the Five Forces Model and Six Forces Model fulfill expectations of professionals and experts regarding their perception of the importance of different aspects of a holistic approach in modeling strategic frameworks?*
4. *Can the Six Forces Model be reduced and concentrated to a set of inherently reliable and exhaustive categories and constructs?*
5. *How does the Six Forces Model differentiate itself from the Five Forces Model in terms of possible applicability and real implementation?*

Main Theses to be defended

1. *The comparison of the Five Forces and the Six Forces Models illustrates and discovers that the Five Forces Model is not embracing a holistic reality of today's environmental complexity in developing strategies.*
2. *The Six Forces Model is a holistic model in helping managers to improve their strategy development performance.*
3. *The empirical research highlights that managers see therein a vital potential to contribute to the long-term successes of their organizations.*
4. *The Six Forces Model is a more suitable diagnostic model to help managers designing robust strategies for complex and turbulent environments.*

Main Hypotheses

The following main hypotheses are stipulated:

1. *The Six Forces Model is better suited than the Five Forces Model to support managers in formulating and executing more holistic strategies for today's global and complex reality of business.*
2. *Porter's Five Forces Model has limitation to be an adequate model for today's global and complex environment of business in comparison to the Six Forces Model that captures a holistic environmental diagnosis.*

Methods Used

Research based on publications within the high ranking and internationally recognized scientific journals on management and in particularly on strategic management have revealed that based on the obtained evidence therein, which accounts for the nature of research methodologies conducted, that the mixed research method (Quantitative/Qualitative) has been much wider applied in these fields. The author has conducted several surveys. These surveys were aligned and finalized by the “*triangulation and mixed research method*”, which is performed based on the following robust methodology:

1. ***The Ulrich's scientific-practice method is applied, which puts the study of management science in terms of its practical relevance and unifying the existing management theory and models into a coherent whole beyond the boundary of economics lens.***
2. ***The Kolmogorov-Smirnov Test and the Shapiro-Wilk Test is applied to evaluate the normal distribution of the sample population, essential to ensure the validity of the test, thus before starting the prediction, a test of normality ought to be used to determine whether the sample data has been drawn from a normally distributed population. Normality as the assumption is especially critical when constructing reference intervals for variables. Normality among other assumptions***

must be taken seriously, for when this assumption does not hold, it is impossible to draw precise, accurate and reliable conclusions about reality.

3. ***The Mann-Whitney-U-Test*** is used to evaluate the significant differences between the Porter's Five Forces Model (Group 0) and the Six Forces Model (Group 1). Research indicates that the Mann-Whitney-U test is among the most powerful non-parametric empirical tests, where the statistical power coincides with the probability of rejecting a false null hypothesis. Thus, it has a solid basis for probabilities of delivering statistically convincing results when the alternative hypothesis applies to the measured reality. The empirical investigation and test with professionals is designed, finalized and evaluated via SPSS to validate the hypothesis.
4. ***The Cronbach's Alpha Test*** for internal consistency predicting the measure of consistency of responses of the data is applied. Internal consistency displays the extent to which all conducted parts within a test-construct embrace the same concept or construct and therefore they are connected to the inter-relatedness of the parts within the test framework. Thus, internal consistency should be determined before any test can be applied to research obtaining high validity. In addition, the Cronbach Alpha Test has also been considered as the pilot testing strategy and measure so that high validity and optimal results are obtained.
5. ***The Case-Based Field Application and Empirical Qualitative Analyses*** of the author's model is conducted to validate the SFM in practice within a real firm's operational environment.
6. ***The Weighted Scoring Model Analysis, the Spider-Web Overlay Visualization Analysis and the Wilcoxon- Test*** based on **a)** a weighting of the importance and relevance of the individual layers and the components of the Six Forces Model; **b)** the comparative relative evaluation of the Porter's Five Forces Model, the SWOT analysis, PESTLE analysis, Value Chain Model and the Six Forces Model, and **c)** the evaluation of dependent samples to test on the difference between importance and valuation of the participants is applied.

As established above, the "triangulation and mixed research methodology" is essential, thus based on the discipline-specific approach for "Competitive Strategy and Strategic Management", an in-depth theoretical literature analysis and primary data generation, via empirical research, were conducted to establish and prove the theses and hypotheses.

Research Sample and Sampling Size

The diverse Qualitative/Quantitative tests based on the Triangulation and Mixed Research Method (T&MRM), as described above, were necessary to establish the high validity and quality of the results. For the different tests samples had to be created to ensure the validity of the sampling and thus avoiding professionals' and experts' bias, which results in strongly validating the Six Forces Model as a solid tool to be applied in strategy formulation for business administration. To validate a model externally by ensuring its predictive performance additional

and separate datasets and samples are also a vital consideration in high quality and precise empirical model validations. It is essential to highlight that due to the nature of advanced and specific knowledge of the strategic models tested here, access to professionals and experts, who had to be precisely briefed and trained on the application of the Six Forces Model, was limited. Holistic strategy models need to be explained and the professionals and experts required time for reflecting on the newly developed models and their application. Altogether 465 potential participants were approached via email and phone calls. The essence of the empirical investigation was discussed with them.

Altogether 3 reminders were sent via email and phone calls were conducted in an interval of two weeks each. A total of 141 participants have been won to participate in the empirical investigation. This represents an average 30% success of recruiting adequate professionals that have participated in this research.

The basis population of business strategy development research is comprised of relevant academic personnel e.g. junior academics and senior academics, business professionals (to which in this research the author would refer as “professionals”) and additional business experts. The research sample consists of a relevant population selected, whose decision-making skills and behaviors can be regarded as representative for business management strategy builders. The research design selected a number of survey participants, whose positions and managerial behavior are supposed to mirror the criteria described above. The participants of the research sample were recruited on the one hand among participants in advanced executive managers training and on the other hand by a random selection of contacted business managers via email. Some participants were among the author’s and the ISM- University of Applied Sciences’ wider network. The sample being studied is representative of the target population as shown in Table 6. The specific sampling techniques used are homogeneous sampling and judgment sampling combined. Homogeneous sampling is a purposive sampling technique that aims to achieve a homogeneous sample, i.e. whose units (people) share the same (or very similar) characteristics or traits. The participants can be divided into four groups. Each group has received an appropriated survey.

The diverse groups (samples) include experts from different walks of vocations, e.g., company owners, managers, academics, non-governmental organization managers and consultants with diverse work experience and scientific backgrounds and coming from multiple nationalities. This diversity was essential for the high quality of the results collected to evaluate a holistic model by different cultural backgrounds and through different lenses in the contemporary globalized and multipolar environment. Altogether there were sample I: (n=63), sample II: (n=12); sample III: (n=9); sample IV: (n=57) participants, resulting in a large total sample of (n= 141) participants, who were empirically and scientifically evaluated. This diverse sample and different testing

methods were essential to validating the hypotheses.

The sampling strategy is examined in a four-step procedure. Firstly, there is a description of what was studied, secondly the sampling techniques available are applied, thirdly, the sampling strategy used is stated and finally, the justification for choice of sampling strategy is provided.

Content of the Dissertation

Chapter One: ‘Theoretical Background - The Origin of Competitive Strategy, Its Approaches, and Models’

Chapter One describes the theoretical background of the thesis by conducting an in-depth research and analysis of the contemporary foundations of strategic management. First, there is setting a general overview of the field and also documenting the corporate failures and the challenges of the contemporary models. After the short overview, the role of strategy in general management particularly by the works of Michael Porter within a spectrum of over 39 years of publications and also by conducting a very in-depth and systematic literature review of the most important publications that have shaped and paved the way for the field of competitive strategy and strategic management, is established. The chapter also structures the insights from the most cited and relevant publications from the leading journals in the field. Furthermore, diverse definitions of the terms “*Strategy, Competition and Sustainable Competitive Advantage*’ have been thoroughly examined. A solid foundation of all the schools of strategic thought has been given by the works of Chandler, Mintzberg, and Kim and Mauborgne and also via connecting the essentials of research and the scientific views on strategic thinking from the European (Germanophone) and the Anglo-Saxon (Anglophone) countries.

Chapter Two: ‘Systems Theory, Cybernetics, and Complexity as Foundations for Interdisciplinary Competitive Strategy and Strategic Management’

Chapter Two concentrates on the foundations of cybernetics and systems sciences and delivers an interdisciplinary perspective on social and economics sciences. An in-depth research has been done to introduce the field cybernetics in particular ‘*Management Cybernetics*’ and the notion of the **Viable System Model (VSM)** is analyzed via a rigorous and holistic approach, embracing the essentials of the field. The work also concentrates on the essentials of self-organization, recursion, autonomy and integration into realm of strategy in social systems. A vital contribution is also the introduction of **Ashby’s Law** as the fundament for constructing the Six Forces Model in terms of variety engineering. The chapter also concentrates on the notion of homeostasis as the logic of constructing a solid holistic model via this dissertation for management of organizations. In addition, the dimensions of autopoiesis and Eigen-behavior, and their implications for competitive strategy and strategic management are highlighted.

Chapter Three: ‘A New Model of Complexity: The Sixth Competitive Force That Shapes Strategy in Turbulence and Research Investigations’

Chapter Three concentrates on the theories of previous chapters *one and two* to develop and design a holistic model coined by the author as the Six Forces Model. The Six Forces Model has been constructed based on an interdisciplinary theoretical foundation. The model is constructed based on nine different layers of logic and scientific foundations resembling the total environment of the global business. All nine layers have additional sub-fields, which construct each individual layer. The Six Forces Model is conceptualized on Ashby’s Law and the author’s thesis of ‘*structure is strategy*’, extending Chandler’s original thesis. (Kamran, 2018b). The model is corroborated based on a Triangulation and Mixed Research Method. Based on the developed Six Forces Model firms are able to cope with complexities and environmental turbulences. The Six Forces Model is extending Porter’s Five Forces Model and actualizes the most robust and holistic model developed for competitive strategy and strategic management. The Six Forces Model reinvigorates the debate between structure and strategy from a holistic point of view and delivers a framework for competitive strategy and strategic management to cope with complex and turbulent environments (Kamran, 2013, 2018b). Furthermore, the Six Forces Model describes a holistic view of the organization and its topology in a total environment rather than the partial economic view and the limited spectrum of industry-in understanding that the Five Forces Model has been used for the last 39 years. The Six Forces Model aligns the essentiality of the varieties of the internal structure of the firm via the Viable System Model and the nine spheres of environmental reality. As established in chapter two the Ashby’s Law and Ulrich’s “*scientific practice*” analogies enable the integration of a coherent set of models and theories uniquely designed based on the diverse spheres to create the Six Forces Model as a solid tool of analysis of the complex environment for managers. In addition, the model is based on *Conant and Ashby’s Theorem* of applying, extending and engineering organizational varieties and “*model-based management*” for firms as a necessary foundation to coping with complex challenges that emerge via the dynamic of the markets. This dynamic is also substantiated by Pfeiffer and Bongard’s theory of “*Embodiment*” in terms of organizational intelligence, which based on conglomeration of brain, body and the environment. (Pfeifer, R. & Bongard, 2007)

Chapter Four: ‘Research Results for the Complexity the Sixth Competitive Force that Shapes Strategy in Turbulent Environments’

Chapter Four corroborates the Six Forces Model via the Triangulation and Mixed Research Method. The chapter is divided into diverse tests to deliver solid empirical evidence, which was collected in examining four different groups of professionals. The chapter is concerned with validating the Six Forces Model as a model and also establishing the authors thesis to be defended and the hypothesis to

be proved and thus, describing the results of the empirical investigations and tests conducted, based on the large empirical evidence and relevant population (n=141) that has been collected in Appendices 34 and 40, which are also a vital part of this chapter, wherein in detail all the essential aspects of these investigations are documented. To summarize the essential aspects of the population and the diverse units, the results of the author's research were applied to the population based on actors (German and international) within the field of strategic development and application within the realm of business administration (students undergraduate, postgraduate and their training faculty), who need to make sense of the essential issues of today's global and complex business world by designing a solid strategy to help coping with the complex challenges of the globalized world. The author's theses and hypotheses have been validated and corroborated by the Triangulation and **Mixed Research (Quantitative/Qualitative) methods.**

Novelty of Research

1. *The Six Forces Model is developed as a new model of strategic management with nine diverse layers, wherein the essential components relating to the individual layers of a holistic management within the realm of business administration are embedded, thus helping firms in their strategic development phase to construct a more robust and holistic model of the market reality.*
2. *The Six Forces Model combines all nine essential layers of an organization's total environment, which has not been conceptualized so far within management sciences and business administration. It enriches the current state of the art of strategy development by the holistic management approach, thus it extends Porter's Five Force Model for a better suitability in a global environment.*
3. *The Six Forces Model is based on a unique and interdisciplinary Weltanschauung to strategic management by combining the sciences of cybernetics, management cybernetics, business administration, and the contemporary strategic into a coherent whole to help managers find their way with a single holistic model.*
4. *Chandler's 'structure follows strategy' thesis is extended, which is the foundation of all the contemporary strategic management models and the model contributes to open a new thesis developed by the author in terms of "structure is the strategy" thus it is within the dimensions of cultivating the self-organizing forces and structural dynamics of the firm that strategists can cope with complexity and turbulent environments.*
5. *The Six Forces Model is so far the most holistic model ever developed for managers to apply in their strategic formation phases.*

Limitations

This research is based on the development phase of the organization's strategic management. Due to the nature of research, which encompasses and consumes a longer time period of observation from

strategy design to application to the results to be seen in the marketplace, the evaluation of the empirical investigations and studies' tests, are mainly concentrated on the efficiency of the development phase of the strategy modelling based on an internal and a holistic external environmental scanning. A test on the professionals from a Small- or Medium-sized Enterprise (SME) has been conducted, however participants from larger Multinational Corporations could not be tested specifically. It is also essential to mention that only participants, who have a good knowledge of the strategic modelling landscape in terms of academe and practice and also a good understanding of the Six Forces Model, which had to be introduced to them *ex ánte*, have participated in the survey.

Main Results and Conclusions

The main theses and hypotheses of the author are substantiated, corroborated by diverse empirical evidences and tests conducted and based on the results achieved, they can be defended.

1. *The comparison of both model (the Five forces and the Six Forces Model) has empirically shown that the Five Forces Model is not embracing a holistic reality of today's environmental complexity in developing strategies.*
2. *The Six Forces Model has proven itself to be a holistic model in helping managers to improve their strategy development performance.*
3. *The empirical research highlights that managers see therein a vital potential to contribute to the long-term organizational success.*
4. *Based on the evidence obtained, the Six Forces Model is a more suitable diagnostic model applied to complex and turbulent environments of global business.*

Main Hypotheses of the author have been proven

The empirical research has concluded:

1. *The Six Forces Model is a better suited model for manager than the Five Forces Model by supporting managers to diagnose, formulate and execute more holistic strategies for today's global and complex reality of business administration.*
2. *Porter's Five Forces Model has displayed limitation to be an adequate model for today's global and complex reality of business than the Six Forces Model. The model does not capture the holistic spectrum required for strategist in business administration*

Main Suggestions

The suggestion is to establish the Six Forces Model as a holistic model and a foundation for navigating all types of organizations seeking to achieve a sustainable competitive advantage in terms of their survival as social productive systems in a complex and global environment.

Organizations of the contemporary era cannot only survive by producing the most high-

tech devices possible, while their organizational foundations and strategic models have been laid on models of thirty plus years back. The following suggestions are essential to be addressed:

1. ***For professionals:*** *It is essential to understand the notions of interdisciplinary model-based-management and strategic diagnosis via a holistic model as the Six Forces Model.*
2. ***For management and strategy consultants:*** *It is essential to highlight that robust models tend to achieve better and more profound strategies.*
3. ***For professionals within the field of family business management and start-ups:*** *The Six Forces Model delivers a powerful tool of analyzing the internal and external challenges they face and may face in the near future.*
4. ***For academics as advanced undergraduate, graduate and senior academics:*** *Their academic pursuits to be put into a practical context and that the reality of the environmental and organization internal affairs as complex systems can only be diagnosed and properly managed, if the models applied, whereby the system is navigated, are powerful enough to cope with complex settings. This analogy has also vital implications for effective learning and better teaching of business administration.*

Sources Used

The dissertation covers the most essential and major publications relevant to the research not only within a single field but moreover it covers the publications from these top journals: ‘*Strategic Management Journal*’, ‘*Journal of Management*’, ‘*Academy of Management Journal*’, ‘*Organizational Behavior and Human Decision Processes*’, ‘*Academy of Management Review*’, ‘*Administrative Sciences Quarterly*’, and ‘*Journal of Applied Psychology*’. Furthermore, the following main sources were applied:

Classic literature used

1. Porter (1979, 1980, 1985, 1995, 1996, 2008b, 2014 and 2017)
2. Beer (1959, 1967, 1972, 1981, 1979, 1985, 1994 and 2000a, 2000b)
3. Schwaninger (1990, 2001, 2003, 2004, 2006b, 2010a, 2010b and 2015)
4. Malik (1981; 1984; 1986b, 1986a, 1989b, 1989a, 1992, 1993, 1994, 1996, 1997, 1999, 2000a, 2000b, 2002, 2003, 2006, 2007a, 2007b, 2008, 2013a, 2013b, 2014, 2015a, 2015b; 1984)
5. Ashby (1948, 1952, 1956, 1958, 1960 and 1968); Conant and Ashby (1970)
6. Pfeifer and Scheier (2001); Pfeifer, R. and Bongard (2007)
7. Chandler (1962, 1970)
8. Ulrich (1968, 1970, 2001)

And many additional top sources available on the subject based on an interdisciplinary lens.

Modern literature Used

1. *Huang, L. (2018)*
2. *Gupta, A., Briscoe, F., & Hambrick, D. C. (2018)*
3. *Deken, F., Berends, H., Gemser, G., & Lauche, K. (2018)*
4. *Shaw, J. D., & Ertug, G. (2017)*
5. *Glaser, V. L. (2017)*
6. *Powell, E. E., & Baker, T. (2017)*
7. *Hoffmann, W., Lavie, D., Reuer, J. J., & Shipilov, A. (2018)*
8. *Cozzolino, A., & Rothaermel, F. T. (2018)*
9. *Dyer, J. H., Singh, H., & Hesterly, W. S. (2018)*
10. *Hannah, D. P., & Eisenhardt, K. M. (2018)*
11. *Ranganathan, R., Ghosh, A., & Rosenkopf, L. (2018)*
12. *Futterer, F., Schmidt, J., & Heidenreich, S. (2018)*
13. *Wirtz, B. W., Pistoia, A., Ullrich, S., & Göttel, V. (2016)*
14. *Ritter, T., & Lettl, C. (2018)*
15. *Priem, R. L., Wenzel, M., & Koch, J. (2018)*
16. *Foss, N. J., & Saebi, T. (2018)*
17. *Fjeldstad, Ø. D., & Snow, C. C. (2018)*
18. *Hacklin, F., Björkdahl, J., & Wallin, M. W. (2018)*
19. *Teece, D. J. (2018).*
20. *Harvard Business 10 Must-Reads 2018 (2017)*
21. *Harvard Business 10 Must-Reads 2019 (2019)*

Empirical research data used

The research questions and tests are analyzed scientifically and proven with several surveys/interviews based on empirical tests (participants/ attendees/ professionals/ experts by a total of (n=141).

Approbation of the Results of Research

The main results of the author's research progress have been presented to the scientific community for scrutiny, debate, review, application and further research. So far 3 bachelor theses and 4 master theses have been written applying the author's Six Forces Model in diverse turbulent and complex environments. The works are available at the University of Augsburg and the ISM- International School of Management at campus Munich and campus Dortmund Germany. The author has participated and published in **ten** international scientific conferences:

1. *Kamran, Qeis, Robin Eckhorst (May 27-29, 2019), Designing Freedom for HTSF and family-*

- run SME's. The embodiment of designing cybernetic organizational structures to dissolving disruption in fast-paced high-tech industries- University of Twente, Enschede Holland, organized by Entrepreneurship, Strategy & Innovation Management (ESIM/NIKOS)- the Netherlands Institute for Knowledge-intensive Entrepreneurship, Faculty of Behavioural, Management and Social Sciences (BMS), May 27-29, 2019, <https://www.utwente.nl/en/bms/nikos/events/high-tech-small-firms-conference/>*
2. *Kamran, Qeis (September 05-07, 2018), Structure does not follow strategy - structure is the strategy. How operational excellence through a viable organizational structure delivers the fourth generic strategy (University of Plymouth UK) Managing business for policy and integrated sustainable logistics operations- The 23rd Annual Conference of the Chartered Institute of Logistics and Transport, Logistics Research Network (LRN), September 05-07, 2018*
 3. *Kamran, Qeis, (January 26th, 2017), Developing Robust Strategic Models based on Sciences of Cybernetics, International Conference, Impact of globalization to National Economies and Business (University of Latvia, Riga). (Case study published under the title Kamran, Qeis, An Empirical Case Study of Applying the Sixth Force Model on a German Hidden Champion (May 14, 2017)*
 4. *Kamran, Qeis, (August 3rd-7th, 2016), Complexity the Sixth Competitive Force That Shapes Strategy in Turbulent and Complex Environments- A Cybernetics Approach to Porter's FFM in Turbulent and Complex Environments, International Conference of Business Administration (ABA), Prague August 3rd-7th, 2016.*
 5. *Kamran, Qeis, (August 3rd-5th, 2012), The Transformation of Porter's Strategic Mind from 'Shareholder Value' to 'Shared Value' - Bridging the Sciences of Economics, Strategy and Cybernetics. International Business and Economics Conference, Innovative Approaches of Management Research for Regional and Global Business Development, Austria, Kufstein, August 3rd-5th, 2012.*
 6. *Kamran, Qeis, (10th -11th November 2011), Running Multinational Corporations (MNC) in China: A Survival-Kit to Western CEOs, 5th St. Gallen International Energy Law Forum IEF, St. Gallen Switzerland, 10th -11th November 2011.*
 7. *Kamran, Qeis, (April 7th-8th, 2011), Running Multinational Corporations (MNC) in China: A Survival-Kit to Western CEO, 18th St. Gallen International Competition Law Forum ICF (www.sg.icf.ch), St. Gallen Switzerland 7th-8th April 2011.*
 8. *Kamran, Qeis, (December 1st -3rd, 2011), 'Complexity', the 6th Competitive Force that Shapes Management Strategy - A Cybernetic Approach to 'Porter's Five Forces that Shapes Industry Strategy' in Turbulent and Complex Environments, International Conference, Fulda, Germany, December 1st -3rd, 2011.*

9. Kamran, Qeis (November 10th -12th, 2011), *Complexity of Negotiation and Negotiation of Complexity Getting to Trust*, International Conference in Current Issues in Economic and Management Sciences, Riga, Latvia, November 10th -12th, 2011.
10. Kamran, Qeis, (May 5th-7th, 2011), *Management by Deception (MBD): The Need for Designing a Viable Strategy*, International Conference Current Issues in Management of Business and Society Development, Riga, Latvia, May 5th-7th, 2011.

Publications

The author's scientific contributions have been published in combination with ten conferences, articles in peer-reviewed scientific journals, three books and one larger monograph; all publications are available at diverse book-stores worldwide and also as online publications to the scientific community:

1. Kamran Qeis, Robin Eckhorst (2019), *Design of Cognition, Cognition of Design- A Cybernetics Approach to Enhancing Organisational Cognition in Management Education and Practice*: submitted to the *Design Science Journal Summer 2019* to be published in *Design Science Journal* by Cambridge University Press. <https://www.designsociety.org> and <https://www.cambridge.org/core/journals/design-science>.
2. Kamran, Qeis (2018f), *Structure does not follow strategy - structure is the strategy. How operational excellence through a viable organizational structure delivers the fourth generic strategy* (University of Plymouth UK) *Managing business for policy and integrated sustainable logistics operations- The 23rd Annual Conference of the Chartered Institute of Logistics and Transport, Logistics Research Network (LRN)* <https://ciltuk.org.uk/LRNfullpapers>. Paper also to be published at the special issue of *International Journal of Logistics- Research and Application* in 2019.
3. Kamran Qeis, (2018e), *The Service-dominant Perspective to Create Value in the Maritime Business*. In: *Container Logistics, the Role of the Container in the Supply Chain*, edited by Neise, Rolf. Kogan Page ISBN 978-0-7494-8124-7, p. 346-373.
4. Kamran, Qeis (2018b, 2018d, 2018c): *Da-Sein Thinking: A Phenomenological Epistemology for Design Thinking*. In: *Continental Philosophy eJournal Vol 11, Issue 10, November 28, 2018*; *Aesthetics & Philosophy of Art eJournal Vol 10, Issue 23, November 28, 2018*, Social Science Research Network (SSRN Elsevier Publications).
5. Kamran, Qeis (2018a), *The History of Design Thinking from Pragmatism to Phenomenology* (February 9, 2017). Published in *Aesthetics & Philosophy of Art eJournal Social Science Research Network (SSRN Elsevier Publications)* <http://dx.doi.org/10.2139/ssrn.3273872> also to be published in: Kamran Qeis, (2019), *The History of Design Thinking- From pragmatism to phenomenology*. In: *ISM Research Journal*, 5. (2019), No. 1 pp. (paper accepted, page numbers

to be submitted by March/June 2019).

6. Kamran, Qeis (2018f), *Structure does not follow strategy - structure is the strategy. How operational excellence through a viable organizational structure delivers the fourth generic strategy (University of Plymouth UK) Managing business for policy and integrated sustainable logistics operations- The 23rd Annual Conference of the Chartered Institute of Logistics and Transport, Logistics Research Network (LRN), September 05-07, 2018 (peer-review article) Published in "The Chartered Institute of Logistics and Transport, see: <https://ciltuk.org.uk/LRNfullpapers>.*
7. Kamran Qeis, (2017d), *An empirical case study of applying the Sixth Force Model on a German hidden champion, (May 14, 2017). Available and published in Social Science Research Network (SSRN Elsevier Publications): <https://ssrn.com/abstract=2986189>*
8. Kamran, Qeis, (2017a), *Cybernetics and Strategy a Necessary Synergy for Strategic Models- Complexity the Sixth Competitive Force That Shapes Strategy in Turbulent and Complex Environments- A Cybernetics Approach to Porter's FFM in Turbulent and Complex Environments, Academy of Business Administration (ABA) Year Book. In: Innovation Law & Policy eJournal Vol 5 (February 23, 2017), Issue 25 Social Science Research Network (SSRN Elsevier Publications).*
9. Kamran, Qeis, (2013a), *Complexity the Sixth Competitive Force that Shapes Strategy- A Cybernetics Approach to "Porter's FFM" in Turbulent and Complex Environments, Lambert Academic Publishing, Saarbrücken Germany, ISBN: 978-3-659-38633-6. (Published book- 576 pages).*
10. Kamran, Qeis, (2013d), *Reinvigorating Antitrust Enforcement in Obama's Second Term an Economic, Policy and Legal Analysis of the Latest Development of Antitrust Enforcement in US, Lambert Academic Publishing, Saarbrücken, Germany, ISBN- 978-3-659-41024-6 (Published book- 104 pages).*
11. Kamran, Qeis, (2011b, 2012a), *Opening an Italian winery, spirits and accessories retail business in Northern California: Attracting the Customer Concentration of an Established Industry Cluster- Based on Michael Porter's 'Cluster and Competition Theory, ASIN: B00MFPTLS0 (Published book - 137 Pages) & Entrepreneurship & Economics eJournal October 17, 2012 Research Network (SSRN Elsevier Publications).*
12. Kamran, Qeis, (2012b), *Running Multinational Corporations (MNC) in China: A Survival-Kit to Western CEOs Published in: Baudenbacher, Carl, Prof. Dr. jur.; Kokott, Juliane, Prof. Dr., Aktuelle Entwicklungen des Europäischen und internationalen Wirtschaftsrechts (Band 14) Helbing Lichtenhahn Verlag, Basel ISBN 978-3-7190-3293-7, pp. 249- 317.*
13. Kamran, Qeis, (2014), *Model Safari in Strategy: Scanning the Landscape of the Essential Strategy*

- Models (August 4, 2014). Qeis Kamran (2013), Complexity the Sixth Competitive Force that Shapes Strategy: A Cybernetics Approach to 'Porter's Five Forces Model in Turbulent and Complex Environments, LAP LAMBERT Academic Publishing, Saarbrücken, Germany. In: O&M: Structures & Processes in Organizations eJournal, Archives of Vols. 1-6, 2009-14, Vol 6, Issue 44, August 25, 2014 & Strategy Models for Firm Performance Enhancement eJournal Vol 6, Issue 17, August 15, 2014 Social Science Research Network (SSRN Elsevier Publications).*
14. Kamran, Qeis, (May 5th-7th, 2011) *Management by Deception (MBD): The Need for Designing a Viable Strategy, International Conference Current Issues in Management of Business and Society Development, Riga, Latvia, May 5 th -7th, 2011, ISBN 978-9984-45-348-4, pp. 290-301.*
 15. Kamran, Qeis (December 1st -3rd, 2011), *Complexity of Negotiation and Negotiation of Complexity Getting to Trust, International Conference in Current Issues in Economic and Management Sciences, Riga, Latvia, November 10th -12th, 2011, ISBN 978-9984-45-417-7, pp. 305-316.*
 16. Kamran, Qeis, (August 3rd-7th, 2016) *'Complexity', the 6th Competitive Force that Shapes Management Strategy - A Cybernetic Approach to 'Porter's Five Forces that Shapes Industry Strategy' in Turbulent and Complex Environments, International Conference, Fulda, Germany, December 1st -3rd, 2011. Published in Social Science Research Network (SSRN Elsevier Publications) at: <http://dx.doi.org/10.2139/ssrn.2137853>, pp. 1-10.*

1. THEORETICAL BACKGROUND - THE ORIGIN OF COMPETITIVE STRATEGY, STRATEGIC MANAGEMENT, THE APPROACHES AND MODELS

The foundation of strategic thought within the contemporary understanding of strategy is derived from a military origin while constructing its reality for markets from an economic Weltanschauung. Before conducting the literature-review and establishing a general overview of competitive strategy, it is essential to understand the context in which the author addresses the notion of strategy and its foundation by extending the contemporary apperception in strategic thought and within the roam of business administration. Thus, the strategic problems of the future require a novel and more adequate world-view to solve them by a multidisciplinary scientific and holistic lens (cf. Beer, S., 1994a) The reductionist worldview, which has been responsible for most of the achievements of men from the 'Stone Age' over to the 'Industrial Age' to the 'Information Age', while not to be considered as an incorrect view, is based on a rationality that is incapable of dealing with complex problems and environmental turbulences that organizations are facing today. The author defines this state as crises of rationality and linearity of thinking based on the view of yesterday's logic. Relevant examples are here not only the current crises in European Union, from the Euro currency crises to the belated response to the global refugee crises to the European Union political crises and the complex crises in the Greek economy. The latest "Brexit" crises, resulting in the demise of not only the political unity in Europe, but moreover causing major challenges for markets, SMEs and MNCs operating in the very turbulent, intertwined and complex global business environment, is a prime example. The most prevalent and obvious challenge is that no single politically and rhetorically accomplished and realized change in a social system, economy and society can yet survive or bring forth the initiated and pivotal objectives, for which it was actually designed and initiated, if its theoretical and logical foundation on how to cope with these systems lacks a holistic model and an in-depth understanding of the realities that embrace systemic robustness and *requisite variety* (cf. Beer, S., 2002) "*One often hears the optimistic demand: give me a simple control system; one that cannot go wrong. The trouble with such "simple" controls is that they have an insufficient variety to cope with variety in the environment. Thus, so far from not going wrong, they cannot go right. Only variety in the control system can deal successfully with variety in the system controlled*" (Beer, S., 1959a, 2002, p. 7). Most of the contemporary scientific foundations, models, and theories in strategy and business are derived from more stable times, solely delivering solutions to reductionist challenges or problems that can be calculated in advance and solutions provided by a juxtaposition of data of the past to some future scenarios and financial objectives and reasoning.

The aforementioned analogies, diverse organizational collapses and corporate failures have challenged the very notion on how business is conducted and how competitive strategy needs to rise to the occasion and deliver a holistic foundation and model to cope with the challenges ahead by

absorbing the shocks and perturbations of the complex global environment. Systemic risks, global operations and *'too big to fail'*. MNCs cannot be controlled by reductionist measures or the contemporary models available by the Anglophone notion of competitive strategy,¹ by the legal institutional and dimensional measures alone² or the monetary economic and financial models (cf. Kamran, August 3rd-7th, 2016, 2017a). Most strategic models, as it is the case with Porter's FFM and the historic dimension of Chandler's path of strategy, whereupon he formulated his famous thesis "*structure follows strategy*" (Whittington, 2008), lack the foundational understanding of Ashby's Law and the Theory embodiment. According to Beer (2002), Ashby's Law relates to management science as Newton's Laws relates to physics, meaning it is central to a coherent account of complexity control. Beer states that the notion of *'only variety can destroy variety'* is perceived to be autologous but argues that all mathematics is either autologous or wrong and further questions why managers' behavior does not correspond to its truth although it is perceived to be true (Beer, S., 2002, p. 7). Systems, cybernetics and complexity sciences and Weltanschauung deliver the necessary foundations, models and laws that *strategists* will need to understand and to have at their disposal for implementation (see: Appendix 1, p. 15).

There are reasons why the aforementioned approach is usually missing in contemporary strategic discourse, which are, first, the Anglophone strategists' worldview that has been dominated by the economic lens of organizational realities and, second, the foundation that Chandler, on whose work most of the contemporary strategic thoughts are founded, (cf. Rajapakshe, 2002; Whittington, 2008 & Toms & Wilson, 2012) has delivered as the nester among management and strategy pioneers (cf. Kamran, 2018). It is constructed on observations conducted during the linear, predictable and stable Post-World-War-II times of the sixties and seventies, where the only concern of the US corporations was growth and an organizational restructuring, to cope with this phenomenon by diversification or vertical integration. Chandler's observations were originated in a historical perspective. While history is a vital aspect that contemporary strategists do miss in their scientific and practical endeavors, Chandler has been widely accepted because of the nature of their reductionist apperception to the organizational realities.

The author's critique is not to write-off Chandler's major contribution out of the contemporary strategic canon but rather to establish a different regime in strategic thought and discourse. Chandler's original thesis "*structure follows strategy*, (Whittington, 2008) as described by him: "... *deduced from these several propositions* (cf. Chandler, A. D., 1962)³ *is then that structure follows strategy and that*

¹ The contemporary Anglophone competitive strategy thought is based on Chandler, who actually coined the phrase strategy for business and defined it as: "*Strategy can be defined as the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals. Decisions to expand the volume of activities, to set up distant plants and offices, to move into new economic functions, or become diversified along many lines of business involve the defining of new basic goals.*" (Chandler., (1962), p. 13)

² No regulatory model or legal statutes can absorb and deliver remedies to a complex system.

³ Chandler based his thesis based on the empirical results he derived from companies that actually had grown from the post WWII US economy

the most complex type of structure is the result of the concatenation of several basic strategies” (Chandler, A. D., 1962, p. 14). He additionally underpins in 1962: “*Unless structure follows strategy, inefficiency results*” (Chandler, A. D., 1962, p. 314). He sees strategy merely as a planned finite a priori phenomenon executed by administrative organizational notion and body embedded in a top-down bureaucratic structure and growing from a centralized to a decentralized form. Chandler wants its research to provide information by concentrating on innovation and the spread of the modern decentralized organizational form observed in American industrial development and evolution. He especially focuses on administrative histories of the four companies (du Pont, General Motors, Standard Oil New Jersey and Sears) that initially created the decentralized form. Therefore, his work states the companies’ reasons for growing their businesses, establishing new functions and developing new lines of business and it furthermore gives reasons for new designs of administration required after the respective decisions by providing insights into the development process of new methods and means for coordinating, appraising and planning the effective utilization of human resources, financial assets and materials. (cf. Chandler, A. D., 1962, p. 5) The author’s argument is constructed, contrary to the general epistemological conclusions of an either *a priori* or *a posteriori* propositioning of the structure and strategy debate, on the basis of an additional philosophical construction that is based on cybernetic conclusions. Seeing the aforementioned relationship as a ubiquitous feedback-based phenomenon by underpinning the logic that a structure is required a priori, leading to the perspective on the very notion of strategizing as an intellectual capital or intangible (operant) resource of the organization. Thus, cultivating the embodiment (cf. Pfeifer, R. & Bongard, 2007) of a viable and complex organizational structure generating a unique ‘*Eigenbehavior*’⁴ that actually results in the Sustainable Competitive Advantage (SCA) of the firm in the contemporary dynamic marketplace (cf. Kamran, August 3rd-7th, 2016, 2017a) Considering the most essential operational successes of the contemporary era, as Apple Inc., the phenomenon can explain and derive how the rise of the firm from the roam of bankruptcy in 1996 (cf. Rumelt, 2012) to becoming one of the most valuable brands and companies today, was realized (cf. Cyran, 2016). Observing firms like Apple Inc. and Tesla Motors, not limiting themselves to industry boundaries and economic dimensions and embodying non-bureaucratic structures but rather being navigated by an entrepreneurial structure and corporate culture, show that a different strategic understanding and role of structure and industry boundaries is emerging. The debates have been raised also by Teece et al., (1997), O’Reilly III and Tushman (2008), Mintzberg et al., (1998) and the author’s diver’s publications leading to the development of the SFM. However, research into the top journals in competitive strategy shows that Porter (1980, 1985) has had the most significant influence within the field (see: Appendices 2 & 3, pp. 16-17). Thus, the

boost. (See: Chandler, 1962).

⁴ Eigen-behavior is a cybernetic term meaning the collective response and intelligence of the member of a group/organization or a firm based on the analogy that the sum is more than its part.

notion of choosing Porter as the nester of competitive strategy and as the cornerstone of the author's research has been derived based on evidence of the in-depth research in competitive strategy literature and the leading journals. As the evidence delivered in Appendix 2 (p. 16), Appendix 3 (p. 17), and Appendix 4 (p. 18) substantiating the role that Porter has played in shaping the intellectual landscape of competitive strategy as the most cited and influential scholar, taking the first and the third place of the most influential publications with Porter (1980) and Porter (1985) publications, which reveals their influence on the field (see: Appendices 2 & 3, pp. 16-17). The literature review also substantiated, as described in Appendix 4 (p. 18), the diminishing role of Porter's influence especially when comparing the results from "1987-1993 to 1994-2000" (cf. Ramos-Rodriguez & Riuiz-Navarro, 2004). Rumelt (1991) empirically validated the notion of the visible managerial hand, which makes the actual difference by falsification of Porter's industrial economic dimension and indicating a less important role of industry-membership while giving managerial and organizational specific activity a more essential role. While, "... *the birth of the field of competitive strategy in the 1960s can be traced to the following three works: Alfred Chandler's Strategy and Structure (1962); Igor Ansoff's Corporate Strategy (1965); and the Harvard textbook Business Policy: Text and Cases (Learned et al. 1965), the text of which is attributed to Kenneth Andrews and was later rewritten in a separate book*" (Rumelt, Schendel, & Teece, 1994). *The Concept of Corporate Strategy (1971)*(Furrer, Thomas, & Goussevskaia, 2008, p. 3), the rise of the "*Resource-based View*" (RBV) led by Wernerfelt (1984), Barney (1991) and Peteraf (1993) as an essential strategic Weltanschauung for the field has also been apparent (cf. Ramos-Rodriguez and Ruiz-Navarro, 2004 & Penrose, 1959) has laid the foundation and paved the way for the RBV movement. Scholars in strategic management agree that the field is far from being mature (cf. Caldart & Ricart, 2004).

However, based on the most essential and wider scientific publications in the field overall and within a certain period of time, scholars can make a perspective study of mapping the evolution of the field by considering and analyzing the broader context of the publications of the greater number of researchers to gather an impression by the bibliometric methods (cf. Ramos-Rodriguez & Riuiz-Navarro, 2004). "*Once a scientific discipline has reached a certain degree of maturity, it is common practice for its scholars to turn their attention towards the literature generated by the scientific community and, treating it as a research topic in its own right, to conduct reviews of the literature with a view to assessing the general state of the art*" (Ramos-Rodriguez & Riuiz-Navarro, 2004, p. 983). Constructing on the most influential papers published in journals with the highest impact on the field such as Strategic Management Journal (Tahai & Meyer, 1999), Academy of Management Journal, Journal of Applied Psychology, Organizational Behavior and Human Decision Processes, Academy of Management Review, Administrative Sciences Quarterly, and Journal of Management (cf. Tahai & Meyer, 1999 & Furrer et al., 2008) resulting in more than half of all citations (cf. Tahai

& Meyer, 1999) in the field of strategic management citations between 1980 and 2006, which are ranked numerically by the highest citations and the following scientific works are regarded as the most essential based on most citations generated and ranked: 1 Barney (1991), 2 Cohen and Levinthal (1990b); 3 Teece et al. (1997), 4 Wernerfelt (1984), 5 Nahapiet and Ghoshal (1998), 6 Powell et al. (1996), 7 Dyer and Singh (1998), 8 Grant (1996), 9 Uzzi (1997), 10 Peteraf (1993), 11 Eisenhardt and Martin (2000), 12 Dierickx and Cool (1989), 13 Williamson (1991), 14 Tushman and Anderson (1986), 15 Gulati (1995), 16 Szulanski (1996), 17 Amit and Schoemaker (1993), 18 Leonard-Barton (1992), 19 Hambrick and Mason (1984), 20 Eisenhardt (1989b), 21 Ring and Van de Ven (1994), 22 Hamel (1991), 23 Gulati (1998), 24 Levinthal and March (1993), 25 Eisenhardt and Tabrizi (1995), 26 Oliver (1991), 27 Ouchi (1980), 28 Kogut (1988), 29 Lane and Lubatkin (1998), 30 Eisenhardt (1989a), 31 Ring and Van de Ven (1992), 32 Suchman (1995), 33 Spender (1996), 34 Doz (1996), 35 Conner (1991), 36 Mitchell et al. (1997), 37 Parkhe (1993), 38 Powell (1995), 39 Gulati et al. (2000), 40 Henderson and Cockburn (1994), 41 Lieberman and Montgomery (1988) (cf. Tahai & Meyer, 1999 & Furrer et al., 2008, p. 1). However, not a single paper as demonstrated above has applied the cybernetics lens in terms of a holistic perspective on strategic management. Thus, the lacking understanding of the cybernetics worldview meaning that the question of ***‘viability of organizations and complexity in strategic management’*** has not been raised and asked so far by the most influential publications and scholars. This is an essential aspect to reflect upon, hence viability of organizations within the realm of the business administration is the *raison d'être* of strategy. The author's research answers this gap within the literature as identified solutions provided through the SFM-model.

One gets a clear idea of the interwovenness of strategy, performance and environment when looking at the *“main d'oeuvres”* of scholars like Ramos-Rodriguez and Rius-Navarro (2004). They rank ***“performance”*** (Ramos-Rodriguez & Rius-Navarro, 2004) as a major strategic concern of every company closely followed by the consideration of the ***“environment”*** (Ramos-Rodriguez & Rius-Navarro, 2004) as a second variable dominating this field of interest. Competitive strategy, performance and the total-environment of every company are interwoven in a way that a separate consideration of them is clearly not possible because one piece will be missing (cf. Ramos-Rodriguez & Rius-Navarro, 2004 & Appendix 1, 2, 3 p. 15-17). A review of the most influential scholars in the journal of strategic management between 1980-2000 reveals that among the most significant citation and co-citation based on scholars, Porter (1980, 1985) (see: Appendix 1, 2, 3, p. 15-17 & cf. Ramos-Rodriguez & Rius-Navarro, 2004) has been ranked twice as number 1 and as number 3, placing Rumelt (1974) as number 2 and Chandler (1962) as number 4 of the most cited publications in this period. (see: Appendix 1, 2, 3, p. 15-17 & cf. Ramos-Rodriguez & Rius-Navarro, 2004). The most essential typologies within the field of strategic management has been the notion of ***“competitive strategy”*** (Furrer et al., 2008 & see: Appendices 4-10, pp. 18-30) a worldview led by Porter (1979,

1980, 1985, 2008b), the notion of “*corporate level strategy*” (Furrer et al., 2008 & see: Appendices 4-10, pp. 18-30) a monumental worldview held by Chandler (1962), the notion of “*strategic fit*” (Furrer et al., 2008 & see: Appendices 4-10, pp. 18-30) led by Rumelt’s publication “*Strategy, structure, and economic performance*”, Rumelt (1974) and by the “*managers’ strategic role*” (Furrer et al., 2008 & see: Appendices 4-10, pp. 18-30) led by Chandler’s analogy of visible hand as pathway breaking publication by Chandler (1977) (cf. Mathews, 2012). While scholars as Caldart and Ricart (2004), Lane and Maxfield (1995, 1996), Mason (2007), Rueda-Manzanares, Aragon-Correa and Sharma (2008), Amit and Schoemaker (1993), Innes and Booher (2000), Dyer, Wilkins and Eisenhardt (1991), Uhl-Bien and Marion (2007), Frizelle and Woodcock (1995), e Cunha and da Cunha, (2006) and Chaffee (1999) have to some extent adapted the notion of complexity, but their contributions have not really received much attention, since their understanding of complexity has been highly wide-spread and the lack of common concentration has led to not much impact on the field. Cybernetics as the science of control and communication (cf. Wiener, 1948) intends to deliver the diagnostic power (cf. Schwaninger, 2006a) of concentrating and unifying the field. Viability and complexity management in terms of strategic thought can be observed as managing variety (cf. Beer, 1972, 1981, 1985, 2002; Ashby, 1948; Malik, 1982 & Schwaninger, 1985, 2006a, 2006b, 2006d, 2006c, 2009b, 2010) thus understanding variety engineering based on Ashby’s Law is fundamental to business administration, management and strategic thought and practice (cf. Beer, 1972, 1981, 1985, 2002). The cybernetic world-view can deliver a holistic model for strategy unifying the field of strategic management based on a single model and methodology. The proposed holistic model by the author, which was conceptually constructed, empirically tested and corroborated, concentrates on delivering a vital response to the challenges the field of strategic management has to cope with as a field of scientific discourse and practice. Therefore, this dissertation contributes to filling in the gap within the field and answers one of the most needed and sought-after question on how to immunize organization by a viability based on cybernetics worldview, thus if organizations survive and are competitive in the long run economic rents will be delivered as a result. The author will, therefore, concentrate mainly on extending the most essential typologies within the field of strategic management underpinned as “*competitive strategy*”, as led by the Porterian thought (Porter 1977, 1980, 1985, 2008b). The dissertation’s contribution is a novel attempt to extend, unify and to fill the gap within the field.

1.1. The Role of Strategy in General Management

Magretta (2012) defines strategy in her latest book, *“Understanding Michael Porter”* as an antidote to competition and moreover, as a dangerous concept in business. Ghemawat (2002) sees the origins of strategy in the military by stating that it is, *“a term that can be traced back to the ancient Greeks, for whom it meant a chief magistrate or a military commander in chief”* (Ghemawat, 2002, p. 37). However, he builds the bridge to business by analyzing that strategy today is mainly *“use[d] in a self-consciously competitive context, which... is even more recent”* (Ghemawat, 2002, p. 37). According to Mintzberg (1987):

1. *Strategy from a military Weltanschauung is concerned with sketching a how-to of war “... shaping the individual campaigns and within these, deciding on the individual engagements”* (Mintzberg, 1987, 11-12 ff.).
2. *Strategy from a Game Theory perspective is the design of a complete plan identifying which options the player will make in every possible situation* (Mintzberg, 1987, 11-12 ff.)
3. *Strategy from a management viewpoint is unified, comprehensive, and integrated plan... constructed to bring forth basic goals of the firm are achieved.*
4. *Strategy in the dictionary is “a plan, method, or series of manoeuvres and tactics for achieving a high-stake goal”* (Mintzberg, 1987, 11-12 ff.).

According to the author, strategy is based on the essential pillars as described below. Strategy therefore is:

1. *An objective/goal/a position to be achieved, or a problem/competition dilemma to be addressed and solved.*
2. *The process of creating and designing a plan and the “how-to” of achieving the above.*
3. *Action and execution via a self-correcting and self-organizing system of feedback.*
4. *A solid and ubiquitous feedback system of information based on the actions applied to correct errors, however, the chief objective of the strategy is primarily in dissolving problems before they become crises.*

Nevertheless, before the author further outlines the notion of strategy, it is essential to comprehend, what strategy is not:

1. *“Strategy is not operational effectiveness”* (Porter, M. E., 1996, p. 4).
2. *“Strategy is not a mere operational activity, although operations are embedded in a wider sense in it”* (Gälweiler, 2005, p. 23).
3. *Strategy is not a trend or fashion* (cf. Rumelt, 2012)
4. *“Strategy is not liquidity and temporary successes”* (Gälweiler, 2005, p. 23).
5. *“Strategy is not hyper-competition”* (Porter, M. E., 1996, p. 4). *Strategy is not a static and linear*

activity or a random set of activities.

6. “*Strategy is not an outcome or a document*” (FERENCE & THURMAN, 2009, p. 22).
7. “*Strategy is not the application of pure force against the rivals and competition*” (Schelling, 1980, p .4).
8. *Strategy is not a single and standalone activity; it’s a set or system of activities.* (cf. Porter, M. E., 2008b)
9. “*Strategy is not just a mere approach*” (Gälweiler, 2005, p. 65).
10. “*Strategy is not tactic; strategy is actively doing something, manoeuvre, course and a way*” (Gälweiler, 2005, p. 66).
11. *Strategy⁵ is not a military strategy;⁶ these two approaches differ in the statement of the problem they intend to cope with, to resolve and how these problems can be tackled. The objectives of military strategies do not coincide with the strategies of managing an enterprise.*
12. “*Strategy is not always and from the outset a zero-sum-game*” (Gälweiler, 2005, p. 60).
13. “*Strategy is not a success guaranty and does not answer this unsolvable problem*” (Malik, F. F., 1984; 2007b, p. 164).
14. *Strategy is not a temporary project.*
15. *Strategy is not a routinely juxtaposing of financial statements to match a wishful-thought plan or once in while method of doing something for the long run* (cf. Rumelt, 2012)
16. “*Strategy is not solely defined by and aimed at economic and financial targets*” (Beer, 1985, p. xi).

Although Porter (1980, 1998, and 2008b) gives business (competitive) strategy a profound notion, which he underpins by establishing that the formulation of a competitive strategy essentially demands relating a company to its environment, which essentially comprises the industry in which the company competes as well as social and economic forces. He further claims that the industry structure is of particular importance as it defines competitive rules and available strategies within the industry while non-industry forces are considered to be of relative significance as they usually induce implications for all industry participants and the impact varies depending on a firm’s ability to handle them (cf. Porter, M. E., 1980, 1998, p. 3). The importance of industry structures to businesses gets further manifested when reviewing Porter and McGahan (1997). Evaluating a large economic database, they are concluding that “*industry proves to have a powerful direct and indirect influence on profitability*” (McGahan & Porter, 1997, p. 15). However, as correct and rational this view and notion may be, its effects are true in a linear and predictable environment, but other factors and the wider and more in-depth observation of additional factors, forces and organizations’ structure are necessary to deal with

⁵ In management and for the purpose of this dissertation.

⁶ It routes from military sciences but strategy in management tries to answer another problem.

today's problems respectively more holistic strategic challenges. As a good example, one can observe "*The Blue Ocean Strategy*" by Kim and Mauborgne (2005), which is a primary and a solid example of how concentration on a better organizational structure, attracting a different type of customer or addressing the wants and needs of underserved customer group(s) by the particular industry, the redesigning a business model of an established industry, gaining additional capabilities by concentrating on customer value as a new strategic choice and differentiation by a unique value delivery to the customer will result to much superior achievements and will successfully challenge the industry-wide held myopic beliefs.

The author establishes the claim that strategy primarily must be aimed at positioning an organization in its most possible advantageous position against the strongest force or multitude of forces framing a complex situation. The strongest force or complexities may differ from organization to organization or industry to industry, however, the essential point is that strategy must target the most vital forces that threaten the organizations' survival (cf. Summer et al., 1990) by proactive measures in advance of the crises and the problems' occurrence. Thus, strategy is the proactive design of the components that pre-navigate the conditions of a successful steering of the firm (cf. Kamran, 2018b, 2018d). The strongest forces, which played the main role in the dismantlement of many financial institutions starting with Lehman Brothers' bankruptcy, were not primarily economic or financial threats. They were more the sum of systemic management malfunctions, strategic and regulative failures over a long period of time that commenced the 2008-2009 global crises. Furthermore, influenced by the aforementioned crises, the author initiates a serious scholarly debate on the definition of what the notion of '*structure*' means for strategic immunity and strategic control of organizations. Having large sums of financial portfolios under management, which especially in financial industry are regarded as the vital part of the organizational structure and based on the hyper-competition among the big players as Goldman Sachs and Lehman Brothers for more profits and over-leveraging these assets for more risk substantiates the author's claim.

Granted, that profitable performance is essential for overall fitness and organizational existence, however, the author enhances the debate on the structure's importance as a vital strategic concern and objective. It is also essential that elements, which are not tangible and not even quantifiable as trust, culture, reputation and organizational intelligence, organizational behavior, and interrelations (Eigen-behavior), are stated and integrated into the debate.

According to Hall and Saias (1980), "*an organization decides and acts in accordance with its perception of changes in the environment or in its own capabilities*" (Hall & Saias, 1980, p. 156). Miles, Snow and Pfeffer (1974) observe that "*the organization whose managerial talent is fully employed in the operation of the existing technology and process is unlikely to perceive new environmental threats or opportunities*" (Miles et al., 1974, p. 261). Strategy is a large and complex

field of study with almost no agreement or general consensus on the commonly held beliefs, with some exceptions, whereupon the agreement is held as the widely accepted 'Resource-Based View' (RBV), the Porterian 'Industry Economics' (IE) as the FFM or the Chandlerian notion of "strategy follows structure" (Whittington, 2008). Nevertheless, it is essential to question these notions. Hence, the following observations deliver a conceptual framework on what strategy means for the purpose of this work and what strategy ought to resolve so that the organization can survive and thrive: (cf. Summer, et al., 1990)

1. *Strategy is a highly focused combination of diagnosis, policies and actions for the best results (cf. Rumelt, 2012)*
2. *Strategy is a set of coherent actions, which result in a vital change of the future by the actions taken today (cf. Kamran, August 3rd-7th, 2016, 2017a)*
3. *Strategy is dissolving organizational complexity (cf. Beer, 1972, 1981, 1985)*
4. *Strategy is a hypothesis of what is going to succeed in the future.*
5. *Strategy is the set of a pro-active and dynamic course correcting actions for the achievement of the highest organizational objective (cf. Kamran, August 3rd-7th, 2016, 2017a, 2018f)*
6. *Strategy is the most essential part of organizational survival. Before any organizational collapses, the strategist must fail in advance (see Figure 6: Crises Emergence and Company Collapses)*
7. *Strategy's main problem is organizational immunity.*
8. *Strategist's activity field takes place in the future, by connecting it to the present.*
9. *Strategy's main task is maintaining the unconditional supremacy over the strongest force.*
10. *Strategy is an identity- preserving and an identity- transforming organizational capability.*
11. *Strategy is designing an intelligent and viable organizational structure, to cope with emergent and unforeseen phenomenon.*
12. *Strategy according to Ashby's fundamental Law, which states, "only variety can absorb variety", is ensuring the sufficient amount of variety is provided at the disposal of the organization's navigator at all times.*
13. *"Strategy rests on a unique set of interrelated activities." "Competitive strategy is about being different. It means deliberately choosing a different set of activities to deliver a unique mix of value" (Porter, 1996, p. 6).*
14. *Strategy is the creation of the right sort of crises in advance so that the organization can adapt to them and pro-actively dismantle their effects (cf. Kamran, August 3rd-7th, 2016, 2017a)*
15. *According to Porter (2008): "Strategy can be viewed as building defenses against the competitive forces or finding a position in the industry where the forces are weakest" (Porter, M. E., 2008b, p. 27).*
16. *"Strategy presents a companies' direction of actions, values and ethics in the contemporary and*

future complex and turbulent total-environment” (Rumelt, 1991, p. 5).

17. “*Strategy is a strongly contextual concept. At the core, it deals with the adjustment of specific policies to particular situations. In looking at strategy evaluation, therefore, it will be helpful to associate methods of analysis with their appropriate concepts*” (Rumelt, 1979, p. 1).
18. “*In principle, strategy is the primary means of reaching the focal objective. The focal objective is whether the objective is in mind at the moment. Strictly speaking, it is literally meaningless to talk about strategy without having an objective in mind. Viewed in this context, strategy becomes an integral part of ends-means hierarchy*” (Camerer, 1985, p. 1 & Thorelli, 1978, p. 6).

Below are the most essential and vital papers in strategic management journals, which define strategy in the following manner. Additional views from the most cited publications in the history of CS and SM suggest:

1. “*Understanding sources of sustained competitive advantage has become a major area of research in strategic management*” (Barney, 1991). **Barney’s famous paper discusses the importance of RBV of the firm. Thus, based on his approach to which he refers to as the “VRIO framework”, controlling sources are essential to CA.**
2. “*The competitive advantage of firms is seen as resting on distinctive processes (ways of coordinating and combining), shaped by the firm’s (specific) asset positions (such as the firm’s portfolio of difficult-to-trade knowledge assets and complementary assets), and the evolution path(s) it has adopted or inherited*” (Teece, D. J., Pisano, G., & Shuen, A., 1997).
Teece et al., have put forth the concept of dynamic capabilities, meaning that the firms CA is based on combining internal and external resources to address challenging and changing environments.
3. “*... when the knowledge base of an industry is both complex and expanding and the sources of expertise are widely dispersed, the locus of innovation will be found in networks of learning, rather than in individual firms*” (Powell, W. W., Koput, K. W., & Smith-Doerr, L., 1996).
Powell et al., are putting forth the notion of ecosystem-learning or according to Porter (2008), cluster dynamics and effect that foster innovation and CA.
4. “*... a firm’s critical resources may span firm boundaries and may be embedded in interfirm resources and routines... an increasingly important unit of analysis for understanding competitive advantage is the relationship between firms and identify four potential sources of interorganizational competitive advantage: (1) relation-specific assets, (2) knowledge-sharing routines, (3) complementary resources/capabilities, and (4) effective governance*” (Dyer, J. H., & Singh, H., 1998). **Coming for the RBV movement the researchers divide CA based on the inter-organizational key activities and core processes that are shaped by good and solid managerial practices.**

5. According to Williamson, O. E., 1991): “Given assumptions about the characteristics of knowledge and the knowledge requirements of production, the firm is conceptualized as an institution for integrating knowledge... More generally, the knowledge-based approach sheds new light upon current organizational innovations and trends and has far-reaching implications for management practice” Grant, R. M., 1996). **Based on the Knowledge Based View (KBV) of the firm, which also is a sub-section of the RBV, the argument is put forth that the KBV of the firm is highly essential for the innovation’s dimension and the successful path of the firm.**
6. “... that embeddedness is a logic of exchange that promotes economies of time, integrative agreements, Pareto improvements in allocative efficiency, and complex adaptation. These positive effects rise up to a threshold, however, after which embeddedness can derail economic performance by making firms vulnerable to exogenous shocks or insulating them from information that exists beyond their network” (Uzzi, B.,1997). **Based on the research brought forth here, it is essential to note the role of environmental turbulence based on the notion of the firms’ embeddedness within the environmental and social economic exchange.**
7. “...four conditions underlie sustained competitive advantage, all of which must be met. These include superior resources (heterogeneity within an industry), ex post limits to competition, imperfect resource mobility, and ex ante limits to competition.” (Peteraf, M. A.,1993). **As another essential representative of the RBV of firm logic Peteraf works-out the dimension of the superiority of resources, how they are created and can be sustained.**
8. “... dynamic capabilities are a set of specific and identifiable processes such as product development, strategic decision making, and alliancing. They are neither vague nor tautological. Although dynamic capabilities are idiosyncratic in their details and path dependent in their emergence, they have significant commonalities across firms (popularly termed ‘best practice’” (Eisenhardt, K. M., & Martin, J. A., 2000). **As the RBV dominates the most essential papers within the CS & SM, this research is also based on the application of the theory put forward by Teece et al., 1997 and gives solid evidence of the applicability of the subject.**
9. “Sustainability of a firm's asset position hinges on how easily assets can be substituted or imitated. Imitability is linked to the characteristics of the asset accumulation process: time compression diseconomies, asset mass efficiencies, inter-connectedness, asset erosion and causal ambiguity (Dierickx, I., & Cool, K. (1989). The economics of substitution and also the analogy of RBV is an essential factor described here as well. **This argument also corresponds with the of the “red vs. the blue ocean” comparative study done by Burke et al., which state that with**

the specific time frame a blue ocean position can erode and become red, if imitation can be successfully pursued.

10. “... *the key differences that distinguish three generic forms of economic organization-market, hybrid, and hierarchy. The analysis shows that the three generic forms are distinguished by different coordinating and control mechanisms and by different abilities to adapt to disturbances*” (Williamson, O. E., 1991). **Additional dimension of situated-ness and control are discussed, whereby the firms can cope with environmental turbulence, however, the notion of structure is strategy approach is still missing.**
11. “...*we demonstrate that technology evolves through periods of incremental change punctuated by technological break-throughs that either enhance or destroy the competence of firms in an industry. These breakthroughs, or technological discontinuities, significantly increase both environmental uncertainty and munificence..., while competence-destroying discontinuities are initiated by new firms and are associated with increased environmental turbulence, competence-enhancing discontinuities are initiated by existing firms and are associated with decreased environmental turbulence*” (Tushman, M. L., & Anderson, P., 1986). **The researchers put a solid theory of how innovation and technology-based disruption creates and amplifies perturbations within the markets by new entrants and by industry-based incumbents.**
12. “*The ability to transfer best practices internally is critical to a firm's ability to build competitive advantage through the appropriation of rents from scarce internal knowledge. Just as a firm's distinctive competencies might be difficult for other firms to imitate, its best practices could be difficult to imitate internally*” (Szulanski, G., 1996). **The notion of best practice and its benchmarking within the firms inter SBU's is discussed. This notion of course could have been dealt with if the firm have applied and profited by the VSM's power of ambidexterity.**
13. Amit, R., & Schoemaker, P. J. (1993), describe: “*We build on an emerging strategy literature that views the firm as a bundle of resources and capabilities, and examine conditions that contribute to the realization of sustainable economic rents. Because of (1) resource-market imperfections and (2) discretionary managerial decisions about resource development and deployment, we expect firms to differ (in and out of equilibrium) in the resources and capabilities they control. This asymmetry in turn can be a source of sustainable economic rent... Organizational rent is shown to stem from imperfect and discretionary decisions to develop and deploy selected resources and capabilities, made by boundedly rational managers facing high uncertainty, complexity, and intrafirm conflict.* **Amit et al., construct**

on and underpin the domination of the RBV movement and deliver additional evidence that selected resources and cultivated capabilities are the essence of competition.

14. *“The theory states that organizational outcomes—strategic choices and performance levels—are partially predicted by managerial background characteristics”* (Hambrick, D. C., & Mason, P. A., 1984). **This research examines the notion of habitus derived from the background characteristics, thus, there also lie the essence of managerial decision making.**
15. *“... agency theory (a) offers unique insight into information systems, outcome uncertainty, incentives, and risk and (b) is an empirically valid perspective, particularly when coupled with complementary perspectives. The principal recommendation is to incorporate an agency perspective in studies of the many problems having a cooperative structure”* (Eisenhardt, K. M., 1989). **The dimension of agency theory is discussed to reduce uncertainty and enhance the dimension of cooperation within the firms and managerial performance.**
16. *“Global competition highlights asymmetries in the skill endowments of firms. Collaboration may provide an opportunity for one partner to internalize the skills of the other, and thus improve its position both within and without the alliance..., not all partners are equally adept at learning; that asymmetries in learning alter the relative bargaining power of partners; that stability and longevity may be inappropriate metrics of partnership success; that partners may have competitive, as well as collaborative aims, vis-à-vis each other; and that process may be more important than structure in determining learning outcomes”* (Hamel, G. (1991)). **The linkage between global competition and asymmetries of the skills distribution is discussed in this research and notion co-opetition in terms collaboration and competition is highlighted.**
17. *“Organizational learning has many virtues, virtues which recent writings in strategic management have highlighted. Learning processes, however, are subject to some important limitations. As is well-known, learning has to cope with confusing experience and the complicated problem of balancing the competing goals of developing new knowledge (i.e., exploring) and exploiting current competencies in the face of dynamic tendencies to emphasize one or the other”* (Levinthal, D. A., & March, J. G., 1993). **The notion of ambidextrous organisation in terms of exploitation and exploration is discussed, this draws back again on the RBV dimension in CS & SM.**
18. *“The compression model assumes a well-known, rational process and relies on squeezing together or compressing the sequential steps of such a process. The experiential model assumes an uncertain process and relies on improvisation, real-time experience, and flexibility... planning and rewarding for schedule attainment are ineffective ways of*

accelerating pace. We conclude with linkages to punctuated equilibrium and selection models of adaptation, fast organizational processes, organic versus improvisational structures, and complexity theory” (Eisenhardt, K. M., & Tabrizi, B. N., 1995). **The essence of process-orientation is highlighted, which is based on the selection of modes of adaptation and flexibility and improvisation and less on sequential steps of such a process.**

19. *“Much of the prior research on interorganizational learning has focused on the role of absorptive capacity, a firm's ability to value, assimilate, and utilize new external knowledge. However, this definition of the construct suggests that a firm has an equal capacity to learn from all other organizations. One firm's ability to learn from another firm is argued to depend on the similarity of both firms' (1) knowledge bases, (2) organizational structures and compensation policies, and (3) dominant logics....”* (Lane, P. J., & Lubatkin, M. (1998).) **In this research based on the KBV of the firm theory additional dimension of benchmarking are discussed, which include symmetries of organizational structures and intangible knowledge cultivation and the dominant logic embracing the firm’s normative layer.**
20. *“Alliances and similar cooperative efforts are receiving increased attention in the strategic management literature. These relationships differ in significant ways from those governed by markets or hierarchies and pose very different issues for researchers and managers..., their characteristics and follow this with a discussion of criteria which we believe bear on the choice of governance: risk and reliance on trust.”* (Ring, P. S., & Van de Ven, A. H., 1992). **The researchers put forth the importance of cooperative efforts and alliances within the field of CS & SM and basing their findings in terms of managerial corporate governance and the firm’s dependability on trust, whereupon risks and rewards can be mitigated.**
21. Suchman, M. C. (1995) research describes... *“synthesizes the large but diverse literature on organizational legitimacy, highlighting similarities and disparities among the leading strategic and institutional approaches. The analysis identifies three primary forms of legitimacy: pragmatic, based on audience self-interest; moral, based on normative approval; and cognitive, based on comprehensibility and taken-for-grantedness”*. **The notion of the triadic interrelatedness between, what works and its consequences, self-interest, and the meta-assessment in terms judgment and intentionality is put forward within the spectrum of strategic and organizational studies.**
22. *“Knowledge is too problematic a concept to make the task of building a dynamic knowledge-based theory of the firm easy. We must also distinguish the theory from the resource-based and evolutionary views... The result is a very different mode of theorizing, less an objective statement about the nature of firms ‘out there’ than a tool to help managers discover their place in the firm as a dynamic knowledge-based activity system”* (Spender, J. C., 1996). **The**

KBV of the firm is discussed based on the RBV of the firm and the evolutionary dimension it, which evolves based on the pragmatic nature of activity-based learning and doing.

23. *“Successful alliance projects were highly evolutionary and went through a sequence of interactive cycles of learning, reevaluation and readjustment. Failing projects, conversely, were highly inertial, with little learning, or divergent learning between cognitive understanding and behavioral adjustment, or frustrated expectations. Although strategic alliances may be a special case of organizational learning, we believe analyzing the evolution of strategic alliances helps transcend too simple depictions of inertia and adaptation, in particular by suggesting that initial conditions may lead to a stable ‘imprinting’ of fixed processes that make alliances highly inertial or to generative and evolutionary processes that make them highly adaptive, depending on how they are set”* (Doz, Y. L. (1996). **The notion of evolutionary theory of alliance-projects are put forward and the spectrums of their initial structural conditions are discussed, which lead the alliance-projects to a successful outcome.**
24. *“A resource-based approach to strategic management focuses on costly-to-copy attributes of the firm as sources of economic rents and, therefore, as the fundamental drivers of performance and competitive advantage. Interest presently exists in whether explicit acknowledgement of the resource-based view may form the kernel of a unifying paradigm for strategy research”* (Conner, K. R. (1991). **The theory of RBV is furthermore discussed and questioned whether it can be regarded as the nucleus within the CS & SM research.**
25. *“Stakeholder theory has been a popular heuristic for describing the management environment for years, but it has not attained full theoretical status”* (Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). **The notion of Stakeholder dimension of the organizational realities is discussed and brought into the spectrum of CS & SM. This dimension is essential and has been integrated in to the author’s SFM.**
26. *“Maintaining robust cooperation in interfirm strategic alliances poses special problems. Such relationships have received growing (attention in recent research grounded in game theory, which has suggested that some alliance structures are inherently more likely than others to be associated with high opportunity to cheat, high behavioral uncertainty, and poor stability, longevity, and performance. Findings generally supported the model and hypotheses, suggesting the need for a greater focus on game theoretic structural dimensions and institutional responses to perceived opportunism in the study of voluntary interfirm cooperation”* (Parkhe, A.,1993). **The researchers discuss the essence of game theoretic structural dimensions and institutional responses to conceived opportunistic behavior in**

understanding interfirm cooperation and competition.

27. An additional dimension based on the dissolution of ties within alliances research was given by Zhelyazko and Gulati (2013), stating: "... scholars typically assume that past collaborations are understanding the consequences of dissolutions is important because the relationship disruptions they cause can undermine the taken-for-granted relationships between past and future tie formation. **As organization's Eigenbehavior forms the managerial habitus and vice versa in a recursive nature of the firm's evolution, where the historical development shapes thus the future action. The author agrees with the Porterian dictum in strategy in stating, strategy is about making a choice and trade off, which some time means is doing nothing at all and not engaging in risky alliances.**
28. "Total Quality Management (TQM) has become, according to one source, 'as pervasive a part of business thinking as quarterly financial results,' and yet TQM's role as a strategic resource remains virtually unexamined in strategic management research. Drawing on the resource approach and other theoretical perspectives... The findings suggest that most features generally associated with TQM—such as quality training, process improvement, and benchmarking—do not generally produce advantage, but that certain tacit, behavioral, imperfectly imitable features—such as open culture, employee empowerment, and executive commitment—can produce advantage" (Powell, T. C. (1995). **The findings discussed here correspond with Porter's underpinning that operational effectiveness is not a strategy in the larger sense. However, this notion can be challenged by the works of Kamran, (2018d), hence structural conditions bring-forth CA based on the author's thesis of: "structure is the strategy" (Kamran, 2013a, 2018d)**
29. Gulati, R., Nohria, N., & Zaheer, A. (2000): "... introduces the important role of networks of interfirm ties in examining fundamental issues in strategy research. Prior research has primarily viewed firms as autonomous entities striving for competitive advantage from either external industry sources or from internal resources and capabilities. However, the networks of relationships in which firms are embedded profoundly influence their conduct and performance. We identify five key areas of strategy research in which there is potential for incorporating strategic networks: (1) industry structure, (2) positioning within an industry, (3) inimitable firm resources and capabilities, (4) contracting and coordination costs, and (5) dynamic network constraints and benefits". **Gulatin, et al, discussed the common habitus and view dominating the field of CS & SM research. Their identification of the core areas has been widespread and mainstream. It is however within the dimension of organizational structural condition and firm's inception in terms of the VSM that the integrity of the firm's evolutionary- interlinkages lie.**

30. “Renewed interest in the resource-based theory of the firm has focused attention on the role of heterogeneous organizational ‘competence’ in competition” (Henderson, R., & Cockburn, I. (1994). **The RBV has been strongly dominating the field of CS & SM and the habitus of research. Heterogeneous organizational competence is put forward as the firm’s Eigenbehavior that evolve over time that distinguishes a successful firm from less successful ones. Apple Inc.’s successes can be attributed to this specific and vital feature.**
31. Lieberman, M. B., & Montgomery, D. B. (1988): discuss “... the theoretical and empirical literature on mechanisms that confer advantages and disadvantages on first-mover firms”. **The notion of first-mover advantage is out forward. It is however, based on the most essential aspects of firm’s emergent strategic capacity in terms of Ashby’s Law that effective strategic game can be played.**

However, among all the essential dimensions describe here Mintzberg’s profound work for the field has been highly influential. Mintzberg, et al., (1998) divide strategy in ten different schools. These schools are:

1. *The Design School: strategy formation as a process of conceptualization and setup.*
2. *The Planning School: strategy formation as a formal process, based on structured routines.*
3. *The Positioning School: strategy formation as an analytical process, industry’s game.*
4. *The Entrepreneurial School: strategy formation as a visionary process of creating value.*
5. *The Cognitive School: strategy formation as a mental process of thought and action.*
6. *The Learning School: strategy formation as an emergent process, thus structure is strategy.*
7. *The Power School: strategy formation as a process of negotiation by understanding BATNA.*
8. *The Cultural School: strategy formation as a collective process by a culture of commitment.*
9. *The Environmental School: strategy formation as a reactive process by Ashby’s Law.*
10. *The Configuration School: strategy formation as a process of transformation of the firm.*

According to Malik (1997a) and Gälweiler (2005), the biggest fallacy and delusion is the notion that maximizing profits, the shareholder value doctrine, value appreciation and increase are the highest organizational objectives. Another false notion is the quitting of strategy at all since it is impossible to plan and develop strategies that embed coping with the emergent phenomenon, thus, embraces additionally this dangerous fallacy (Camerer, 1985, p. 1 & Thorelli, 1978, p. 15). Müller-Stewens and Lechner (2011) give the below six objectives to strategy:

1. *Strategy as a position within the market/industry.*
2. *Strategy as performance-oriented actions/core competencies.*
3. *Strategy as the pursuit of uniqueness/differentiation, design the game to play/blue ocean.*
4. *Strategy as the ability to be adaptive, a Darwinian notion of acting and shaping the milieu.*
5. *Strategy as management of initiatives, as management by objectives.*

6. *Strategy as resource allocation based on the RBV of the Firm.*

What a strategy should achieve in ultimate consequence is to ensure that sufficient time is available in order to identify, analyze and pre-act upon, respectively to absorb complexity from (internal and external environmental disturbances and perturbations) and incalculable and unforeseen developments and occurrences. Whittington (1993) enables the reader to see a broad and concise basis to discuss divergent views on the formation and implementation of strategies by defining four basic conceptions of strategy dimensions, which have very different implications for how organizations conduct strategy (see Figure 1):

1. *A rational conception- the rational/classical approach, with a more ancient history underpins the planning methods, which is more widespread in textbooks and still the most influential.*
2. *A fatalistic conception- the evolutionary approach has strong ties and interlinkages with Darwinian evolutionary theory.*
3. *A pragmatic conception- the processualists are recognized as pragmatists, who emphasized that organizations and markets are unreliable. They champion an incremental approach.*

A relativist conception- the systemic approach is relativistic regarding the ends and means of strategy, thus strongly linked to the cultures and powers of the social-technical systems in which it emerges.

De Wit and Meyer (1998) account for the following reasons to look at strategy from two different perspectives (see also: Pettigrew, 1992 & Quinn, Mintzberg, & James, 1988). These views are:

1. *Content-Ansoff (1984).*
2. *Process-Porter (1980); Chandler (1962), and Mintzberg (1988), Hannan and Freeman (1988), Granovetter (1985) and Cyert & March, 2006 (cf. Houchin, 2003)*

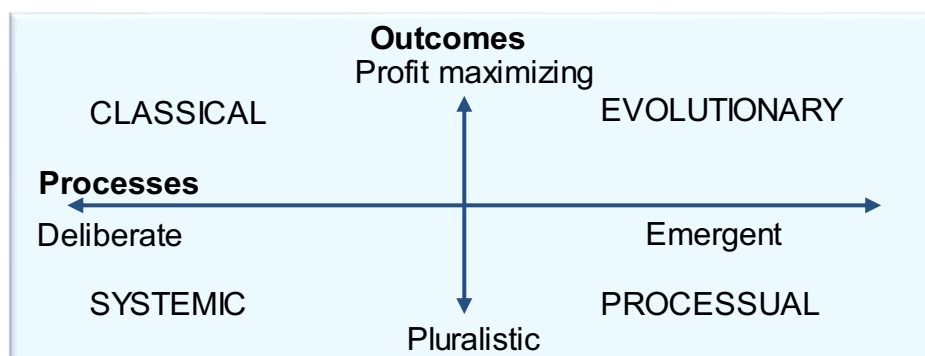


Figure 1: **Generic Perspectives on Strategy**

Source: Whittington (1993).

“There are strongly differing opinions on most of the concepts of strategy. These run so deep that even a common definition of the term is scarcely possible” (Houchin, 2003, p. 24). According to Mintzberg (1998), the concepts such as strategy formation cannot be reduced to a single definition. Houchin (2003) states that the diverse use of the term implies an acknowledgment of numerous

definitions although formally only one is quoted which suggests that the variety of conflicting views is an indicator that strategy is not limited to a number of models or diagrams that can be used as an instruction manual. Hence, the study of strategy requires abiding by a structured process in order to view several approaches separately, compared and contrasted. The above observations are fundamental to the author's work and to the conceptions of the SFM.

1.1.1.Observing and Understanding Porter as the Fundament of the Research

The reason behind why the author chose Porter's work to embed a new and more holistic work is already described above as constructed based on research conducted (cf. Furrer et al., 2008; Ramos-Rodriguez & Riuz-Navarro, 2004). Thus, no other strategy scholar as Porter has proclaimed that level of justified impact and status in the field of competitive strategy literature and its practice since the last four decades (Ramos-Rodriguez & Riuz-Navarro, 2004 & see: this chapter). While the essential role of Chandler can never be underestimated, as the author has established, and criticized simultaneously but by starting to understand strategy and competition in Business Administration (BA) the focal point begins hence with Porter's work and the FFM (cf. Magretta, 2012). His mission to go after the biggest and most consequential problems in strategy and asking why some firms are generating more profits than others, (Magretta, 2012, p. 8) and delivering groundbreaking insights to that question gives Porter a special place at the pinnacle of scholars on business strategy. According to Porter in his collected articles published under the topic of "*On Competition*", (Porter, M. E., 2008b) he recommends to his readers that in order to begin and to seriously understand his work, one ought to begin with his research on the FFM as a foundational framework (cf. Porter, 1979, 1980, 1985, 1998, 2008b). This is also the reason why the author has chosen Porter's FFM model to be the field of concentration, analysis, extension and his contribution to the field (cf. Porter, 2008 & Magretta, 2012). One of the essential reasons why Porter's work has endured for decades and still has not left its powerful impact — is Porter's unique understanding of the sciences of economics and engineering, which he has applied, deriving from his background in the field. It is no wonder that mainstream strategic scholars have led the current thought in strategy by seeing the world from an economic dimension.⁷ In the trends-oriented world of competitive strategy, gurus vanish in very short periods of time, (cf. Magretta, 2012, p. 7) but Porter's legacy has withstood the test of time. Not only is he from a scientific perspective the most cited author in business, (cf. Ramos-Rodriguez & Riuz-Navarro, 2004) but also, his ideas and insights are among the most widely applied in the real world by practitioners around the globe. The FFM is the fundamental curriculum of all MBA programs and above all, it is still an un-falsified model (cf. Porter, 2014). Embedding a business to its environment (industry) and making the organization stable against the industry forces, was a major breakthrough

⁷ Cf. Rumelt, et al. (1991) and Rumelt (2012.) Porter and Kramer (2011) discuss the notion of shared value, wherein Porter revises his long held economic or competing for profits analogy, however, much more work needs to be done.

and it still is a very essential part of strategic thought. However, it is the objective of the author to extend the model and re-engineer its foundational components from a holistic Weltanschauung, thus making it applicable to the challenges of the current era of complexity, unpredictability, ambiguity, and interconnectedness. The below section of the dissertation will give a precise but widely treated introduction into the work of Porter and conclude with an in-depth literature review on the FFM's inception and its pathology.

1.1.2. Porter's Generic Strategies

Generic strategies defined by Porter (cf. Porter, M. Eugene, 1985) deliver the foundation, where the battle for gaining competitive advantage is fought. These three pillars of competitive advantage are:

1. Cost Leadership Strategy

Cost leadership is the strategy whereby a company establishes itself, as "*below the industry price actor*" in the market (Porter, 1986-1998). This means the company is a low-cost producer and a cost-leader in its industry (cf. Porter, 1986-1998). It is essential to understand that no price war can be effectually won or even started, if the low-cost position is not attained. Therefore, it must be avoided.

2. Differentiation Strategy

Differentiation enables a company to position itself along the most valued dimensions in the industry for the customers. However, the research work of Kim and Mauborgne, (cf. Kim & Mauborgne, 2005) challenges the common held view of Porter, where a company can be attractive to customers, who are not the general target group, for which the initiated differentiation was incepted, but moreover by a coherent mix of value proposition and breaking the industry boundaries to serve them, additional possibilities of creating a competitive advantage emerges. According to Burke et al. (2009) in their up to date the most and comprehensive study of the FFM and the blue ocean strategies they observe: "*Blue ocean strategy seeks to turn competitive strategy on its head by replacing 'competitive advantage' with 'value innovation' as the primary goal where firms must create consumer demand and exploit untapped markets... Our evidence for the Dutch retail industry indicates that blue ocean strategy has prevailed as a dominant long-term viable strategy*" (Burke, 2009, p. 1). Nevertheless, being a high- and above-the-average performer is the key in any differentiation pursuits and a company must decide on what difference it can establish, whereupon it can preserve the uniqueness against the rivals in the market (cf. Porter, M. Eugene, 1985). Differentiation in its essence means that the firm is able to defer in time of space the differentiation it has established, thus differentiation has the evolving position of being unique to the customers.

3. Focus Strategy

The focus strategy differs from the above since by this strategy a company optimizes its strategy via excluding other rivals (Porter, M. Eugene, 1985; Porter, M. E., 1998, p. 15). These optimizations are:

1. **Cost focus:** *seeking and establishing a cost focus in the target segment.*
2. **Differentiation focus:** *seeking and establishing a difference for usual needs of the customers that serves better the needs of the target segment.*

Thus, breadth of targeting customers is clearly a matter of the degree of focus, but the essence of focus lies in the exploitation of a narrow target's difference from the balance of the industry (Porter, M. Eugene, 1985; Porter, M. E., 1998, p. 15). Figure 2 displays Porter's "Generic Strategies" as described above.

| | |
|--------------------|---------------------------|
| 1. Cost leadership | 2. Differentiation |
| 3A. Cost focus | 3B. Differentiation focus |

Figure 2: Porter's Generic Strategies

Source: Porter (1985; 1998, 2008a).

Establishing a difference that a company can preserve and combining the notion with the depth of focus the firm decides to establish by its unique attractiveness to the customer,⁸ it requires making trade-offs respectively strategic choices of what not to do. Thus, tradeoffs on the assumption of the focus the organization wants to achieve in its endeavors and the difference it wants to preserve against the rivals are the remedies against mediocrity in the market (cf. Porter, M. Eugene, 1985; Porter, M. E., 1998). Firms that are applying the focus strategy are very successful in the niche, which they have established and have the power of co-creation and high engagement with the segment as a vital tool of innovation and thus, coevolving the market with their customers. Another vital development here was the integration of the "Big Bang Innovation Theory" by Downes and Nunes (2013, 2014)). This theory and model gave the Porterian *Stuck in the Middle*" analogy a different and much sought-after dimension, thus, instead of avoiding it as a major pitfall and contrary to the conventional wisdom, which was laid-out by the Porterian "Generic Strategies" spectrum, doing the exact opposite of embracing it, is pursuit as the mantra of the strategy. The dimension of "Stuck in the Middle" would be described in the later chapters.

⁸ also observed as "Market segments"

4. Viable and Intelligent Structure

While Porter's claim that generic strategies can only embrace the aforementioned triadic understanding and hybrid interrelationship as above described, however, with the rise of IT-technology and also not only product innovation, but moreover, process innovation as the locus of innovation and competitive strategy, the next frontier of strategic dimension has been the foresight of the role of structure in strategic thought and understanding as it has been for Apple Inc. and Inditex/Zara. The enhanced perspective of the fourth generic strategy as a viable and intelligent organizational structure is given below. Thus, an organization, which can adapt, and sense change ubiquitously by having a structure that can cope with the environmental turbulence in terms of fluidity, flexibility and self-organization delivers, in addition, a generic strategy. This claim is substantiated by the author's analogy that strategy regardless of being generic or advanced needs an organizational structure that actually can carry it out, reshape, refocus and to ubiquitously recreate itself until the objective is achieved.

Figure 3 describes the author's contribution since structure is the essence of an organization that can design and embrace, and ultimately execute the strategy holistically. Pfeifer and Bongard (2007) state that embodiment expresses that intelligence always requires a body, meaning that intelligence is attributed to embodied real physical systems exhibiting observable behavior during interactions with the environment. They argue that such embodied systems are confronted with various consequences of embodiment as, for example, being subject to laws of physics, implying that their survival is affected by gravity, friction and energy supply. They conclude that the essential significance of embodiment represents the interaction between physical and information processes (cf. Pfeifer, R. & Bongard, 2007). A solid dimension here is the cybernetics of "*man and machine interface*". The embodiment theory has been successfully executed by firms like Apple Inc.

The author's approach to extending and coining the fourth generic strategy paradigm is influenced by the below-observed scholars' works and publications:

1. *From the "military sciences" perspective* (Boyd's works in Houchin, 2003, Greene, 2010).
2. *From the "management and strategy sciences" perspective:* (Porter; 1974-2013; Mintzberg, et al., 1998; Malik, 1974-2008; Schwaninger, 2006-2016 and diverse publications).
3. *From "management cybernetics" perspective Beer* (1959-1972, 1985, 1966, 1975-1994).
4. *From the "management" perspective by Ulrich* (1971-2001).
5. *From "bionics, management and management cybernetics" perspective, by the works of Malik* (1974-1998, 1993, 1999, 2003b and 2006) and Beer (1959-1972, 1985, 1966 1975-1994)

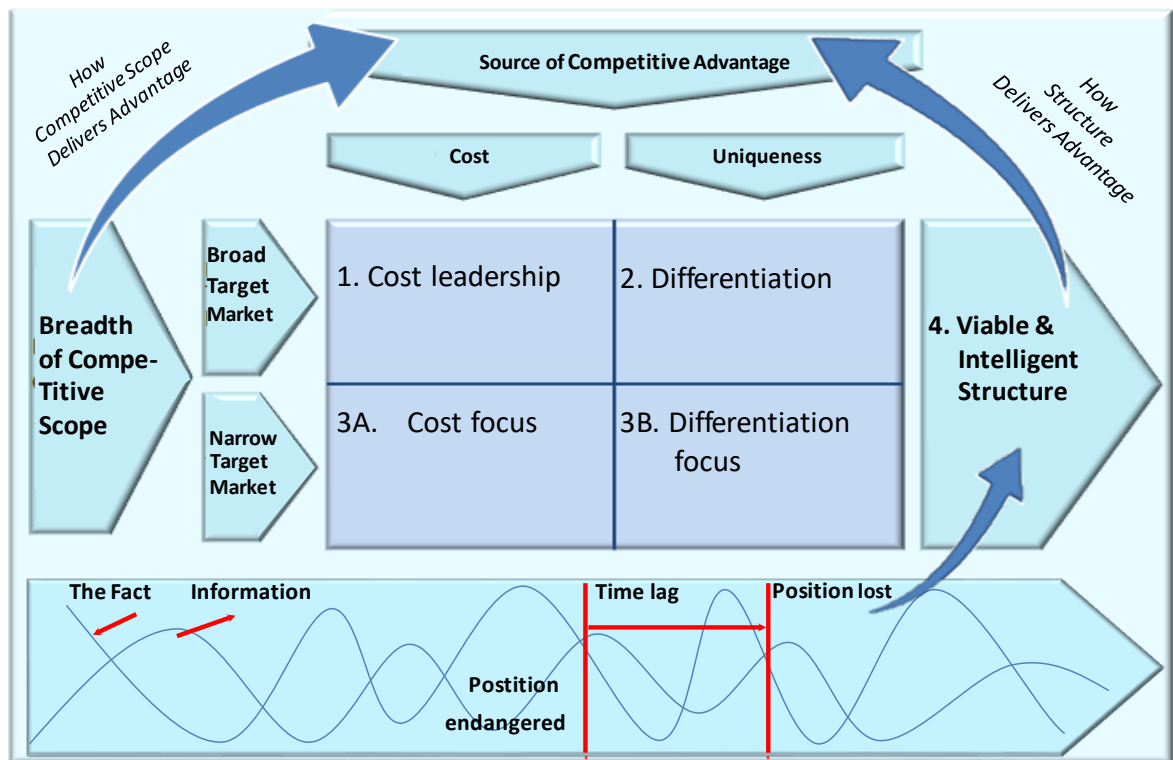


Figure 3: Extended Generic Strategies

Source: Author's own illustration.

Thus, every strategic move requires four essential pillars to succeed:

1. *A goal, a position to acquire, a problem and a crisis to solve (cf. Rumelt, 2012) and moreover to dissolve.*
2. *A plan, a map, which is embodied by the set of actions it needs to conduct and apply.*
3. *Action and execution as a core part of strategic thinking (cf. Rumelt, 2012)*
4. *Feedback, thus it's via feedback that course and policy relating, mission accomplishing, goal achieving, and problem-solving activities can be corrected within the due process without dangerous and costly time-loses, reaction gaps and organizational inabilities.*

From a practical point of view, the fourth generic strategy (Kamran, 2018c) can be substantiated by the rise of Inditex/Zara as Appendix 7-12 (pp. 29-31) displays. *“Fast fashion is a business model that others (the perception of) fashionable clothes at affordable prices. From an operations standpoint, fast fashion requires a highly responsive supply chain that can support a product assortment that is periodically changing.”* (Caro & Martinez de Albéniz, 2014, p. 1). Hence, it is the organized structure of Inditex/Zara's organization that actually and in contrary to other apparel brands (see Appendix 7, p. 29) give the firm a highly defendable source of a sustainable competitive advantage. Caro (2008) states: *“Fast fashion is successful because it competes with (and not in spite of) operations”*, while this notion was originally rejected by Porter (1996): *“Operational effectiveness is not a strategy”* (Porter, M. E., 1996, p. 1), within the paradigm of the author's enhancement of the generic strategies one can establish the logic of **“embodiment”** (cf. Pfeifer, R. & Bongard, 2007) and the author's

analogy of “*structure is strategy*” (Whittington, 2008), thus effective strategies require an organizational structure to execute the strategy. This is empirically validated by the example of Inditex/Zara and fast fashion, which deliver the fourth generic strategy. By the author’s enhancement of the generic strategies, one can establish the logic of competing on operations, which is the essence of structural dynamics of a cybernetic system.

1.2. Porter’s Value Chain Model

The sequence of activity a firm is performing as R&D, design, procurement and supply chain, HR, operations, sales and marketing, planning, execution and additional support activities are understood as a firm’s system of the value chain. The basic “*Value Chain Model*” (cf. Porter, 1985, 1998) (VCM) is described below in Figure 4, thus, it explains in three sections the spectrum of the model. At the section (1); are the interdependent activities that firms engage in first to build a system of activities and later to divide these activities into further smaller activities and sub-systems. At section (2) of Figure 4: an organization creates its holistic structure. It is a system of dynamic activities and not a static departmentalization. The organization must deliver superior performance on the want it has created for the customer or the need it fulfills, which defines its success. According to Drucker (1954), the purpose of a business is to create a customer or a want. The choices a firm makes, strategies it designs, the quality of its execution it applies via receiving feedback (see: Figure 4 - Section 3). How the firm chooses to differentiate itself and as a result, determines its profitability, attractiveness, and superiority over the competition is vital to its success and survival. The competitive advantage is a model that is under the direct command of the strategist. One may not be able to shape the industry in a short time, although the first sign of a good strategy embodies that the market plays the industry leader’s game, as the Apple Inc.’s rise to become the game changer has revealed.

The value chain is a set of superb and uniquely designed activities that firm can perform, which as a result will bring a possible competitive advantage that is not easy to imitate, (cf. Porter, 1985 & Prahalad, C. K. & Hamel, 1990) if a firm chooses to differentiate in terms of business model, execution, and customer satisfaction while maintaining a profit-leadership (cf. Kim and Maulborgne, 2005). The notion can also be substantiated by the works of Teece et al. (1997) and O’Reilly and Tushman (2008) as value chain designed based on dynamic capabilities and ambidexterity, while they do not speak of VCM which relates directly to Porter’s model. Furthermore, Futterer, F., Schmidt, J., & Heidenreich, S. (2018) speak of business model innovation (BMI) and how entrepreneurial aspirations and industry growth projection aligned achieve strong performance. This notion is necessary, hence, it is essential to substantiate the model’s strengths, its weaknesses, challenges, and limitations, while understanding the deep impact the extension of the FFM will bring to strategy scholars and practitioners.

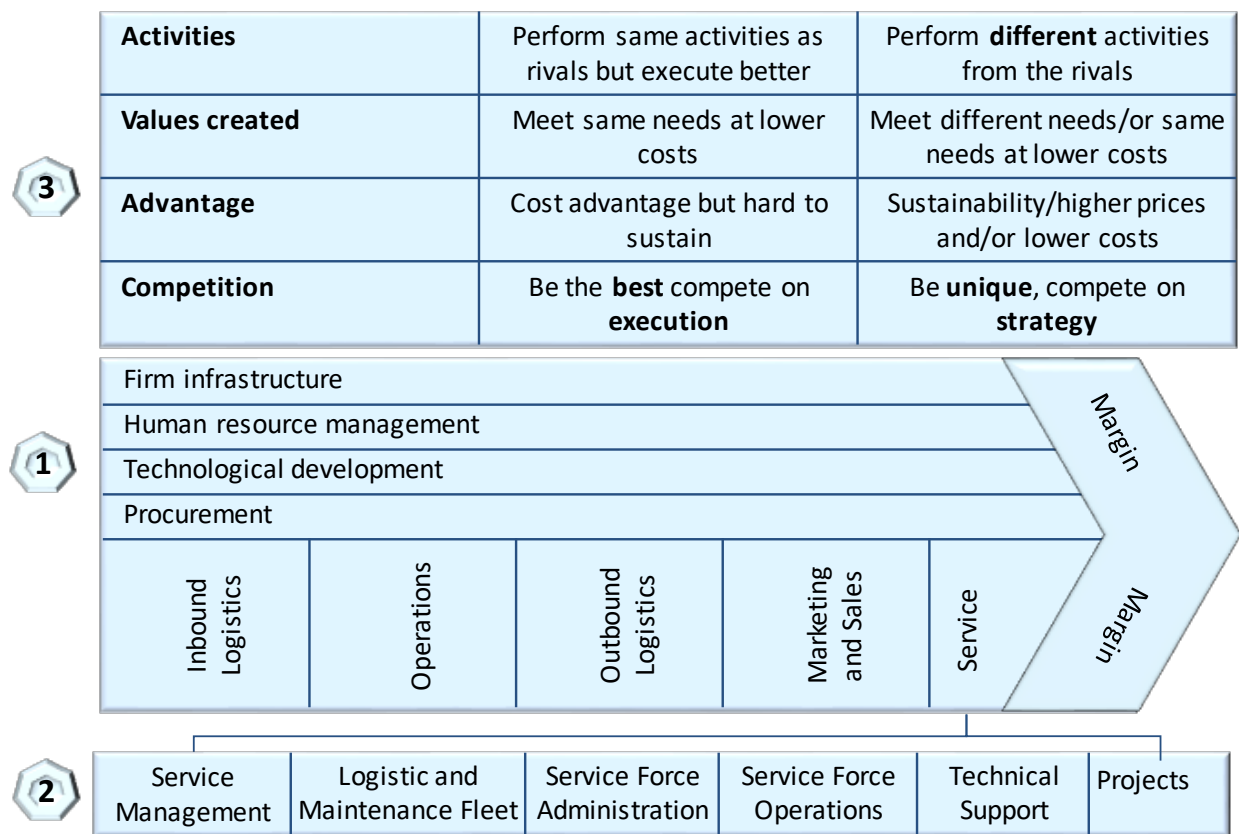


Figure 4: Overview of the Generic Value Chain Model

Source: Porter (1985, 1998) and Magretta (2012).

Additional streams of thought resulting from Porter’s VC are the development of Global Value Chains (GVC) (Kamran, 2018c). As a solid contribution and point of concentration to the state of current theory and practice of GVC, the role of strategy as a point of entry has been distinguished. Thus, based on the recursive nature of the structure of organizational systems, it is essential in designing GVCs. The author observe strategy not purely from a top down designed a priori calculus of *Wahrheit* imposed on a system, but moreover from coping with emergent phenomenon constructed and designed by the intertwined interactional intelligence of the organization’s internal systems navigating the complex and turbulent global environment in an embodied (structured) sense. This dimension, as Kamran (2018c) underpins, has vital implications for the enhancement of strategic management theory and practice within the roam of business administration and the development of logistics, supply chain management (SCM) and GVC. In the next chapter, Porter’s FFM will be treated in-depth.

1.3.Porter’s Five Forces Model that Shapes Industry Strategy

Competitive strategy as an academic field, which has been revolutionized and dominated by Porter since the late 70’s to today (cf. Porter, 1979, 1980, 1985, 1998, 2008b,), has been of vital academic interest to all scholars and practitioners of strategy, which was prior called business policy, before Chandler coined the term “*strategy*” for business administration (Chandler, A. D., 1962). Porter

started his work on the wider held belief that generalizations were possible in the field of **Industrial organizations (IO)**.⁹ Porter's started by challenging the beliefs of his business policy's professor Kenneth Andrew at Harvard, which was cutting edge believes in the field at that time, however, Porter declared them as "very stylized" views. Constructing on Andrews work, Porter saw his big chance, "to turn things on its head", as he emphasized, by focusing instead on what structural factors created opportunities in an industry that a company could exploit to its competitive advantage (. Kiechel, 2010, p. 124). This was a very novel notion, whereupon he constructed his work. Figure 5 displays an extended version of the FFM and how by the 'Porterian' lens one can distinguish between the diverse major and weaker competitions and forces within the industry and weigh the strength of the rivals and their power positions within the industry. Porter although to this day a proponent of the uniqueness attribute of every individual business process addressed two major problems in his later works, which delivered the foundation for his legacy so far. First, IO economists focused on issues of public policy instead of the business policy: "they concerned themselves with the minimization rather than the maximization of "excess" profits" (Ghemawat, 2002, p. 54). A second common problem addressed by Porter was the hitherto limited use of structural variables to explain industry profitability.¹⁰ This approach lacked to include industry complexity and modern industrial and disruptive competition. Porter, starting with his paper, "Note on the Structural Analysis of Industries" (cf. Porter, 1980, 1983), addressed both of the challenges.

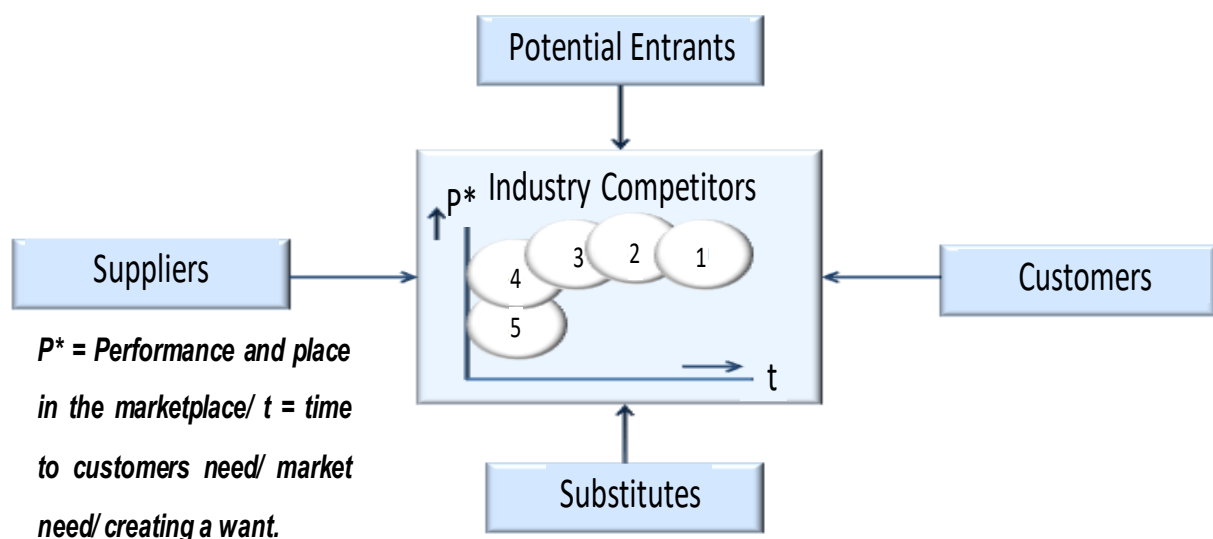


Figure 5: **Porter's Five Forces**

Source: Porter (1979, 1980, 2008b and 2014).

⁹ "Industrial organization (IO) economics is a world of models that depict the effect of forces, at the highest level all purposed at explaining why competition exists in certain industries but not in others, and hence why some industries are more profitable. It had grown out of the work of two other Harvard economists, first Edward Mason in the 1930s and then Joe Bain (no relation to Bill) in the, 1950s." (Kiechel III, (2010), p. 124)

¹⁰ a solid example is the work of Joe Bain: Joe Bain was responsible for identifying the 3 basic barriers to entry strategies; (1) an absolute cost advantage by an established firm (an enforceable patent, for instance); (2) a significant degree of product differentiation; and (3) economies of scale (cf. Ghemawat, (2002), p. 53)

Addressing these two dominating problems, Porter's *main d'oeuvre* "*Competitive Strategy*" (Porter, 1980, 1998) has established the field of competitive strategy in its own right. Its groundbreaking strategic model includes diverse core disciplines like industry analysis, competitor analysis, and strategic positioning of the firm (cf. Rumelt, 1991). Porter's FFM was a breakthrough in strategic thinking, namely shifting the commonly held view from competition mainly focused on the '*extended rivalry*' with the direct competitor to a '*value generating*' approach within the industry. Although "*import competition and multi-market contact*" (Ghemawat, 2002, p. 55) have been introduced into additional determinants to intensify the FFM and framework, integration of additional force has been denied by Porter respectively the wider competitive strategy literature.¹¹ According to Porter: "... *the essence of formulating a competitive strategy is relating a company to its environment*" (Porter, M. E., 1980, p. 3). However, under environment, Porter widened and translated the key aspect of economics into "*business environment*" with the FFM and an industry-in perspective and dimension (cf. Kamran, August 3rd-7th, 2016, 2017a), wherein the organization is embedded according to Porter and where the balance of power within the specific industry's structure defines how value is generated and captured (cf. Kiechel, 2010, p. 125). According to Porter, the FFM does encompass the following five forces, which are described below as:

1. *Powerful customers,*
2. *Powerful suppliers,*
3. *Substitute products,*
4. *New entrants, and*
5. *Rivalry among existing competitors.*

The individual forces are described thoroughly in Appendix 27-31 (pp. 43-49) of this dissertation.

1.4.State of Scientific Dispute with the Five Forces Model

Porter's models have revolutionized the nature of competition, competitive strategy and in the practice and academe. Porter's insights coming from his interdisciplinary background in economics engineering and business administration have shaped the way managers and consultant think and how they navigate their organization in their respective industries. Table 1 below describes the economic heritage and embedded notion therein, whereof Porter designed the FFM as seen in Figure 5.

¹¹ Additional theories have been introduced, while among all the works of the Brandenburger and Barry J. Nalebuff's "Co-optition", are among the finest enhancement in the theory and practice. Porter, 1979, 1980, 1985, 1998, 2008.

Table 1: Porter's Theory and its Link to Economics

| Industry Attractively | |
|------------------------------|--|
| Porter's Five Forces | Area of Macroeconomics |
| Powerful suppliers | Supply and demand theory, cost of production theory, price flexibility |
| Powerful customers | Supply and demand theory, customer behavior, price |
| Power of substitute products | Effects of substitutions |
| Powerful new entrants | Market entry barriers |
| Powerful rivals | Number of competitors, market size & growth |
| Profitability | |

Source: Recklies, (2008).

According to Recklies (2008): *“Porter’s Five Forces model is simple. It is nothing but microeconomics. This man had locked himself in a library for a few years, had analyzed some companies and then he managed to summarize nearly the whole science of microeconomics in one single simple model. – That is the reason why all other economists hate him: they are envious because they did not see something so obvious themselves”* (Recklies, 2008). The FFM has been the subject of much critique and its actuality, effectiveness for strategy and its strength has been questioned by many practitioners, consultants and scholars (among the few are: Minzberg, 1998; Miller, 1992; Recklies, 2008; Narayanan and Fahe, 2005; Foss, 2007; Powell, 1996; Kraaijenbrink, Bos, & Groen, 2009; Alvesson & Willmott, 2003.). Recklies (2008) underpins the evidence from emerging economies indicating that FFM’s assumptions about the qualifiers are not met in these economies; hence, firms adopt strategies not derivable thereof to tackle the unique institutional contexts they embody (Narayanan & Fahey, 2005, p. 1).

Foss (2007) describes that a balanced pluralist perspective implies that disciplines require a balance between creating new theories providing alternatives and the selection among them. Therefore, Foss states that the disproportionate pluralism and eclecticism in the field of strategy and pursuant consequences possibly result in higher importance of economics, such as neoclassical economics, new industrial organization economics and evolutionary economics, for strategy researchers. Michael Porter serves as an example of some advantages and weaknesses of incorporating economics in the strategy field as well as an example of aspects relating to eclecticism and pluralism (cf. Foss, 2007, p. 1). Powell (1996) observes *“Although Porter’s competitive strategy (1980) is by far the most widely cited publication in the strategy literature (Hambrick, 1990), the book’s central feature- the industry framework- has attracted little empirical attention. ...The classical focus on industry analysis is mistaken because these industries are too heterogeneous to support classical theory. It is also*

mistaken because the most important impediments to the equilibration of long-run rates of return are not associated with industry, but with the unique endowments, position, and strategies of individual business” (Powell, W. W. et al., 1996, p. 332). While, Kraaijenbrink, et al, (2009) state: *“The resource-based view (RBV) of the firm has been around for over 20 years—during which time it has been both widely taken up and subjected to considerable criticism. Inasmuch as the RBV’s original impulse was to critique Porter’s five-force analysis ...we must conclude his real estate metaphor of sustained superior positioning has done its valuable work but should now give way to the postmodern innovator’s anxiety about the never-ending race against the market’s own clock”* (Kraaijenbrink et al., 2009, 349 & 367). RBV is integrated into Porter’s powerful supplier dimension. Although recent studies in co-creation indicate that customers are also the source of delivering meaning and information within the context of competitive strategy by *“Co-creation”* (Prahalad, C. K. & Ramaswamy, 2004) and *“Service Dominant Logic”* in marketing (Vargo and Lush, 2015). According to Alvesson and Willmott (2003), the perspective technocratic approach exemplified by Porter (1980, 1985), Andrews (1971) and Chandler (1962) is criticized for depending on a rational, logical and linear model of analysis and planning (Alvesson & Willmott, 2003, p. 95). *Grundy (2006) highlights the strengths of Porters FFM by underlining the plurality of analysis of the different competitive forces. According to his research, they are presenting profound analysis of the market and the competitive landscapes surrounding a company. He further argues that mapping these forces at the same time provides a macro analysis of sub-drivers of each force, an understanding of dynamics and interdependencies between and within the forces as well as a prioritization of the forces (Grundy, 2006, p. 1). Moore (2011) describes his experiences, which are based on the intellectual rivalry between Porter and Mintzberg, that emergent strategy is a set of actions or behavior consistent over time and connotes the emergence of strategy corresponding to changes in reality over time. Emergent strategy is described as “a realized pattern that was not expressly intended in the original planning of strategy” meaning that organizations discover suitable strategies in practice. Moore states that emergent strategy will become increasingly significant in today’s world as an increasing number of ideas opposing Porter’s view on strategy emerge and gain popularity (cf. Moore et al., 2011)*

Grundy (2006 further establishes the notion that: *“Michael Porter’s five competitive forces model has been a most influential model within business schools but has perhaps had less appeal to the practicing manager outside of an MBA and certain short business school course..., it is argued that whilst there are a number of reasons why the model has not achieved greater currency, most importantly it can be developed a lot further”* (Grundy, 2006, p. 1). Grundy’s observations and experiences also reflect the author’s notion and the scientific research interests of this dissertation but moreover the author’s additional interest of making the FFM better practically applicable, wider in its spectrum of strategic grasp and more holistic to the strategist dealing with turbulent environment to

observe the competitive reality he needs to cope with. The author with over twenty years of experiences in business has extended Porter's FFM by constructing the SFM to precisely answer this question.

1.5. The Strength, Weaknesses, Threats and Opportunities “SWOT” of FFM

The “*being- of- too-static debate*” of the FFM, (Collis & Montgomery, 1995 & Mintzberg, Ahlstrand, & Lampel, 2001) the “*structure vs. resources debate*” (Chandler, 1962) or the holistic view integrated by complexity sciences in the spectrum of competitive strategy (cf. Beer, 1959a, 1981, 1985, Schwaninger, 1982-2012, Malik, 1974-2008, Hetzler, 2008) is still an ongoing debate. As already described via Moore's observations on his position to take Porter's views vs. Mintzberg's views, presenting his critique is essential and requires a more in-depth treatment. Porter and Mintzberg have had a vital impact on the way the world of competitive strategy has evolved, whereby their views have differed much on the subject. According to Moore: “*There are two people, and only two, whose ideas must be taught to every MBA in the world: Michael Porter and Henry Mintzberg. This was true more than 25 years ago, when I did my MBA at USC. These are two academics that have had real impact for a long time. Part of their success, beyond having big relevant ideas, is due to their clear and concise writing skills (There is certainly a lesson in there for many of us business school academics)*” (Moore et al., 2011). As Moore further emphasizes from first hand acquaintance with both Porter and Mintzberg and the way managers and students observe the reality based on their own experiences, the shift in thinking towards an evolutionary and emergent notion of strategy thinking is evident (cf. Mintzberg, et al, 1998 & Malik, 1984). Emergent events require adequate responses, which are based on the emergent strategies and based on the information available at the specific time and space of the event. This cannot be done properly by a top-down downward causation, hence emergent strategies cannot be designed by computational dimension of strategy development, thus they are interactional, e.g. between organization as a whole and the environment.

1.5.1. Evolution of the Five Forces Model

As the author has examined the FFM and its economic origin (see Figure 6, p. 49) the model has contributed to the wider range of managers', scholars' and consultants' understanding and by its application and integration into the pursuits of positioning of the organization towards the competitive forces within their industries. The following examination will visualize the forces according to the SWOT analysis. While Porter advocates a pure economic view black-boxed in an industry, other author's although not completely disagreeing with him, (cf. Rumelt, 2012) including the author, (cf. Kamran, August 3rd-7th, 2016, 2017a) however they have included additional views towards competitive strategy. Among the most prominent in representing additional views and regimes in

strategic management is Rumelt (1974, 2012). Rumelt's fame was substantiated by the essential paper, where he asked and proved the question that the industry does not matter as Porter claims, hence its within the power of the firm that engages from internal strengths with the environment and how its structured as a whole that successes as Apple Inc., Ryan Air and Tesla just to name a few can be explained.

1.5.2.Strengths of the Five Forces Model

Shifting the strategist's notion from a solely concentration on their rivals towards other major forces that shape strategic behavior is still a highly original contribution to the field. Porter's FFM made the following contributions to strategy:

1. *Starting the field of competitive strategy and defining competition in business administration not only taking place between the rivals but moreover, within additional participants in an industry.*
2. *Connecting a firm to its economic environment (industry, industry-in-view, and economic dimensions).*
3. *Starting the debate on competition to be competing for profits (economic perspective and the wider actors' participation for profits).*
4. *Giving an easy to comprehend and to apply model what firms can become competitive by understanding their competition based on a single unified model.*
5. *Representing an interdisciplinary approach to business administration/strategy by integrating economics to the field of strategy.*
6. *Defining industrial structure and the positioning school of strategy (cf. Rumelt, 1991 & Mintzberg et al., 1998)*
7. *Starting the debate and the diagnoses of an industry's structure, the embedded forces and how to cope with them.*

While Porter's notions are much criticized today, the essential aspects that Porter delivered and substantiated for competitive strategy still have a wider impact on all undergraduate and postgraduate studies.

1.5.3.Weakness of the Five Forces Model

With his FFM model, Porter sustainable shaped the landscape of corporate strategy by providing a more holistic and not a reductionist model that includes the most vital strategic challenges of our days. However, a good analysis of such a model requires also a look at its weaknesses to put them into relation to its advantages. Thus, below the weaknesses of FFM are described and formulated according to the author:

1. *The FFM is limited to a narrow definition of competition (cf. Rumelt, 1991, 2012; Mintzberg et al., 1998)*

2. *In a complex and turbulent environment, it is important not only to look at a single company environment but rather at a firm's total-environment. Porters FFM is limited to a special companies' environment.*
3. *Porter establishes a very static and linear notion of competition, environment, and disruption in innovation.*
4. *Porter's FFM lacks a constant extension, widening and adaptation to the contemporary complex and turbulent business environment since its establishment 39 years ago. New forces have to be integrated into the existing FFM to keep it constantly updated. According to Krishnamurthy: "Porter (1996) has defended the model and argued that good positioning still matters." (Krishnamurthy, 2010, p. 3). In contrast, (Hax & Wilde, 2002) have shown with the Delta Model that there is more to strategy than positioning.*
5. *Porter's FFM employs a reductionist lens of the notion of strategy, its spectrum, and understanding, which makes the organization a weak actor and where the strategist can merely cope with surprises from outside of the industry. This may also make the strategist deal with disruption as disruptive innovation, big bang innovation (see: the SFM in figure 31)*
6. *Avoidance of the integration of other interdisciplinary sciences and models respectively school of thought into the FFM is one of the major critiques that one can universally have on the model.*
7. *FFM, according to the author may be a dangerous model when used as the only foundation, whereof to steer the business today, if other models, sciences, and Weltanschauungs are not integrated in it to widen its capacity and applicability, since it does not represent viability (cf. Beer, 1959a, 1972, 1981; Malik, 1984-2015) or demonstrate a viable strategy for survival but all pursuits are based on mere profits-oriented dimension.¹²*
8. *The model lacks to represent dynamic behavior of outside competition, structural forces, culture, and adaptability. The model does not demonstrate any structural based view of the organization's reality. VCM is not a representative model of structural dynamics.*
9. *No internal view of the organizational body, Eigen-behaviors, linkages, and systems' dynamics and structure is integrated.*
10. *FFM lacks to give a creative and innovative response not only to the customers within the industry but also to the non-customers, who buy from the rival. The essential pillar of innovative creativity starts with breaking the boundaries of industry walls.*
11. *FFM does not represent a wider horizon of strategic thought, except defending the market share against other rivals.*

The FFM's application field is limited especially in the emerging new economies, where a solid example is China, where the government is a major force in the milieu, where the firm is embedded.

¹² Profits are not an indicator of organizations fitness (see: the cases of Nokia, Motorola, RIM, Enron, Mobile Com, etc.).

The recent withdraw of Google Inc. from China underpins this fact. Therefore, especially in the new emerging economies, institutional forces as governments and regulatory bodies are missing in the Porterian FFM dimension. Whittington (2001) has underpinned the notion in the following manner: *“blithely relegates his assumption of profit objectives to a footnote and concentrates his industry analysis on five sets of economic force amongst which government and labor are almost completely lost”* (Krishnamurthy, 2010, p. 3). Porter’s dimension, furthermore, lacks the notion of regulatory layer, the normative layer of the firm’s set of core values, and the Complex-Strategy layer, which connects the essence of the firm’s strategic foresight.

1.5.4.Threats of the Five Forces Model

The threats of the FFM are formulated below:

1. *Although the FFM explains thoroughly what the structure of the industry is, it still does not provide concrete assumptions how innovation will expand beyond the limited view of industry competition. Only if models are looking beyond existing boundaries, new strategic insights to generate competitive advantage can be generated. This idea links to the notion of blue ocean strategies (cf. Kim & Mauborgne, 2005) and disruptive innovation (cf. Christensen, C. M., 2016) or big bang innovation (cf. Downes & Nunes, 2013). One example is Microsoft causing the “Old Apple Corporation” in 1996 by the introduction of Windows 95 (Rumelt, 2012), and Microsoft forcing Encyclopedias Britannica to go bankrupt by including a cheaper version of the Encyclopedias Britannica’s rival into its software for free. According to Alevizou (2002) in the late 1980s, multimedia technologies were introduced as tools transforming and strengthening the learning potential of reference works by improving the educational value of personal computers by means of the introduction of works such as encyclopedias. Hence, Microsoft introduced Encarta on CD-ROM, which was based on Funk and Wagnall’s print encyclopedia but did not present the same depth of information as Encyclopedia Britannica. However, it included multimedia content as well as better search capabilities, portability, and media features than Encyclopedia Britannica at a lower price. “The alternative value proposition created by Microsoft as well as the firm’s aggressive marketing strategy and wide distribution ensued Encarta’s status as one of the most recognizable electronic encyclopedia brands” (Alevizou, 2002, p. 1). The same pattern can be found in Apple’s transformation to challenge not only the music industry but also the telecommunication and the PC producing business in general.*
2. *The FFM does not give an overview of what is happening outside of the industry and the creation of new industries. Thus, it reflects a narrow view of reality and strategists must see the iceberg before the time runs out and where a course-correction is too late as cases of Nokia, Blackberry, Motorola etc. revealed.*
3. *The FFM is not a holistic view of organizational, environmental and competitive reality; it merely*

represents a narrow view in strategy; thus, it only represents the positioning school.

4. *The FFM does not make the organization viable and contributes to its survival, except balancing the organization towards forces in a perfect competition and stable market.*
5. *The FFM lacks systems view based inter-relatedness and the forces are not interconnected so that the effect of one force does not affect the other one. All the measurement is purely based on profitability. This notion is also inadequate since some quick profits at a cost of a more in-depth strategic thinking will lead the firm to myopic measures.*
6. *The model cannot cope with the complexity of the new era, the information age, and globalized world. Thus, as emerging economies rise and the globalized world and the diverse cultures shape the future of business, a change in interaction within industries and outside of industries will occur, where the FFM is not powerful enough.*
7. *The FFM is a black-boxed-view of the industry, thus, it does not represent emerging strategic challenges and merely is a partial map of the reality. “The model assumes competition as a driving force with organizations trying to derive an advantage at the expense of others. This is hardly the case today with cooptation often holding the key, strategic alliances becoming ever more popular, and virtual networks being a reality” (Krishnamurthy, 2010, p. 3).*
8. *The FFM, solely based on the economic pillar, does not represent everything the strategic thought stands for.*

The next subchapter describes the opportunities of the FFM.

1.5.5. Opportunities of the Five Forces Model

In essence, the FFM is an analytical tool to understand the profit-making factors and identify and exploit these forces for more profitability and economic gain from an IO and IE lenses. The opportunities of the FFM are formulated below:

1. *“With the FFM strategists are able to distinguish and understand the temporary and cyclical changes from vital structural shifts in an industry” (Porter, M. E., 2008b, p. 5).*
2. *Ability to generate more bargaining power towards suppliers.*
3. *Ability to generate more bargaining power towards the customers.*
4. *Maintaining an eye on the new entrant respectively responding to the threat it is exposed.*
5. *Adjusting the organization's product portfolio against the substitute products.*
6. *Competing against the rivals in the industry, monitoring their actions and products via a systemic five forces view.*
7. *Ability to maintaining an industry-in from the economic perspective of an organization.*
8. *The strengths of the FFM have vital effects on the costs, market price, and investment essential for competition. Thus, from an industry –in perspective, the profits of industry participants are*

tied to the forces (cf. Porter, M. E., 2008b, p. 5)

9. *Having a better application by its enhancement to an additional model via the author's work will create a powerful tool to observe not only profitability but moreover the immunization of the organization against other economic and environmental "Black Swans".¹³*

The next subchapter states the FFM within the nature of stuck in the middle.

1.5.6. Five Forces Model and Stuck in the Middle Dilemma

An additional perspective namely *"trying to be anything to anybody"*, pushes the company into a position, which is coined by Porter as the position of *"stuck in the middle"* (Porter, M. Eugene, 1985). This means having no vital or sustainable competitive advantage for the firms in their industries. Companies that have fallen into this trap can easily be outperformed. They can only generate profits that can be attractive by being in a *high-profit industry* (Porter, 1986, 1998, p. 17). According to Porter, if a firm, which engages in each generic strategy but fails to achieve any of them as based on the position of uniqueness is *"stuck in the middle"*, hence it possesses no sustainable competitive advantage. *"This strategic position is usually a recipe for below-average performance. A firm that is stuck in the middle will compete at a disadvantage because the cost leader, differentiator, or focuser will be better positioned to compete in any segment. If a firm that is stuck in the middle is lucky enough to discover a profitable product or buyer, competitors with a sustainable competitive advantage will quickly eliminate the spoils. In most industries, quite a few competitors are stuck in the middle"* (Porter, 1985, p. 16). Pursuits of more than one of the above-mentioned differentiation strategies which differ from each other widely are vital to be understood and avoided by strategists since otherwise the stuck in the middle fallacy is looming large. Thus, it is essential to observe that a generic strategy by itself does not lead to the sustainable competitive position a company seeks to proclaim.

Therefore, a company must unconditionally be able to defend this advantage on which it has focused, and wherein it has based its unique value proposition to the customer. Stuck in the middle is also considered a position, where the firm has no significant advantage respectively superiority in the previously described three generic strategies of Porter (Porter, 1980, 1998). In addition, if a firm is losing to the five forces described above, it is also stuck in between those and losing its ground of profitability to one or many of the forces, hence, it cannot achieve a winning or dominant position. Stuck in the middle describes also a position of low profitability with a probable loss of control over the firm's success. The figure in Appendix 5 (p. 19) displays how failing in having a strategy that is viable is the precursor of failing in business endeavor and the firm is going to collapse as crises emerge, if the navigator of the firm loses control and the stronger position to bargain effectively with

¹³ Taleb's theory states: "In the present discussion, the Black Swan is not simply a problem in logic (in fact the logical importance of the issue is extremely minor), but an empirical matter concerning the occurrence of unusual events: an "outlier" or an exception that have the property of carrying a large impact." (Taleb, 2004)

the forces this reduces his “*better alternative to negotiated agreement*” (BATNA) (Fisher & Ury, 2012) with partners and suppliers, thus suppliers may want to force a renegotiation and take sides with the rivals. In addition, suppliers may give the competitors better deals, the rivals profits may grow larger and this can lead to a position, where the rival can defend a low-cost position. Auxiliary, the strategist’s “*zone of possible agreement*” (ZOPA) (Fisher & Ury, 2012) may reduce in size to his disadvantage. The fourth generic force that the author has introduced establishes the notion further that firms, which cannot execute well or act timely on the needs of the market may lose their competitive advantage. Thus, organizational intelligence and execution of strategic thoughts require a viable structure.

1.6.Limits of the Five Forces Model

FFM has a solely economic view of the strategic landscape, wherein organization’s competition takes place. “*Other strategists...*,” according to Ghemawat: “... *have argued that some very limiting assumptions were built into such a framework and the Porter framework made three tacit but crucial assumptions: First, that an industry consists of a set of unrelated buyers, sellers, substitutes, and competitors that interact at arm’s length. Second, that wealth will accrue to players that are able to erect barriers against competitors and potential entrants, or, in other words, that the source of value is a structural advantage. Third, that uncertainty is sufficiently low that you can accurately predict participants’ behavior and choose a strategy accordingly*” (Ghemawat, 2002, p. 57). Subramaniam and Coyole (1996): argue that strategy in today’s world is a demanding, a complex¹⁴ and a subtle discipline; however, this truth has been widely missing in the contemporary competitive strategy literature and within Porter’s FFM. “*Each season brings a new crop of professionals proclaiming that their frameworks- core competencies, customer retention, time- based competition, total- quality – management, “white spaces”, managing chaos and value migration are definitive*” (Coyne & Subramaniam, 1996, p. 29). It is essential that strategists can answer these questions: How should strategists decide if they need to make a 1 billion dollar ‘yes or no’ decision on, whether he will invest in a certain type of technology or new industry to bring more value to its customers.

1. *How the strategists of a software firm have to position themselves toward their largest supplier or customers, who are also their main and chief competitor?*
2. *How should strategists in the financial or banking industry have to position themselves strategically towards a rapid change or product cycles that vary every six months?*
3. *How can strategists position themselves towards competitors, who are outside of the industry? The facts have already been elaborated above.*
4. *How can strategists position themselves towards a competitive force yet unknown to them, how*

¹⁴ This point additionally and vitally substantiates the author’s thesis.

can they respond to an attack and how can they counter-attack, while not losing the sight from the big and small picture?

5. *How can a regional banker or retailer position itself for value towards a local competitor if all the vital decisions are met centrally?*
6. *How can a strategist position itself towards a business environment, where the change is the state in the business affairs, in comparison to the times, where there was a state, then came to the change, then there was a new state?*
7. *How can strategists position themselves towards a rival who actually has a strategic perspective of 30 or 40 years of positioning his organization, in comparison towards the contemporary strategic fashion, where they need to deliver on objectives, which are within the cycles of 3-6 months?*
8. *How can strategists compete for value if the most vital forces that distinguish between winners and loser are the structure, culture and dynamic capabilities of the firm? (Bea & Haas, 1997, p. 7)*

According to Subramaniam and Coyne (1996) and the discussed cases, more than 50 percent lie outside of the Porter's FFM's application and effectiveness and the conditions wherein described. Thus, substantiating the author's claim that economic and industry-driven strategy is insufficient to cope with overall strategic challenges a strategist needs to cope with. But this claim can be widened in perspective that no other strategy model as yet can embark on all the threats and challenges that the strategist faces (Bea and Haas, 2004). These threats combined cause a complex strategic problem that requires a holistic response and understanding of the affairs and their dynamics. It is the chief objective within the dissertations to design a holistic model to understanding complex strategic challenges.

1.6.1.Application Field of Five Forces Model

The FFM can be better applied only if all industry structure is based on rational but in addition predictable competitors and actors. Some sets of circumstances, wherein the model can be applied are described below. Thus, the industry is based on a set of unrelated and unconnected groups of buyers, customers, rivals, and substitutes acting, reacting and counter-reacting to each other:

1. *All the actors are competing for profits.*
2. *The rivals view competition from a microeconomic lens by the industry- in worldview.*
3. *The forces of regulation respectively government (policy) are mere factors, not vital forces.*
4. *The market is calm and predictable, so are the competitors.*
5. *The rate of change, uncertainty, and turbulence is calculable; the strategist can make a precise prediction of the market and environmental development.*
6. *The strategist can strongly predict the rivals', customers' and suppliers' behaviors and set of behaviors, and calculate the number or the option they have so that firms can react strategically upon their shifting behaviors.*

7. *Entry and exit barriers are measurable for all rivals, positioning the organization into the structure of the industry is vital and “structure advantage is a source of value”* (Coyne & Subramaniam, 1996, p. 30).

In general, the author adheres that the FFM is an industry-locked and a partial resource-based view. The industry is defined largely as being homogeneous, and competition is seen as occurring via positioning by the five forces understanding of competition in respective industries. The industry-based view embeds the strategic challenge to see and identify attractive industries and markets, wherein to compete. The RBV, however, was much popularized by Hamel and Prahalad in their groundbreaking book *“Competing for the future”* (cf. Hamel & Prahalad, 1994). The authors conceptualized the firm as a bundle of resources. So, do many other scholars like Malik (1984, 2006-2012), who sees management and organization as the transformation of resources into benefits. This view underpins that the way the resources are gained and are combined make the firm different from one another and in turn allow a firm to deliver products and services in the market. The better they can allocate the resources the stronger position they can acquire in their industries. Porter’s assumption that markets are zero-sum games and that all the firms embedded in a certain industry are in pursuit of a perfect game has shifted the strategists’ attention from customer-value to mere a forces-related and industry-in environment of competition by seeing the organizational reality solely based on juggling between the forces for more profits. However, the 2008 management crises in the financial industry revealed the vulnerability of the firms in diverse industries and the inability of Porter’s model to prepare the firms for these crises. Thus, the author sees the organization as a set of sub-systems, which are viable themselves in terms of autonomy and decisions, structured recursively and act in unison to achieve a larger objective (cf. Ulrich & Probst, 1984). This objective must be at first the guarantor of the firm’s survival, thus firms are goal-achieving systemic beings. One of these objectives is beyond the notion of seeing customers as buyers, who are a group to squeeze-out profits from, but moreover to see customers as co-creators of value and collaborators (cf. Lusch & Vargo, 2006; Kamran 2018d). Drucker’s insights to see: *“the purpose of a business is to create a customer”* must be at the heart of every strategy (cf. Drucker, 1954). Indeed, defining strategy just based on five forces and relating all of them to a locked industry-in view may cause challenges in the dynamics of today markets.

1.6.2.The Anatomy of Competitive Strategy

The firm, its inputs and outputs, its behavior and actions, and how it transforms its structure and preserves its identity or advances it, connects the firm from the present to the future. Strategists can generally adhere that within the set and bundle of activities of the firm lies its future.

The strategists’ main objective is not only to transform the organization that it fits in the environment and the challenges of the future but moreover that the future is also designed favorably, wherein the

organization provides answers, products and solutions, which the organization can design and invent and that it is actually capable of delivering them based on innovation and under the Druckerian logic of the “customers’ want” (Drucker, 1954). Distinguishing between strategy and action as Rumelt (2012) describes is a vital flaw in understanding strategy. “Many people assume that a strategy is a big-picture overall direction, divorced from any specific action. But defining strategy as broad concepts, thereby leaving out action, creates a wide chasm between “strategy” and “implementation.” If you accept this chasm, most strategy work becomes wheel spinning. Indeed, this is the most common complaint about “strategy.” Echoing many others, one top executive told me, “We have a sophisticated strategy process, but there is a huge problem of execution. We almost always fall short of the goals we set for ourselves” (Rumelt, 2012, p. 6). To dramatize the author’s claim, a solid picture of Apple Inc.’s struggle for survival is given and how Steve Jobs transformed it from a bankrupt organization to be the industry leader in many industries. When Steve Jobs took over Apple Inc. again in 1997, the organization was actually bankrupt. It could only afford to stay in business for the next two months since its cash reserves would have been vanished and evaporated by then. Prior in 1995, Microsoft released its Windows 95 multimedia operating system; this caused Apple Inc. to fall into a death spiral. On February 5, 1996, “*Business Week*” put Apple’s famous trademark on its cover to illustrate its lead story: “*The Fall of an American Icon.*” (see fig. 7) CEO Gilbert Amelio¹⁵ struggled for Apple’s viability in a world being rapidly dominated by Windows-Intel-based PCs. He lay-off people and reorganized the company’s many products into four groups: 1) Macintosh, 2) Information appliances, 3) Printers and 4) Peripherals, and “*alternative platforms.*” A new “*Internet Services Group*” was additionally added to the “*Operating Systems Group*” and the “*Advanced Technology Group.*” But the case was lost, and Apple’s crisis was serious. The bankruptcy was due in September. Steve Jobs, who had co-founded the company with his friend Steve Wozniak in 1976, agreed to return to serve on a reconstructed board of directors and to be interim CEO without any pay (cf. Rumelt, 2012). Many fans of the original Macintosh computer were overjoyed, but the business world and the analysts were not expecting much (cf. Rumelt, 2012). Steve Jobs surprised them all by reinvigorating Apple Inc. to become the most powerful brand and firm in the world. What would strategists need to do if the organization has fallen that far? If the reader has followed the line of the dissertation’s argument and logic, he can distinguish a clear path whereon the author’s claims are grounded. Jobs needed to concentrate on one focused but vital notion of strategy, namely a combination of three different set of actions and activities to ensure the ultimate strategic objective, namely Apple’s survival:¹⁶

- Diagnosing of the Apple’s state of crises, challenges, and problems.

¹⁵ Dr. Gilbert F. Amelio PhD was CEO of Apple CEO from, 1994 to, 1997

¹⁶ The narrative here on how Jobs understood his job as strategist, is used from the groundbreaking book about strategy by Rumelt (2012).

- Drawing a precise, detailed and divers' set of activities into a dynamic plan for the whole firm.
- Executing on the plan drawn, taking all the obstacles and challenges from attaining a right-away liquidity to survive to the launch of iPod, what Job's called as the next big thing. (Rumelt, 2012, p. 29)

According to Rumelt (2012): *“A good strategy includes a set of coherent actions. They are not “implementation” details; they are the punch in the strategy. A strategy that fails to define a variety of plausible and feasible immediate actions is missing a critical component. Executives who complain about “execution” problems have usually confused strategy with goal setting. When the “strategy” process is basically a game of setting performance goals—so much market share and so much profit, so many students graduating high school, so many visitors to the museum—then there remains a yawning gap between these ambitions and action”* (Rumelt, 2012, p. 6). Organizational crises emerge when an organization fails to attain, transform and adapt itself to its environment while it navigates the stormy waters of change, turbulence and, and longevity and unpredictability. Figure 6 exemplifies how organizations collapse,¹⁷ how crises emerge and are getting stronger in a certain time period. The reader can comprehend how Apple's crises emerged and how Jobs corrected the course of Apple's direction from failing to be a star and the unique company it has become. Another notion that Figure 6 displays, which a vital strategic significance is, that the game of strategy and the uncertainty environment that surrounds its decision making, is to some extent traceable and predictable, thus, it is the author's chief conviction that before the organization collapses or the organization and firm has a success problem the strategist's strategy must fail first. Thus, by being able to design and act in the pre-problem phase many crises can be avoided and many firms saved. It is, therefore, the purpose of strategy to dissolve problems before having to act in surgical measure to rescue just a part of the firm. Jobs actions resemble the surgeon who intends to just keep the core alive.

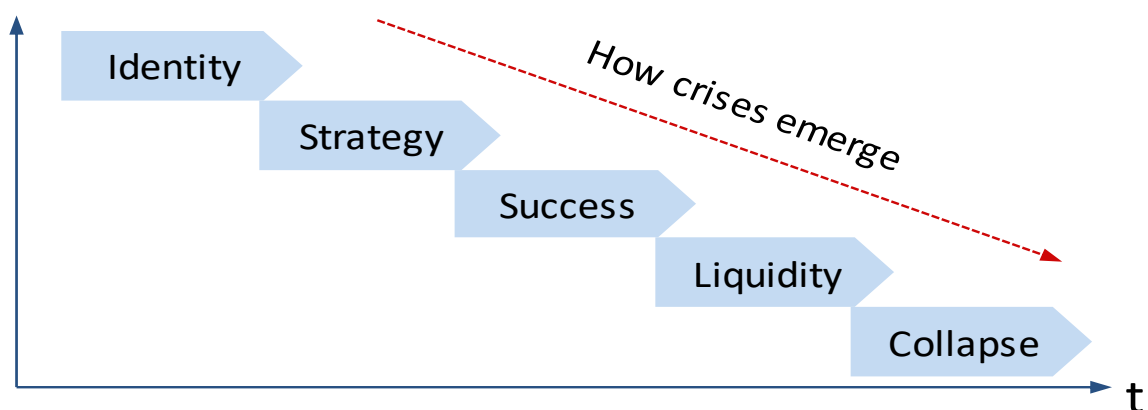


Figure 6: Crises Emergence and Company Collapses

Source: Bickoff et al. (2004).

¹⁷ The author will explain every step of the crises diagram on Apple's example, so that the reader can maintain a precise picture of how a firm collapse and how it can be saved or better pre-saved, thus a strategist ought to focus on the pre-problem phase.

Referring to an article from “*Wired Magazine*” titled “101 Ways to Save Apple” (Daly, 1997 & see Appendix 3, p. 17), is it suggested to sell and divide Apple, “*since it will never survive*”.

According to Rumelt (2012): Jobs convinced Bill Gates of Microsoft, who was suffering from a major Anti-trust suit, where Apple’s bankruptcy would have damaged and increased Microsoft’s losing position much harder in front of the anti-trust commission, to invest 150 million dollars in Apple—whereby giving Apple 6 months of ability to survive. As Apple Inc. is the most profitable company in the world, one can establish the power of ‘*structure is the strategy*’ approach. Hence, coming back to Apples corporate strategy and its involved contemporary sustainable growth, one can conclude that a good strategy does not just draw on existing strength but that it creates strength through the coherence of its structural organizational design. Often, organizations are suffering to focus on a single objective and are rather pursuing multiple approaches objectives that are unconnected with one another or, even conflict with one another (-cf. Daly, 1997 & see Appendix 3, p. 17). The power of Jobs’ strategy came from directly tackling the fundamental problem with a focused and coordinated set of actions. Instead of announcing ambitious revenue or profit goals or indulging in messianic visions of the future, he redesigned the whole business logic around a simplified product line sold through a limited set of outlets.” (Daly, 1997, p. 13). Apple’s rise from bankruptcy does not only took place in PC-business but also in additional industries as music, IT and telecommunications. It transformed many industries and created the best technology brand in the contemporary history. What would have happened if Jobs followed the advice of Jon Carroll, a newspaper columnist, who told him to repurpose entirely and to sell real apple (cf. Daly, 1997)

It is real strategic game that Jobs has played to not only prove all of the columnist wrong but in addition to create products that mean really much to consumers and who re also willing to pay the highest process ever paid to buying mobile phone and other high-tech gadgets.

1.7. FFM in Relations to Competitive Advantage

Both terms “*Competitive Advantage*” (CA) (Porter, 1985-1998, x-ii) and “*Sustainable Competitive Advantage*” (Porter, 1985-1998, xv.ii), were coined by Porter and belong to the two pivotal and to some extend vital strategic objectives a firm can pursue and achieve. According to Porter: “*The strongest competitive force or forces determine the profitability of an industry and become the most important to strategy formulation. The most salient force, however, is not always obvious*” (Porter, M. E., 2008b, p. 26). Establishing a position, where the organization can maintain a high-profit position is vital to the firm for creating a competitive advantage over its rivals. The FFM gives the strategist the ability to create this position by analyzing the organization through its five defined forces analysis. However, a competitive advantage can only be created if the firm is able to defend the position in its industry over a long period of time. According to Porter (2008b): the point of conducting

industry analysis is not to define, whether an industry is attractive or not but moreover to understand competition and the root causes of profitability. While Porter's definition of competitive advantage rests on the firm's profitability, additional views must be taken into consideration to establish a competitive advantage that cannot be easily copied. The strategist needs to define a clear action-path for the organization, where he sees the competitive advantage of his firm to be created. This can mean a different thing to a different firm. While for a shareholder-oriented steered firm, since its model is based on short-term achievements, it can mean the good financial data of the last 3-6 months, and how that organization has performed, while for a family business or entrepreneurial-run organization it can mean, how the organization has established a set of actions that actually ensures the viability of the firm for generations (Kamran, 2011a, 2011b, 2012a, 2012c, 2012d, 2013a, 2013b, 2013c, 2013d, 2013e, 2014a, 2014b, 2014c, 2014d, 2014e, 2014f, 2017b, 2017a, 2018b, 2018d, 2018c, 2018f). FFM is a good place to start to understand and to differentiate a firm by the set of concentrated actions towards a position of profitability; however additional models as it is the objective of this dissertation are essential to be established and designed that surprise actions from competitors and the threat from unknown sources can be detected earlier. Porterian mindset establishes the notion that prevailing in the five forces within the industry enables the strategist to maintain an advantageous position in that industry. Porter's notion is partially correct; hence, the model requires a highly stable market with less disruption and a narrow field of environmental complexity shared by predictable rivals and the whole system that constructs the FFM and the Porterian industrial dynamics.

1.8.FFM in Relation to Blue Ocean Strategy

A fundamental work on changing the way firms compete was introduced by Kim and Mauborgne, (2005) and coined by them as; "*The Blue Ocean Strategy*." According to them: "*Blue ocean strategy challenges companies to break out of the red ocean of bloody competition by creating uncontested market space that makes the competition irrelevant. Instead of dividing up existing— and often shrinking—demand and benchmarking competitors, blue ocean strategy is about growing demand and breaking away from the competition*" (Kim & Mauborgne, 2005, x). Although this work was strongly criticized by Magretta (2012) Porter's protégé calling it; "*as a misconception worth highlighting*" (Magretta, 2012, p. 31) the fact of the matter is that the blue ocean approach is a newer and more profitable way on how managers, entrepreneurs and existing firms indulged in a heavy competition, can break free to change the industry but moreover to achieve higher values over the longer period. However, scholars as Burke et al. (2009), in their research-paper called: "*Blue Ocean versus Competitive Strategy: Theory and Evidence*", examine both models and underpin the view that existing literature on blue ocean strategy lacks a distinction between long-term and short-term strategic time frames meaning that the choice between blue ocean or competitive strategy defies consideration of any time horizon. Burke et al. established a model aiming to reconnoiter time

horizons, concluding that short-term time frames are predominantly affected by competitive strategy effects while long-term time frames are coherent with blue ocean strategy. Hence, the analysis revealed a level of synthesis between blue ocean and competitive strategy and a higher degree of complexity of the environment within which blue ocean and competitive strategy are implemented as an inter-temporal strategic blend. Therefore, a successful transition from a competitive market to a blue ocean requires the ability to compete in the short term ensuring current viability while progress towards the blue ocean objective. The evidence provided by the analysis coheres with Boston Consulting Group's seminal business portfolio matrix and its proposition of innovation strategy which elaborates how firms utilize revenues generated by "cash cows", before they become "dogs" due to an increasingly red ocean, in order to finance the development of "question marks" and "stars", which is in line with finding a blue ocean (Burke et al., 2009). Figure 7 describes the author's combination of the two dominated theories of Porter by his vision of competition within the industry for value and the blue ocean competition based on innovation. The author's notion is a much broader definition of competition; thus, the author not only combines these both doctrines but he represents also the logic that the competition of the future takes place based on the viable and high-quality organizational structure, which makes not only immunity possible but more over the holistic perspective, which is vital to strategy (cf. Kamran, November 10th -12th, 2011, 2011a, November 10th -11th, 2011, August 3rd-7th, 2016, 2017a)

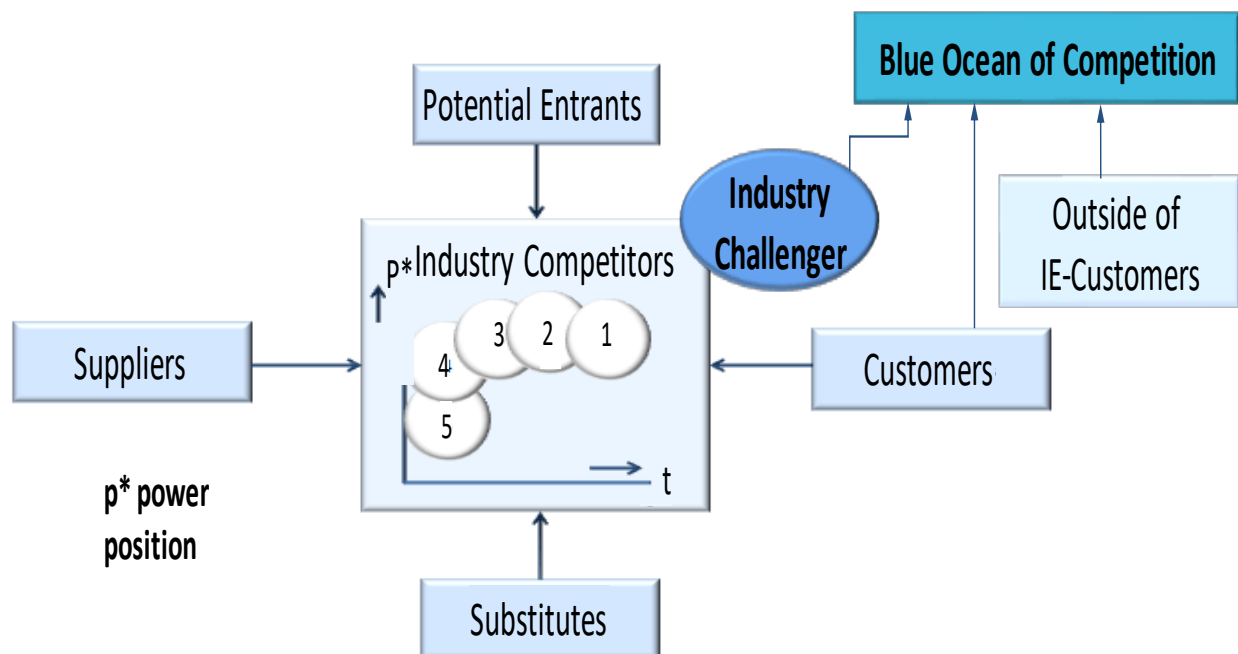


Figure 7: FFM Incorporated into the "Blue Ocean Strategy"-Approach

Source: Porter, (1980).

Kim and Mauborgne (2005) with their approach to strategy did not create a new industry or a new path into the field of strategy, thus, many companies have had developed break-through products and

ground-breaking innovations. Blue ocean opportunities have always existed. However, their contribution is to establish a systemic analysis on how value for the customers and the firm is innovated and how firms can exploit opportunities outside of their industry or by observing the industry and the customer with a different outside of the box lens. With their approach opportunities that transform the whole meaning of competition can be achieved. *“As they have been explored, the market universe has been expanding. This expansion, we believe, is the root of growth. Yet poor understanding exists both in theory and in practice as to how to systematically create and capture blue oceans.”* (Kim & Mauborgne, 2005, xi) They argue and criticize the way competition has been established and widely understood, mainly by the Porterian view of strategy, which they have coined as the *“Red Ocean of Competition”*. *“Since the groundbreaking work of Porter (1980, 1985), competition vis à vis a direct rival or between the actors within the industry has occupied the center and core of strategic thinking, and how competition is defined. Unfortunately, this resulted that blue oceans are largely uncharted. The dominant focus of strategy work over the past twenty-five years has been on competition-based red ocean strategies”* (Kim & Mauborgne, 2005, xi). Although a solid and in-depth understanding of how competition in red oceans is carried-out has been established by Porter, via analyzing the underlying economic structure of an existing industry and choosing a strategic position of either low cost, differentiation or focus, however, the thinking and tools to innovate outside of the industry and make unprofitable industries more profitable has been widely missing. Moreover, there has been little practical insights on how to create these blue oceans and how to give strategists some precise set of tools to polish their handcraft, to innovate not only the product but moreover their industries. *“Without analytic frameworks to create blue oceans and principles to effectively arrange risk, creating blue oceans has remained wishful thinking that is seen as too risky for managers to pursue as strategy”* (Kim & Mauborgne, 2005, xi). Figure 7 and Table 2 reveal how the FFM as described by many as *“too static”* can be transformed into more creative and trendsetting competitive models and behaviors, where *“the creative destructionist”* (cf. Schumpeter, 1942) strategist in the Schumpeterian lens is the true game changer of industry and innovation. Schumpeter (1942) observed: *“The opening of new markets foreign or domestic, and the organizational development from the craft shop and factory to such concerns as the US Steel illustrate the same process of industrial mutation —if I may use that biological term —that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating the new one. This process of Creative Destruction is the essential fact about capitalism”* (Schumpeter, 1942, p. 83). The blue ocean strategy fits well into the Schumpeterian economics, as the Porterian economic view constructed the FFM, so does the blue ocean strategy deliver a different notion, where innovation and creative destruction bring a better strategic foresight and ability as Table 2 describes.

Table 2: Transition from the FFM Competition to Blue Ocean Competition

| | Head-to-Head Competition | Blue Ocean Creation |
|---|--|---|
| Industry | Focuses on rivals within its industry | Looks across alternative industries |
| Strategic group | Focuses on competitive position within strategic group | Looks across strategic groups within industry |
| Buyer group | Focuses on better serving the buyer group | Redefines the industry buyer group |
| Scope of product or service offering | Focuses on maximizing the value of product and service offerings within the bounds of its industry | Looks across to complementary product and service offerings |
| Functional-emotional orientation | Focuses on improving price performance within the functional-emotional orientation of its industry | Rethinks the functional-emotional orientation of its industry |
| Time | Focuses on adapting to external trends as they occur | Participates in shaping external trends over time |

Source: Kim and Mauborgne (2005).

Schumpeter (1942) stated: “The first thing to go is the traditional conception of the *modus operandi* of competition. Economists are at long last emerging from the stage in which price competition was all they saw. As soon as qualitative competition and sales efforts are admitted into the sacred precincts of theory, the price variable is ousted from its dominant position” (Schumpeter, 1942, p. 84). This does not mean that via the industry based and competitive advantage lens of Porter’s FFM no innovation is possible, however, just to take the example of the most innovative company in our era as Apple Inc., its transformation can be clearly traced back to its unique approach to product, industry and value innovation the firm created.

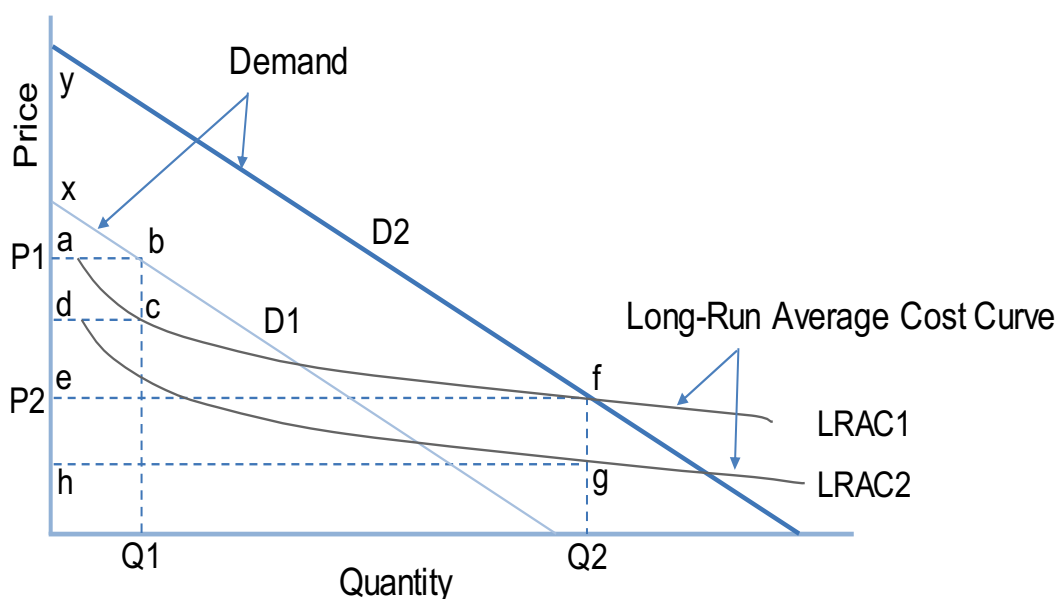


Figure 8: Market Dynamics of Value Innovation

Source: Kim & Mauborgne (2005).

Apple is today appealing to old, young, to professionals, to universities¹⁸, and to private people, thus, it has challenged diverse industries and disrupted many. Figure 8, which reveals, value innovation radically increases the appeal of a good, transforming the demand curve from (D1) to (D2). The price policy is applied strategically and, is shifted from (P1) to (P2) to capture the mass customization in the newly created and expanded market. The resulted enhancement of the products' sales-volume from (Q1) to (Q2) and the creation of strong brand recognition are further features for unprecedented value and its innovation. Thus, the firm engages here in target costing to simultaneously reduce the long-run average cost curve from (LRAC1) to (LRAC2) to expand its ability to profit and to prevent and avert free riding and imitation. This result to a win-win situation hence, buyers are receiving a leap in value, transforming the consumer surplus from (axb) to (eyf), while the company earns a leap in profit and growth, game-changing the profit zone from (abcd) to (efgh) (cf. Kim & Mauborgne, 2005)

Figure 9 describes how value can be engineered based on diverse industries assumption of what the customer wants. Cirque du Soleil created a vital advantage for the firm based on applying the blue ocean. The same logic applies to Hans Zimmer, who transformed the film music industry by how it is created.

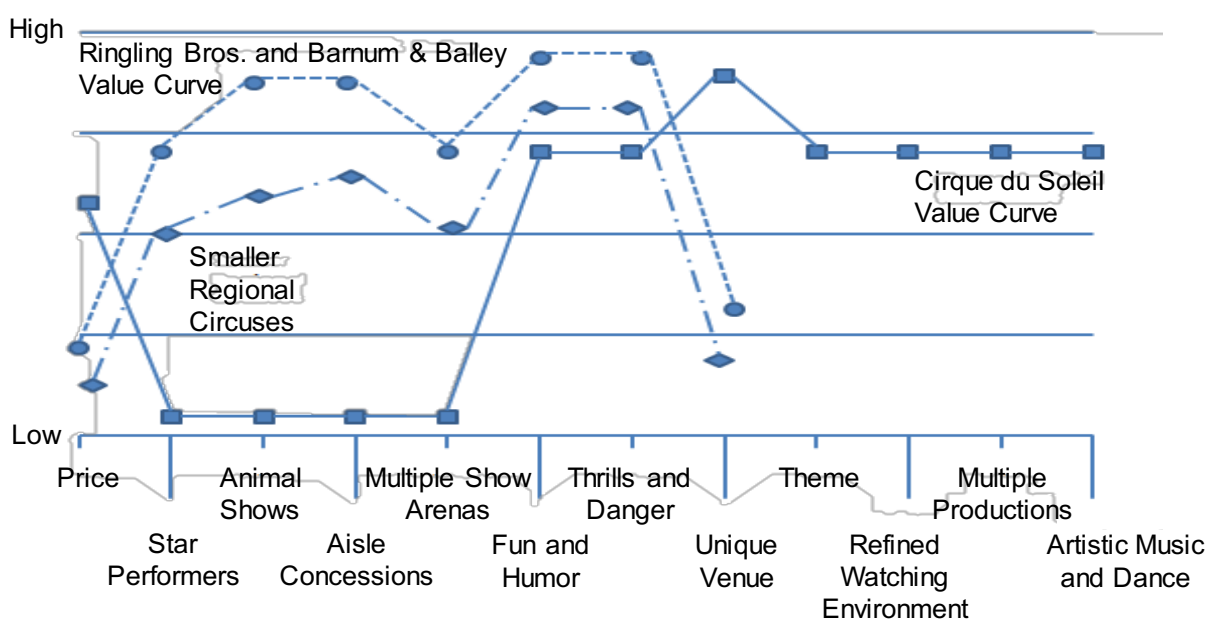


Figure 9: **Cirque du Soleil Innovation and Customer Value via the Blue Ocean Strategy**

Source: Kim and Mauborgne (2005).

Figure 10 below displays how Cirque du Soleil has achieved vital strategic position and customer

¹⁸ The author just visited the Harvard Law School's new Wasserstein Building. From his observations all the computers that were available for class were provided by Apple, so were the lecturer and the members of the class. In 2007 when the author started his Global MBA in general management Apple was scarcely seen in campus of most of the universities, and Microsoft's software and RIM's (Research In Motion) Blackberries were the norm.

attraction by applying the blue ocean strategy. The main sequence, how blue ocean strategy is created consist of the four steps. These steps are described as 1) Buyers utility; 2) Price; 3) Cost; and 4) Adaptation.

To display for the reader how blue ocean strategy is applied based on the four pillars described above, Figure 10 outlines furthermore the fundamentals of the blue ocean thinking. This model has a very well-functioning system of analysis, whereby customer-value is at the center of model generation.

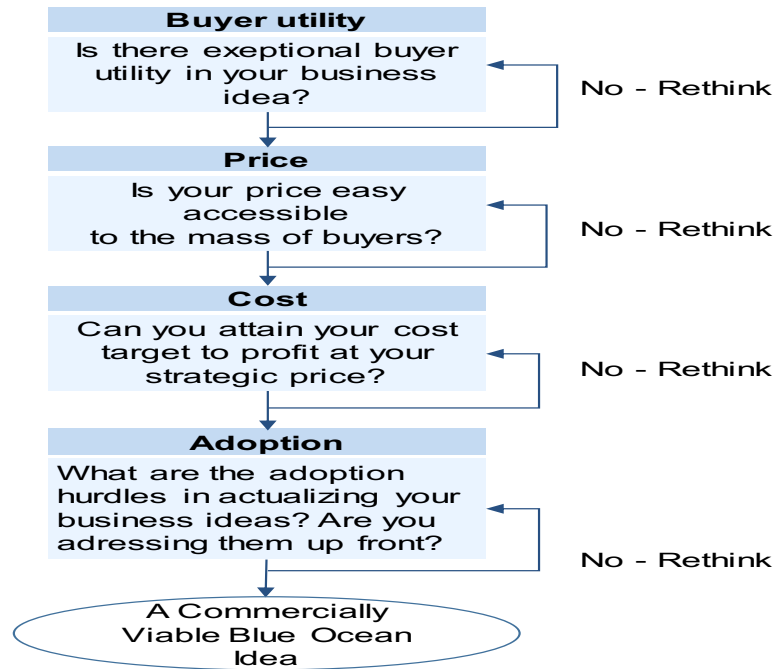


Figure 10: **The Creation of Ideas**

Source: Kim and Mauborgne (2005).

The starting point is buyer utility, as described in the figure above. *“Does your offering unlock exceptional utility? Is there a compelling reason for the mass of people to buy it? Missing this, there is no blue ocean potential, to begin with. Here there are only two options. Park the idea or rethink it until you reach an affirmative answer”* (Kim & Mauborgne, 2005, p. 118). Burke, et al (2009) conclude their research by stating that their research focuses on the prevalence of blue ocean versus competitive strategy in the short and long-term during 1982-2000 due to the fact that the preceding 20 years have been revolutionary regarding strategy in retailing as new brand and differentiation strategies prevailed which ensured a higher degree of market segmentation, deeper and wider market boundaries and reinvigoration of sectors previously considered to be drained. In order to establish the short and long-term relationship between the number of firms and average profits per firm in the Dutch retail industry, Burke et al. used an error-correction model which provided results indicating the predominance of the blue ocean as a long-term form of strategy during the period of observation. Further, the research implies the success of a blue ocean strategy, as a positive long-term relationship between the number of firms and average profits is evidential. However, the analysis’ validation of an

error-correction model indicates the dominance of competitive strategy effects in the short term, which infers that the notion that *“blue ocean makes competition irrelevant”* cannot be substantiated by the analysis (cf. Burke, 2009). Thus Burke et al. (2009) conclude: *“Nevertheless, we find that the competitive strategy (red ocean) adjustment process back to equilibrium is docile, taking approximately 20-25 years to bring a 10% deviation between the actual and the equilibrium number of firms back to equilibrium. The timidity of this competitive process appears to provide the platform from which blue ocean generates sustainable increases in profits without fear of extensive rapid erosion through competition”* (Burke, 2009, p. 25). One aspect that needs to be highlighted here is that firms, which have created a solid web of ties in terms of ecosystems, can enjoy a much vital and long-during blue ocean in the market e.g. IKEA.

1.9.FFM in Relation to Competitive Intelligence and Forecasting

When Steve Jobs was once asked in 1982 if he wanted to do market research, he said, *“no, because the customers do not know what they want until we’ve shown them.”* (cf. Isaacson, 2011 (picture nr.6)). When Steve Balmer the CEO of Microsoft was interviewed by David Liebermann of USA Today and asked at the CEO forum about the iPhone launch, he replied by laughing at Jobs’ invention by saying: *“\$500.00 for a fully subsidized with a plan that is the most expensive phones in the world and it does not appeal to business customers because it does not have a keyboard which makes it not a very good email machine.... We have our own strategies; we have our own devices in the market today. You can get a Motorola Q phone now for \$99.00, it is a very capable machine, it will do music, it will do internet, it will do email, it will do instant messaging, so I kind of look at that and... well, I like our strategy..., I like it a lot”* (Ballmer as cited in Smugmacgeek, 2007). He concluded by saying: *“there is no chance that the iPhone is going to get any significant market share. No chance”* (Ballmer as cited in Hruska, 2007). Microsoft had launched *“the Zune”* as a product to compete with Apple’s iPod, on the day Jobs introduced the iPhone, he started by saying: *“this is a day that I have been looking forward to for the last 2 1/2 years. Every once in while comes a revolutionary product along that changes everything.”* (Jobs, 2007). *“iPhone is a revolutionary and magical product that is literally five years ahead of any other mobile phone,”* said Steve Jobs, Apple’s CEO. *“We are all born with the ultimate pointing device—our fingers—and iPhone uses them to create the most revolutionary user interface since the mouse.”* (Apple Inc., 2007). Apple’s inventions truly transformed this generation’s understanding and dealing with technology, and even transformed the way technology is observed namely as a luxury lifestyle item which is humanized. This competitive mindset was one of the major reasons, why Apple Inc. became what it represents and what it stands for today namely the embodiment of innovation, strategy and a game changer. The industry-based competition-view was needed in the era of contibuity, where industry and competitive analyses were vital to the success of the firm, going the red ocean path. However, regardless of the industry- locked-

view or blue ocean strategy in dealing with market dynamics, the essentiality of information is apparent; hence, strategists must know on how to connect the dots within the market reality. Therefore, the role of “..., *information is crucial to both offensive and defensive competitive moves. Sometimes selective release of information can serve very useful purposes, in the market signaling communicating commitment, and the like; but often information about plans or intentions can make it a great deal easier for competitors to formulate a strategy. For example, if an impending new product is disclosed in detail competitors will be able to focus their resources in preparing a response*” (Porter, M. E., 1980, p. 107). Collecting and processing detailed information about the rivals, their capacities and capabilities and that of the industry and where the journey may lead to, from the new environmental regulations, the antitrust and competition law to what is happening outside of the industry are essential for strategist in order to position the organization on the right path to cope with these multiple challenges, while the regulative factors apply to all the industry to some extent quality depending on the market position, etc., having information about the rivals’ behaviors and next moves is an essential part of competitive intelligence. “*Forecasting potential competitors is not an easy task, but they can often be identified from the following groups:*

1. *firms not in the industry but who could overcome entry barriers particularly cheaply;*
2. *firms for whom there is obvious synergy from being in the industry;*
3. *firms for whom competing in the industry is an obvious extension of the corporate strategy;*
4. “*Customers or suppliers who may integrate backward or forward*” (Porter, M. E., 1980, p. 50).

According to Porter (1980): one approach in formulating a strategy is to look for positions in the market where the firm can achieve its goals without causing a serious threat to the rival’s market security resulting in a severe retaliation. Porter applies here one of Sun Tzu’s doctrines which states: “*Know your enemy and know yourself— if you know the enemy and know yourself, you need not fear the results of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle.*” (Tzu, 2005, Chapter VII). Porter called Sun Tzu’s wisdom in business language as “*assumptions*”. The most crucial component in competitor and rival’s analysis is the understanding each of their assumptions and organizational respective decision-making structures. These fall into two major categories:

1. *The rival’s assumption about itself- (internal perspective).*
2. *The rival’s assumption about the industry and the companies in it- (external perspective) (cf. Porter, 1980 & see Appendices 13 and 14 for a detailed checklist on how to analyze the competitor, pp. 32-33)*

Chapter Analysis:

The chapter has described an in-depth research within the field of strategic management. Not only clear evidence-based research and accounts were delivered based on the essentiality that the FFM has played as the inception model of the field of competitive strategy but moreover, the role it has occupied for general managers navigating their organizations. The chapter has analyzed the FFM from the diverse angles as breadth, width, and accuracy of the model's diagnostic powers. The chapter has also diverse critiques of the model substantiating the author's thesis by many scholars, that while the model is still widely spread, managers need to look beyond the industry-locked-in views or organizational realities in order to achieve SCA. The research's strength as an evidence-based and historical review is also that it has delivered so far, the most holistic treatment of the model. Based on the research available no other literature review has been devoted to analyzing the model for a broader critique as the author has illustrated above. The foundation of any strategic model is the assumption it occupied to looking at the milieu, wherein it is embedded. The Porterian dimension thus has been thoroughly discussed thereby opening a new path towards a managerial understanding of strategy by paving the path of management cybernetics as founded by Beer. While the FFM has been analyzed within the most essential publications as lead journals, influential books and practically focused papers ensuring a wider spectrum of literature collected concerning strategic management, the author has applied a unique combination of literature between the Anglophone and Germanophone worlds. This diversity and holism have been essential to deliver a solid understanding and scanning of the field of strategy bridging these two strategic Weltanschauungs, not regularly combined and treated in a single literature. Based on the research conducted a systemic and cybernetic path in strategy seems to be a promising venture, thus, it opens new pathways towards a deeper implication that the intertwinedness of the field as the notion of recursion-based management of the total environment of the firm, wherein its embedded, is concerned. Chapter two is concerned with a deeper treatise of the field of management cybernetics as essential pillar for strategy observing the phenomenon from a structure-based approach to coping with the emergent strategies that an organization based on holistic management approach can deliver.

2. SYSTEMS THEORY AND CYBERNETICS AS ENHANCED FOUNDATIONS FOR INTERDISCIPLINARY COMPETITIVE STRATEGY DEVELOPMENT IN BUSINESS ADMINISTRATION

All natural-order and evolutionary phenomenon underlie a simple, in contemporary Anglophone dominated strategic and management sciences rarely applied and consulted, but fundamental natural law, namely “*self-organization*”. Embarking on studying and understanding of complex systems presupposes the apperception of this phenomenon. However, pioneering research has been done by Malik (1984, 2015a) in his “*Habilitationschrift*”, by Ulrich and Probst (1984) as editors of the “*Conference on Self-organization of Social Systems at the University of St. Gallen*” (cf. Malik, F. F., 1984, 2015a), as one of the world’s first major scientific conferences on the subject of “*self-organization in social systems*” and by Ashby (1952), who considered the principle of self-organization as a highly practical affair, and by Beer (cf. Beer, S., 1959a, 1993a, 1972, 1984, 1985), who put self-organization at the core of the “*Viable System Model*” (VSM) (cf. Beer, S., 1959a, 1993b, 1972, 1981, 1984). The VSM is at the core and foundation of applying self-organization in terms of cybernetics to business administration and management science. The most visible demonstration of self-organization as a natural law and phenomenon, which is responsible from the self-management of the ecosystem to self-regulation of the national and global economy,¹⁹ the markings and stripes of the shapes on the body of the animals,²⁰ to creating the shapes of sand dunes in Arabian Sahara, to a flock of birds and see gulls self-organizing themselves into a giant whole, while each individual bird’s next action and move in the flock or school of fish is not limited and hindered by any calculations and predictions (cf. Mitchell, M., 2009), thus, they are still able to manage one of the most vital tasks essential to their survival (cf. Malik, F., 2007a). Imagining giving one of the birds in the flock the position to be the leader of the group, one is sure to experience that their journey might turn not very successful. By understanding and applying self-organization as the major pillar of control “*from parts separated to parts joint*” (cf. Ashby, 1952, 1958) and steering of complex systems, the depth of a holistic and collective, structural and interactional intelligence embedded within the structural dynamics of the interacting systems and sub-systems emerges (cf. Pfeifer, R. & Bongard, 2007, Mitchell, M., 2009; Erdi, 2008; Schwaninger, 2001b). This collective output of the respective systems’ behavior is called Eigenbehavior. The notion of “*Eigenbehavior*” (cf. Foerster, H., 2003; Valera, 1984) of complex systems²¹ is essential to highlight and to underpin here, to which Beer refers to ascending from the recursion of the interacting subsystems of the whole,

¹⁹ Adam Smith’s “The invisible Hand” is a prime example of self-organization of the economy

²⁰ Turing, 1952, p. 5- Turing states: “It is suggested that a system of chemical substances, called morphogenesis, reacting together and diffusing through a tissue, is adequate to account for the main phenomena of morphogenesis. Such a system, although it may originally be quite homogeneous, may later develop a pattern or structure due to an instability of the homogeneous equilibrium, which is triggered off by random disturbances.”

²¹ The researcher constructs on Ashby’s, 1962 paper „*Principles of Self-organization*”, as a key foundation on complexity as a science (see: Kamran, 2013a and Dupuy, 2000)

by describing it as: “*the purpose of the system is what it does...*” (Beer, S., 2002, p. 218), and von Foerster coined the term and “...*equated the ability of an organization to classify its environment with the notion of Eigenbehavior.*” (Rocha, 1996, p. 1). According to Varela (1974): “*Eigenbehavior is thus used to define the behavior of autonomous, cognitive systems, which through the closure (self-referential recursion) of the sensory-motor interactions in their nervous systems, give rise to perceptual regularities as objects*” (Varela et al., 1974, chapter 13 quoted from Rocha, 1996, p.1). Stable social productive systems have learned to apply self-organization as the most powerful organizational characteristics and embodiments of their collective intelligence (cf. Ashby, W. R., 1958; Beer, S., 1972; 1984, 2002; Malik, F. F., 1984; 2015a; Ulrich & Probst, 1984). The sciences of cybernetics and complexity deliver vital approaches and insights, whereby the management and strategic control and navigation of firms within the dynamics and turbulence of the future could be established on much more solid grounds than the top-down notion — “*structure follows*” strategy and thereof resulting organizational forms and structures can deliver. All complex systems are self-organizing, viable²² and autonomous systems. In the context of the research, the author constructs on von Hayek stating: “... *the only possibility of transcending the capacity of individual minds is to rely on those super-personal 'self-organizing' forces which create spontaneous order.*” (cf. Hayek, F. A. von & Hamowy, 2011, p. 54; Malik, F. F., 1984; Malik, F. & Probst, 1984) Malik and Probst underpin: “*As managers, we have to ... learn to be what we really are: not doers and commanders, but catalysts and cultivators of a self-organizing system in an evolving context*” (Malik, F. & Probst, 1984). To have a better understanding of the nature of the application of cybernetics within managerial sciences, it is necessary to underpin and substantiate the notion whereupon the definition and observation of “*management*” in the dissertation is constructed. The author refers to management as the management of the social system in the tradition of and foremost constructed on Ulrich (cf. Ulrich, 1968; 1970, 2001; Ulrich & Probst, 1984)²³ and also on Beer (1959a, 1966, 1972, 1981), Ashby (1952 1958), Malik (1984; 2013a, 2015a) and Schwaninger (2007, 2009a, 2010a, 2014, 2015a). The author understands: “*Management as the Design, Control and Development of Purposeful Social Systems*” (Ulrich & Probst, 1984), this view differs from contemporary literature as the sum of explicitly tabulated activities such as planning, organizing decision-making, leadership of people, controlling and accounting (Malik, F. F., 1984; 2015a; cf. Malik, F. & Probst, 1984). According to Ulrich, social systems comprise living systems, which may or may not participate in its formation. Participation in such systems does not imply a loss of character as an individual. Simultaneous participation in various social systems always exists for human living systems. Social systems provide all components with direct access to the environment of the whole system, which distinguishes social

²² Viable is used as a cybernetics term meaning—the ability to maintain a separate existence.

²³ Ulrich is considered to be the father of modern systemic management within German speaking countries.

systems from biological systems (cf. Ulrich & Probst, 1984) Under the notion of controlling complex systems, scientists have come to understand that another approach and context needs to be applied departing from the traditional “*reduction ad absurdum*” approach. Thus, according to Bertalanffy, that all elements and constituents of society are interrelated, implying that essential factors in public problems, issues, policies and programs are interdependent components of a total system and need to be considered and evaluated as such (cf. van Bertalanffy, 1969) Paczuski observes that biological observations are not required to conclude that a purely reductionist approach is fundamentally insufficient. Paczuski exemplifies “*the surface of the earth is an intricate conglomerate of mountains, oceans, islands, rivers, volcanoes, glaciers, and earthquake faults, each with its own dynamics*” and concludes that dynamics and form of such systems is emergent and hence cannot be explained microscopic laws deduced from scrutinizing gradually diminishing scales. Paczuzki further concludes: “*Unless one is willing to invoke an organizing agent of some sort, all these phenomena must be self-organized*” (Paczuski & Bak, 1999, p. 1). Evolution is nothing else but a history of self-organization. Emergence is embedded in its DNA. Emergence welcomes change and takes its forms by adaptation in an order that it actually can survive. The quest for survival is nature’s ultimate doctrine. Survival is embedded in every action and activity of nature. Order and chaos are just as much a natural phenomenon as it is the shape of “*fractals*” (Mandelbrot & Hudson, 2008). The notion that complexity arises not from complicated matters but instead of some simple natural rules and that these simple natural rules give rise to very complex objects and phenomenon is not what is generally observed. Knowing that an object can be complex and simple simultaneously depends on the mental model the scientist is running intellectually by his cultivated apperception. Furthermore, some developed arguments according to Nahapiet and Ghoshal (1998) state”: (1) *social capital facilitates the creation of new intellectual capital; (2) organizations, as institutional settings, are conducive to the development of high levels of social capital; and (3) it is because of their more dense social capital that firms, within certain limits have an advantage over markets in creating and sharing intellectual capital*”. In these arguments in addition to the model-based-management dimension above described, the social milieu of the firm has essential implication for the generation of social capital and thus a gaining a better power position within the market to contribute to s SCA. Thus, it is within the realm of holism of the scientist’s modeling capacity of the total reality and “*Habitus*” (cf. Bourdieu, 1977; cf. Kamran, 2018b) that the depth of understanding, knowing and designing of complex systems emerges. Managers run a sort of mental model that the width, breadth and acuity of it distinguishes between the stability of the sociotechnical system, its Eigen-behavior, Eigen-dynamic and the autopoiesis of the system and the notion of the systems homeostasis towards the environmental perturbations. The author constructs on Wittgenstein, who observes: “*The results of philosophy are the uncovering of one or another piece of plain nonsense and of bumps that the understanding has*

got by running its head up against the limits of language. These bumps make us see the value of the discovery” (Wittgenstein, 1958, 1968, p. 7). This analogy is essential hence cybernetics and systemics require a different language and terminology, whereby new approaches and phenomenon are introduced to the field of strategic management to extend the wider grasp of the thesis. One of the main challenges in the era of complexity (cf. Hawking, 2000 in: Mitchell, M., 2009) is that top-down management is insufficient to control the ubiquitous change and emergent phenomenon that a manager and his organization under control have to cope with. Indiscriminately intervention into the system by prerogative means does not possess “*Requisite Variety*.”²⁴ This is the reason, why the state interventions throughout the financial world do not heal the world’s economic systems, thus, Greece will never become Germany, regardless of the amount of money provided, hence they are applied to bring forth a reductionist intervention in a complex system as Greece’s economy without any regard for the country’s Eigen-behavior and internal dynamics of its malfunctioning institutions, which does not underlie reductionist rules. What the world faces today is systemic crises that cannot be remedied by the methods of reductionist means and the scientific methods focused on separation of the whole to understand it. A holistic and a systemic lens can resolve these crises. This requires an interdisciplinary approach, and the chapter substantiates this claim by giving the reader a conceptual understanding. Figure 11 below describes how the current model of strategy is transformed from order to chaos. “*Proliferating variety*,”²⁵ is the challenge with the contemporary strategy models and the strategic-mindset based on reductionism, which are violating “*Ashby’s Law*” (cf. Ashby, W. R., 1958) and are not designed based on the self-guided mechanisms that could be cultivated by managers to organize themselves. The organized modern society has been established within the shortest of time horizon and a span of approximately 150 years and this makes man face different type of problems and situations today. Of course, many organizations have existed before and throughout the history. There existed even very large organizations, e.g. the construction site and organization of the pharaohs in Egypt and the legendary armies from Napoleon to Chingiz Khan etc., but the research quickly reveals that, although there may have been large organizations in terms of their members, but these were still very simple and homogenous organizations embedded within linear milieus. The organization and the numbers wherewith contemporary practitioners have to deal today are complex (cf. Malik, F., 1993; 2000a, 2003a). The large organizations of the past were unfamiliar with problems of communication and control because the tasks that they had to perform were apparent with visible outcomes. There were still masters and commanders, but the tasks were still as transporting and breaking stones and additional construction tasks or fighting with the enemy by physical force. The

²⁴ “*The Law of requisite variety: The larger the variety of actions available to control system, the larger the variety of perturbations it is able to compensate.*” Heylighen (1999), Ashby (1958) from principia cybernetica.

²⁵ Proliferating variety is used based on Beer’s analogy of modeling systems based on relation of the elements of the system and the managerial situation. (Beer, 1966 and Malik, 1984, 2015)

organizations of the past were man-powered organizations; the task, if one could not have solely done and finalize it was simply done by adding people to the task to get the job done as a simple act of power. Knowledge and information did not play the most essential role (cf. Malik, F., 1993; 2000a, 2000b, 2003b, pp. 9–10). In the cybernetics of firms' diverse functions, the role of information is key to act in the right manner, with the right models and in the right feedback-loop of trial and error.

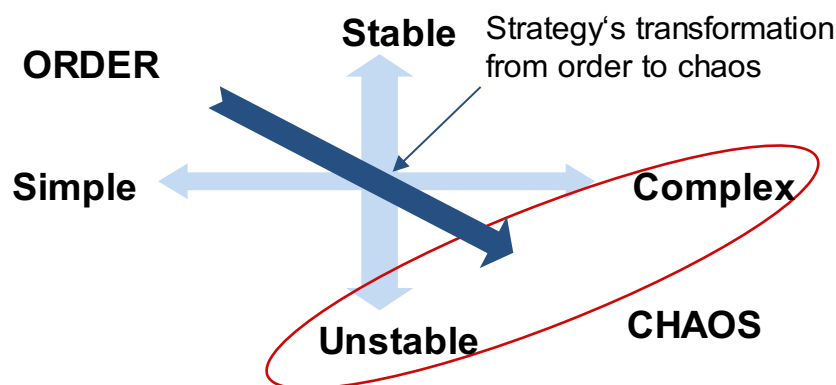


Figure 11: **The Transformation of Strategy from Stable Environments to Environments of High Velocity and Turbulence**

Source: Author's own illustration based on theoretical findings in literature and state-of-the-affairs in global business²⁶

Therefore, some very simple and routine rules of how to guide and command were necessary to get the task accomplished. All this simplicity has emerged becoming a gigantic complexity in the organizations of today. The diverse and different type of organizations and the wider difference in the tasks of the workforce to be accomplished has aroused the complexity of coordination and communication, which is fundamental to the functioning of organizations, thus coordination and communication are order-designing and structure-maintaining functions to the organizations (cf. Malik, F., 1993; 2000a, 2003b, pp. 10–11). Function is the ethos of organization; therefore, it is essential that a shift in thinking about organizations, their parts, systems and subsystems, and Eigen-behavior is established.

2.1. The Principle of Recursion

The principle of recursion is one of the foundational principles of management in the animal, machine, and productive social systems. According to Beer: *"that every viable system contains and is contained in a viable system"* (Beer, S., 1989, p. 4). Malik underpins the notion that the principle of recursion is one of the most important principles of systems' structure. Thus, recursion can only be understood in relation to viable organizations and hence necessary for organizational viability (cf. Malik, F. & Probst, 1984, p. 90). Viability in terms of systemic respectively cybernetics sciences means being *"... able to maintain a separate existence"* (Beer, S., 1995b, p. 113). According to Beer (1995a), the

²⁶ Scholl-Latour (2013) and Haas (2018)

laws of viability in complex organisms are related to the dynamic structure regulating the adaptive connectivity of the organism's parts rather than to energy impelling the organism (“like the metabolism of money”). In order to remain a viable system, organizations are required to become “immune to infection and adaptive to environmental change” (Beer, S., 1994b, xi) meaning organizations have to be resistant to managerial issues that disregard financial and territorial boundaries. Beer has signified two principles of recursion in viable systems: [...]

1. “If a viable system contains a viable system, then the organizational structure must be recursive” (Beer, S., 1979b, p. 287; Malik, F. F., 1984, p. 93).
2. “If we decide to define a social system by recursion, we shall find that every viable system contains a viable system” (Beer, S., 1979b, p. 287).

Figure 12 models a whole industry's system according to Beer (1995b). The reader can clearly observe therein how the recursive systems of a total industry are embedded in each other. “The total system contains two systems which are identical with it. Like the one on focus mentioned earlier, these two embedded systems are themselves viable systems. They are RECURSIONS OF THE VIABLE SYSTEM. We shall make use of this mathematical term because, while its meaning in context is evident, it reminds us that we are not talking loosely about any kind of system contained inside another—but about an absolutely precise definition of viability” (Beer, S., 1995b, p. 2).

To understand the notion of recursion within the firms' internal and its interaction with the environment is a core criterion to dissolve complexity, whereupon solid strategies can be designed.

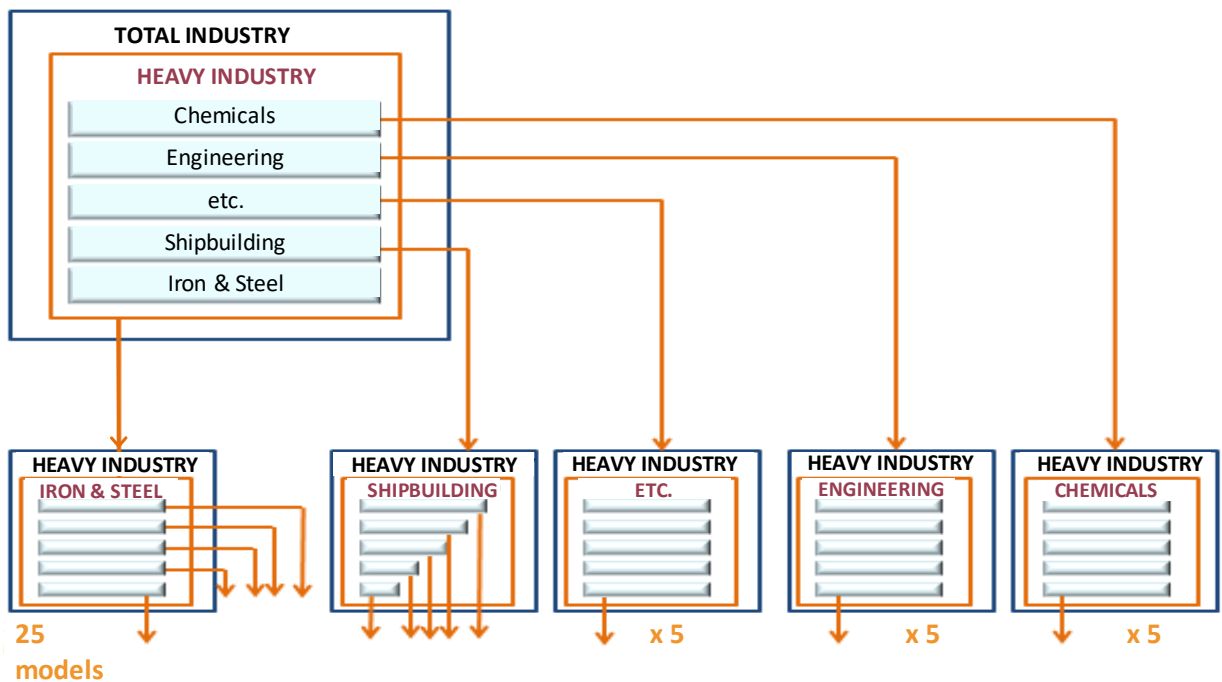


Figure 12: An Industry with its Recursive Sub-system

Source: (Beer, S., 2002).

As a good example Figure 13 demonstrates that the viability of the cluster's-specific conditions, wherein the innovative orientation of the embedded firms is concerned, and the overall common and purposive innovational infrastructure reflect via the principles of recursion the very viability of these parts of the cluster and that of the whole cluster together. As a good example Figure 13 demonstrates that the viability of the cluster's-specific conditions, wherein the innovative orientation of the embedded firms is concerned, and the overall common and purposive innovational infrastructure reflect via the principles of recursion the very viability of these parts of the cluster and that of the whole cluster.

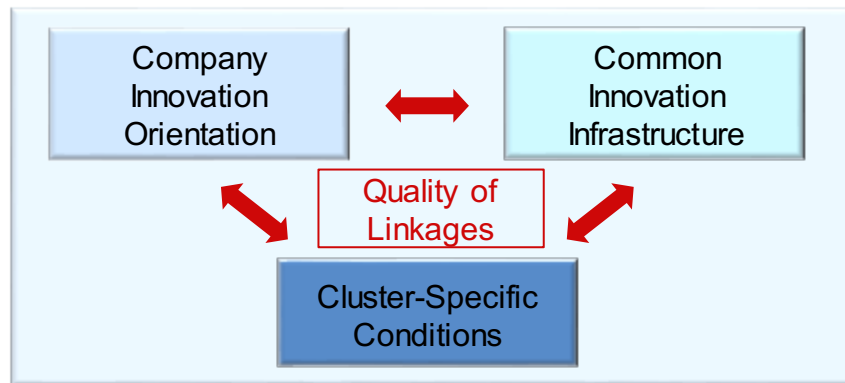


Figure 13: **Innovation in a Cluster**

Source: (Porter, M. E., 2008a).

Thus, these symbiotic cluster-conditions based on the relations of the diverse inter-related firms work on the principles of recursion and symbiosis. The concentration on recursion is not only on the notion of model-building but moreover on an understanding of how a complex organization can be simplified, explained and controlled. Thus, it fosters decentralized control function and enhances the variety of the next higher system to maintain stability by achieving organizational objectives efficiently and function on the basis of homeostasis within their respective environments. The application of VSM and the recursive logic discovers new guiding parameters for leaders that will simplify management and the achievement of the organization's objectives in complex environments.

2.2. The St. Galler Management Model

Before a scientist engages in designing a new disciplinary paradigm, a new dimension of a theory and modeling, it is essential to put the new ideas to a test of a comparative analysis and research. This not only enhances the researcher's ability to design a better and more comprehensive model but moreover this method supports the researcher to come to much better and more accurate conclusions. One of the best models for holistic management known to the author and which originally introduced by Ulrich and Krieg (1972, 1973, 1974) and modified by Rüegg-Stürm (Kamran, August 3rd-7th, 2016, 2017a; 2005; Rüegg-Stürm & Grand, 2015), is the "*St. Galler Management Model*" (SGMM). The model was one of the main reasons behind the fame of the University of St. Gallen and the cornerstone

of a new wave of thinking in management (*Managementlehre*) within the Germanophone countries. The SGMM embraced a fundamentally new paradigm shift beside the spectrum of the Anglophone dominated managerial and strategic schools, which are all constructing on Chandlerian foundations. The model was developed to observe an organization within the spectrums of its total environment from an interdisciplinary perspective on systems theory and cybernetics foundations. While the model has been the cornerstone of the University of St. Gallen's curriculum and the trained managerial mindset, it has still not extended its fame beyond the boundaries of the Germanophone countries. The SGMM above displays a partial resemblance to Porter's FFM; however, it is based on much more holistic and wider grounds. While Porter's analogy is much narrower, concentrating strongly on the industry-in perspective and the economic sphere as the total environment of the firm, wherein it's embedded, the SGMM includes not only additional stakeholders e.g. various institutions, sponsors and employees,²⁷ but also many wider spheres e.g. social sphere, technical and ecological spheres. Porter only included these additional dimensions within a different paradigm and newly introduced framework introduced as "*Shared Value*", (Kamran, August 3rd-7th, 2016, 2017a) which is based on designing a more civilized capitalistic system (cf. Porter, M. E. & Rivkin, 2012b), especially after the 2008 world financial distress. At this part, the author will introduce in particular Ashby's Law as another view and foundation for competitive strategy. While some scholars like Beer (1959b, 1962, 1971, 1982, 1985, 2002), Ulrich (1968, 1970, 2001), Ulrich and Krieg (1972), Malik (1984; 2015a), Schwaninger (2010b, 2015b), Hetzler (2008), Rüegg-Stürm (2015) and the Kamran (August 3rd-7th, 2016, 2017a) have applied Ashby as foundations within their research. Beer as the father of "*Management Cybernetics*" has paved the framework (cf. Beer, S., 1959a, 1972; 1981; Beer, S., 1984). The VSM model is the most powerful diagnostic tools to enable the SFM establishing a vital strategic foresight. However, the mainstream thought within the dimension of CS & SM as described by Ouchi (1980), which still has held its truth, states: "*Evaluating organizations according to an efficiency criterion would make it possible to predict the form organizations will take under certain conditions. Organization theory has not developed such a criterion because it has lacked a conceptual scheme capable of describing organizational efficiency in sufficiently microscopic terms*". It has been the author's pursuit to introduce the VSM designed within a solid model of strategy building and fill the gap within management science by extending the states of intellectual and practical discourse within the field.

²⁷ The author refers to a wider stakeholder view of the organizational realities.

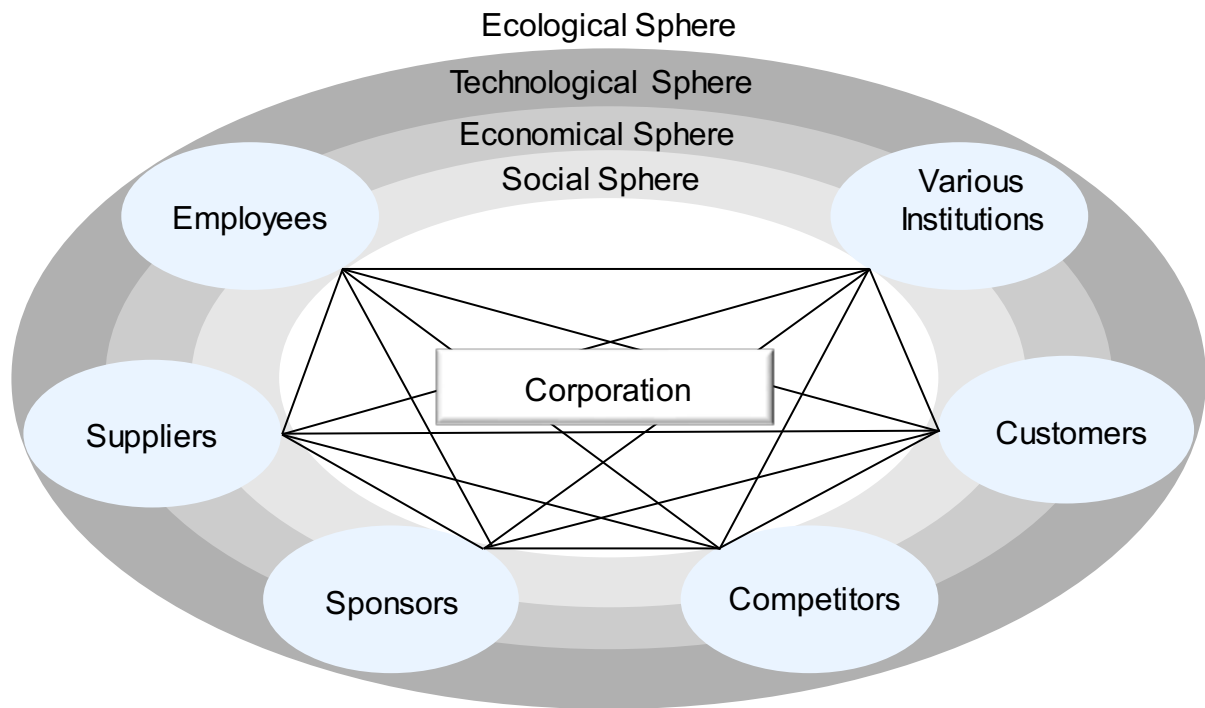


Figure 14: **St. Galler Management Model**

Source: Ulrich & Krieg (1972-1974) and Rüeegg-Stürm (2002-2003).

To the author’s knowledge, the comprehensive application of Ashby based on the theoretical reasoning, theory building, and modeling has not been applied in any other scholarly publications and research so far, especially under the notion of extending Porter’s led contemporary thought in competitive strategy. This identified gap in theory and practice substantiates the author’s claim of novelty and originality of the dissertation.

2.3. Ashby’s Law of Requisite Variety

Ashby is the founding doyen and pioneer of cybernetics and systems theory. His major contributions are the “*Law of Requisite Variety*” (Ashby, W. Ross, 1952; Ashby, W. R., 1958; cf. Ashby, W. Ross, 2015) applied by Beer to construct the field of management cybernetics, the “*Conant and Ashby’s Theorem*,” (cf. Conant & Ashby, 1970) which brought modeling and “*Model-Based Management*” (MBM) into many scientific fields, whereby he proofed that a model is thus a necessity for constructing effective control systems (Schwaninger & Groesser, 2012; cf. Schwaninger & Grösser, 2008) and also designing the “*Homeostat*” (cf. Ashby, W. Ross, 2008), as an ultra-stability system (cf. Froese T. & Stewart J., 2010) based on self-organization. Ashby invites managers and scientist that have fewer skills and training in engineering and mathematics to study cybernetics and to understand its powerful character on designing strategies, organizations and their system of governance. Ashby states that cybernetics and its application of methods and techniques are of interest to numerous biological scientists and their fields of specialty, yet many are under the impression that the subject requires extensive study of electronics and advanced pure mathematics as these fields are

regarded inseparable, which obstructs many professionals to participate in the study of cybernetics. Ashby considers this impression to be false since the fundamentals of cybernetics are simple and do not necessarily require reference to electronics so that pronounced results can be realized by using straightforward techniques if a clear understanding of their principles is established. (Ashby, W. R., 1958, v). The principles, which are essential for management as self-organization, design, control and the natural laws of function and governance, are the very principles of the science of cybernetics, thus they are essential to management, strategy and ultimately an organizational system's survival. According to the *"First Law of Thermodynamics"* energy and different forms of energy can be converted to each other as mechanical work to heat, but they cannot be destroyed, hence complexity in a control system cannot be destroyed, it can only be absorbed, controlled and managed in terms of variety attenuating capacities of the firm. Stable and robust control systems are the foundations of sustainable competitive advantage, whereupon the contemporary economic and management strategy models must be constructed and extended. There are vital models, laws and general principles, which are built on the very essential biological or bionics principles. According to the *"Law of Requisite Variety"*— *"the variety in the control system must be equal to or larger than the variety of the perturbations in order to maintain stability"* (cf. Ashby, 1958 & Heylighen, 1991.) and thus, *"variety can destroy variety"* (cf. Ashby, 1956). Beer referred to this as *"only variety can absorb variety"* (Beer, 1985, p. 26). Beer's definition in the field has since been the standard definition of Ashby's Law. Figure 15 describes Ashby's Law and displays how management via operations can create equilibrium between the organization and the environment. Here the capacity of organizations to self-organize themselves and to cope with unforeseen and unpredictable perturbations via homeostatic stability is the foundation for applying Ashby's Law in complex settings and milieus.

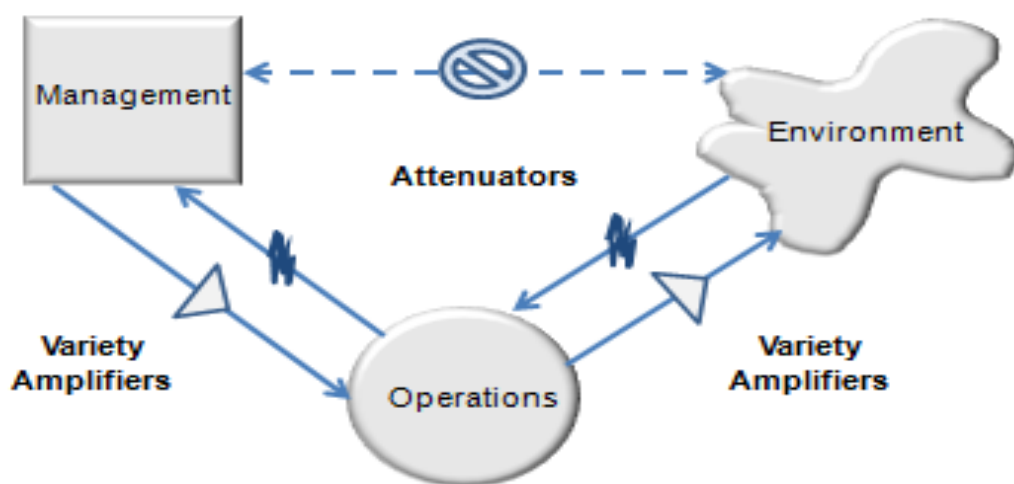


Figure 15: Ashby's Law

Source: Ashby (1956, 1958) and Beer (1979a).

Another vital contribution of Ashby's work, which is essential for observing and understanding by the strategist, is Ashby and Conant's Theorem, stating: *"Every good regulator of a system must be a model of the system,"* (Conant & Ashby, 1970, p. 1) which is modeled in the figure below.

According to Conant and Ashby: *"The first effect of this theorem is to change the status of model-making from optional to compulsory."* Conant and Ashby argue that model-making is yet viewed as a possibility for regulating complex dynamic systems; however, the theorem indicates the necessity of a *"sufficiently similar model"* for successful regulation within a wide class. The construction of such a model may have been realized explicitly or through improvement of the regulator. Conant and Ashby further elaborate: *"To those who study the brain, the theorem founds a 'theoretical neurology'. For centuries, the study of the brain has been guided by the idea that as the brain is the organ of thinking, whatever it does is right. But this was the view held two centuries ago about the human heart as a pump; today's hydraulic engineers know too much about pumping to follow the heart's method slavishly: they know what the heart ought to do, and they measure its efficiency. The developing knowledge of regulation, information processing, and control is building similar criteria for the brain"* (Conant & Ashby, 1970). This suggests that based on the knowledge that *"regulators must model what they regulate"* it is necessary to empirically measure the brain's efficiency in conducting this process, however, Conant and Ashby underpin: *"There can no longer be a question about whether the brain models its environment: it must."* (Conant & Ashby, 1970). This notion is also substantiated and applied in MBM (cf. Schwaninger, 2010b, 2015c; Schwaninger & Groesser, 2012). According to Schwaninger (2010): *"... the complexities confronting organizations have been subject to drastic amplification. As a consequence, the pressure on leaders has markedly increased. Orientation and steering devices have become all the more important because they enable actors in organizations:*

- *to find their way in complex settings, and*
- *to decide and act more effectively and consciously"* (Schwaninger, 2010a, pp. 1419–1420).

Schwaninger (2010a) further claims that *"...high-quality models can make a powerful contribution"* (Schwaninger, 2010a, pp. 1419–1420), thus, the strategist occupied with the most essential task of this era needs to model viability, immunity, and competence, whereupon the control models need to be designed. It is the very purpose of the author's work to establish a holistic strategic model that models the proactive dissolving and controlling of complexity.

2.4.Homeostasis in Systems and Organizations

Alan Turing the famous British mathematician,²⁸ upon taking note of Ashby's contemplation and plan to build a homeostasis machine, wrote him a letter (see: Appendix 16, p. 35), where Turing states his greatest interest to Ashby on his model that actually resembles the model of brain's action namely the

²⁸ Turing's contribution to science have also been many, especially to complexity and chaos theory (see: Turing, 1951, Kamran, 2013a)

teleology of computing. Times Magazine called Ashby's "Homeostat": "*The Thinking Machine*" (Times Magazine, 1949). "*In the laboratory of Barnwood House Mental Hospital, on the outskirts of Gloucester, England, is a modest black contraption that looks like four storage batteries set in a square. Its only visible moving parts are four small magnets, one swinging like a compass needle over each box. Psychiatrist William Ross Ashby, who built the machine, thinks that it is the closest thing to a synthetic human brain so far designed by man. Practical calculating machines explains Dr. Ashby, merely take orders and act upon them, in complicated but predetermined ways. His machine, which he calls a "homeostat", is different*" (Times Magazine, 1949). Ashby's Homeostat thought for himself and modeled a brain-like apparatus, whereby the notion of the brain and its function as a controlling mechanism was ubiquitously displayed, to which Beer referred to: "*The purpose of the system is what it does.*"²⁹ The purpose of homeostasis in managerial situations is to maintain a self-organizing control by absorbing and coping with perturbations while maintaining organizational stability internally and also the state of equilibrium towards external forces. From a strategic point of view, Beer advocated pre-control situations under the analogy of "*dissolving problems*", as already stated: "*... rather than to solve problems it is clever to dissolve them.*"³⁰ According to Ashby: "*How does the brain produce adaptive behavior? In attempting to answer the question, scientists have discovered two sets of facts and have had some difficulty in reconciling them. On the one hand, the physiologists have shown in a variety of ways how closely the brain resembles a machine: in its dependence on chemical reactions, in its dependence on the integrity of anatomical paths, and in the precision and determinateness with which its component parts act on one another. On the other hand, the psychologists and biologists have confirmed with full objectivity the layman's conviction that the living organism behaves typically in a purposeful and adaptive way. These two characteristics of the brain's behavior have proved difficult to reconcile, and some workers have gone so far as to declare them incompatible*" (Ashby, W. Ross, 1952, p. 1, 1960, p. 1; Ashby, W. Ross & Stein, 1954, p. 1). Here Ashby takes a contrary position and underpins the claim that the brain is constantly using adaptive behavior and that machines and organizational behavior can be thereby trained. Adaptivity is a key strategic capability, which requires an organization of any kind to embody high integrity,³¹ navigating in uncertainty, unpredictability, dynamic turbulence and complexity to constantly act in or react to a changing milieu by incorporation and capacity of processing real-time information the organization receives and must absorb and amplify. Simon (1994) identifies 3 skills that an organization must cope with in uncertainty to survive and to prosper (Simonsen, 1994, p. 7):

²⁹ Beer, 1995, p. 7 From Beer's speech "*What is cybernetics*": "*the purpose of a system is what it does*", is a cybernetic dictum. (See: <http://www.nickgreen.pwp.blueyonder.co.uk/beer/WhatIsCybernetics.pdf>)

³⁰ Stafford Beer, quoted from: Das «Nervensystem» der Firma Neue Organisationsstrukturen für eine Neue Welt“ tmalik-management.com/

³¹ Integrity is a cybernetic term. "Decision integrity is proposed as a reflexive theory of decision making that incorporates the decision maker as part of the decision field. It requires stepping out of the observer/object paradigm of classical science and into the alternative paradigm of second order cybernetics. The decision maker is not simply an observer but also a participant who cannot abdicate from personal ethical considerations and ultimate responsibility even in the face of uncertainty." (Hodgson, 2010, p. 52)

1. *Skills in anticipating the shape of an uncertain future.*
2. *Skills in the generation of alternatives in navigating effectively in changing environments.*
3. *Skills in implementing new information and plans effectively and rapidly.*

Ashby's original design was found by the author seen in Appendix 16 (p. 35) in Ashby's digital archives (cf. Ashby, W. Ross, 2008). According to Beer: "*homeostasis is stability of a system's internal environment, despite the system has to cope with an unpredictable external environment*" (Beer, S., 1995c, p. 17). According to von Foerster (2003): "*As a general suggestion for researching this problem, I would postulate the following proposition: The postulate of the epistemic homeostasis—The nervous system as a whole is organized in such a way (organizes itself in such a way) that it computes a stable reality. This makes it clear that here again, with "stable realities", we are dealing with an Eigen-value problem, and I could imagine that this observation may be of value in psychiatry. Some may have seen in these remarks their existentialist basis. By means of the double closure of the circle of signals—or the complete closure of the causal nexus—I have done nothing more than stipulate the autonomy of each individual living being anew: the causes of my actions are not somewhere else or with somebody else—that would be heteronomy: the other is responsible. Rather, the causes of my actions are within myself: I am my own regulator! Frankl, Jaspers, or Buber would perhaps express it the following way: in each and every moment I can decide who I am. And with this, the responsibility for who I am and how I act falls back to me; autonomy means responsibility; heteronomy means irresponsibility. Here we see that the epistemological problems of ethics coincide to a larger degree with those of cybernetics, and thus we, in the field of cybernetics, have the responsibility to partake in the solution of the social and ethical problems of our times*" (Foerster, H., 2003, p. 244). According to von Foerster: "*The computations within this torus are subject to a nontrivial constraint, and this is expressed in the postulate of cognitive homeostasis: The nervous system is organized (or organizes itself) so that it computes a stable reality. This postulate stipulates "autonomy," that is, "self-regulation," for every living organism. Since the semantic structure of nouns with the prefix self- becomes more transparent when this prefix is replaced by the noun, autonomy becomes synonymous with regulation of regulation. This is precisely what the doubly closed, recursively computing torus does: It regulates its own regulation*" (Foerster, H., 2003, p. 226). How the typical human's or the same way an animal's neural circuit and let-loose or escape action from a painful or potentially dangerous situation, is self-organized, so are the neurons in the brain organized in a way to produce reflexive arc reactions and movement by the messages of pain or danger that have been transmitted or sensed by them, even before the brain or the spinal cord, has processed the real danger, thus reflexive arc actions are constructed by the body in terms of holistic action based on interactional intelligence to avoid dangers and master situations of a vital consequences for the survival of the organism. These fundamental principles reveal how biological systems maintain

viability and create homeostasis, thus, partaking in solving problems based on the ethos of viability, which is to retaining viability. This is the purpose of evolution; hence organizations must be the model of what they really do, not what they say they intend to do. This is the ethical imperative in control systems. The capacity to model equals the capacity of control, thus modeling is the pre-control in terms of organizational success, to which Gäweiler (2005) referred to as “*Erfolgsvorsteuerung*”.

2.5. Variety or the Number of States in a System

The notion and the understanding of variety are fundamental to management of all types of organizations. It is upon this very notion that the whole capability of management as the embodiment of control relies. Ashby’s Law as the fundamental law of management is based on balancing of variety. “*Variety has always been a fundamental idea in Cybernetics and Systems Science and is so in Metasystem Transition Theory. Variety is defined as a multiplicity of distinctions. The existence of variety is necessary for all change, choice, and information. A reduction in the quality of variety is the process of selection. If variety has thus been reduced, i.e. if actual variety is less than potential variety, then we say that there is constraint*” (Heylighen & Joslyn, 2002). Variety engineering is the term whereby the highest abstraction of management can be described. Thus, the highest form of abstraction in living organizations is based on three components (Hetzler, 2008, p. 74):

1. *The organization’s milieu, where the organization (organism) is embedded, and wherein its existence is ever possible.*
2. *A unity of operations entity, or an organizational structure, whereby the organization deals and copes with its environment. In terms of cybernetics, one speaks of a teleological or goal-oriented behavior, whereby the organization achieves its objectives.*
3. *A management entity, which maintains and executes control, whereby the whole system is under a structural and behavioral control.*

The triad above as described in Figure 16 below, consisting of the environment, organization and management constructs a closed and separate system. According to Beer (1966), the system in which the manager is interested in is relatively an isolated system (Beer, S., 1966, p. 275). The manager coping with the environment may be able to isolate his responsibilities from the world of outside, but he cannot avoid the outside forces and challenges affecting his organization under control. While the environment perturbs the organization by disturbances from changing dynamics in competition, consumer behavior and demographics to changes in regulatory affairs, disruptions in innovations from products to processes to business models, to vital challenges in political dimension of the globalized world, thus, it is within the abilities of the manager to construct a variety attenuating capacity and a control system that is based on Ashby’s Law. That is the reason that lean, flat or bureaucratic systems

are not capable to absorb the varieties of a dynamic and complex environment. The ability to model variety attenuation based on *Conant — and Ashby's Theorem* by designing a ubiquitous regulatory control system and to enlarge the organizational collective thinking habitus (cf. Bourdieu, 1986) from the analogy of the top-down to interactional intelligence are strategic imperatives necessary to coping with emergent complexity. Ashby's Law of requisite variety also observed as the simpler version of Shannon's Tenth Theorem (cf. Shannon & Weaver, 1949) which states that "... *if a correction-channel has capacity H, then equivocation of amount H can be removed, but no more*" (cf. Richardson & Tinaikar, 2004, p. 77) as well as Ashby, (1952). According to Ashby (1958), who underpinned his law also based on the notion of the brain, since brain is the organ, which is recognized as a paradigm example of a complex system (cf. Richardson & Tinaikar, 2004, p. 77), "...*the amount of regulatory or selective action that the brain can achieve is absolutely bounded by its capacity as a channel*" (Ashby, 1952: 274, 1958b). *A variation on Ashby's Law, sometimes referred to as the Conant-Ashby Theorem, is that every good regulator of a system must contain a complete representation of that system.*" (Richardson & Tinaikar, 2004, p. 77) According to Shannon and Weaver (1948): "*If the correction channel has a capability equal to $H_y(x)$ (the amount of additional information that must be supplied per second at the receiving point to correct the received message), it is possible to so encode the correction data as to send it over this channel and correct all but an arbitrarily small fraction of the errors. This is not possible if the channel capacity is less than $H_y(x)$* " (Shannon & Weaver, 1949, p. 68). This theorem can also be understood as natural symmetry and the golden ratio of mathematical beauty.

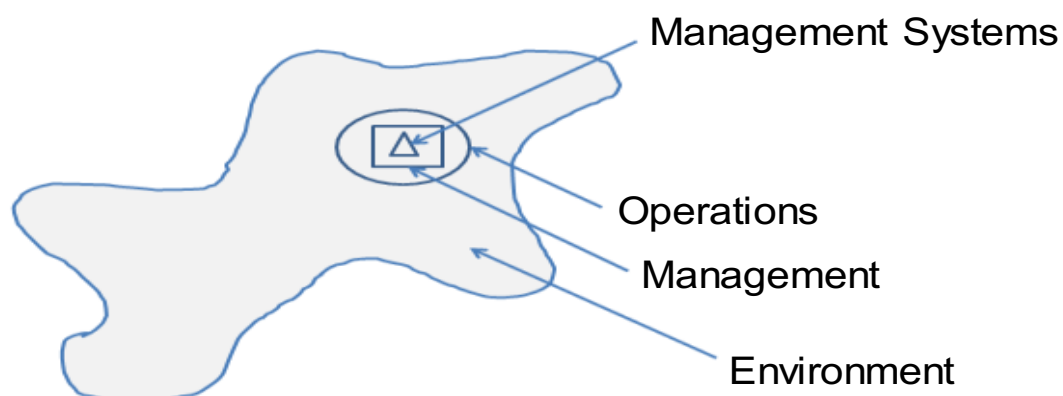


Figure 16: **A Firm or Organization System Embedded in its Environment**

Source: Christopher (2007), layout by the author.

According to Beer, Ashby himself pointed out that the theorem states the same thing as his law (cf. Beer, S., 1966, p. 282). Considering the relations between management, organization and the environment as the figure above displays, it resembles the Hegelian Axiom of "*Internal Relations*", which describes the ontological relations of beings, agents and things to one other. Furthermore, it

states that all things are internally related that make them interrelated. Turchin states: “*The most important features of Hegel's dialectic follow directly from the description of phenomena in terms of relations, not attributes. Above all, what follows from this approach is the theory of the interaction and interrelatedness of everything that exists. Further: If two elements are in correspondence and do not contradict one another, they act as something whole and their common attributes become paramount while the interaction, the relation, between them withdraws to a secondary position. Relations among elements, objects, manifest themselves to the extent that they are relations of opposition, contradiction, and antagonism. Thus, the idea of the struggle of opposites plays an important part in Hegel*” (Turchin, 1977, p. 103). Beer underpins that considering the Hegelian Axiom of Internal Relation, one can establish the notion of ramified system, whereby one can argue that the disturbances caused by the system under control are an environmental disturbance and which is consequently something bound up and related to the system. Thus, the system may be separated from its environment but it's embedded there, so it actually belongs to the system and therefore it is not foreign to its milieu. Figure 17 below describes this very relation, whereby the disturbance of the environment is transmitted to the management via the organization, which can also be described as processes or operations. The managerial function absorbs the disturbance or situation and maintains the organizational control via the managerial systems, which are highlighted in Figure 17 below.

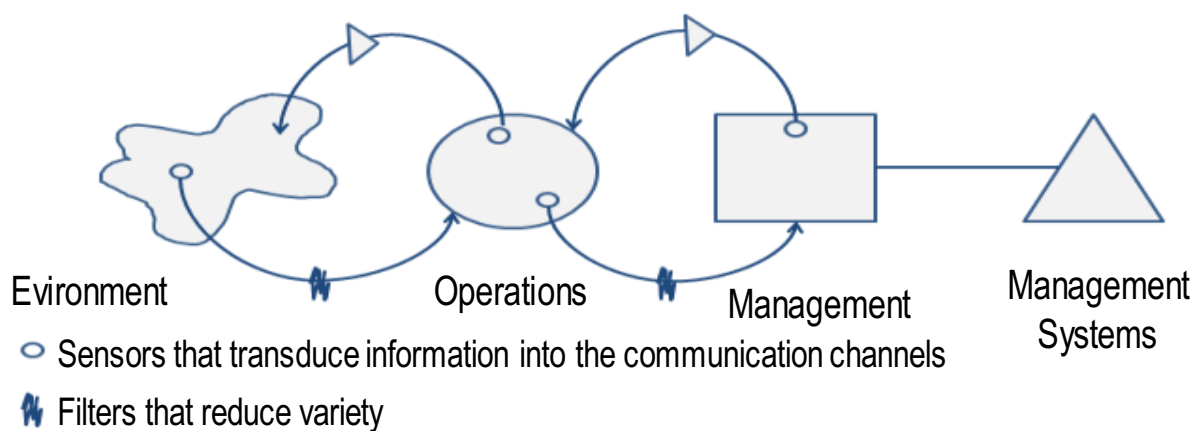


Figure 17: **The System of the Firm**

Source: Christopher (2007).

According to (Ashby, W. Ross, 1960), who defines this very notion: “*Two systems of continuous variables (that we called 'environment' and 'reacting part') interact so that a primary feedback (through complex sensory and motor channels) exists between them. Another feedback, working intermittently and at a much slower order of speed, goes from the environment to certain continuous variables which in their turn affect some step-mechanisms, the effect being that the step-mechanisms change value when and only when these variables pass outside given limits. The step mechanisms affect the reacting part; by acting as parameters to it they determine how it shall react to the*

environment. (From this basic type a multitude of variations can be made. Their study is made much easier by a thorough grasp of the properties of the basic form just defined)” (Ashby, W. Ross, 1960, p. 98). Speaking of managing complex systems as the fundamental concept of the dissertation the discretion of variety can be stated in the following way: variety is the measure of the number of possible states of a system or the number of possible states, whereby the system can be controlled. Systems generally develop many and diverse numbers of varieties or sets of varieties. In systems and cybernetics as the sciences of steering complex systems and organizations, variety is described as the number of measurements of complexity. Organizations are complex and probabilistic systems. The term complexity is often confused with complicatedness. Factually this is incorrect, since reflection upon an organization as a complex system built and constructed of many diverse sub-systems and parts (the whole is more than the number of its parts), gives us possibilities and challenges that differ from managing a complicated system as a computer. The notion, which is a bit difficult to absorb is the probabilisticity of organizations, firms, and enterprises as complex social systems. Variety from a terminological point of view in competitive strategy could be understood as the number of possible states and behaviors a strategist can employ proactively to navigate his organization in complex and turbulent environments dealing with already conceived and the notion of emergent phenomenon. To state this more precisely, strategists must observe that every time a strategic objective is set, the number of actions necessary to be taken, the plans to be drawn and the emergent manoeuvres, and strategies calculated, recalculated and employed to achieve that objective can be postulated as varieties. Every goal attainment has a bottleneck to be resolved, which determines the time, resources and actions the strategist needs to take and include in order to achieve those objectives. Figure 18 describes how organizational complexity rises when a strategic objective is embarked upon. Complexity is the set embracing the ‘goal’, the ‘plan’ the organization needs to draw and to design, and the ‘action or set of actions’ it needs to take, as an essential part of the strategy design. Dealing with this complexity is the variety attenuation of variety according to Ashby’s Law. In terms of strategy, which necessarily embeds the futuristic nature of strategy, the author wants to establish another and a different notion of Ashby’s Law by stating only variety in terms of time, capability and intelligent structure can dissolve variety, thus, only complexity³² absorbs complexity. In order to cope with complexity and the proliferating variety, the following strategic imperative needs to be established by challenging Chandler’s thesis namely by hypothesizing that: “**structure is strategy**” Control is the ethos of strategy postulating on the thesis above by affirming that the foundation of strategy is beyond the uni-spherical dimension of the economic view to be extended by additional spherical dimensions (see: St. Galler Management Model in Figure 14) constructed on more robust foundation as Chandler’s reductionist thesis, hence, navigating organizations in a multi-actor and

³² Complexity of structure and variety derived in terms of Eigen-behavior.

multi-spherical dynamics (cf. Kamran, 2013c), presumes structural intelligence to which Bongard and Pfeifer (2007) also refer to as the torus of “*embodiment*” (cf. Pfeifer, R. & Bongard, 2007), this view challenges Chandler’s Œuvre, whereupon the field of competitive strategy relies (cf. Chandler, A. D., 1962). Since for the organization to be viable, the notion goes as: **it must maintain a separate and self-organizing existence**, (cf. Beer, S., 1985) thus, the foundation of strategy relies on organization’s structure as a source of interactional and cognitive intelligence by maintaining viability and therefore to designing the needed adaptability to its milieu in form of homeostasis. A postulating tautology to the author’s above notion must be established, hence, the function of strategy is not imposed on the system or organization but, moreover, strategic control needs to be underpinned as a perturbation attenuating regulatory mechanism —as a part of the system’s structure essential to survival and evolvement. When the very structure of the organization’s raison d’être is responsible for its teleological behavior, one speaks of intelligent structure, which can also be put in Ulrich’s terms as a purposive productive social system (cf. Ulrich, 1968, 1970, 2001).

This notion can also be substantiated by the normative aspect of a goal, which is its yardstick.

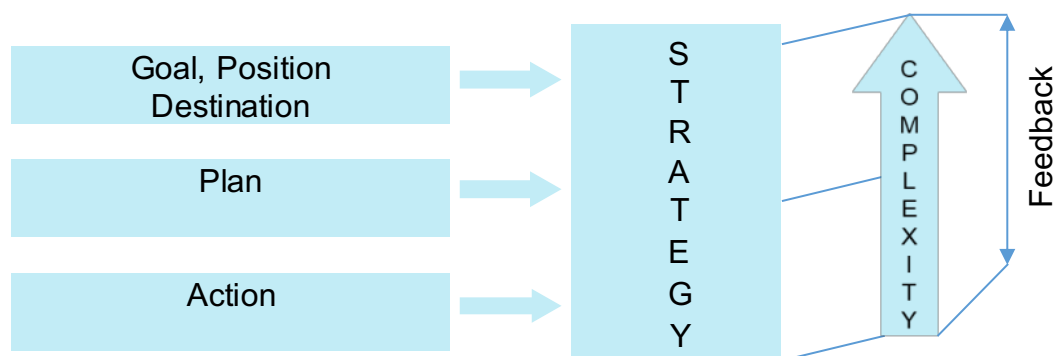


Figure 18: Strategic Complexity of Alignment

Source: Author’s own illustration.

Figure 18 describes the author’s model of strategy aligning all the essential components. Thus, strategy is a combination of the pillars of goal, plan, and action. “*Organizations are adapted to their environment and it has appeared adequate to say of them that their organization represents the ‘environment’ in which they live and that through evolution they accumulated information about it, coded in their nervous systems. Similarly, it has been said that the sense organ gathers information about the ‘environment’ and through learning, this information is coded in the nervous system*” (Maturana, 1980, p. 1). Thus, this gathering of information and what is coded within the organizations (organisms) intelligence system (nervous system) is the organization's cognitive activity of self-reference, self- observation and thus of autopoiesis (cf. Varela et al., 1974). Therefore, structure is strategy, to design and act upon emergent and cognitive teleological activities. The effectiveness of this part of strategic capability depends on the ability of the organization’s self-reference and self-transformation (cf. Kamran, August 3rd-7th, 2016, 2017a). The turbulence of the systemic crises of

this era makes it clear that an additional management doctrine is strongly needed. Strategy must integrate additional sciences to be able to cope with the situations the strategist faces, if foreseeable or emergent. The notion of survivability first applies to all types of organizations and that is where management and strategy are necessary for the achievement of maximization of survivability, while profits, which are the result of good strategies applied and which must come second. Von Foerster's Theorem number one describes: "*always act so to advance the number of your choices*" (Foerster, H., 2003, p. 6), thus variety-engineering in strategy is advancing the number of sets of actions the strategists can employ to cope with complexity.

2.6.Viable System Model (VSM)

Management cybernetics developed by Stafford Beer is the field of scientific management based on the aforementioned holistic view and the application of cybernetic principles originally developed by Ashby and Norbert Wiener. Beer's work to management is as vital as Porter's work is fundamental to competitive strategy. Cybernetics as the science control studies diverse systems to learn their characteristics, how they function, but above all how they are controlled. Beer substantiates this claim: "*Science has sought the ultimate source of energy in the physics of the sun itself ... the hydrogen-helium fusion. Science now seeks the ultimate source of control, in the cybernetics of natural processes ...the brain itself*" (Beer, S., 1985, ix). The VSM has been derived from the human brain and nervous system (cf. Beer, S., 1972, 1985) and it is the most advanced model ever designed and operationalized for managing organizations so far. The VSM is still a valid and un-falsified model (cf. Popper, 2002) and is based on characteristics of living organizations as the researcher has already established and these assumptions are common to all viable systems (cf. Kamran, 2013b) For a more in-depth treatment of the essential components, whereupon the VSM is constructed and designed (see: Appendix 6, p. 22).

2.6.1.VSM's System 1 (Operations)

At the core of management, cybernetics underlies the notion of functioning within the embedded environment. These in the living system are the organs of the body, the muscles, skin, and the ears, hands and feet, etc., whereby the operative functions of the body are conducted. Transforming this pattern into the business one speaks of the sales and the product service of the organization dealing with the marketplace. From the family-three chart, the operating units resemble the VSM's system 1. The best way to explain what system 1 is also by the Figure 19, whereby the author displays to some wider extend the responsibilities of the system 1. The additional functions can and may differ from the generalization below. Since every organization is unique, therefore the VSM can be designed based on the needs of the organization and its operation. Depending on the nature of the business or organization the system 1's units and divisions can be distinguished and integrated. Figure 19 below

describes the VSMS' system one as the general operations unit based on the extend version of Porter's Value Chain Model (cf. Porter, M. Eugene, 1985). This also correlates to the notion of the recursive nature of organization sub-unites as already discussed in previous part.

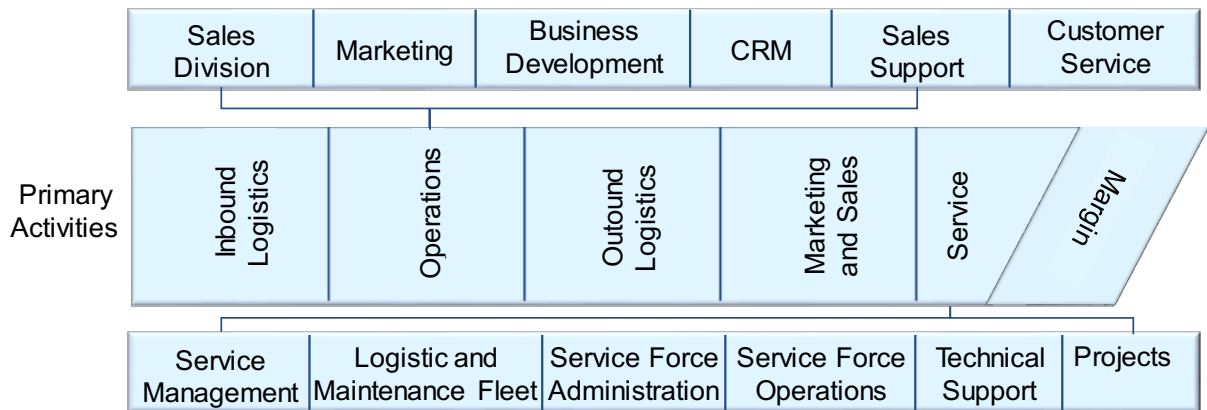


Figure 19: **Businesses' Activities According to System 1**

Source: Porter (1985).

The system 1 as the operational sub-system of the VSM can be extended to as many units and divisions as there is the requirement for it. There are no limitations in terms of the number of operational systems and units. Hence, to reduce the complexity the recursion principle is fundamental to VSM, thus, all these units can be designed in a way that their control function is self-organized and reported to the higher sub-systems.

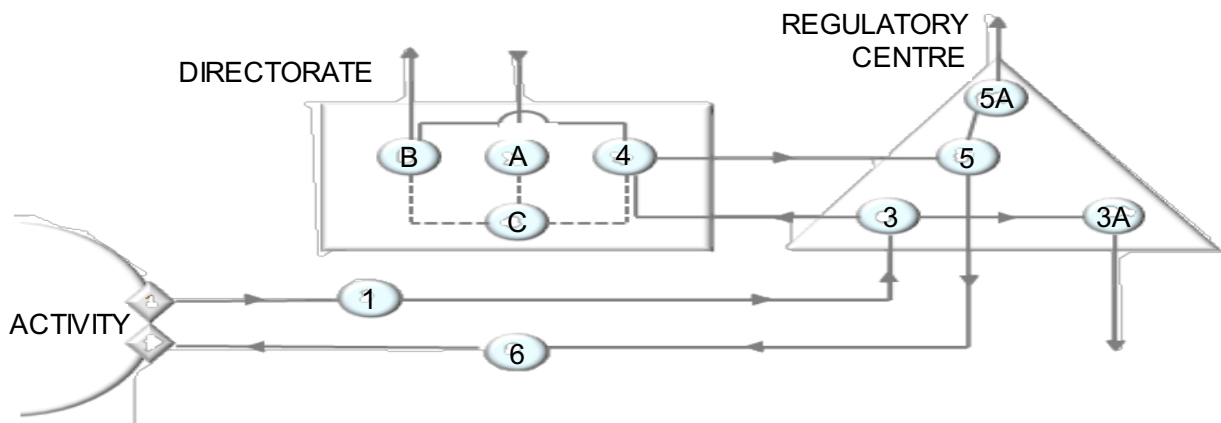


Figure 20: **VSM's System 1**

Source: Beer (1972, 1979a, 1985).

Figure 20 displays VSM's system 1 interacting with the higher systems based on diverse channels, while the half circle figure on the left shows system 1 and the triangle shaped part is the VSM's system 2 connected to the box-shaped part displaying system 3. These additional systems will be explained in the below part.

2.6.2.VSM's System 2 (Coordination/Supporting)

System 2 as the diagrammatically described above is the tall and thin rectangular box drawn around

the column of boxes, which are the system 1 (cf. Beer, S., 1972). The main function of the system 2 is the coordination and the connection and the interlinking between the divisions' regulatory centers with the corporate regulatory centers. According to Beer (1972, 1981, 1985): “So it would be correct, and even helpful, to think of System two as an elaborate interface between system three and system one. It partakes of both” (Beer, S., 1972, p. 172). The most essential four functions of the system two are:

1. *Coordination of the actions of the system one and the interrelation among them. It serves as the fundamental hemostat to make sure that the matters are running in operations or system one in accordance with the overall policy but at the same time managing to overcome challenges and oscillations the environment gives or imposes on the system before it can achieve its objectives as the author observes as the emergent phenomenon, needing a flexible MBO type of approach to resolve it.*
2. *Control of budgetary affairs and transfer of information and collaborations with system three of the VSM.*

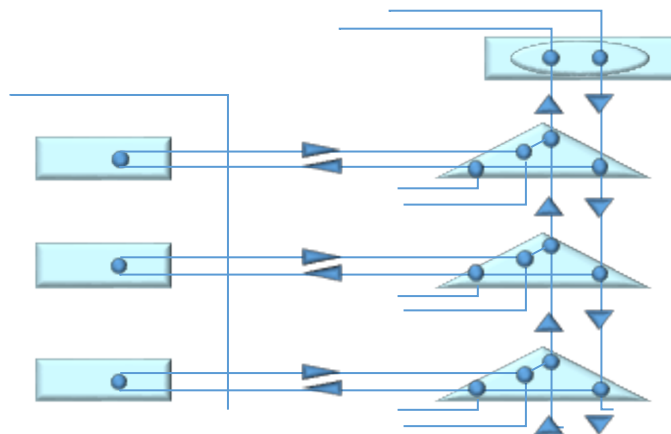


Figure 21: VSM's System 2

Source: Beer (1972, 1981, 1985).

3. *Transducing the flow of information from the system 1's higher-level management (Directorate) and transmitting this information to systems 3, 4, and 5 as needed.*
4. *The communication and the control function of compliance of the higher level of management by the operations (system 1). The system transmits the quality and the level of how progress is made to achieve the larger goals towards the higher management level.*

According to Christopher (2007), the coordination of the actions requires a facilitator, a tiebreaker, and an authority, when needed to upon the situation arising. (Christopher, 2007, p. 49). One should not forget that all the systems of the VSM are viable and autonomic systems; they resemble the very recursive viability as the notion has been already established by the author. VSM underpins that each system has its own budgetary freedom and constraints, thus each system can maintain autonomy. The budgetary control functions are essential for operations, which deal with the present environment and

asks the question, how successful has the organization or the system has been today, thus system one has the objective to achieve short-term and the present objectives of the firm and system two has the supportive coordinating role so the system in its lower recursion level, can maintain a top-quality operation. The budgetary functions are not only there for limitation of the financial resources and of creating dependence but are unitary freedoms as well, since they contain also resources that each system can bargain, within which spectrum the unit can invest to self-transform or self-recreate itself in cybernetics also called as autopoiesis, thus this brings innovation, technological and organizational dynamic capability as a result affecting the overall fitness of the larger organization. Corporate parameters and system two support of the organization to be more than the sum of their parts. According to Christopher (2007) below are some examples:

1. *Dealing with essentials, not majoring in minors.*
2. *The fewer parameters the better no forgetting to not violate the quality of the self-organized achievement of the tasks as “MBO” (cf. Drucker, 1954)*
3. *To work less restrictive, always remembering von Foerster’s “The ethical imperative: Act always so as to increase the number of choices” (Foerster, H. von, 2007, p. 12).*
4. *Allowing and encouraging local initiatives, as von Foerster; famously underpinned: everybody is a manager in an organization, thus they know what’s best for them and when they get the support of the initiatives that they know and propose, they will produce results that will astonish the higher management.*

System 2 is in terms of how the VSM embodies the above-described parameters, while these are missing within the family-tree organizational charts and models. The functions are poorly handled in a top-down manner, which gives the organization a wider weakness in not being able to react to changes within the market ubiquitously as actions to changes are emergent in control systems. System 2 is an organizational function of coordination that may not be left to chance; therefore, from a systemic perspective system 2 delivers organizational stability by coordination.

2.6.3.VSM’s System 3 (Direction of Internal Operations & Now)

The function of the VSM’s system 3 is to manage the internal affairs and stability of the whole VSM system. This function must be considered the management and the maintaining of the homeostasis of the whole organizational internal body beyond the homeostasis of the units below within their environments and the avoidance of the internal oscillations between them. Since systems 1 and 2 are coping with situational perturbations at the lower recursion levels and keeping the local disturbances within their environments under control, it is necessary thus for system three to act viable as a whole and therefore navigate according to the larger internal challenges the system faces as a directory unit for the internal environment and another point that needs to underpinned here, which is the time frame of now. The primary function of system 3 is managing the internal homeostasis of the VSM in present

time. System 3 enables the organization to act as a whole and from a holistic perspective; it is the managerial co-ordination's authority for the whole organization and is considered to be the interface between the autonomous units and the highest authority. (Malik, F. F., 1984, p. 119). For the purpose of better understanding this function, it is similar to the function of the Chief Operating Officer (COO) of the firm, hence with a difference that system 3 is designed and acts according to Ashby's Law. Christopher describes: *"System 3 mindful of Ashby's Law, views the company as a black box. A black box is an entity that has much greater variety than can be known or controlled by much lower variety in a higher-level system. But to the black boxes themselves the system 1's, they are not black boxes. They are viable systems that are largely self-organizing and self-controlling, and are quietly able to control themselves"* (Christopher, 2007, 51-52 ff.). This notion can also be established within the context of ambidexterity of the firms to capture the essence of strategic execution in the time zone of "now" and the additional duality of capturing the essence of the future via system 4.

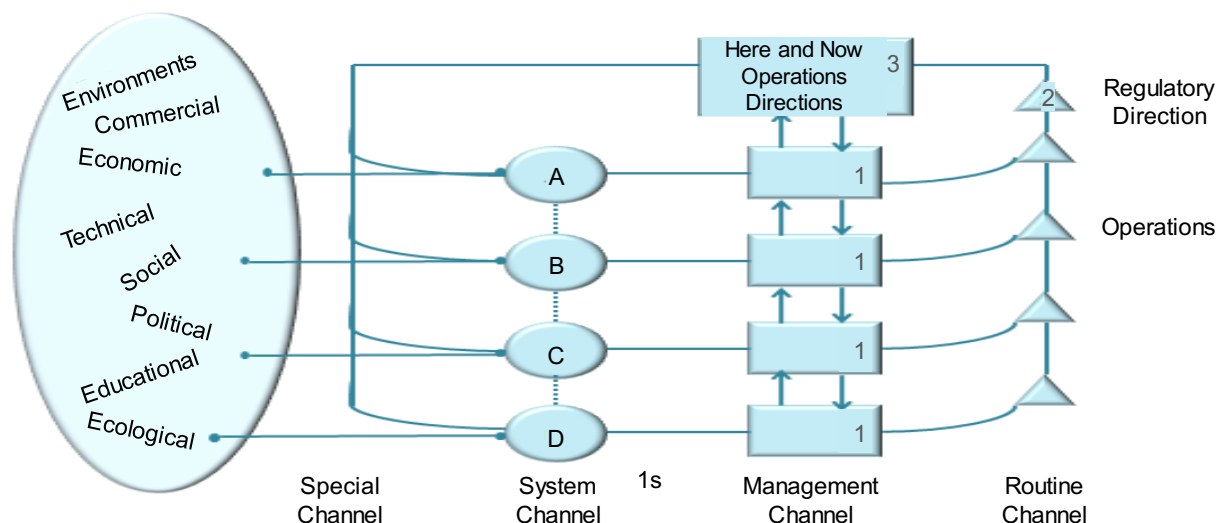


Figure 22: VSM's System 3

Source: Beer (1972, 1981, 1985).

2.6.4. Black Box Analogy in System Theory and its Implications for Competitive Strategy

Christopher states: *"Black boxes—lower-level systems whose complexity cannot be understood, and effective operating decisions made, by management in a higher-level system. A higher-level decision lacks requisite variety"* (Christopher, 2007, 51-52 ff.). The lower systems are black boxes to the higher system; thus they know the purpose of the lower systems and black boxes, their input, and their output, but as the higher management lacks the requisite variety, which describes; *"The larger the variety of actions available to a control system, the larger the variety of perturbations it is able to compensate"*, it cannot intervene in the affairs of the black box. According to *"Principia Cybernetics"* the black box method can be explained in the following way: *"A strategy for investigating a complex object without knowledge or assumptions about its internal makeup, structure or parts."* (Principia Cybernetica

Web, (n.d.)) To manage the lower levels in accordance and with knowledge gained by the notion of self-organization, where it emphasizes is on autonomy and the science of cybernetics, understanding and applying the black box method, helps the higher management to improve organizational performance via indirect interference and management. This notion increases requisite variety and helps the higher management to avoid making an unwise decision, within the black box, since higher management levels may not always know the real reasons beyond some mal-performance and challenges within the lower level of recursion. Only the controller within the black box and ubiquitously embedded as its controlling function not imposed on the system knows what is really going on within that system via the feedback that it receives. The feedback within control system is therefore ubiquitous. A final point about the system 3 is that it is concerned to take advantage of the synergies that are resulting from the lower systems interactions, thereby increase organizational fit and avoiding the energy drain out of the system.

2.6.5.VSM's System 3* (Responsibilities for Internal Operations)

System 3* while it is a part of the system 3 is mostly misunderstood in terms of its function. It is solely the information's transmuting channel of the system 3. The gained and transferred information, which is a) affecting the whole organization and systems; b) are coming via interaction with the directorate of the system one and the system one's resources bargaining, and 3) or what can lead to a direct intervention. However, the system 3* ought to be used in proportions, thus it otherwise interferes with the authority of system one and takes the systems autonomy and therefore its responsibility of the results gained. Thus, it will lead to diverse problems, which must be avoided. In addition, one has to guard against all the internal spying and activity and distrust activities, wherefore the system 3* can be used by the system 3 against its lower systems of recursion. Thus, via the system 3* the needed information is transferred to the right channels so that they can to act accordingly and absorb the information. (Hetzler, 2008, p. 83). The system 1 is also informed and the essentiality of these interrelations between the functions security and the ability of the organization is clearly pointed-out, hence natural systems reflect also that such systems are indispensable for the viability of each system. In addition, the system 3 is used as an activity that connects the higher layer of management with the realities of the operative (operations) layer of the organization. It helps the overall qualitative improvement and enhancement in accordance with customer value market-oriented-ness of the whole organization (Beer, S., 1972, 177 ff.; Hetzler, 2008, p. 83). Thus, according to Beer, the system 3 and system 3* must be able to cope and to deal with challenges of now (present time) and their ubiquitous internal absorption and attenuation.

2.6.6.VSM's System 4 (Strategic Direction/Outside & Future)

The system 3 of the organization as described above has the power and the mechanism with its own

steering capability to absorb attenuations from the current environment and technology that the organization confronts. Thus, it can maintain the internal stability and homeostasis of the organization in spite of ubiquitous rate of change. However, for the organization to stay viable in the long run it must also confront the organizational future and its strategic challenges. This aspect of the organizational function is also called the management of outside and the future, whereby the organization embarks on a journey from today to the favorable future, that it actively creates for himself. System 4 resembles all the functions and organizational parts that report to the CEO, thus, in the VSM “*the-reporting-to*” (Christopher, 2007, p. 68) is not reconstructed but moreover, it displays the functions and communication links. In the VSM hierarchy may not be understood in terms of command and control but moreover in terms of the sum of functions that resemble a viable larger whole, hence, every function is essential and is based on ensuring survivability not displaying importance. Systems within the VSM rely on their own self-organizing, self- controlling and self-steering autopoietic capabilities. In order to the system four to be effective and to do its duties of efficiently and intelligently by identifying the value potentials, it ought to be based on “*Conant and Ashby’s Theorem*”, applying the notion of “*every good regulator of a system must be a model of that system*” (Conant & Ashby, 1970, p. 1). The system 4 must be able to model a favorable future, identify and design the path towards the value potentials, whereby the organization's future direction needs to be constructed upon. According to the above theorem the matter of high-quality operations is not an operations excellence by some measures, but moreover, it is an organizational necessity and design. Conant and Ashby (1970) have therefore in their famous paper observed: “*The design of a complex regulator often includes the making of a model of the system to be regulated. The making of such a model has hitherto been regarded as optional, as merely one of many possible ways. This paper a theorem is presented which shows, under very broad conditions, that any regulator that is maximally both successful and simple must be isomorphic with the system being regulated...Making a model is thus necessary*” (Conant & Ashby, 1970, p. 1). The theorem has essential applicability to strategic management hence only a successful and effective strategy-regulating system must model the firm’s complex environment to navigate the firm. According to Leonard: “*Although timelines vary from seconds to decades, organisms and organizations need some capacity to anticipate the future and prepare for it. System Four’s role is to observe the anticipated future environment and its own states of adaptiveness and act to bring them into harmony. To do so, it must also have a clear picture of System Three’s present state so it can offer alternative paths from the present to the future*” (Leonard, 1999, p. 7). Conant and Ashby state: that brain-like regulation requires the modeling of the environment, and while containing the lower systems based on recursion this the author observes as the maintaining of ubiquitous control of organization’s internal structure and knowing its capabilities to pro-actively develop and prepare the organization for higher capabilities. Beer observes: “*The*

'strengths and weaknesses' analysis by which managers are often invited to seize opportunities is therefore not strictly possible. The manager will have to take chances, and this (despite much propaganda) he is most unwilling to do. Chess players are much the same. Botvinnik's conclusion is this: until the 'depth' picture resolves itself at a level where one can legitimately take a decision, the proper course is to strengthen oneself. Managers seem to intuit this to some extent. Unfortunately, strengthening 'oneself' is however often seen as the need for strengthening the inside-and-now, the 3-2-1. But System Four is also part of 'oneself. Moreover, System Four is the very part that will develop the 'depth' picture that has to be resolved. Botvinnik is perfectly clear that the decision not to act is a current action. In terms of the VSM, what we are discussing is the intervention by system five in the balancing activity of the three-four homeostat."³³ By system 4 Beer is referring to the strategic management of the firm. He applied the system 4 successfully in one of the most vital cybernetic projects ever done in the science of management, "*Project of CyberSyn*" of Dr. Allende's Chile. Beer designed the VSM of Chile's national economy and the brain-like part of the VSM, which is the system 4 coined as "*Operation's Room*".³⁴ Beer's operations room has been one the most futuristic scientification of a managerial practice ever engaged by a management scientist. No other management scientist has contributed so much by the power of science to the practice of management and the managers mainly depending on their "*Fingerspitzengefühl*"³⁵ and data and who are trained mainly with the tools and ways of thinking of the past to which Beer refers, to as the "*Vanished World*" (Beer, S., 1975, p. 15). According to Beer, commenting on the objectives of the Project CyberSyn: "*To install a preliminary system of information and regulation for the industry economy that will demonstrate the main features of cybernetic management*" (Beer, S., 1972). Unfortunately, the activities of the system 4 have been missing as a separate brain-like entity with its own functions within the family tree organizational charts, thus, these very activities for which the system 4 is responsible are divided among other subsystems and units. The value of every cybernetic system's model, system 4 included, regardless of its simplicity resembles the dynamic structure and characteristics the organization faces; thus, it facilitates the examination of corporate plans on the indefinite time base, which invalidates so many static models of the corporate economy (cf. Beer, S., 1972). System 4 is displayed below in Figure 23. This correlates to managing the future by the strategic understanding of organizational ambidexterity (Homeostat and Heterostat).

³³ "The sixth World Champion Mikhail Moiseyevich Botvinnik was born on August 17, 1911, so this year the World Community will celebrate the 100th anniversary of his birth and FIDE has announced that, 2011 will be the "Year of Botvinnik." He was the founder of the famous Soviet School of Chess which explains his popular nickname "Patriarch of the Soviet Chess School" or simply "Patriarch." Many generations of chess players learned the game from his numerous books and articles. Personally, I don't know any Soviet Grandmaster who wouldn't emulate Botvinnik to some degree. And of course, his best student, Garry Kasparov, elevated his scientific approach to the game to a new level." (See Gserfer, 2011)

³⁴ Operations Room is a "Brain Supporting Environment for Decisions" according to Hertzler (2008), see also Shaker and Gembicki (1999) War-Room, for more information. Cf. Beer (1972-1981).

³⁵ "*Fingerspitzengefühl*" is a borrowed word into English from German, meaning finger-tip-feeling (intuition)

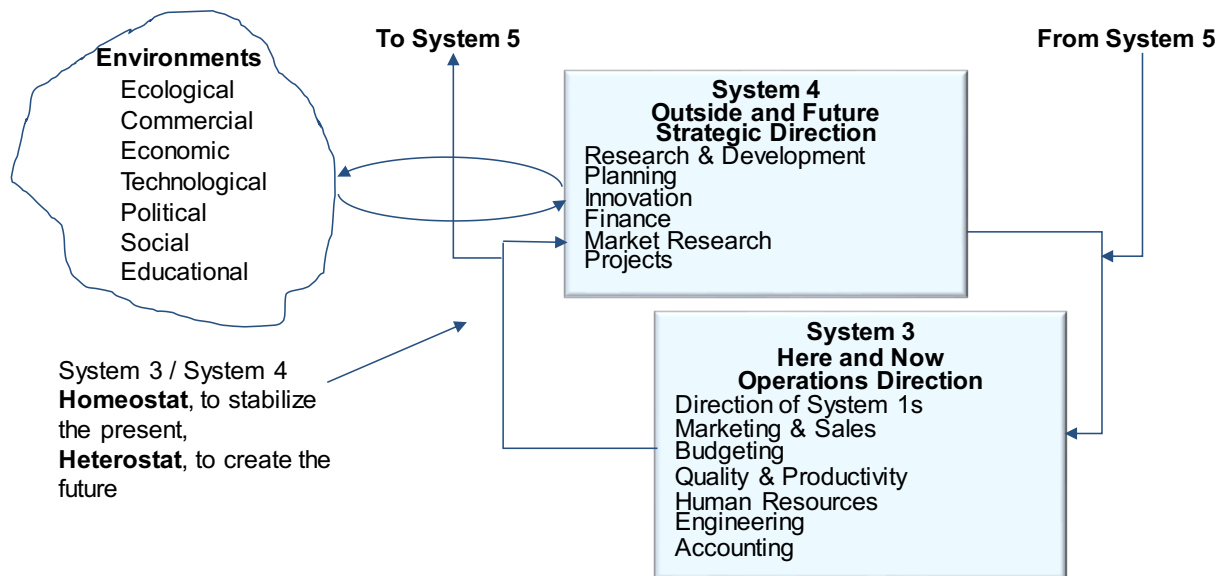


Figure 23: VSM's System 4

Source: Christopher (2007).

2.6.7.VSM's System 5 (Strategic Foresight and Executive Direction)

System 5 is the thinking part of the VSM and the direction of the organization. Its main objectives are to enable the organization to have a clear foresight in dealing with the now and the future. Foresight according to Drucker is one of the common traits he has found in successful corporations and high achieving entrepreneurial endeavors, namely the commitment to approach and to integrate innovation as a "systematic practice" within the organization's activities.³⁶ Beer has not only given the foresight activity a systemic character but moreover, he has integrated foresight into the very structure of the organization. Thus, the VSM's system 5 is acting based on foresight not only in a systematic manner but moreover it's navigating the organization based on real-time and ubiquitous connected whole within the total environment of the firm. Christopher describes the system five as: "System 3 performs many executive functions in relation to operations. But system 5 as the company's executive direction of the company is responsible for the company's most important executive decisions—determining company structure and management principles" (Christopher, 2007, p. 75). The existence of the system five furthermore substantiates the author's claim that "structure is strategy". Thus, according to Christopher: "Structure defines the company. Its purpose, its boundaries, establishes company goals and performance measures; and provides the needed resources" (Christopher, 2007, p. 75). System 5 is the authority in VSM, which determines the ethos, and which sets the general characteristics of the firm. Furthermore, the additional core activities of the system 5 are to maintain the oversight on the activities of the systems 4, 3, 2, and system 1. As Figure 24 below describes the executive director, board of director's, the CEO and the corporate executive team are a part of the

³⁶ See also the Systemic Foresight Institute, (n.d.): "The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday's logic" – Drucker.

system 5. Most vital functions of the system 5 are to give the overall leadership insights and guidance to maintain the homeostatic stability between the management of the system 3 (today and now) and system 4 (future and then) strategies. System 5 resolves as the firm's overall leadership function and manages the possible conflicts, which may arise between both realities (today and now and future and then) and organizational functions of system 3 and system 4. Therefore, the author observes the system 5 (organizational ethos) also as the firm's balancing authority between the actions concerning the present and the future, since system 5 is the essential part of the firm's survivability, to which Maturana refers to as "*autopoiesis*".³⁷ Maturana (1980) emphasizes the fundamental bifurcation³⁸ of an autopoietic organization and system is that everything that takes place in its boundaries is subordinated to the realization of its autopoiesis (self-reproduction and maintaining itself), otherwise the system will disintegrate. This means that the recursive nature of the autopoiesis and its foundational attributes, which embody a system's structure are based on a closed web of interacting subsystems, wherein every state of further emerging activities causes another form of further activities. An organization as a social system is a cognitive and autopoietic system. Thus, according to Bourguine and Stewart (2004): "*A system is cognitive if and only if sensory inputs serve to trigger actions in a specific way, so as to satisfy a viability constraint*" (Bourguine & Stewart, 2004, p. 327). Hence, the autopoietic embodiment that an organism adopts is determined by its structure (e.g. the structure of the nervous system defines its requisite variety), *and that the structure of the organism (including its cognitive apparatus and the three-ply account) is at any instant the result of its evolutionary and ontogenic structural coupling with the medium in which it is autopoietic, obtained while the autopoiesis is realized.*" (Maturana, 1980, p. 156). This notion is strongly realized by the VSM as applied by the author.

Chandler (1962) could make his famous statement based on the observation he could do since Chandler was not aware of the theory of VSM, thus in a "*family-tree-organizational-chart*" (see: Figure 25) structured organization, any other statement contrary to Chandler's observations is impossible. The reason is that these types of organizations not only violate the Conant-Ashby's Theorem, Ashby's Law of Requisite Variety, but moreover, the organization is not even aware of its own structural dynamic and Eigenbehavior, which was underpinned by Bourdieu as "Habitus". These points are furthermore substantiated by the following Figure 24 below, as according to Beer (Beer, S., 1972), one can easily distinguish, between how organizations are really organized versus, how organizations think they are organized. Thus, being aware of the true nature and interrelations of an

³⁷ "An autopoietic system can be described as a random dynamical system, which is defined only within its organized autopoietic domain." A modified definition of autopoiesis is also: "An autopoietic system is a network of processes that produces the components that reproduce the network, and that also regulates the boundary conditions necessary for its ongoing existence as a network." (Bourguine and Stewart, 2004, p. 327)

³⁸ Bifurcation according to Maturana and Valer (1980) means: "All living systems are autopoietic systems.... All living systems are cognitive systems."

organization, the strategist can reduce and absorb complexity. Absorbing complexity effectively is the fundamental strategic advantage an organization can have. The human factor is not a resource for the organization to exploit, it is moreover a human capital (HC) of “*operant resource*” (Vargo et al., 2015) is not processed from input to output to be products or services for sale as other organizational resources are. The human factor is a core part of the organization’s identity, whereby the organization does what its purpose or intention is.

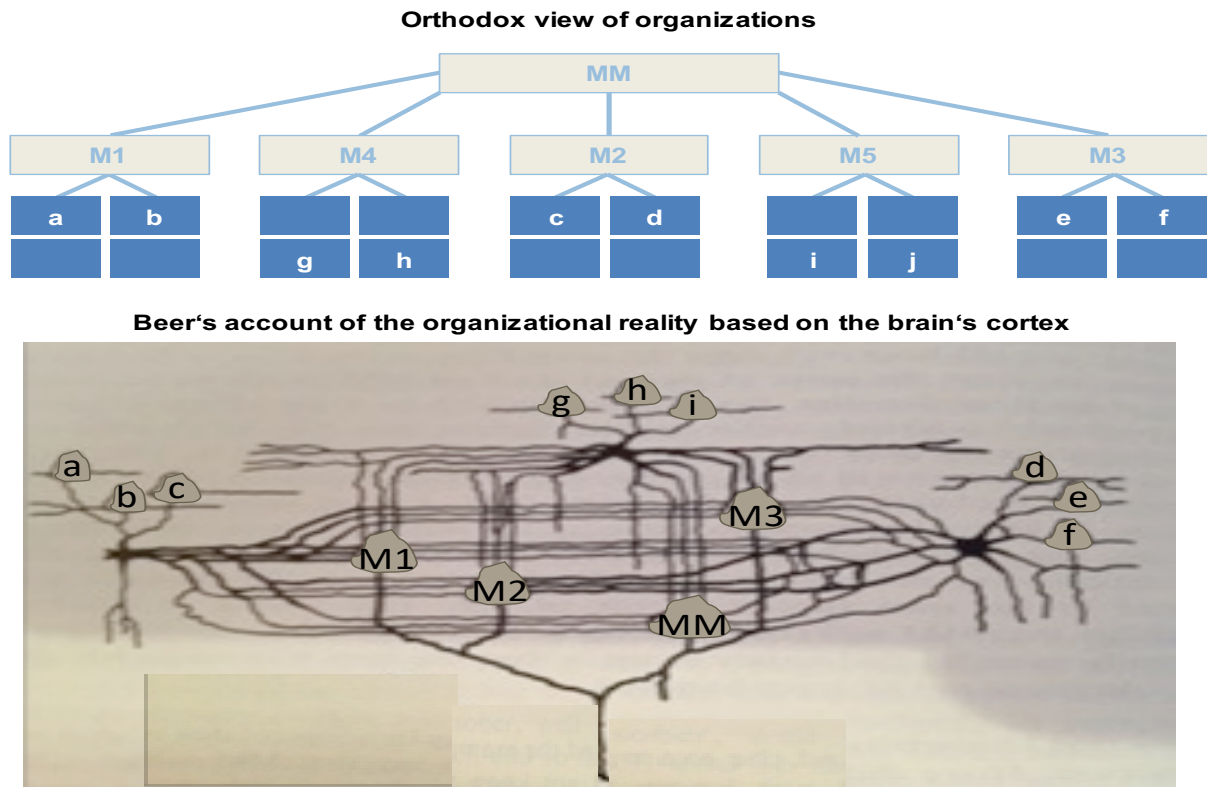


Figure 24: **Organizational Charts vs How Organizations Are Really Managed**
 Source: Beer (1972).

Therefore, the notion of HR is a flawed observation and it is disadvantageous for the organization’s strategic foresight. Active and viable agents in an organization that are considered to be ‘*beings*’ and not ‘*resources*’, therefore HC needs to be attracted and their capabilities organized via VSM, which actually resembles viability as a larger in a larger whole and organization. This of course depends on the “*upper echelons perspective*” by Hambrick and Mason (1984): “*The theory states that organizational outcomes—strategic choices and performance levels—are partially predicted by managerial background characteristics.*” The theory observes that based on the dominated values held by the top management the choices and the dimension of their bounded rationality and the behavior of the actors and subordinates change. Firms with solid values treat intellectual capital with the outmost care.

In the previous paragraphs, the author has explained the recursive characterizes of a viable organization, in Figure 27, Figure 28 & Figure 29, the readers see the recursive organizational

structure based on the VSM. Beer describes his “Recursive System Theorem”: “If a viable system contains a viable system than the organizational structure must be recursive.” (Beer, S., 1972, p. 228). The diagnostic and the organizational steering power of the VSM as an organizational model contains as already stated in the pages above not only the functions, their structure, the display of the organizational autonomy, moreover, it states the organization's internal relations to each of its sub-systems. Furthermore, it simulates the environment, wherein each system and business unit, but also where the whole organization is embedded. Figure 25 describes a VSM based recursive multi-unit organizational structure, where one sub-system or business unit is contained within another to create a larger organization. From a holistic view, Figure 25 displays how each organization is able to survive within its milieu, how they are connected to the other business- units and how each affects each other are in concert to create a larger VSM. The model was successfully applied to Peter Lacke Group (PLG) during the year 2016. A solid case study field experience-based analogy and a survey as qualitative empirical evidence are described in the PLG case study in Kamran (January 26th, 2017).

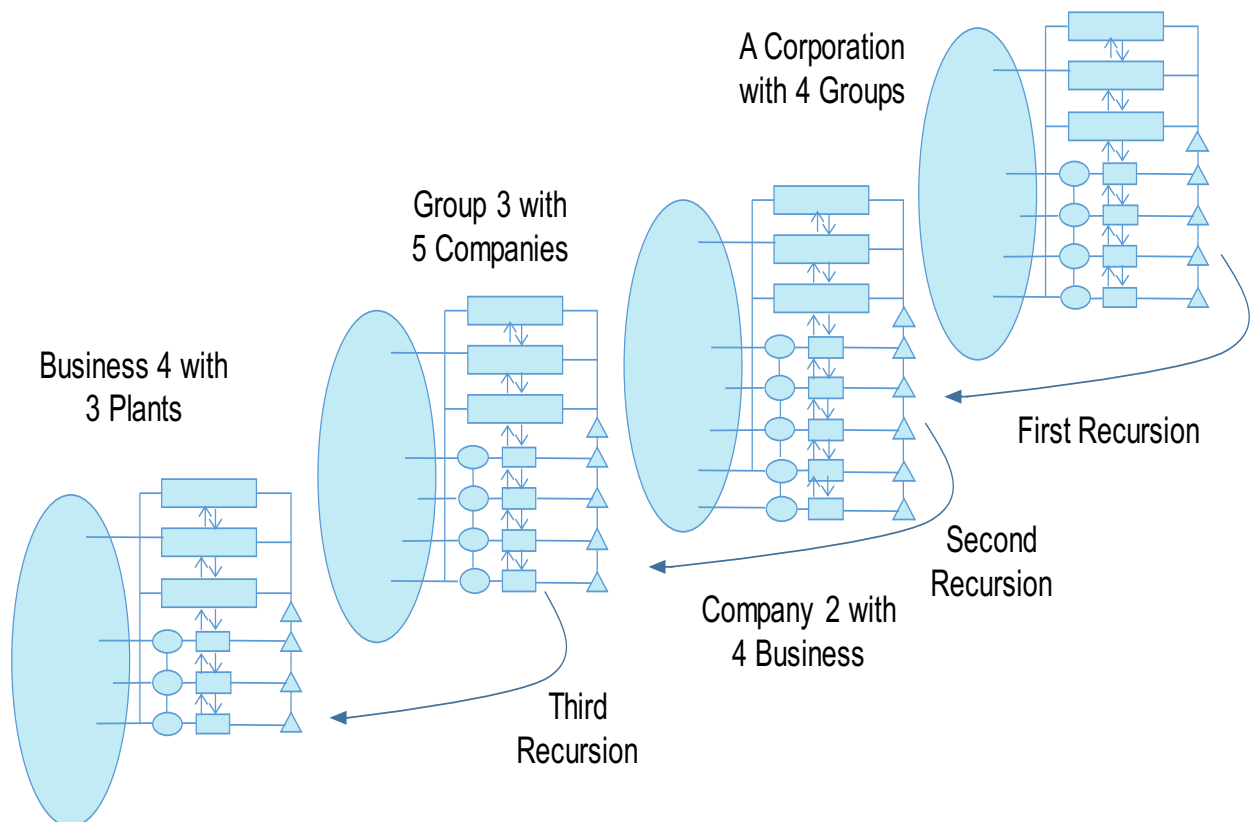


Figure 25: **Wider Recursive Organization's Structure Based on the VSM**

Source: Schwaninger (2004b).

One of the biggest questions in competitive strategy is, as described by Lane and Maxfield (1995): “What is a strategy?” They argue that “the answer depends on the foresight horizon” meaning that it is dependent on the strategist’s estimation of what is foreseeable up until when. A complex foresight horizon is characterized by rapidly changing organizational structures and ambiguous interpretations

of agents' and artifacts' identity and therefore its strategy shall enable interpretation and construction of relationships within the organization's environment by providing continuous practices. Lane and Maxfield approach cognitive and structural practices as interlinked. They describe cognitive practices as an organization's effort to conceive and interpret the population in its environment while structural practices are described as an organization's effort to promote relationships within the organization and beyond in order to generate additional value (cf. Lane, D. & Maxfield, 1995). According to Beer (1972): *"Ultimately, neither brain nor the firm is an analyzer, but recognizer. That is why speed of recognition is so important. We must recognize than react. Otherwise analysis may consume some precious weeks, and a viable response to a threat will be (as the lawyers say)'out of time'. A great deal of serious analytical work in management is wasted for this reason. It becomes an intellectual game that is played concomitantly with, but not affecting, the progress of real events"* (Beer, S., 1972, p. 238).

Figure 26 describes the whole VSM interacting with its environment. The VSM is still an un-falsified model and it took Beer almost thirty years of research, development, and application in diverse forms of organizations, from steel industry to the state economy of Allende's Chile, the Canadian government and etc. The body of distinguished opinion in management and strategic sciences are more concentrated on quick pay and quick benefits. The organizational power and structure of these ideas have not given the managers the needed freedom from collapses but moreover made them proactively creating challenges and risky models that can actually construct systemic collapses on a larger scale.

In Figure 26 (on the right) is an original design of the VSM by Beer. Beer observes: *"Above all, let us all expect it of each other that we find ways to use the power of science in better cause. It is no more sensible to say that we cannot, because ordinary folk do not understand science, as it would be to say we cannot sail a boat, because we cannot understand the wind and the sea and the tide-race. Men have always navigated those unfathomable waters. We can do it now"* (Beer, S., 1974, p. 43). The strategic immunity based on the theories introduced lies in the hands of the organization, hence in managerial and strategic sciences, the organization's structure is the fundamental issue. Structure is strategy, in complex and turbulent environment. Ashby's law presumes the management of variety based on the most advanced organizational model, namely the VSM to cope with the proliferating variety in this hyper-connected and systemic global world of business.

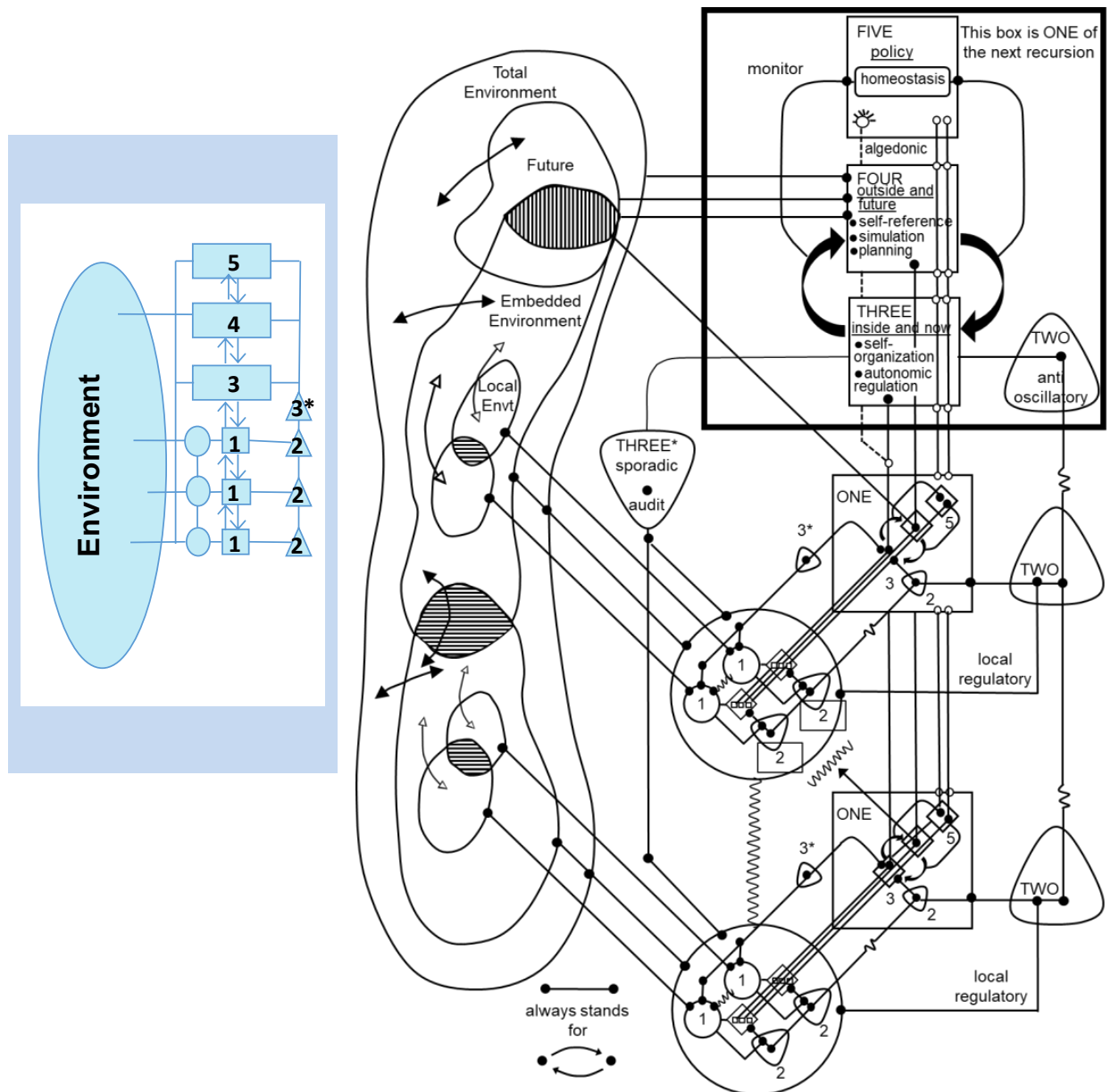


Figure 26: Two Versions of Beer's VSM

Source: Beer (2000a).

This analogy has been also validated by Pfeifer and Bongart (2007) in their theory of “*embodiment*”. While additional streams of literature and experiences as the notion of strategic alliances have emerged in recent years as essential structural interpretations for business development, as laid-out by Albers, et al (2013) which states: “... *we have developed an organization-design-focused framework for classifying alliances. The framework’s five parameters—interface, intraface, specialization, formalization, centralization—provide a nuanced description of alliance structures and their effect on coordination, learning, and trust in alliances and thus also enabled us to outline design challenges that arise out of tensions and trade-offs between individual design parameters*”. The dimension based on Ashby’s Law observes alliances as a pure variety

enhancement based on the dynamic capability of the firm to integrate internal and external competencies to address a changing organizational milieu.

Chapter Analysis:

The second chapter aimed to embed the thoughts presented in the beginning of the dissertation into the thinking of cybernetics, especially the works of Beer. Introducing recursion as the necessary condition for the viability of an organization links the thoughts of Porter regarding competitive strategy and Beer's research of self-organization. With the phenomenological lens, the author gives unprecedented insights into the gap existing between these fields of science and research. Only scarcely has there been an approach in research to combine these schools of thought. While both Weltanschauungs have been groundbreaking in their respective field, findings have yet to be more interdisciplinary in regard to strategic management. A novelty in international literature is also the analysis and comparison of the FFM to the St. Galler Management Model, which has almost solely been applied in Germanophone countries so far. Another research gap is aimed to be filled by the author between the notion of Ashby's law and the competitive models presented before. The author includes essential attributes of the VSM as the notions of systems, cybernetics, variety, Ashby's Law, homeostasis, recursion, self-organization, environment, information, structure, autopoiesis, and Eigenbehavior. Furthermore, the VSM is thoroughly described and extended by the sub-system 5*. The chapter includes a thorough interpretation of Stafford Beer's VSM as the basis for a company's longevity. For the complex environment wherein organizations are operating today, a simplistic model does not equip managers with tools sophisticated enough to ensure their viability. The chapter also analyses and explains the notion of autopoiesis and organization cognition as a prerequisite for organizational survival. Organization as a social system must embody the capacity of self-maintaining and the attributes of viability.

Chapter three aims to outlay the implications and ratiocination of complexity as a strategic force for management and introduces the author's contribution in form of the SFM and its justification for research.

3.A NEW MODEL OF COMPLEXITY, THE SIXTH FORCE THAT SHAPES STRATEGY IN TURBULENCE AND RESEARCH INVESTIGATIONS

Chapter three will describe the author's Sixth Force Model (SFM) by enabling firms to cope with viability and managing complexity based on "*Ashby's Law of Requisite Variety*" and embedded in their total environments (the multi-layer/ and holistic perspective) beyond the limitations of industry-in structures and a purely economic lens but moreover by a systemic Weltanschauung. The model is furthermore based and designed on the notion of "*structure is strategy*" as highlighted throughout chapters one and two by emphasizing the essential role of structural integration within the dimensions of organizational realities constructed on the logic of "*embodiment*" (cf. Pfeifer, R. & Bongard, 2007) and interactional intelligence, (cf. Pfeifer, R. & Bongard, 2007) whereby a new understanding of competitive strategy can be derived, not only from a top-down management decision. As aforementioned, Ashby's Law is substantial to competitive strategy by bringing forth the logic of strategy seen as variety engineering and thus enabling the firms' navigators to deal with diverse environmental perturbations as varieties they need to absorb, while amplifying the regulating varieties. By applying the logic of systemic thinking and cybernetics, as the next foundation of strategic thought in the turbulent environments it is a necessity for competitive strategy, to underpin the logic of organizational homeostasis by coping within the complex duality of the field as an academic and practical field. Beer's VSM as thoroughly described in the previous chapter two, and as its diagnostic capabilities have been documented and demonstrated by Beer (1972, 1981, 1985), Christopher (2007), Malik (1984; 2013a, 2015a), Hetzler (2008), Schwaninger (1990b, 2006a, 2007, 2010a, 2010b), Schwaninger and Scheef (2016), Ríos (2012), Espejo and Reyes (2001), as one of the most robust organizational theories applied to the field of competitive strategy by enabling the dynamics of "*Eigenbehaviors*" (cf. Foerster, H., 2003) of the firm to set forth the self-organizing powers and forces, (cf. Hayek, F. August, 1945) cultivating the regulatory varieties, so they can cope with the emergent and unforeseen challenges, the contemporary top-down computational driven competitive strategy world-view, is unable to cope with. This notion was also observed by von Hayek as "*catallaxy*".³⁹ Strategists need to understand that in a world regulated by the "*invisible hand*" (cf. Smith, [1759], [1776]) one cannot manage on the basis of a top down analogy, as this is a clear violation of Ashby's Law, Beer's principle of "*autonomy*" (cf. Beer, S., 1959b, 1972, 1985) within the VSM, to which Valera and Maturana's referred to as "*autopoiesis*" (cf. Maturana, 1980), von Foersters "*triad of self-organizing systems*" states that "by a self-organizing system he observes "... that part of a system that eats energy and order from its environment", and there "... is a reality of the environment in a sense suggested by the acceptance of the principle of relativity, and the

³⁹ "While it is widely recognized that Hayek began his investigations into the nature of social order as a consequence of his work on economic systems, it is generally not recognized that Hayek's theory of the evolution of social order is most convincing when used to explain the evolution of market institutions." (Vaughn, 1999)

environment has some sort of structure."⁴⁰ and thus Kant's "*Critique of judgment*" (cf. Ashby, 1952, 1958) delivers of the same foundation of thought. According to Schwaninger: "...*To the best of the author's knowledge, no other organizational theory makes a claim as strong as this one. One would assume that evidence contradictory to the contentions of the VSM has been found. The surprising fact is, however, that the model has not been falsified but, on the contrary, corroborated by the growing empirical evidence from VSM applications.*" (Schwaninger, 2006a, p. 1). However, it is to note here that besides the wider application of the Beer's VSM there has been no real enhancement respectively extension of the model, even by Beer's protégés as Malik and Schwani nger etc., who have contributed much to its application and publicity but not to the VSM's further development. While researchers as Espejo (2001) and Ríos (2012) have developed a software application to the model, a wider extension of the model or embedding the VSM into a larger context has not yet been introduced.

Via this dissertation's contribution to bridge a management cybernetics approach and Porter's FFM leading to design the wider SFM, the author has contributed a vital aspect that has been ever since lacking in strategic management, thus according to A.T Kearney (2014): "*There are many excellent stand-alone concepts, but no overriding framework*" (ATkearney.com, 2014, p. 7). Beer's challenges were always to save the firm from the environmental perturbations and complex problems that organizations face. The rise of many large corporations with less consideration for a societal dimension of management and strategy brought also scholars as Porter and Kramer (2011) and Porter and Rivkin (2012a), who actually were the true advocates of profits and economic dimensions of managerial and strategic thought, mainly introduced through the works of Austrian School of Economics (cf. Hayek, F. August, 1945; Menger & Hayek, 1981; Mises, 1983; Mises & Adler, 1935; Rothbard, 1990) and by works of Friedman (1962), who took liberal economics and the notion of shareholder value to social responsibility of corporations, to shifting their thinking and understanding the vital issues that Porter himself originally criticized even by his own professor Andrews in the seventies at HBS (cf. Hagel, Brown, & Davison, 2010). Andrews's framework had put the viability of a social community as a main priority of business. Strategy's concerns are not only that the businesses should be immunized to environmental challenges, but furthermore that the environment and societies are protected from the failures and organizational collapses of corporations, and their compliance' malfunctions as the latest Volkswagen case,⁴¹ where the crises still goes on, has clearly demonstrated. This notion was also substantiated by Porter and Revkin (2012a) in analyzing the 2008 global managerial (cf. Hackhausen, 2009) (financial) crises. Porter and Revkin (2012a) observe that it is essential to establish a clear understanding of the implications of competitiveness and its influence on U.S. prosperity in order to attend to America's economic prospects. They state

⁴⁰ cf. von Forster (1960)

⁴¹ see also the corporate failure cases of WorldCom, Enron, BP, Long-Term Capital Management

that there is a significant misunderstanding regarding the concept of competitiveness, which leads to critical consequences for political discourse, policy and corporate choices. Porter and Revnik further argue that America can only resolve such problematic issues by developing a strategic plan that provides a united direction and involves all government levels rather than by following steps guided by self-interest of single-issue advocacy groups. Thus, resolving challenges in the business environment and local communities is a sensible first step as organizations can realize contributions to “*America’s competitiveness*” (Porter, M. E. & Rivkin, 2012a) while simultaneously seizing opportunities of innovation and growth (cf. Porter, M. E. & Rivkin, 2012a). Figure 27 (part a & b) describes the management board constructed of the VSM’s systems 3, 4 and 5 as presented according to Beer, whereby the main concentration is based on managing the inside operations, managing the future and overall identity of the organization/firm. The author, according to the challenges of corporate failures above, but moreover based on the field application of the SFM at Peter Lacke Group (PLG), a leading global paint and coating producing company to diverse industries as automotive, glass and home appliances to sport and leisure instruments, suggests adding another crucial sub-system to Beer’s VSM Model. This system is coined by the author as the “**System 5***” (5 star). The main function of the system 5* is to enable the organization to be having an outside-in-view and independent conscious and control system. The VSM can be a part of the whole system also observed as the system 5 and corporate ethos. However, while some argue that the system 5 already covers this aspect as the ethos of the firm, but the empirical challenges that the author had in actually applying the VSM to PLG, (cf. Kamran, 2018e) have illustrated how essential the system 5* is, while challenges in the corporate world underpin the author’s notion. The application of the theoretical foundations of the dissertation to PLG was due to the necessity to validate the author’s theoretical framework based on the triangulation method quantitative research, qualitative research and a case-based application to a firm to testing the model in practice as an essential part and case-based analysis. Due to the complexity that the VSM Model embodies, its understanding for the practitioner at the corporate and firm levels and also by the very nature of how German SME’s are structured that have an ‘*advisory council*’ called ‘*Beirat*’,⁴² it is necessary that this system is embedded within the spectrum of the five systems the VSM has. The advisory council is a legally mandatory and integral part of the corporate governance, ethical dimension, strategic direction and control of the large German SMEs and furthermore it enables the firms advisory and corporate governance to occupy a neutral outside-in look by applying the essential aspects discussed in in chapter two, also as the notion of second-order cybernetics (cf. Foerster, H. von, 1958; Foerster, H. von, Mora, & Amiot, 1960). However, it is

⁴² The term “*Beirat*” or Advisory Council is based on some characteristics as saving the public-interest mandatory according to the German Business Law. These conditions are number of staff 500-2000, capital structure etc. Based on the structure of the VSM and its complexity but moreover based on the needs that it can fulfill, the model is currently highly essential to be applied to SMEs within a phase of generational transition, merger and acquisition of large subsidiaries or if the firm is operating in many countries and needs a robust model to prepare the firm coping with immense internal and external complexities and dynamics.

necessary to understand that the advisory council is not a part of the organizational internal nor operative structure in terms of its system 3 of the VSM-operative management but rather outside-in observers and councils constructed by members from diverse fields in pre-arranged settings and deadlines making sure to control the actions and strategies of the managing director or CEO of the firm. By underpinning the indication that the profundity of an observation lies within the qualitative of the observer's competence, thus, observing entails responsibility and it furthermore contributes to Ulrich's framework of scientific practice and by seeing companies as social productive systems (cf. Ulrich, 1970, 2001). This conscious system is described in the author's VSM extension in the figures below as VSM's system 5*. A chief additional reason for the author to develop the system below was the perception to integrate the meaning of *'structure'* to competitive strategy beyond the notion observed by Chandler and by making the VSM understandable and applicable to the PLG. According to Hall and Saias (1980): *"Structure determines the introduction and subsequent development of strategic planning... The structure can make an organization more or less shortsighted... Structural characteristics act like filters and limit what the organization can see"* (Hall & Saias, 1980, 153-156 ff.) (see also: (Miles et al., 1974; Weick, 1969). Hence, a good corporate ethos based on the VSM and the extension by the system 5* would help PLG not to make errors that can actually cost the firm losing the overall fitness,⁴³ based on myopic adventures. This is the cornerstone of managing a family business over many successful generations. In Figure 27 an attempt has been made to define the author's notion for what organizational structure stands for.

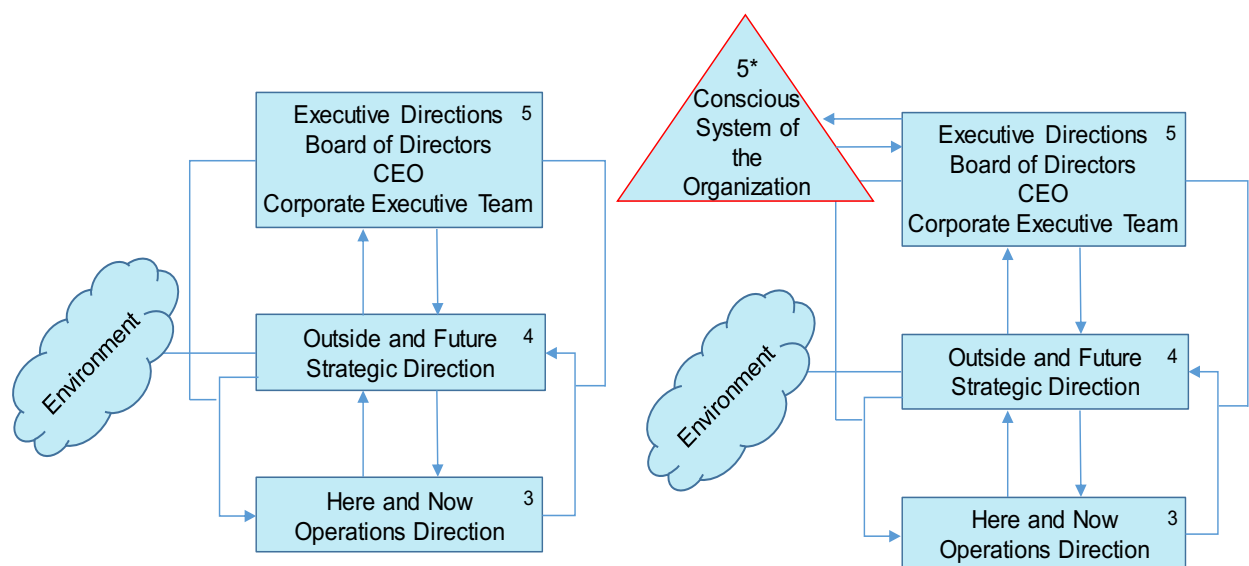


Figure 27: a) (left) Management World Organized According to Beer's VSM/ & b) (right) Beer's VSM and the Model's Extensions by the Author to a 5-Star System

Source: (1972, 1979b, 1985); (b) extended by the author's analogy of the 5*

These vital components of structure are necessary not only because they fit the acronyms outlined, but also as the author has documented, essential to have a holistic understanding of strategy, therefore

⁴³ see the case of Volkswagen, and ENRON etc.

'structure' in terms of strategy is comprised of:

1. **Strategy-** based on a systemic triad as diagnosis, a plan, and execution (cf. Rumelt, 2012)
2. **Teams-** Human capital (cf. Smith, [1776] & Schultz, 1961)
3. **Resources-** Operand and operant resources the firm needs as described by the resource-based view of the firm (cf. Prahalad, C. K. & Hamel, 2006)
4. **Uniqueness & unique set of capabilities-** (cf. Porter, M. Eugene, 1985; Porter, M. E., 1996) (cf. Prahalad, C. K. & Hamel, 2006), *dynamic capabilities* (cf. Teece, 1996)
5. **Culture-** Core rigidities (cf. Leonard-Barton, 1992) and operant resources of the firm (Vargo and Lusch 2004)
6. **Trust and systemic interrelated integrity**⁴⁴ - Control and communication
7. **Units & subsystems-** Systems and subsystems interacting recursively (cf. Beer, S., 1972, 1985)
8. **Relations internally and externally-** the ability of a holistic and solid response; embodiment, interactional intelligence (cf. Pfeifer, R. & Bongard, 2007)
9. **Environment-** total environment of the firm (cf. Porter, M. E., 1980, 2008b), (cf. Beer, S., 1972, 1979b, 1985) *evolution and emergence* (cf. Mintzberg et al., 1998).

The notion of how structure affects strategic decisions and plans is described in Figure 28 below. Schwaninger argues that the quality of a strategy is dependent on its diagnostic basis and analytical phases. He further describes the necessity of a modular and simultaneously inter-connectable system of planning tools, which are required to ensure the ability to resolve individual planning problems by the use of instruments adapted to specific needs of respective units.

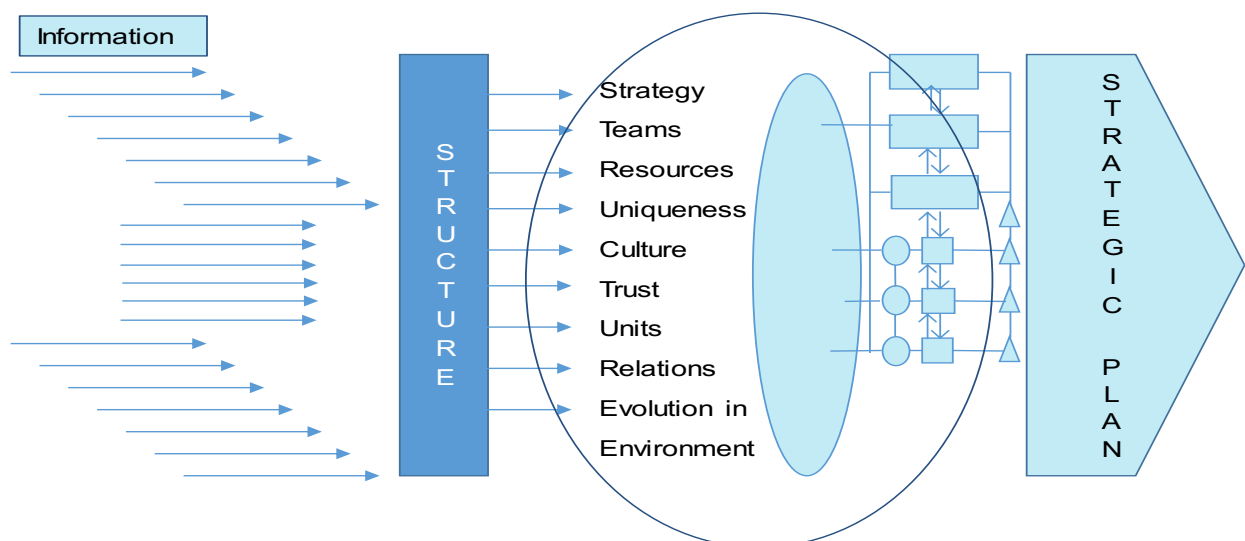


Figure 28: **Structure as an Enabler of Strategic Planning and an Information Filter**

Source: Author's own illustration.

The degree of detail and the coherence or segmentation of the relevant business system are described

⁴⁴ "Integrity also involves an ethical dimension, a sensitivity to values, and a degree of consistency in relation to those values that transcend the optimising and satisficing." (Simon, 1996, quoted from Hodgson, 2009)

as decisive factors for the selection of planning tools while instruments are selected based on flexibility and adaptability to material, structural and terminological characteristics of the organization or its parts. Schwaninger appends that comparability and compatibility of data must be accomplished by implementing necessary standards of uniformity at the corporate level (cf. Schwaninger, 1987, p. 77). In competitive strategy time and the ability to process information for a solid response play a major role. This analogy has been underpinned by the notion of Eigen-behavior in terms of systemic variety according to Ashby's Law. Strategists must be able to cope with inadequate information and uncertainties while prescribing and applying adequate remedies to the challenges they are facing and the decisions they are making, thus due to this nature of strategic and decisions making problems the analogy of the author seeing structure as the core part of high-quality strategies can be therefore underpinned. This notion can be coined as the term '*strategic homeostasis*'⁴⁵, thus homeostasis in organizations is among the main prerequisites to viability. Therefore: '*Eigen-States*' of the organism which permit it to refer each incoming signal to its own self, i.e., to establish self-reference with respect to the outside world. Emergent strategies can only out-grow based on structure that can maintain its '*Eigenvalues*'⁴⁶ used in terms of a cybernetic epistemology: "*The meaning of the signals of the sensorium is determined by the motorium; and the meaning of the signals of the motorium are determined by the sensorium*" (Foerster, H., 2003, p. 230), hence, this logic entails a structural logic in competitive strategy based on Wiener's original terminology: "*Circular Causal and Feedback Mechanisms in Biological and Social Systems*" (STEER, 1952,p. 115, cf. von Foerster, 1952). Feedback mechanism is thus ubiquitous in control-systems.

3.1.Complexity and Strategy (Complex-Strategy)

The word "*Complex-Strategy*" was coined by the author, which resembles the essence of strategy and how it copes with the complexities arising within the business environment. Strategy is, in essence, the unification and alignment of a diverse set of structural, systems interrelated and cognitive activities to achieve a better state. By the author's design of the model below another attempt has been made to substantiate his claim of "*structure is strategy*" (cf. Kamran, 2018a) and that it is accordingly defined in Figure 29 below. Substantiating on Beer's VSM and the notion of "*the purpose of a system is what it does*", (Beer, S., 2002, p. 7) it is the purpose of competitive strategy to design immunity and long-term viability for the organization. Beer (1985): quotes Botvinnik, the famous Russian chess-player's conclusion on playing chess is the following: "...until the '*depth*' picture resolves itself at a level where one can legitimately take a decision the proper course is to strengthen oneself" (Beer, S., 1985, p. 127). The essence of "*structure is strategy- methodology*", as Figure 29 displays, can be conveyed

⁴⁵ A term coined here, meaning the state of control over environmental dynamics according to Ashby's Law and "structure is strategy" analogy.

⁴⁶ Cf. von Foerster, 2003. "... a system is able to maintain an '*internal*' equilibrium in the face of '*external*' perturbations. Yet systems are also capable of generating change autonomously by amplifying feedback instead of merely adapting to external contingencies by dampening it..." Allen, et., al, 2011)

by the following points:

1. *Structure (A viable and self-organized autopoietic organizational system)* (cf. Beer, S., 1972, 1981; 1985) & (Maturana, 1980)
2. *Transformation* (cf. Malik, F., 2007a) (*Ability to transform- not merely growth but development*).
3. *Resources (RBV)* (cf. Mahoney & Pandian, 1992) *VRIO- valuable, rare, imperfectly imitable, substitutability*) (cf. Barney, 1991)
4. *Adaptation (Ability to adapt to changing environment faster than the competition, this means also shaping the organizational milieu)* (cf. Mintzberg et al., 1998)
5. *Teams (Recursive organized teams working in concert and based on VSM Model)* (cf. Beer, S., 1985)
6. *Emergence (Ability to cope and handle emergent phenomena and strategic challenges)* (cf. Mintzberg et al., 1998; Müller-Stewens & Lechner, 2011).
7. *Goals (MBO and self-control)* (cf. Drucker, 1954)
8. *Yardstick (Doing the right thing/ leadership)* (cf. Drucker, 1954)

It is precisely the broader (multi-layer) understanding of strategy that it actually makes strategy one of the most essential parts of the organization and of coping with the complex perturbations an organization faces. Strategy is also the ability of the organization to reflect on itself from a normative perspective, via a second-order intervention as well. According to the author's research, the modeling of a socio-economic-strategic-system, for enabling it to reflect on itself, to implement the mechanism of the second-order, self-repair and self-control or autopoiesis is undoubtedly among the class of highly complex issues, and problems and challenges of our contemporary strategic thought.

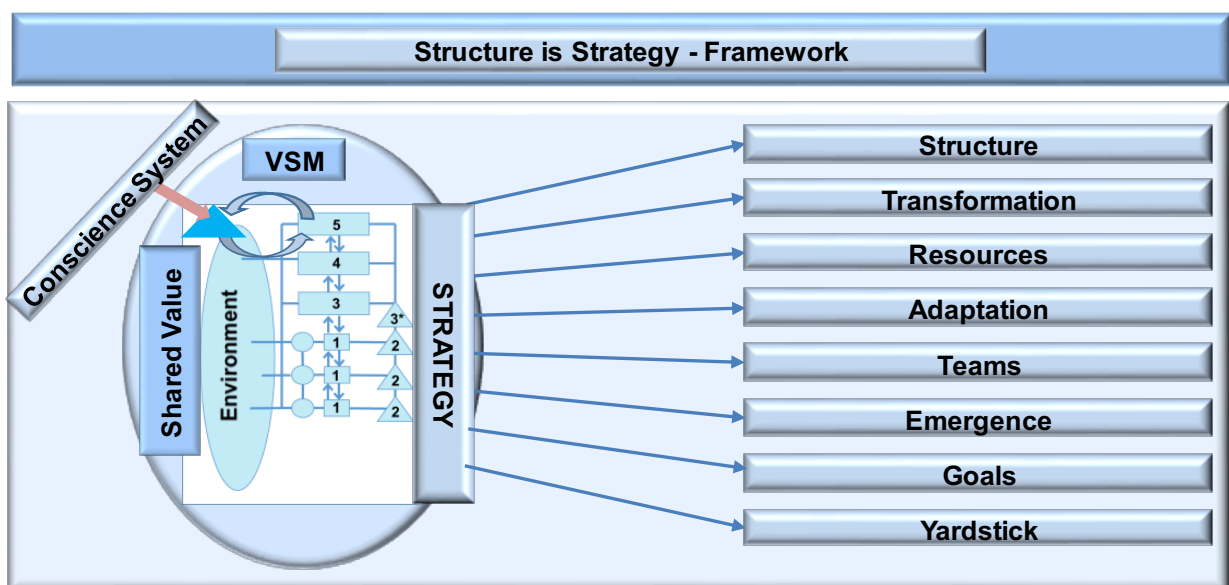


Figure 29: '*Structure is Strategy*' Framework

Source: Author's own illustration.

In the model above the author has tried to define this set of complexities and how a viable system

(organization) can develop a plan of self- transformation to be a highly effective strategic organization. Organizations are as organisms a conglomeration of diverse systems and subsystems to survive via a cognitive-structural activity by maintaining their systemic homeostasis and designing emergent strategies in order to cope with environmental and competitive challenges. This cognitive-structural activity and ability is a part of the organizational structure and cannot be imposed on a system as a top-down phenomenon, thus according to Pfeifer and Bongard (2007), “... *the body shapes the way we think*”, (cf. Pfeifer, R. & Bongard, 2007) so do social systems as a whole. This notion is also underpinned by Maturana and Valera (1972), who describe: “*Cognition is a biological phenomenon and can only be understood as such; any epistemological insight into the domain of knowledge requires this understanding*”. (Varela et al., 1974, p. 7). The Chandlerian thesis of “*structure follows strategy*” imposes the notion of cognitive ability as a top-down phenomenon disregarding the depth of interrelated systemic structure of cognition in organizations. Furthermore, Chandler’s thought may have invalidity as Hall and Saias describe in quoting from Galbraith and Nathanson: “*If a firm has power over its environment so that it can control prices because of monopoly position, tariffs, or close ties to government, it can maintain effective economic performance even if there is a mismatch between strategy and structure*” (cf. Galbraith & Nathanson, 1978, p. 139; Hall & Saias, 1980, p. 162). This analogy can be summed up to the size of a company and its impact on the ecosystem, wherein it is embedded. A good example could be the latest Apple Inc. fine by the EU. Thus, Hall and Saias (1980) further emphasize that discrepancies between strategy and structure ultimately result in inefficiency in the long term which is why it is deemed crucial for strategists to precisely consider structure during the development process of a strategic plan in order to prevent inefficiency caused by reliance on the traditional misbelief that structure will follow the strategic plan which is a particularly dangerous assumption in today’s state of the evolving environment. Hall and Saias suggest a revision of the model that structure follows strategy by stating that there is a symmetry in the relationships between strategy, structure and the environment as environment as well as structure and strategy respectively shape their counterparts (cf. Galbraith & Nathanson, 1978, p. 139; cf. Hall & Saias, 1980, p. 162). According to Wesley M. Cohen and Daniel A. Levinthal (1990a): “*The premise of the notion of absorptive capacity is that the organization needs prior related knowledge to assimilate and use new knowledge. Studies in the area of cognitive and behavioral sciences at the individual level both justify and enrich this observation. Research on memory development suggests that accumulated prior knowledge increases both the ability to put new knowledge into memory, what we would refer to as the acquisition of knowledge, and the ability to recall and use it*”. The dimension of “*structure is strategy*” would embrace the firm with absorptive capacities and hence this notion has the merit of not violating Ashby’s Law.

3.2. Introducing the VSM to FFM and Strategy and Structure Debate

Chandler (1962) in his original study paved the way on how changes in strategy as product market diversification, required ensuing amendments in structure precisely divisionalization of the firm (cf. Miller, D., 1987). Many scholars around the globe as Channon (1973), Dyas (1972), Thanheiser (1972), Rumelt (1974), Porter (1980; 1985), Rumelt, Schendel and Teece (1991; 1994), Whittington and Mayer (2006) and Whittington (2008) have written scientific publications in confirmation of Chandler's thesis. According to Pugh et al (1968) organization theory has six primary dimensions of organization structure: 1) specialization; 2) standardization; 3) formalization; 4) centralization; 5) configuration, and 6) flexibility (cf. Pugh et al., 1968). Ansoff and Brandenburg (1971) emphasize the role: of 1) a centralized functional form; 2) a decentralized divisional form; 3) a project management form and 4) an innovative form. Miles et., al, (1978) propose 1) product-market domains as strategy and 2) construct-mechanisms as structures and processes of the organizations, Miller (1986) underpins by analyzing strategy 1) taking one or two elements of strategy at a time "*e.g. innovation, or salespersons to total employees, or relative product qualitative*" (Miles et al., 1978, p. 235) and 2) "*elements of structure cohere within common configurations, as do those of strategy*", (Miles et al., 1978, p. 235). This notion is also substantiated by Ansoff and Brandenburger (1971), to which they have referred to as four categories that shape structure under the auspices of "*performance*",⁴⁷ while applying the RBV to their analogies as 1) steady-state efficiency; 2) operating responsiveness; 3) strategic responsiveness; 4) structural responsiveness; 5) decision and information quality criteria. Miles, Snow and Pfeffer (1974) ask the question to what extent do firms and organizations shape their environments and via which characteristics 1) strategies; 2) technologies; 3) structures and 4) processes do firms need to interact with their specific environments and how success can be determined thereof. There are still much-dispersed views on strategy and structure related issues respectively on the typologies, where the field has its centers of gravity. The author proposes another vital aspect to the aforementioned views of the field. Thus, Beer's VSM could be argued to be a new beginning in breaking the weakness that the Porterian FFM incorporates, as the most influential works based on industry structure and strategic performance of the firm. Beer states: "*It is interesting to begin the analysis of hierarchic control structures by asking about the basic decision elements of which ranks and orders of command are in general composed. In nature, and if we consider that most sophisticated control system the brain, this element might be identified as a single nerve cell- or – neuron. In industry or – government- indeed in any strongly cohesive social group- the element is some sort of manager*" (Beer, S., 1972, p. 63). Managers need a solid control system and the VSM is a powerful control model to be synergized with Porter's FFM.

⁴⁷ Performance still occupies the top of latter as the mantra in strategic management

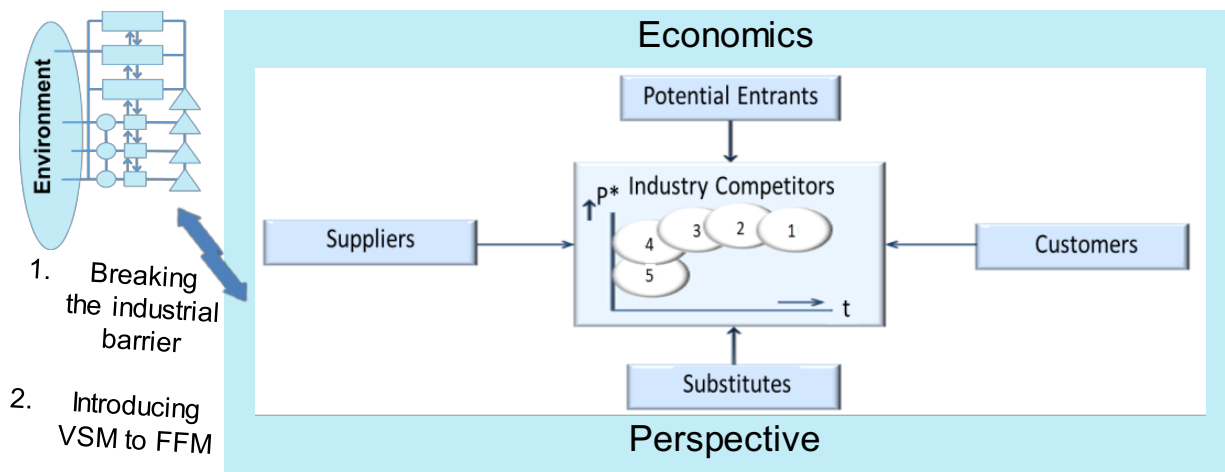


Figure 30: Introduction of the VSM to the FFM

Source: Kamran, (August 3rd-7th, 2016, 2017a) Porter (1979, 1980, 2008a) and Beer (1972, 1981, 1985).

The above perception is necessary thus structure is the prerequisite to higher strategic performance. The analogy to put viability as the *raison d'être* of strategy is not only a novel approach but moreover it is an approach that actually connects other justified approaches, as above illustrated. What the field of competitive strategy⁴⁸ lacks, is a unified theory that the sciences of cybernetics can deliver. The VSM will be integrated with the author's extension of the 5* sub-system, which the author has already provided.

3.3.Design of the SFM Model

In essence the SFM is constructed based on model-based-management analogy that modelling reality of is must criteria doe strategists in business administration according to the proven theorem od Conant-Ashby. This according to the concept and dimension of BMI, According to Wirtz, B. W., Pistoia, A., Ullrich, S., & Göttel, V. (2016): "*The concept of business models has reached global impact, both for company's competitive success and in management science*". Ritter, T., & Lettl, C. (2018) describe the essence of BMI: "... *business-model research is not necessarily a "theory on its own" and that it can be more fruitfully understood as a theoretical mechanism for combining different literature streams. As such, business-model research is positioned as a central connecting component in the further development of the strategic management field*". While Priem et al. (2018) emphasize: *Value creation for consumers, as the conditio sine qua non for value capture, is at the heart of demand-side strategy research and is a core element of almost any business model*". They furthermore argue: "... *that both the demand-side perspective and the business model concept could jointly promote a better understanding of strategy-making by mutually relying on the distinctive insights from each stream...*" Foss and Saebi (2018) describe: "*While research on business models and BMI continue to exhibit growth, the field is still, even*

⁴⁸ Also, the whole umbrella field of strategic management.

after more than two decades of research, characterized by a striking lack of cumulative theorizing and an opportunistic borrowing of more or less related ideas from neighbouring fields in the place of cumulative theory". The author's aspirations to design the SFM go at the heart of the contemporary research within the field. Thus, the gap and lack of a solid theory that fills this is put forward; by the interdisciplinary and holistic approach to put a solid model of CS & SM at the hand of the strategists and managers to make a better sense of their complex realities of global competition. Fjeldstad and Snow (2018) furthermore confirm the author's approach, thus, *"Despite a voluminous literature, business model research continues to be plagued with problems. Those problems hinder theory development and make it difficult for managers to use research findings in their decision-making... organization design is affected by value configuration and how new collaborative organizational forms enable open and agile business models. We derive the implications of our analysis for future research and management practice"*. According to Hacklin et al. (2018): *"Unpacking BMI allows us to discuss contingencies for the main business model strategies, specifically in terms of limitations to—and opportunities of—changing the primary business model and the practice of parallel business models, thus the SFM unpacks the essence of BMI in strategy development of the firm by aligning all the important aspects of its foundation and the evolutionary dimension of emergent strategic management. Teece, D. J. (2018) describes: "Business models, dynamic capabilities, and strategy are interdependent. The strength of a firm's dynamic capabilities helps shape its proficiency at business model design. Through its effect on organization design, a business model influences the firm's dynamic capabilities and places bounds on the feasibility of particular strategies. While these relationships are understood at a theoretical level, there is a need for future empirical work to flesh out the details. In particular, studies that provide a better understanding of BMI, implementation, and change will also shed light on important aspects of dynamic capabilities."* This dimension has been taken into high consideration by the author, hence via the integration of the VSM and the interdisciplinary approach put forward as incorporation of systems and cybernetics sciences underpin Teece's essential aspect in terms of the interdependencies of structural design substantiated by the authors analogy of *"structure is the strategy"*. This dimension is essential hence based on the vast literature covered the vital aspects of the author's strategic mindset are confirmed by the most rigorous and high-impact literature since the inception of the field of strategy. As the author has followed Teece's evolutionary development as one of the most propound thinkers: as Teece, D. J. (2010) some years back states: *"Whenever a business enterprise is established, it either explicitly or implicitly employs a particular business model that describes the design or architecture of the value creation, delivery, and capture mechanisms it employs"*, this development of Teece and the author while coming from different sides and

Weltanschauung by looking at the strategic paradigm, the key messages and analogies are merging into the coherent whole in terms the alignment of the role of the structural conditions and design of the firms' model on which effective strategies can be executed.

The SFM describes a holistic view of the organization and its topology in a total environment rather than the partial economic view and the limited spectrum of industry-in understanding that the FFM/construct has occupied for the last 39 years. The SFM aligns the essentiality of nine spheres, wherein an organization is embedded. As established throughout the thesis, "*Ashby's Law*" and Ulrich's "*scientific practice*" (Hetzler, 2008) —analogy enable the integration of a coherent set of models and theories designed based on nine spheres to design the SFM.

The Individual Components of the SFM:

The SFM describes a holistic view of the organization and its topology in a total environment rather than the partial economic view and the limited spectrum of industry-in understanding that the FFM/construct has occupied for the last 39 years. The SFM aligns the essentiality of nine spheres, wherein an organization is embedded. As established Ashby's Law and Ulrich's "*scientific practice*" (Hetzler, 2008) analogy enables the integration of a coherent set of models and theories designed based on nine spheres to create the SFM. The constructed spheres designed in a way to give a solid holistic model embracing a wider spectrum based on Ashby's Law of applying, extending and engineering organizational varieties to cope with complex challenges that emerge for firms operating in a global, complex and turbulent world. Latest research illustrates: "*Organizations often create and employ artifacts in order to change their routines, but little is known about how artifacts can be designed to intentionally influence routine dynamics*" (Glaser, 2017). The SFM as an artefact of designing for effective strategy-making and consciously acting at the right time and or by attaining a better trail-and-error-loop, is a dynamic model that requires a solid understanding of the components put below based on the 9 essential layers. However, the model will prove itself to be vital for generating sustainable competitive advantage.

The spheres are designed and constructed in the following manner⁴⁹:

1. **Economics Layer-** (cf. Kamran, August 3rd-7th, 2016, 2017a) *consisting of Shareholder Value, (cf. Rappaport, 1998) Industry-in-View, (cf. Porter, M. E., 1979) Red Ocean Perspective (cf. Kim & Mauborgne, 2005), and Clusters (cf. Porter, M. E., 1998, 2008b)*
2. **Normative Layer-** (cf. Beer, S., 1972, 1984, 1985; Gälweiler, 2005; Schwaninger, 2001a) *consisting of "Core Values & Ethics, Corporate Social Responsibility"- this notion can also be aligned based on the works of Porter, M. E. and Kramer (2011) and Porter, M. E. and Rivkin (2012b) as the "Shared Value Model" (cf. Porter, M. E. & Kramer, 2011) (SVM), Identity, (cf.*

⁴⁹ Based on the essentiality of constructing the firm's total environment for the SFM and the scientific/practical validation an extensive citation of the major works is necessary.

- Schwaninger, 2001b) *Autopoiesis*, (cf. Maturana, 1980) *Legitimacy* (cf. Schwaninger, 2001a) and *Raison d'être* (Drucker, 1954; Gälweiler, 2005; cf. Schwaninger & Scheef, 2016)
3. **Resource Based View (RBV) Layer-** (cf. Barney, 1991; Penrose, 1959; Peteraf, 1993; Porter, M. E., 1980; Porter, M. Eugene, 1985; Porter, M. E., 2008b; Porter, M. E. & Heppelmann, 2014; Wernerfelt, 1984) *Structure is Strategy Lens*, (cf. Kamran, August 3rd-7th, 2016, 2017a) *Core Capabilities*, (cf. Leonard-Barton, 1992; O'Reilly & Tushman, 2011; Prahalad, C. K. & Hamel, 2006; Teece et al., 1997) *Information*, (cf. Wiener, 1948; Beer, (1972, 1981), 1985 & Kamran, August 3rd-7th, 2016, 2017a) *Human Capital*⁵⁰ and *Machinery & Material*⁵¹
 4. **Technology & Innovation Layer-** *Blue Ocean Strategy*, (cf. Kim and Mauborgne, 2004) *Disruptive Innovation* (Christensen, C. Roland, 1987) & *Big Bang Disruption*, (cf. Downes & Nunes, 2013) *Real-Time Communication* (cf. Beer, (1972, 1981), 1985) & *Ubiquitous Computing* (cf. Beer, (1972, 1981), 1985) *Artificial Intelligence (AI)* (Oke, 2008; Miller, 2018) and *Internet of Things* (cf. Porter, 2014)
 5. **Nature & Ecological Layer-** (cf. Ulrich and Krieg, (1972), Porter, M. E. & Kramer, 2011, Rüegg-Stürm and Grand, 2015) *Environment & Ecology*⁵² and *Green Competition* (cf. Porter, M. & van der Linde, 1995, p. 120)
 6. **Stakeholder Value Layer-** (cf. Ulrich and Krieg, (1972), Porter, M. E. & Kramer, 2011, Rüegg-Stürm & Grand, 2015) *Shared Value, Unions/Workers*, (cf. Ulrich and Krieg, (1972)) *Non-Governmental Organizations*, (cf. Ulrich and Krieg, (1972)) *Government & Political Risk*, (cf. Ulrich and Krieg, 1972)⁵³ and *Non-industry Competition* (cf. Kim and Mauborgne, 2005)
 7. **Legal and Regulatory Layer-** (cf. Kamran, 2012) *Antitrust & Competition Law*, (cf. Kamran, 2013c) *Regulation and deregulation*,⁵⁴ *Labor and Tax Law*, (cf. Kamran, August 3rd-7th, 2016,

⁵⁰ Cf. Schultz, 1961, 1972. See: Goldin, 2014, p. 22: "Human capital is the stock of productive skills, talents, health and expertise of the labor force, just as physical capital is the stock of plant, equipment, machines, and tools. Within each type of capital, the performance, vintage and efficiency can vary. The stocks of human and physical capital are produced through a set of investment decisions, where the investment is costly in terms of direct costs and, for human capital investment, in terms of the opportunity cost of the individual's time." See: Smith, 1776 "The acquisition of ... talents during ... education, study, or apprenticeship, costs a real expense, which is capital in [a] person. Those talents [are] part of his fortune [and] likewise that of society" (quoted from Goldin (2014, p. 23)

⁵¹ See Beer, 2002, p. 4 **On 4 M's**: "Operational Research is the attack of modern science on complex problems arising in the direction and management of large systems of **men, machines, materials and money** in industry, business, government and defense. Its distinctive approach is to develop a scientific model of the system, incorporating measurements of factors such as chance and risk, with which to predict and compare the outcomes of alternative decisions, strategies or controls. The purpose is to help management to determine its policy and actions scientifically." (Beer, 1966)

⁵² cf. Porter, van der Linde, 1995, p. 120: "Properly designed environmental standards can trigger innovations that lower the total cost of a product or improve its value. Such innovations allow companies to use a range of inputs more productively- from raw materials to energy to labor- thus offsetting the costs of improving environmental impact and ending the stalemate. Ultimately, these enhanced resources productivity makes companies more competitive, not less."

⁵³ & cf. Miller, 1992, p. 312: "A firm's strategy deals with the alignment of the organization to its uncertain environment. As such, organizational strategic choices determine a firm's exposure to uncertain environmental and organizational opponent's hat impact firm performance. "Exposure" refers to the sensitivity of a firm or project's cash flows to changes in any of a number of interrelated uncertain variables".

⁵⁴ cf. Joskow, 2005, p. 34: "A lot has been accomplished in all relevant dimensions—theory, empirical methods, empirical results, and policy applications. What started as a sort of subfield of industrial organization has become fully integrated into it and I believe there is much to learn about scholarly research in industrial organization generally from this experience. I believe firmly that research on regulation and deregulation progressed nicely because the people working on these problems recognized that useful contributions to knowledge could be made using a range of methodological approaches and drawing on knowledge from other fields of social science and law. Research on regulation and deregulation involved the interaction between theoretical and empirical analyses, structural models, reduced form models, and natural experiments as well as institutional analysis drawing on political science, law, and organizational behavior. Scholars working with different methods worked well together and shared their work constructively."

- 2017a) *Compliance* (cf. Kamran, 2013c) and *Intellectual Property Law (IP)* (cf. Kamran, 2012d)
8. **Societal Layer-** (cf. Porter, M. E. & Kramer, 2011 & Porter, M. E. & Rivkin, 2012a) *Global Citizenship*,⁵⁵ *Culture & Trends Perspective* (cf. Ghoshal & Bartlett, 1999) *Local & Glocal* (cf. Ghoshal & Bartlett, 1999), and *None-State Actors*.⁵⁶
9. **Complex-Strategy Layer-** (cf. Kamran, August 3rd-7th, 2016, 2017a, 2018b, 2018a) *Weltanschauung, Ontology, Epistemology* (cf. Foerster, H., 2003; Kabouridis, 2015, Heidegger, 1927, 1977) *Service Dominant Logic (SDL)*, (cf. Vargo & Lusch, 2004) *Emergence & Adaptation*, (cf. Müller- Stewens and Lechner, 2011) *Ashby's Law*, (cf. Ashby, 1948, 1952, 1956, 1960, 2008) *Holistic Interdisciplinary Lens* (cf. Wiener, 1948 & Beer, 1972, 1981, 1985) and *Strategic Foresight* (cf. Beer, 1972, 1981, 1985; Hetzler, 2008 & Müller-Stewens & Lechner, 2011)

The Viable System Model as the Core of the Six Forces Model:

In classical strategy literature, the notion of competitive advantage is generally attributed to the management's ability to position the company's assets against some external context (cf. Chandler, A. D. & Redlich, 1961; Penrose, 1959 & Rumelt et al., 1997). According to Beer's cybernetic model of any viable system, any organization is a viable system because of its capability of maintaining its identity independently in turbulent environments (cf. Beer, S., 1994c; Vidgen, 1998). The SFM, in turn, delivers the necessary diagnostic power to develop this possibility and capability. Beer's VSM is inspired by the human nervous system. Based on the thorough analysis in chapter 2, the author introduced complexity as the sixth competitive force into Porters FFM by integrating Beer's VSM into the model. By doing so, a self-organizing and self-regulating mechanism for observing strategic reality is now a fixed component of the SFM (Kamran, August 3rd-7th, 2016, 2017a).

Economics Layer:

The economic environment of a company refers to all those economic factors, which have a bearing on the functioning of a business unit. The **industry-in View** is one part of the economic complexity (Kamran, 2013a, August 3rd-7th, 2016). It is based on Bain and Mason's structure – conduct – performance (SCP) paradigm that investigates causal flows between market performance and various market structure variables through the conduct of the firm within the market (cf. Phillips, 1970, p. 59; Wirth & Bloch, 1995). The SCP paradigm, therefore, enables a holistic competitor analysis embedded into an internal analysis of the company and its performance measurement tools. Creating **shareholder value**, however, depends on different performance indicators that are unique from

⁵⁵ cf. Lesserre, 2002, p. 38: "A company whose ambition is to be a Global Player aspires to establish a sustainable competitive position in the key markets of the world and to build an integrated business system of designs spread over those markets."

⁵⁶ cf. Jayawardane, 2010, 2013, p. 47: "Non-state actors have existed from the 13th century when the Hanseatic League traded in the Baltic Sea. Broadly speaking, nonstate actors fall into two categories: individuals and international organizations. But this division is not the full extent of the complexity in the current crop of nonstate actors in the international arena. Non-state actors can be both good and bad depending on the context. In 'weak states', criminal and terrorist organizations play a major role' Even in strong states such as the USA, criminal organizations such as drug cartels exist". Keohane and Nye, 1971, xi: "contacts, coalitions, and interactions across state boundaries that are not controlled by the central foreign policy organs of governments".

industry to industry and from company to company. These value drivers have to be defined and used to “*transfer skills or expertise among similar value chains and [...] to share activities that may create synergies that can optimize the value chain as well as building a strong relationship with [the environment]*” (Porter, M. Eugene, 1985). Creating high shareholder value, therefore, enables to have a sustainable competitive advantage. Kim and Mauborgne (2004) introduced the **red ocean perspective** to look at a company within an industry that solemnly competes about market share and how to outperform its rivals (Andrews, K. J. & Porter, 1986; cf. Kim & Mauborgne, 2005). The **cluster approach** is considered a paradox phenomenon, as it represents the procedure of creating a local network between miscellaneous companies, suppliers, service providers, institutions, and universities, which compete but also cooperate with each other at the same time (cf. Porter, M. E. & Rivkin, 2000). Nevertheless, Porter describes building clusters as a new form of gaining a competitive advantage as it can result in an increase in productivity and efficiency. By taking the industry-in view combined with the shareholder and the red ocean perspective and the possibility of defining clusters, the economic layer enables every strategist to get a clear picture of the immediate business environment of its company and to get a holistic status quo of the economic environment the firm is embedded in (cf. Phillips, 1970; Scherer, 1971; Porter, M. Eugene, 1985 & Kim & Mauborgne, 2005). According to Huang, L. (2018): “*Securing financial resources from investors is a key challenge for many early-stage entrepreneurial ventures. Given the inherent uncertainty surrounding a decision to invest in these ventures, prior research has found that experienced investors rely heavily on their investor gut feel—that is, dynamic expertise-based emotion-cognitions specific to the entrepreneurship context*”, this may be an essential aspect for entrepreneurs applying the model in terms highlighted the most vital aspects of the economic layer. However, research also illustrates further that the economic layer is the most essential aspect of firms’ survival, but it is still not an indicator of the firms’ fitness.

Resource Based View Layer:

Today’s turbulent business environment has generated new opportunities and challenges for firms. As suggested by the Resource based view (RBV) (cf. Barney, 1991; Penrose, 1959; Peteraf, 1993; Wernerfelt, 1984) a firm’s dynamic capabilities allow it to create new products and processes and to foresee changing market conditions; these are the **core competencies** of its competitiveness (cf. Evans, 1991; Johnson, G., Langley, Melin, & Whittington, 2007; Sanchez, Heene, & Thomas, 1996). According to the RBV, a companies’ competitive advantage depends on the internal resources like **material possession**, know how (**information**), **processes**, knowledge and **human capital**. Thus, it is suggested to focus rather on a firm’s resources than on its products. These dynamic capabilities shape a firm’s managerial and organizational processes, its position, and its paths (cf. Meirelles, 2004; Teece et al., 1997). In the contemporary business, Chandler’s notion of “structure follows strategy”

(1962) has to be thought ahead because of its assumed one-way relationship between structure and strategy. The author suggests viewing the two terms holistically, assuming independence between structure and strategy. Pfeifer and Bongard stated that *“by embodiment, we meant that intelligence always requires a body. Or more precisely we describe intelligence only to agents that are embodied. i.e. real physical systems whose behavior can be observed as they interact with environment”* (Pfeifer, R. & Bongard, 2007). As a result, efficiency can only be achieved through a strategic structure. Therefore, strategy development should be seen through the *“structure is strategy lens”* that allows every viable system to organize structure based on real-time information management capability while also keeping an eye on the big picture and to focus on the detailed adapted strategy. Another aspect to be highlighted was put forward by Gupta, A., Briscoe, F., & Hambrick, D. C. (2018), by stating: *“Recognizing the central role of chief executive officers (CEOs) in resource allocation, we argue that CEOs’ personal values regarding egalitarianism, as manifested in their political ideologies, will lead to different allocation styles. Liberal CEOs will favor evenhandedness, while conservatives will tolerate greater disparities. Placing this primary expectation in a social context, we then argue that the effects of a CEO’s values are amplified when aligned with the prevailing ideology among organizational members, and conversely are muted when misaligned”*. While this notion combines the author’s normative layer, which will be discussed below, it is still essential to underpin an interlinkage between the dimension of RBV and the normative assessments of the CEO’s behavior, habitus, whereon political ideologies are based.

Technology & Innovation Layer:

Nineteenth-century economic historians observed that the acceleration in economic growth was the result of **technological progress** and that **innovation** is crucial for firms that are seeking to ensure the long-term survival (cf. Rigby & Corbett, 2002; Charitou & Markides, 2003 & Foster & Kaplan, 2013). The Internet is the most recent innovation in the digital computing and communication technologies and allows **real-time communication** and connectivity with the environment. Caused by that, PCs, laptops, tablets or smartphones (post-pc- devices) are already a fixed element of the everyday life. Weiser (2002) described this phenomenon as **ubiquitous computing** referring to our technologized everyday life (cf. Weiser, 2002). The twenty-first century brings-forth an additional dimension of artificial intelligence (AI) within the roam of strategic management. While the dimension of AI is still evolving much promising fields within AI research and innovation such as belief revision, expert systems, artificial life, data mining, genetic algorithm, theory of computation, programming, reasoning, natural language understanding, semantic web, machine learning, image recognition and systems dynamics have emerged (cf. Oke, 2008). Another vital stream that has emerged is coined as *“explainable artificial intelligence”* (Miller, 2019), which will runs the

hypothesis that building more “*transparent, interpretable, or explainable systems*”, users are better equipped to comprehend and trust the intelligent agents, thus therefore will engage with AI from a social sciences perspective (cf. Miller, 2019)

Today, everything is connected be it the company with its clients, suppliers or other institutions or a board variety of devices, machines, and sensors **Internet of Things (IoT)**. Using technology to innovate has become essential for businesses. Kim & Mauborgne (2005) introduced the **blue-ocean strategy** to break away from the competition by creating new markets to move over the competition (cf. Kim and Mauborgne, 2005). This strategy allows to focus uniquely on the customers demand rather than looking at the business activities of the competitors. The notion of **disruptive innovation** was developed by (1997) and looks at innovation as a revolution through new technologies that change and shape the external environment from low to high-end consumers (cf. Christensen, C. M., 2016). However, as discovered by Downes and Nunes (2013), this strategy has a blind spot (cf. Downes & Nunes, 2013). So-called **big bang disruption** emerges from a blind spot outside the industry and can change the game and might trigger disasters (cf. Downes & Nunes, 2013). Simon (1996) argued for establishing a design approach in economics and engineering and other disciplines including all the artefacts and organizations (cf. Bayazit, 2004) which have yielded some impressive results by borrowing from areas that range from architecture to NASA. **Design Thinking (DT)** (cf. Kamran, 2018b and 2018d) and its development, was founded in the tradition of practicalism and pragmatism (cf. James, 1907), DT as a different culture from the science and the arts in terms of “*designerly ways of knowing thinking and acting*”, which has been distinguished it in its own right (cf. Cross, 2001, 2006; Simon, 1996). The author claims that first an organization is structurally designed and thus based on the analogy of “*structure is strategy*” the Eigen-behaviors of the organization are cultivated by design ‘*avant la lettre*’ in terms of the varieties they can attenuate via organization of the self-organizing forces and according to Ashby’s Law, systems sciences and systemics (cf. Foerster, H. von, Bröcker, Ivanovas, & Glasersfeld, 2007) that the sum is more than the number of the parts. Today, looking at the technological and innovative environment of a company is essential for every strategist because real-time communication, the IoT, and ubiquitous computing are offering the highest potential for innovation whether by using blue ocean innovation or disruptive innovation (cf. Christensen, C. M., 1997; Kim & Mauborgne, 2005). As Kamran (2018b, 2018a, 2018d) describes, this aspect of technology as a vital tool of innovation in organizations that are navigated via design of information cybernetics.

Stakeholder Value Layer:

Looking at a company through the eyes of network and cybernetics theory, it is apparent that a firm is embedded into a highly fragile network of stakeholders. Hannan und Freeman (1984) defines stakeholders as “*any group or individual who can affect or is affected by the achievement of the firm’s*

objectives” (Freeman & McVea, 2001). Thus, stakeholders can be owners, suppliers, customers but as well competitors, NGOs, Unions/Workers or media (Freeman & McVea, 2001). **Stakeholder Value** should be taken into account when establishing corporate strategies as looking at shareholder value only is incompatible with the efficiency principle (cf. Charreaux & Desbrières, 2001). The **shared value perspective**, however, can help a business not to be caught in a vicious circle that undermines competitiveness and saps economic growth through their outdated and insufficient approach to value creation (cf. Porter, M. E. & Kramer, 2011). In establishing a business model that creates economic value for the company and at the same time for the society it operates in, the company creates “*shared value*” (cf. Porter, M. E. & Kramer, 2011). In order to incorporate this vision, companies have to be aware of some main stakeholders. These are for example **Non-Governmental Organizations (NGOs)** (cf. Laakmann, 2013), **unions and workers** (cf. Schniederjans & Cao, 2002) but also competitors that are not coming from the same industry (**Non-Industry Competition**) (cf. Spiegler, 2016). In today’s globalized environment, stakeholders of companies are not only national but as well international. By doing business internationally, the number of stakeholders has increased significantly. Consequently, companies have to be highly aware of unforeseeable **political and governmental risks** (abroad as well as in the home country) (cf. Aliber, 1975; Kobrin, 1979). Superior knowledge about the political as well as legal environment, therefore, can provide a realistic view on how the probability of political events occurring in the environment is distributed (cf. Kobrin, 1979). Taking the stakeholders into account is one of the key forces of the SFM. Because of our highly networked world, the strategist has to be aware of certain stakeholders. NGOs, for example, are determining the business environment by defining e.g. policy rules. Unions and workers, on the other hand, are crucial to the success of every company (cf. Charreaux & Desbrières, 2001; Laakmann, 2013; Phillips, 1970; Scherer, 1971; Schniederjans & Cao, 2002). Thus, political and governmental risks are going hand in hand with NGOs and unions/workers’ interest of a county (cf. Laakmann, 2013). Integrating them into the model, therefore, takes part of developing a holistic model. One additional aspect put forward by Deken et al. (2018), states: “...*that resource complementarity is not given but jointly constructed in interactions with multiple potential partners through recursive cycles of what we refer to as “prospective resourcing.” Prospective resourcing mediates the interplay of strategizing and collaboration, thereby reversing the prevailing logic that strategy precedes and determines collaboration*”. The role of collaboration as a co-creational dimension between collaborative partners cannot be underestimated. This notion has also been substantiated by (Hoffmann et al., 2018), who have stated: “*Research streams on competition and cooperation are central to the field of strategic management but have evolved independently. The emerging literature on coopetition has brought attention to the phenomenon of simultaneous competition and cooperation, yet the interplay*

between the two has remained under-researched". The understanding of cooperation was originally developed and brought forth by (cf. Nalebuff & Brandenburger, 1997), which emphasized on the roles of competitive and cooperative business strategies in times of digital disruption.

Legal and Regulatory Layer:

Another very important perspective for a company to take into consideration when developing its strategy is the legal perspective. This layer is highly linked to the stakeholder layer. The **antitrust & competition law**, for example, supports the government in regulating questionable business activities to ensure fair competition within an open-ended economy. Jorde and Teece (1990) posed the hypothesis that "*antitrust laws may be at odds with technological progress and economic welfare*" (Green & Teece, 1998; Teece, 1992). The main purpose of competition law is to fill market system gaps and to discourage breakdowns (cf. Armentano, 1999). Thus, these laws help companies to have guidelines as well as protect them from unfair industry competition. Another key factor in the legal perspective is **regulation & deregulation**. Governments and higher institutions deploy these laws in order to maintain a fair market for all players. The same is applicable for **labor & tax laws** that define rights and obligations for both, employees and employers. Following these laws and being in accordance with the given rules and guidelines is manifested in the state of **compliance**. Compliance rules, laws, and standards are usually a way of guaranteeing that organizations will not neglect any market conduct practices, conflicts of interests or customer service (cf. Young, 2012). Especially, antitrust & competition law, regulation & deregulation and labor & tax laws generate a holistic overview of the legal environment in that a company is acting. Knowing these laws means having the capacity to take an active role in the market.

Nature & Ecological Layer:

Today, ecological and natural aspects have increased importance in scientific as well as academic literature. Companies are taking increased attention to environmental standards, green sourcing and a symbiotic relationship with nature. Forced by increasing 'green movements' within the customer base and increased environmental standards, the nature and ecological layer gains in importance while developing the strategy of a company. The notion of **green competition** assumes that environmental regulations erode competitiveness. It refers to the underlying economic logic that links the environment, resource productivity, innovation, and competitiveness. Porter and van der Linde already pointed out in 1995 that environmentally friendly innovation can create offsetting benefits (cf. Porter and Linde, 1995). By taking into consideration the direct natural and **ecological environment** via e.g. corporate social responsibility (CSR), companies can attract more customers and are simultaneously sustainable and can serve as role models (cf. Iansiti and Roy Levien, 2004). However, the question of the contemporary era is not the wide-spread of CSR but moreover the

question of making ecological engagement profitable as a form of a solid BMI.

Societal Layer:

In a modern society, a number of major social, technological, economic and cultural transformations have come about and give rise to the network society (cf. Castells, 2009). Organizations have to approach these changes in order to understand the kind of economy and society in which everybody lives. Today's society has been massively influenced by crises and conflicts of the twenty-first century as the global financial crises or the transformation of communication. Therefore, in today's society, it is necessary for organizations, both regional and global, to maintain a deeper knowledge of the laws of society development that allow for dealing with constant change. Falk (1993) summarized this by the notion of "*global citizenship*" (cf. Falk, 1993). Every country's culture has its foundation in attitudes and values. Bates, D. G. and Plog (1990) defined culture as "*a system of shared beliefs, values, customs, behaviors and artefacts*" that are created through generations by means of learning. It thus enables members of a society to cope with each other and with the environment (cf. Bates, R. & Khasawneh, 2005). For the development of corporate strategy, it is therefore essential to be aware of differences in culture and trend – locally as well as globally. The author manifested this observation by the notion of "*culture & trends perspective local & global*" (cf. Kamran, August 3rd-7th, 2016, 2017a & Bartlett and Ghoshal, 2008) '*Glocalization*' captures the essence of the emerging worldwide phenomenon where globalization and localization are transforming the development landscape (cf. Sharma, 2009). The context of glocalization has pronounced the dilemma of balancing the contrasting forces of centralization and decentralization (cf. Sharma, 2009). Therefore, companies have to think global and act locally.

Normative Layer:

The normative layer describes the deeply embedded beliefs and values of every company. Within this layer, **core values** and **ethics** describe one dimension of the knowledge-based core competencies framework and provide a competitive advantage for the company (cf. Leonard-Barton, 1992). Core values are a crucial part of profit generation and sustainability, which help to underpin all conduct regulations and requirements of a company (cf. Funabashi & Grzech, 2005). Henceforth, every employee should incorporate these core values and the self-image of the organization in order to pass these to the team. Therefore, corporate leaders must constantly reinforce core values, as value related to knowledge and content affect all the projects in line of business (cf. Leonard-Barton, 1992). Variable systems as autopoietic systems have the ability of self-repair and self-transformation as one of their most essential abilities (cf. Kamran, 2013d). This possibility and therefore defining core values are among the most powerful capabilities in nature, hence it is responsible for how organisms have evolved in their current shapes and abilities to master survival. Thus, **identity and autopoiesis** are crucial for the development of the firm's strategy (cf. Kamran, 2013d). By self-repairing and self-

transforming, companies always have to adapt to the requirements of the social cooperation towards mutual benefits. The inclusion of **corporate social responsibility** (CSR) in a business is defined through a positive contribution to society by broadening the focus beyond profit maximization (cf. McWilliams, 2014). This idea beyond profit maximization also goes in line with Drucker's (1954) idea that *"the purpose of a business is to create a customer"*. (Drucker, 1954). This notion has to be at the heart of every strategy and therefore defines the **legitimacy & raison d'être** of every company (cf. Kamran, August 3rd-7th, 2016, 2017a, 2018a, 2018b 2018d; Schwaninger, 2006b, 2010b & Ashby, 2015)

According to Ashby (1952, 1958), absorbing variety with new inputs can be a way to respond to change successfully because *"only variety absorbs variety"* (cf. Ashby, 1952, 1958). As Figure 31 illustrated the VSM has been integrated as the core of the model's corporate body embedded within the nine dimensions. Figure 31 described the SFM in its entirety. The model embodies a holistic view of an organization's reality; hence the layers are recursively connected to another and the subparts within the layer represent the essential aspects that cover the specific spheres. The model is designed to immunize the firm by integration and unification of the field of competitive strategy based on a single model. The systemics' (cf. Foerster, H. von et al., 2007) worldview of management is based on connecting and not separating (cf. Ulrich, 2001). According to Lutterer (2005): *"The central meaning of the term 'systemics' for Foerster can be proven in two ways: on the one hand, it is something like a term of attack which he uses in order to protest against the classical reductionist 'science' paradigm. On the other hand, systemics - in contrast to 'constructivism' and 'second-order cybernetics' - is a term, which he at least uses without immediately distancing himself from it again"* (Lutterer, 2005, p. 1 ff.). Ashby's Law is about designing the set of strategic choices/options in a coherent way thus enabling the firm to actually absorb the set of perturbations in diverse spheres based on a self-organized strategic foresight and an immunization strategy. Immunization in strategic terms actually means an a priori set of pre-control measures installed by the cultivation of the dynamic capabilities that the VSM delivers. Furthermore, it means reducing the time lag of responsiveness via the fourth generic strategy as the author has already established in Figure 3. Detailed descriptions of the model's theories are described within the PLG case study. The author's model has been fully applied and used to prepare a German large SME in its reorganization and change management phase within the fifth generational transformation (cf. Kamran, 2017c). The model is also substantiated by multiple publication of the author (Kamran, 2012a, 2013a, 2014b, August 3rd-7th, 2016, 2017b).

Complex-Strategy Layer

The in-depth literature review in chapter 1 established that the question of viability and organizational survival has really not been asked so far within the leading publications that have actually shaped the field of strategic management. The SFM was designed to fill precisely this

gap within the field for businesses to have a model that actually displays viability. The notion of '**Complex-Strategy**' is a word coined by the author to establish the final layer/sphere of the SFM, thus it is the dissolving of complexity within the framework of the organizational strategic foresight a priori that distinguishes solid strategic achievements rather than the process of constantly solving challenges and crises that have actually taking place and the business' strategists are solving post-priori. Complex-Strategy is maintaining the organization homeostasis, while coping with complexities of the lower level of the SFM's recursion (lower layers) and coping with dimensions as '**Weltanschauung, Ontology and Epistemology, Holistic and Multi-Disciplinary Lens, Strategic Foresight and Service Dominant Logic.**'

Weltanschauung, Ontology and Epistemology

In the paper "*The History of Design Thinking*", the author extends the view in literature and the understanding of design as the third pillar of human knowing from a contextual historical point of view and integrates additional essential scientific contributions to the field (Kamran (2018b, 2018c)). The author suggests that a synergy between phenomenology and pragmatism as a new Weltanschauung based on a solid model as the SFM that embraces the organisation's "*ontologic-epistemological*" understanding is necessary. This notion as coined in terms of the Heideggerian '**thrown-ness**' within the reality of the market-dynamics and their complexities, has rarely been applied within managerial sciences. Hence, the organisation needs to first cope with its own "*thrownness*" within a market reality, while it secondly has to embrace with making sense of its own sense-making based on the second-order epistemology of self-reflection as paved by von Foerster as "*Understanding Understanding*" (von Foerster, 2003). Therefore, based on Ashby's Law; the complexity of the model constructed on its ontologic-epistemological foundation as the "*second-order understanding*", it must have requisite variety to absorb complexity, to ensure its homeostasis. Thus, the author observes that there needs to be a solid bridge laid to close the gap on the missed opportunity of interaction between epistemology and philosophy and science as the self-correcting "*ethical imperative loop*" between the first-order cybernetics (science) and second-order-cybernetics (philosophy) to which Heidegger 1977 also referred to as the "*essence of technology*" and "*Dasein*". Thus, according to Kabouridis: "*Since thematization is the main objective of presence-at-hand in order to be valid as such, then we also have to think how it would be possible to thematize something like self-understanding, that is fundamentally personal and moves thus beyond these epistemological modes of being to Dasein's human ontology*" (Kabouridis, 2015, p.143). Heidegger speaks of this gap with the statement: "*science does not think*" (Heidegger, 1997; GA, 1951-1952). Thus, this is the ontoic ontological dimension of ready at hand (Zuhandenheit) coping the state of givenness (Vorhandenheit) as the reality of thrownness (Heidegger, 1927, 1977) towards a better and more suctioning reality (Kamran, 2018a,2018b).

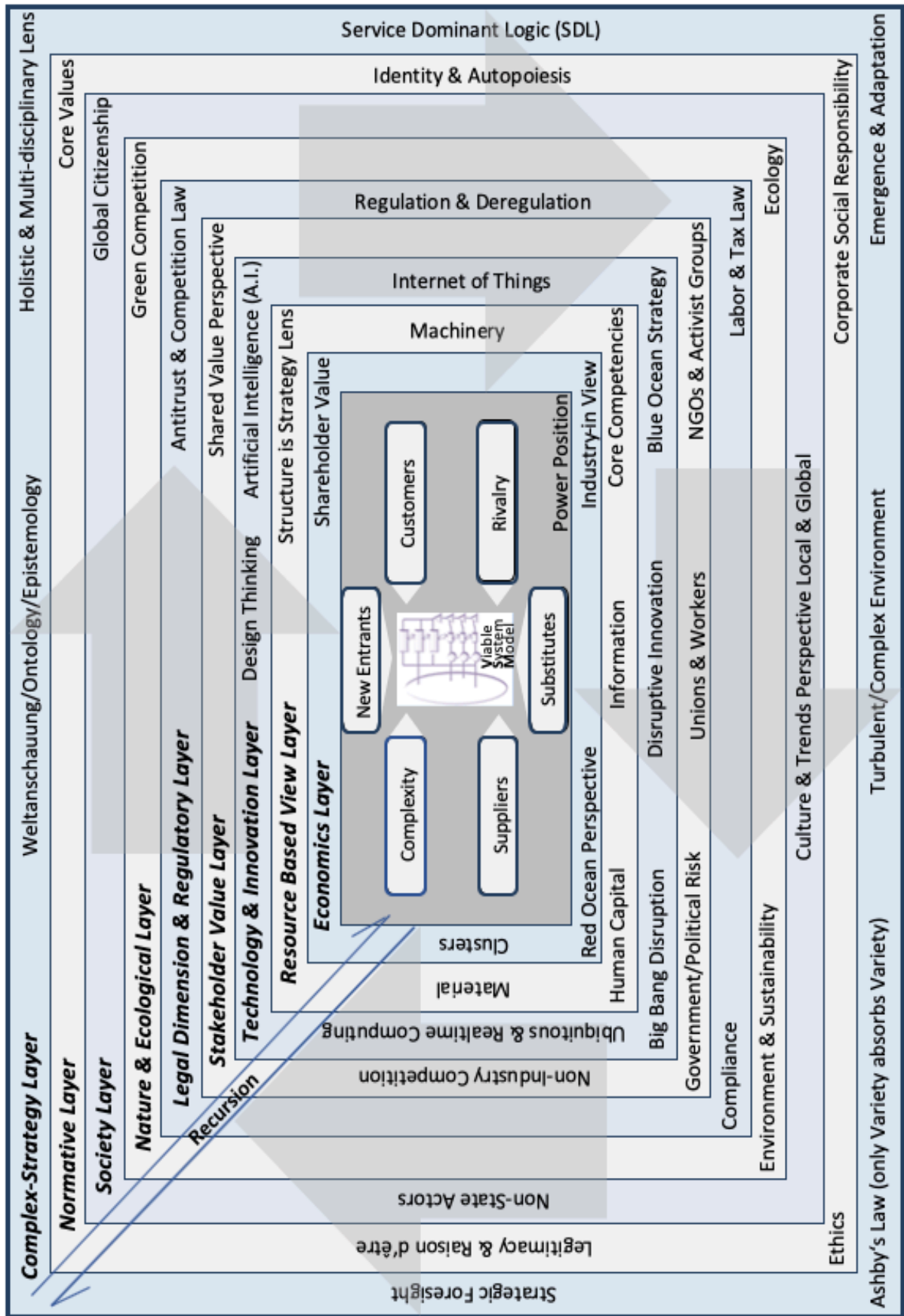


Figure 31: The SFM Embedded in the Wider Environment from a Holistic Perspective
 Source: Author's own illustration based on the author's research results.

Holistic and Multi-Disciplinary Lens & Strategic Foresight

Looking through a holistic lens enables firms to identify the external dimension, which are shaping the conditions of the industry they are working in (cf. Kamran, August 3rd-7th, 2016, 2017a). This proactive approach enables to shape change rather than being chased by it. Therefore, this is necessary for every firm navigating in the contemporary turbulent and highly complex environment. As shown by the different layers of the SFM, every organisation is embedded into different environments that are influencing it on many diverse levels. Applying the strategic foresight, companies can establish an overview of the various influencing factors around them. Strategic foresight can deal with the complexity of known and unknown forces in order to apply the notion of ambidexterity to exploit opportunities and simultaneously to capture the future and achieve a powerful position in the market (cf. Kamran, August 3rd-7th, 2016, 2017a). In a highly competitive and complex environment, it is especially necessary for companies to develop meaningful and future-oriented knowledge. Therefore, adapting a holistic and multi-disciplinary lens as proposed by the SFM merges the cybernetic and systems view and the contemporary knowledge of strategic management to solve problems in business administration.

Service Dominant Logic

An underlying development of major importance in the economic world from a macro perspective can be detected: Scholars agree that economic reasoning shifts from a goods-dominant view where tangible resources and a transaction focus are central towards a view of dominant (intangible) service provision with a focus on relationships and exchange processes (Prahalad, C. K. & Ramaswamy, 2004; Vargo & Lusch, 2004; Vargo, Maglio, & Akaka, 2008) develop the Service-Dominant logic (S-D logic) to frame this understanding. They envision service provision as the fundamental economic exchange process and only source of value creation (Vargo et al., 2008). The great recognition of the logic and many sub-sequent publications prove the profundity of the concept and underline its ability to depict the entirety of economic processes. *“Put simply, the economies of the world are becoming one large service-system”* (Spohrer & Maglio, 2008, p. 239). The S-D logic is explored within SFM and the dimension of its applicability and that the implementation of the concept would add value to business, specifically in the relation of co-creation. The author successfully applied the SDL logic to the maritime business based on the research done in Kamran (2018c). Vargo & Lusch introduced the initial version of S-D logic in the article *“Evolving to a New Dominant Logic for Marketing”* in 2004. In order to understand why the two authors, saw the need to display a *“changing worldview of marketing”* (Vargo & Lusch, 2004), it is essential to briefly revise the existent marketing literature. They display that the development of the traditional economic

worldview begins with famous economists like Thomas Malthus and Adam Smith in the 18th century (Vargo & Lusch, 2014). Economics developed into a science focused on the exchange of tangible goods where each produced unit was embedded with value. This transaction resulted in an increasing wealth (due to an improved assortment of goods) for every contributing trading party. The first marketing scholars fostered the development of this underlying paradigm by directing their attention towards the exchange of commodities (Copeland 1920, cited after Vargo & Lusch, 2004), the marketing institutions necessary to allow and facilitate trade and possession (Nystrom 1915, Weld 1916, cited after Vargo & Lusch, 2004) and the internal processes required to exchange tangible goods through such institutions (Cherington 1920, Weld 1917, cited after Vargo & Lusch, 2004). This development resulted in the marketing management school in the 1950s where a strong customer focus was characterising and the development of the famous ‘4 Ps’⁵⁷ framework was initiated (Kotler, 1967). All above-mentioned and further aspects of the SDL are summarised in Table 3 below indicating the wide range of specific firm level actions.

Table 3: Select Implications of Adopting S-D Logic

| | Role in G-D World | Role in S-D World |
|---------------------------------|---|--|
| Sustainability/ Shared Value | Initiate isolated Shared Value creating actions to enhance sustainability | Understand Shared Value in a network context and create sustainability in a co-creative manner involving every actor |
| Innovation | Create improved goods and services based on customer needs | Understand relevant networks and improve service provision within them |
| Value Creation | Embed value in goods and services that are distributed to customers | Enable value creation in a co-creative manner among all actors within networks |
| Value Propositions | Make promises about the value embedded in a good and service | Propose value by enabling customers to successfully use and integrate (co-create) the resources provided by the firm |
| Customer Selection | Target customers who are willing and able to purchase a particular good or service to satisfy their needs | Choose customers in a way that maximises value co-creation within networks |
| Strategy | Create unique sustainable value by differentiating goods and services | Find unique, valuable and sustainable ways of linking together a firm's knowledge and skills with the customer's context |

Source: (Bettencourt, Lusch, & Vargo, 2014)

The SFM model based on its cybernetics embodiment as thoroughly underpinned in chapter two, is **recursively** interconnecting all the necessary nine environmental layers as shown in figure 31.

⁵⁷ The ‘4 Ps’-concept is a foundation model in marketing. It refers to four broad levels of marketing decision: product, price, promotion, and place.

3.4. Comparison with Theoretical Competitive Strategy Approaches

Brown and Eisenhardt (1998) in their strategic building block model describe an essential point that strategy is about winning tomorrow today (Eisenhardt, K. M. & Brown, 1998). Gälweiler (2005) observes this fact in the same manner, by establishing the essentiality of the interdependence and correlation between strategic and operative tasks. In the Gälweilerian term, success has besides some additional managerial and economic tasks and responsibilities, above all the task of pre-control or pre-steering regarding the organization's success and liquidity (cf. Gälweiler, 2005, p. 28-29). Thus, the SFM enables strategists to have a solid diagnosis of the situation and to seek for actions that are necessary, enabling the organization via the VSM and the power of structural dimension's ambidexterity to simultaneously explore and exploit, and therefore, solve also the innovator's dilemma in forms of disruptive innovation (cf. O'Reilly and Tushman, 2008, 2013 & Christensen, 1987). According to O'Reilly and Tushman (2013), organizational ambidexterity describes a firm's ability to simultaneously explore and exploit market opportunities in order to be able to compete in mature and new technologies and markets by fulfilling respective requirements of both contexts, i.e. efficiency, control and incremental improvement within mature markets and flexibility, autonomy and experimentation within new markets (cf. O'Reilly and Tushman, 2013 p. 1). Understanding this logic, substantiates the notion further that actions are the essential aspects of strategy; (cf. Rumelt, 2012) so is a solid diagnosis and a vital plan of execution, which maps the whole spectrum of "*diagnosis/objective, plan and action,*" (cf. Rumelt, 2012) while having a vital and real-time information-based feedback system to make the necessary changes and maneuvers so that the objective is achieved. Table 4 below illustrates the essential logics/models of strategy, whereby a comparison of the diverse models is established. A comparative analysis of the SFM to the other models and in particularly with Porter's FFM establishes that the SFM performs better under the following assumptions: 1) survival as the essential questions in strategy; 2) real-time control based on the VSM; 3) applying the notion of "*structure is strategy*" and 4) interactional intelligence as the measure of proactive stability. Based on Table 4 below the assumptions are clear that the SFM is a novel conceptualization of a model to cope with the complex and turbulent reality of today's business environment. According to the modalities described by Klein (2001) illustrated in Table 5 the SFM in comparison leads as a unified model connecting the diverse modalities of: 1) factor inputs product and location etc., 2) innovation; 3) branding; 4) productivity and 5) technology in a coherent way together.

Table 4: Diverse Strategic Models and their Logic

| Models | Five Forces Model | Core Competencies | Game Theory | Competing on the Edge | Six Forces Model |
|---------------------|---|--|--|-----------------------------------|---|
| Assumptions | Stable Industry Structure | Firms as Bundle of Competencies | Industry View as Dynamic Oligopoly | Industry in Rapid Change | Holistic Lens Total Environment |
| Goal | Defensible Position | Sustainable Advantage | Temporary Advantage | Continuous Flow of Advantages | Survival Immunity Viability |
| Performance Drivers | Industry Structure | Unique Firm Competencies | Right Moves | Ability to Change | Emergent Change Realtime Control |
| Strategy | Pick and Industry & a Strategy Fit Organization | Create Vision Built & Exploit Competencies to Realize Vision | Make the Right Competitive & Collaborative Moves | Gain the „Edge“ Time, Pace, Shape | Structure is Strategy/ Dissolve Organizational Challenges |
| Success | Profits | Long-term Dominance | Short-term Win | Continual Reinvention | Pro-active Stability SCA |

Source: Extending on Brown and Eisenhardt (1998).

As the examples below demonstrate the assumption on competing based on a multi-modality/sphere is also a test of the SFM’s robustness.

Table 5: Differentiation of Five Distinct Modalities

| Modality | Examples | Possible mechanisms | Six Forces Model |
|--|--|---------------------|--|
| Market competition (Competition in tradeable assets) | Factor inputs Products Channels Finance Location | Price | Layer 1-Economics Shareholder Value Industry-in-View Red Ocean Perspective Cluster |
| Priority competition (Competition to be first) | Innovation Creativity Patents | Competence building | Layer 4-Technological & Innovation Incremental, disruptive & big bang innovations |
| Hegemonic competition (Competition for influence) | Brand recognition Standards | Politics | Layer 1-Economics Power position while applying blue ocean |
| Performative competition (Competition in organizational performance) | Productivity Quality | Management | Layer 3-Resource based view & operant & operand Layer 9-Complex-Strategy Structure is strategy lens Ashby’s Law |
| Competition in foresight (Competition to understand and predict) | Technology choices | Leadership | Layer 9-Complex-Strategy Strategic foresight, SDL-Logic, emergence & adaptation |

Source: Extending on Klein (2001).

Competition on an either-or sphere and dimension has been exhausted based on the reductionist perspective. What is required is a unified model that competes on holism and constructs a multi-disciplinary/dimension of competition thus applies Ashby's Law.

3.5. Summary and Novelty of the SFM

According to Rumelt (1979), the studies of economic behavior have been targeting the same audience from economic dimensions and also the judiciary and regulatory agencies (cf. Rumelt, 1979). This has been ever since relevant in terms of anti-trust issues and market dominations disputes based on competition law. The notion what strategy research actually addresses differs by tradition of strategy seen as coping with organizational survival (cf. Kamran, August 3rd-7th, 2016, 2017a & Summer et al., 1990) and there are aspects lift out by economics as rivalry among firms, innovation-based competition, product differentiation, and segmentation, shifting defense and exploitation of territories (cf. Rumelt, 1979). While Porter's IO-economics driven dimension addressed the issues to some extent by the economic logic of the FFM (Porter, 1979, 1980, 2008b; Porter, M. E. & Heppelmann, 2014), however, the theoretical foundation of the Porterian logic ignored the notion of holism and the multidisciplinary nature of the field of competitive strategy (cf. Rumelt, 2012). Bettis (1991) emphasizes on the assertion that research in competitive strategy should address the understanding the managerial work, the nature of decision-making, the operating business units, and the industry and governmental macro policies. Bettis furthermore, establishes the perception of research from the point of view of ethnocentricity⁵⁸ within the field, (cf. Bettis, 1991) thus contributing to less adequate models and theories not bringing forth research to address the challenges faced by complex and global firms operating within a dynamic environment. Camerer (1985) stated: *"Although a new tradition in strategy could spring from current writing, it is probably healthy to borrow ideas and methods from other disciplines. Decision theory, game theory, industrial organization, and microeconomics are prime fields for poaching. Slightly fertile fields—were deductive theorizing has taken a back seat to inductive description—include military strategy, science, organization theory, anthropology, psychology, sociobiology and perhaps sociology"* (Camerer, 1985, p. 7). Thomas and Pollock (1999) give the following six issues importance in the future of strategic research; 1) definitional issues; 2) measurement issues; 3) the unit of analysis considered; 4) the study of process, not states; 5) the examination of organizational failures as their successes and 6) the greater micro-analytic data from within the organization (cf. Thomas and Pollock, 1999). After Camerer (1985), the state of research on strategy is dissatisfying, thus theories are ambiguous and the overlapping seems to be too large to make a solid contribution, he emphasizes on the notion of deductive reasoning as the most useful way of

⁵⁸ cf. Bettis, 1991: is concerned with the U.S. dominated ethnocentricity of the evolution of the field of strategic management

conducting research in strategic and policy research. Based on the conceptual modeling and the triangulation/mixed method research conducted, the formation of the SFM fits very well to satisfy the point Camerer (1985) is underpinning. According to Thomas (1993), the field of competitive strategy clearly and openly demands an integration of various streams of research as competitive strategy researchers face regular confrontation to diverse perspectives which should stimulate multilectal or even truly integrative thinking and may result in a competitive advantage for the field of competitive strategy (cf. Thomas, 1993, p. 5). Schwaninger’s MBM-methodology delivers a solid base, whereupon the novelty of the SFM can be further substantiated.

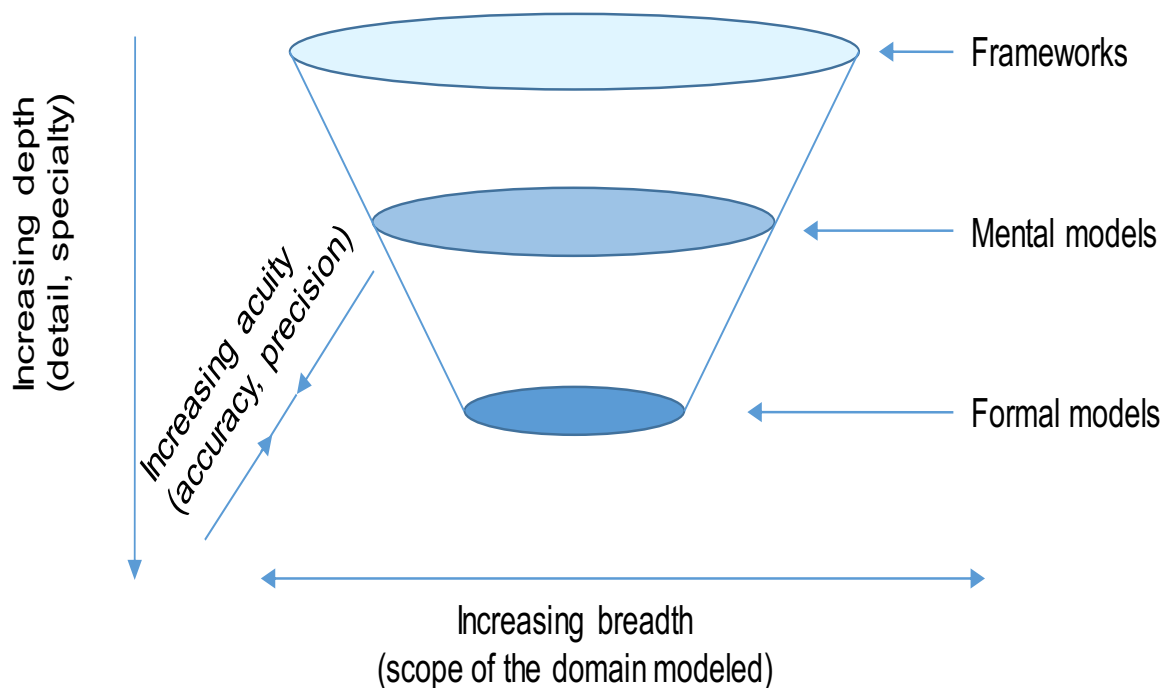


Figure 32: **Model-Based Management (MBM) Framework**

Source: Schwaninger (2010a).

Schwaninger (2010a) underpins the theorem by stating: *“This law has universal validity, because we always manage on the basis of models, whether we want to or not and whether we know it or not. In light of the Conant-Ashby-Theorem, models are a vital prerequisite for organizational viability, and the quest for high-quality models is a must”* (Schwaninger, 2010a, p. 1421). Figure 32 above describes three notions as emphasized by Schwaninger (2010a): 1) depth of a model, which refers to the level of detail and specificity of a model, 2) breadth of a model, which refers to the scope of the domain modeled, between broad and narrow and 3) acuity, which refers to the notion of accuracy and precision of a model (cf. Schwaninger, 2010a, p. 1422). The SFM is unique in a sense that it fulfills the depth in terms of enabling the SFM to be constructed based on the notion of recursion meaning enough detail can be expected from each sphere and the higher respectively lower level of recursion of the systems. The second notion of breadth is established

based on nine different spheres. According to the current literature available on strategic management, the author can claim that no other strategic management model can display more breadth. The model’s precision is also demonstrated based on the empirical evidence delivered. The model can be applied with no restrictions. However, depending on the nature of the firm, its maturity, size, revenue volume, and industry or legal framework and also based on the firm’s embedded international environment some adjustments may be necessary. This is the strength of the SFM because it is precise enough to cover the most essential aspects of the firm’s competitive strategy in detail but still leaves the possibility of customizing some aspects based on the necessity and nature of the individual firm’s situation. According to Ashby’s Law the complexity that a model embraces to that depth and breadth complexity can be amplified. This notion is also strengthened by the aforementioned “*Conant and Ashby Theorem.*” (Ashby, W. Ross, 1952,1956,1958; cf. Conant & Ashby, 1970; Schwaninger & Grösser, 2008). The SFM furthermore is substantiated by the dual—induction and deduction method in theory-building hence the diagnostic power of the author’s model based on an in-depth research a priori to conceptualize the SFM has been clearly demonstrated.

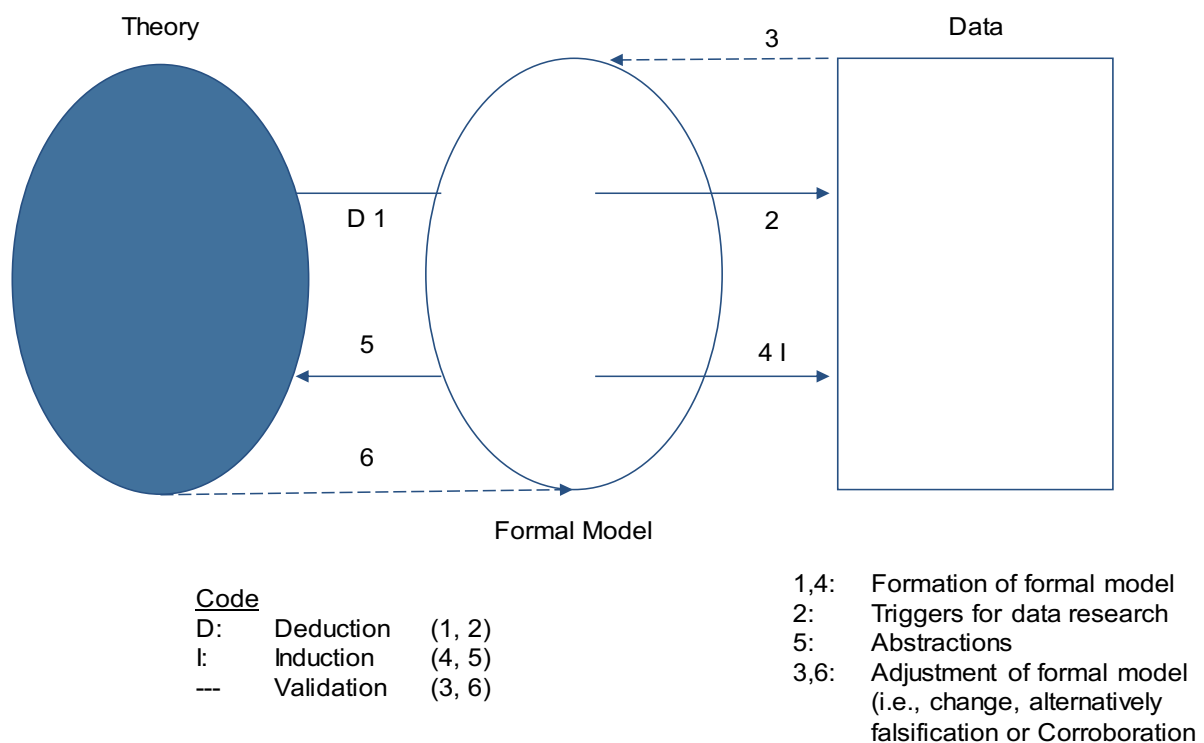


Figure 33: **Induction and Deduction Method in Theory Building**

Source: Schwaninger and Grösser (2008).

The model as chapter four will substantiate, has been validated by a large empirical analysis. Based on the essential list/framework of model-based-theory-building and validating Schwaninger and Grösser (2008), constructing on Patterson (1986) and completed by Holton and Lowe (2007) deliver additional aspects, which the author has applied in Appendix 24 (p. 40).

4. EMPIRICAL RESEARCH METHODOLOGY AND EMPIRICAL RESULTS

Due to the nature of CS & SM as a field of scientific and practical research within the broader dimension of BA, the author has chosen to apply the triangulation and mixed research method to be the more adequate research framework based on foundations of empirical research conducted on the subject. Diverse major contributions to the validation of research results and theory building within the scope of CS & SM have distinguished (Johnson & Onwuegbuzie, 2004; O'Cathain, Murphy, & Nicholl, 2007, Molina-Azorin, 2012) that mixed methods research deliver holistic and better suited results, which could not be established by seeing them purely from a mono-method lens and therefore mixed methods research can produce much more precise and complete results about the design, applicability of a model or theory and above all to simultaneously deliver a scientific foundation towards validating the model (Molina-Azorin, 2012). Thus, it is essential to apply adequate methodologies specifically in the subject of this dissertation which is management science and strategy to obtain solid empirical results.

4.1. Validity in Competitive Strategy

The subject of the research is to deliver a vital critique to Porter's FFM by extending it and designing a holistic model to be able to cope with the complexity of today's market dynamics for BA. The result is a much wider model than the purely economic perspective of Porter, whereby the SFM incorporates nine essential layers such as the ecological and the societal, the RBV of strategy and the most essential role of the organizational structure, as described in previous chapter. In this chapter the validity of the SFM is analyzed by a systematic research methodology constructed on the following formulation of the author's thesis and hypothesis:

In order to prove and to validate the postulated thesis and hypothesis above the following methodology of empirical research was conducted. The purpose of the empirical research is to collect and gather precise statements about the nature of how participating professionals give evidence to establish a high validity of the SFM. The author has constructed the logic of applying the *"Triangulation and mixed research method"*, as delivered to the field by Molina-Azorin (2012), which accounts for solid evidence on analyzing the different types of publications and the most empirically validated methodology, e.g. QUAN/QUAL and mix method research, applied in strategic management research and evolution based on diverse *"Competitive Strategy and Strategic Management Journals"* between the years 1980 to 2006. The findings underpin that the author's approach by choosing this research method to validate the dissertation's scientific and practical contributions as Appendices 21-23 (pp. 38-39) illustrate, prevails, where the mixed methods research as combining QUAN/QUAL methods is among the strongest research methods. Thus, mixed methods articles tend to receive more relevance and citations than

monomethod articles do.

According to Molina-Azorin (2012), the frequency of citations on average per year as well as the cumulative sum of citations of an article is influenced, by whether a mixed method or mono-method approach is applied for the studies discussed. Molina-Azorin argue that citation frequencies for mixed method articles are typically higher than for mono-method articles, irrespective of individual types of mixed method studies differing in their purposes, priorities, implementations, and designs (cf. Molina-Azorin, 2012, p. 33 & see: Appendices 21-23 (pp. 38-39)). Furthermore, according to Thomas (1993), *“Rather than urging strategy research to retreat to a state of disciplinary isolation or specialization, it is more sensible to adopt the viewpoint that phenomena studied in competitive strategy research often can be viewed through more than one lens. Some of the more widely drawn-upon perspectives include industrial and organizational economics, organizational behavior, and psychology. Generally, each perspective can capture a part of a given competitive strategy phenomenon but, like the parable of three blind men feeling an elephant, an integrated understanding is rarely obtained. Despite the potential benefits of an integrative perspective, there is a need for much progress in synthesizing the various theories. The primary difficulties stem from incompatible assumptions and differences in units of analysis”* (Thomas, 1993, p. 4). Thomas’ notion as above stated is another validation that the interdisciplinary view applied throughout the dissertation and particularly in designing the SFM is strongly justified and the appropriate approach. Hence an interdisciplinary model and theory construction requires, due to the comprehensiveness of the nature of modeling and theorizing, and synthesis of combining and interpreting the data, a robust validating methodology which the triangulation and mixed research method delivers.

One of the most solid models of validity in mixed research methodology was delivered by Onwuegbuzie and Johnson (2006b). The author has therefore considered a **multiple validities legitimation**. This legitimation type is due to the nature of the holistic foundation of the SFM necessary, which according to Onwuegbuzie and Johnson, (2006b): *“... is pertinent in virtually every mixed research study, refers to the extent to which all relevant research strategies are utilized and the research can be considered high on the multiple relevant “validities.” For example, when addressing legitimation of the quantitative component, the relevant quantitative validities are addressed and achieved; when addressing legitimation of the qualitative component, the relevant qualitative “validities” are addressed and achieved; and during integration and to allow strong meta-inference, the relevant mixed legitimation types are addressed and achieved.”* Generally, as Figure 34 describes, the validities can be distinguished in 1) **content-related**, 2) **criterion-related** and 3) **construct related**. Appendix 33 (p. 53) describes in-depth the notion of validity in this chapter, which is illustrated by the author as the Figure 34 describes.

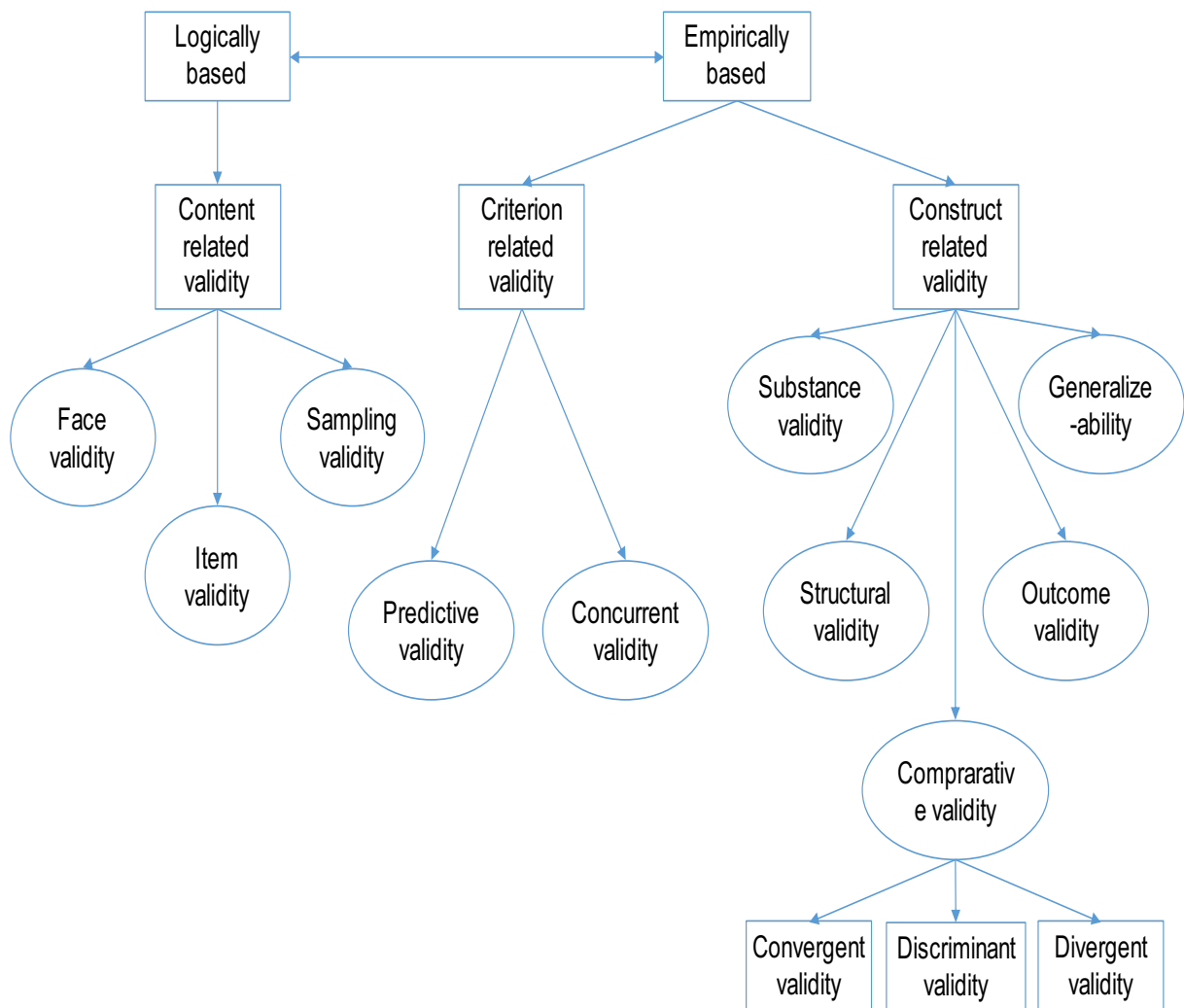


Figure 34: **Conceptual Framework for Assessing Instrument Fidelity**

Source: Collins, Onwuegbuzie, Sutton, (2006).

In this chapter all the necessary empirical foundation validating the SFM model development will be analyzed and corroborated. The Appendices (1-45, pp. 15-362) accompanying the dissertation substantiate and document the length of the survey, the collection of the data and the methods applied.

4.2.Triangulation and Mixed Research Method

The author has considered the below perspectives to design the research methodology and validation of the dissertations’ scientific and practical contributions. As Figure 35 represents a robust T & MRM framework, the model is distinguished in three essential perspectives:

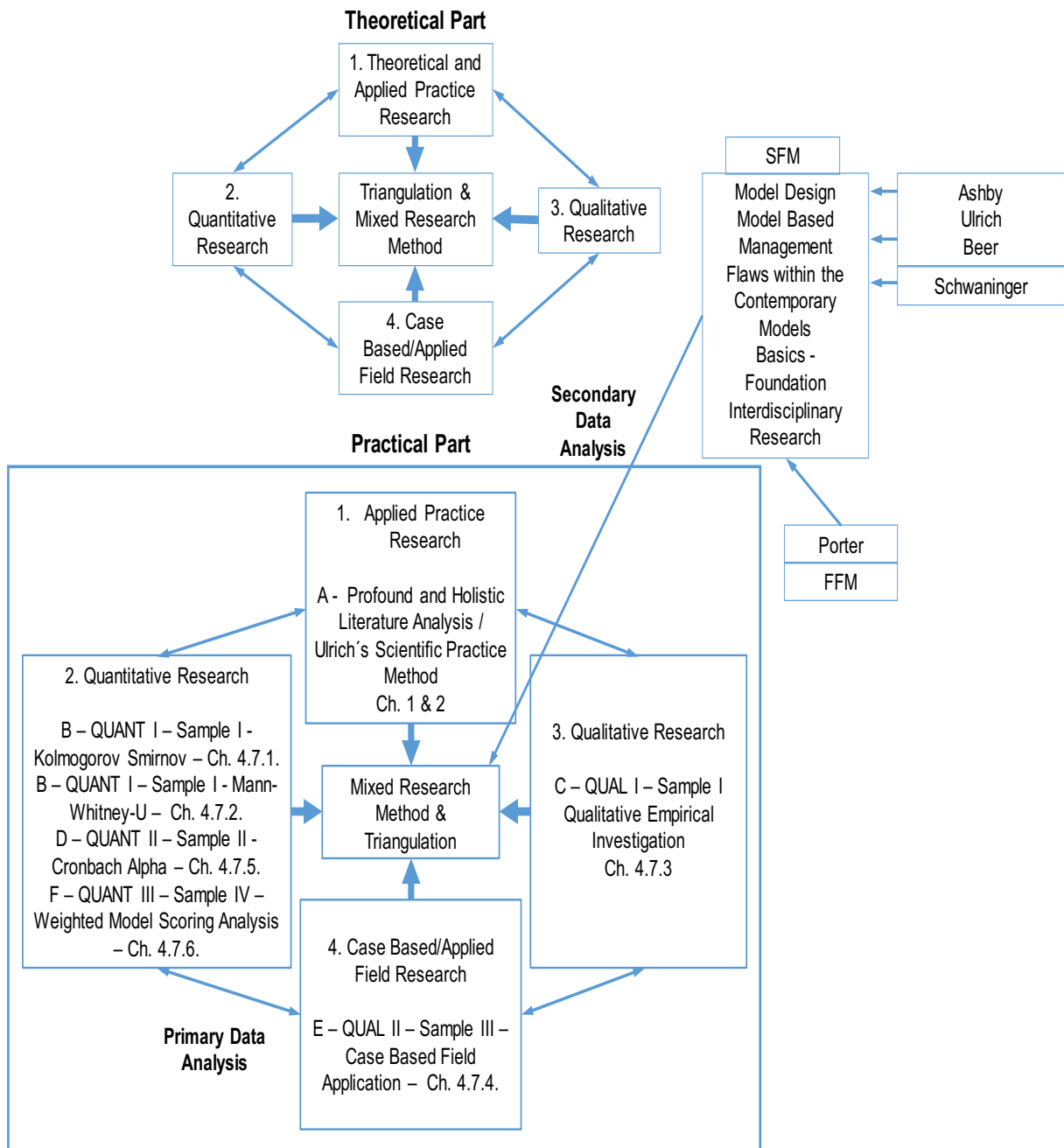


Figure 35: **Triangulation & Mixed Research Method Structure**

Source: Author's own illustration based on author's empirical research results.

- The first perspective** illustrates the theoretical background of research in competitive strategy. It examines Porter's vast contributions to the field spanning a research based on a spectrum of over 39 years of relevant scholarship (see: Chapter 1), in addition, the integration of the sciences of cybernetics (see: Chapter 2) and complexity, in particular Beer's management cybernetics analogy delivered by the VSM and Ashby's Law as vital fundamentals of management and strategic thought (see: Chapter 2) within the turbulent environments of today based on Ulrich's approach to solving management problems by the method of scientific practice (cf. Ulrich, 1968, 1970, 2001) While chapter 3 contributes in applying Ulrich's method by combining the analogy of seeking within the scientific models

and theories available to the scientist in business administration in finding adequate models and theories to answering the questions that strategists of today must cope with via the construction of a more holistic, integrative and multidisciplinary framework and model (cf. Hetzler 2008) capability of analyses and the robust planning and executing powers of the model applied into reality.

Methods applied:

A: Profound and holistic literature Analysis/Interdisciplinary Research and Ulrich's Scientific Practice Method.

- **The second and third perspective** is to choose a very broad and thorough empirical research analysis based on the mixed research method by QUANT/QUAL tests combining altogether (n=141) professionals by semi-structured interviews organized within 4 different sets of groups. The author has chosen the first set of interviews in a concurrently QUAN tests and the latter in a sequential QUAN/QUAL tests manner to further establish and to validate the findings of the first set of interviews and to dissolve any biases, which may have incurred thus ensuring a high validity of the empirical results.

Methods applied:

QUANT-Tests

B: Kolmogorov-Smirnov Test and Shapiro-Wilk-Test applied (QUANT I/ Sample I)

B: Mann-Whitney-U Test (QUANT I/ Sample I)

D: Cronbach -Alpha Method (QUANT II/Sample II)

F: Weighted Scoring Model Analysis/Wilcoxon-Test (QUANT III/ Sample IV)

QUAL-Tests

C: Qualitative/Empirical Investigations (QUAL I/ Sample I)

- The **fourth** perspective is furthermore a case-based method of the field and practical research based on applying the SFM on Peter Lacke Group (PLG), (see: peter-lacke.com & cf. Kamran, 2017a) a German SME operating successfully in diverse continents and regional headquarters e.g. Asia, North America, and Europe. PLG has decided to apply the authors SFM framework as the sole holistic model to prepare the firm for a global competitiveness and to align their operations globally based on the holistic nature of the SFM. The project was launched in December 2015, took the author approximately a year of preparations and consultancy work to actually apply the model to PLG, which is in generational transformation (5th generation and 150 years of family-run operations) and restructuring to be a leading global provider of paint and coating systems in diverse industries as e.g. automotive, household appliances, consumer electronics and general

plastics and glass. (see: peter-lacke.com, 2018 & cf. Kamran, 2017d)

Methods applied:

E: Case Based Field Application and Empirical Analysis

According to Jakob (2001), the combination of multiple observers, theories, methods and empirical materials presumably enables researchers to successfully cope with weaknesses, intrinsic biases and problems related to studies based on a single-method, single-observer and single-theory approach. Jakob states that a triangulation in specific contexts allows for differing perspectives to converge in order to provide evidence by representing reality at the point of convergence (cf. Jakob, 2001 and Yeasmin and Rahman, 2012, p. 154). At this part, the author would describe the methodological models applied to validate and describe the research. As Figure 35 illustrates, it displays the triangulation structure of the author's methodology by organizing the research in the following systemic framework conceptually to observe the validation of the SFM from diverse perspectives.

4.3.Mixed Research Method

According to Boring (1953): "*As long as a new construct has only the single operational definition that is received at birth, it is just a construct. When it gets two alternative operational definitions, it is beginning to be validated. When the defining operations, because of proven correlations, are many, then it becomes reified*" (Boring, 1953). According to Johnson & Onwuegbuzie (2004), Raudenbush (2005), Chatterji (2007), and Collins, Onwuegbuzie and Sutton (2006) much interest has been paid to combining and integrating QUAN/QUAL approaches within the same research. The publication of Tashakkori & Teddlie (2006), as the vital and comprehensive step forward on the subject has provided researchers with a solid theoretical and practical toolbox and understanding for conducting mixed-methods research. The most up to date definitions of mixed research method has been delivered by Johnson, Onwuegbuzie, and Turner (2006a) who state that mixed research is defined as a research approach used within a single study or a set of related studies which consists of both QUAN/QUAL research techniques, methods, approaches, concepts or language and is applicable when the contingencies are expected to result in an improved ability to answer the relevant research question(s) (cf. Johnson et al., 2004, p.19). The author's constructed of triangulation and mixed research methodology adds one additional layer herein thus to combine the field research in terms of a practically observed model applied to a real situation and therefore validating the conceptualized hypothesis and SFM model developed by mixed research approach with the effects observed directly from an inductive-observational methodology and theory validation. Another vital notion, essential to be mentioned is, that strategy as an applied practice requires validation of its models based on the practically induced strength of modeling via resulted

feedback as the cybernetics-based reasoning of feedback and interaction of the organization with the environment delivers. In this line of argument, the author aligns with what Schwandt (2003) foreshadowed: *“All research is interpretive, and we face a multiplicity of methods that are suitable for different kinds of understandings. So the traditional means of coming to grips with one’s identity as a researcher by aligning oneself with a particular set of methods”* (Schwandt, 2003). However, the author wants to emphasize that interpretative reasoning may not entail losing objectivity in the process.

4.4. Empirical Research Methodology

The foundational strength of the author’s methodology is that with the application of T & MRM, which were conducted in order to accomplish highly valid empirical results, a much better picture of reality as described by the population can be obtained.

As already described above, the mixed research methodology can be considered based on the discipline-specific approach and process for CS & SM and therefore diverse research analyses methods based on secondary theoretical literature analysis and application of Ulrich’s scientific-practice method and primary data generation via diverse empirical test have been conducted. Furthermore, according to Molina-Azorin (2012): *“A major advantage of mixed methods research is that it enables the researcher to simultaneously generate and verify theory in the same study. Second, mixed methods research provides stronger inferences. Several authors have postulated that using mixed methods can offset the disadvantages that certain of the methods have by themselves. Johnson and Turner (2003) refer to this as the fundamental principle of mixed methods research: Methods should be mixed in a way that has complementary strengths and non-overlapping weaknesses”* (Molina-Azorin, 2012, p. 35). Methodologies are discipline-specific approaches and processes of the research, while methods are the specific ways in which researchers conduct the collecting of research data. Based on the findings of Molina-Azorin (2012), which have revealed that mixed method articles have a greater impact than mono-method studies within the field of CS & SM, therefore, by application of mixed research methods, the author has combined diverse elements of QUAN/QUAL research approaches for the broad purpose of breadth and depth of understanding, validating and corroborating of the designed SFM model as has been illustrated below in Figure 36.

The main theses and hypotheses as conceptualized are postulated based on a mixed research methodological framework which is illustrated in Figure 36:



Figure 36: Research Methodology

Source: Author's own illustration based on author's empirical research results.

Based on Figure 36 above the following methods of scientific analyses were conducted:

A. ***Ulrich's scientific-practice method***, which puts the study of management science in terms of its practical relevance and unifying the existing management theory and models into a coherent whole beyond the boundary of economics lens, will be conducted. Ulrich's unique method conducts research for the practical purpose of integrating diverse scientific fields into a unified theory to solve real problems in management. This method is applied by interdisciplinary bridging of CS & SM, systems and cybernetics into a new approach-based model for management. **The method** will embrace the analysis of the research questions, which were analyzed scientifically by an in-depth research in the above fields of sciences to solve real and

significant problems of the contemporary era in business administration. Thus, seeing the multidimensionality of the managerial problems based on a systemic and interdisciplinary Weltanschauung enables the integration of a coherent set of models and theories to solve problems of high practical relevance.

- B. **The Kolmogorov-Smirnov Test and Shapiro-Wilk Test- (QUANT II/ Sample I)** will be applied to control if the data of the questionnaires is normally distributed or not, by enabling quality, reliability, and validity of the empirical tests to be conducted. **This test** will be used to evaluate the normal distribution of the sample population, essential to ensure the validity of the test. Normality as the assumption is especially critical when constructing reference intervals for variables. Normality among other assumptions must be taken seriously, for when this assumption does not hold, it is impossible to draw precise, accurate and reliable conclusions about reality. Afterwards **the Mann-Whitney-U-Test (QUANT- Test II/ Sample I)** will be used to evaluate significant differences between the FFM (Group 0) and the SFM (Group 1). Research indicates that the Mann-Whitney-U test is among the most powerful non-parametric empirical tests where the statistical power coincides with the probability of rejecting a false null hypothesis. Thus, it has a solid basis for probabilities of delivering statistically convincing results, when the alternative hypothesis applies to the measured reality. The empirical investigation and test with diverse samples sets to construct the representative population will be designed, finalized and evaluated via SPSS to validate the hypothesis. **The Mann-Whitney-U Test** answers the questions concerning the difference between groups (Group 0) and (Group 1), thus detecting a difference on the extent of the possible differences between participants investigated for the research to validate the hypothesis and therefore the SFM.
- C. **A Qualitative Survey and Test (QUAL- Test II/ Sample I)** with participants establishing a qualitative research to analyze the diverse layers and their individual components of the SFM will be applied. With this analysis the different layers which are not considered by the FFM are tested. These additional layers, as designed by the author would contribute to embracing the necessary total environment, which is missing within the spectrum of the FFM's dimensions, and thus enabling the managers to see a much broader reality, wherein a solid navigation of the firm is possible for its viability.
- D. **The Cronbach Alpha Test (Pilot Study) (QUANT- Test III/ Sample II)** will be applied to investigate the internal consistency, thus predicting the measure of consistency of the data. Internal consistency displays the extent to which the conducted parts within a test-construct embrace the same concept or construct and therefore they are connected to the inter-relatedness of the parts within the test's framework. Thus, internal consistency should be determined before any test can be applied to research obtaining high validity. It validates the alpha as an important

concept in the evaluation of the author's assessments and questionnaires much more accuracy to the interpretation of the empirical data collected. The notions of consistency, homogeneity or unidimensionality improves the application of Alpha, this internal consistency is concerned with the interrelatedness of a sample of the test items, whereas homogeneity refers to unidimensionality of the constructs analyzed for the research. Therefore, the **Cronbach Alpha Test** will be applied as the **pilot testing strategy of the empirical tests (questionnaires)**, hence measuring high validity of test results and that optimal results are being obtained.

- E. **A case-based field application and empirical qualitative analyses (QUAL-Test II/ Sample III)** of the author's model will be conducted to validate the SFM in practice within a real firm's environment. The SFM is applied to a real German SME. **Business case/field test** and the application of the SFM practically in a German family operated multinational firm the **Peter Lacke Group, (PLG)** will deliver solid evidence that the model is considered to be of value and the firm has benefitted from the diagnostic power of the SFM, Therefore, the SFM is also corroborated in practice.
- F. **The Weighted Scoring Model Analysis, a Spider-Web Overlay Visualization Analysis and the Wilcoxon- Test (QUANT- Test III/ Sample IV)** based on a) weighting of the individual layers and the components of the SFM and furthermore based on the comparison of **the sum of relative evaluations, the average absolute evaluations and partial relative evaluations of the importance of essential components and key variables of the SFM as a holistic strategic model;** b) **the comparative Spider-Web Overlay Modeling Analysis** to evaluate Porter' FFM, the SWOT analysis, PESTLE analysis, Value Chain Model and the SFM; c) **the Wilcoxon- Test, which was among the latter tests was conducted.** Thus, before the data of the **QUANT-Test III** was first analyzed by **the Wilcoxon-test**, it was tested for normal distribution the **Kolmogorov-Smirnov test**. Afterwards, **the Wilcoxon-test** was applied to measure the tendency of all models and the importance in relation to the evaluated data. This was essential to validate the SFM through the scores of the participants' answers- and to make the statistical result better comparable and interpretable to validate the SFM to be a superior model in strategic management within the roam of business administration.

4.5.Approach for QUAN/QUAL Data

The empirical research was based on several comprehensive questionnaires, which were developed particularly for the empirical evidence delivered. The **"Likert / Rating Scale"** was used for scaling the responses. The first iteration was based on questions concerning the relevance and the expandability of the FFM in comparison to the FFM. Two specific questionnaires were used for both QUAN/QUAL statements, in survey I:

1. Survey I

- **Questionnaire I:** Questions about Porters FFM - Sample I & II
 - 36 detailed questions / 40 for Senior Academics
- **Questionnaire II:** Questions about Kamran's SFM - Sample I & II
 - 36 detailed questions / 40 for Senior Academics

Which were used for the following analyses :

B - QUAN I - Kolmogorov-Smirnov & Shapiro-Wilk Test - Sample I

B - QUAN I - Mann- Withney-U-Test- Sampe I

C - QUAL I - Qualitative Empirical Investigation - Sample I

D - QUAN II -Cronbach's alpha - Sample II

For the empirical analysis all questions of these questionnaires had to be divided first into quantitative and qualitative data to determine the statistical approach. The following questions are of quantitative nature: 2, 3, 4, 5, 6, 34a, 34b, 35a, 35b, 35c, 35d and 36, whereas all other queries are qualitative.

A further questionnaire was developed to analyse the application of the SFM within a real business environment of the Peter Lacke Group (PLG), the German SME, which has implemented the author's model and where it was used to understand the importance of extending competitive strategic management in real practice.

2. Survey II

- **Questionnaire III:** Application of Kamran's SFM (20 detailed questions)
(E – QUAL II – Sample III - Qualitative Evaluation by Professionals at PLG)

Survey strategies using questionnaires are popular as they allow the collection of standardized data from a sizeable population in a highly efficient way, allowing easy comparisons. In addition, the survey strategy is perceived as authoritative by people in general and is comparatively easy both to explain and to understand (cf. Saunders et al., 2015). The survey strategy allowed the author to collect data that was analyzed quantitatively using descriptive and inferential statistics. In addition, the data collected using a survey strategy can be used to compare different variables and to produce models of these relationships.

3. Survey III

- **F - QUANT III - Sample IV – Weighted Scoring Model Analysis / Kolmogorov Smirnov Test / Wilcoxon Test**

Before going into the subsequent section with the actual analysis of the empirical findings and the resulting conclusions, the author first defines the general approach in the data analysis. After the

data collection, the underlying data were imported into the widely-used SPSS software (Statistical Package for the Social Sciences) – SPSS Statistics Version 25.

4.5.1. Approach for Quantitative Data (B – QUANT I – Sample I, D – QUANT II – Sample II, F – QUANT III – Sample IV)

The approach for analyzing quantitative data is visualized in Figure 37:

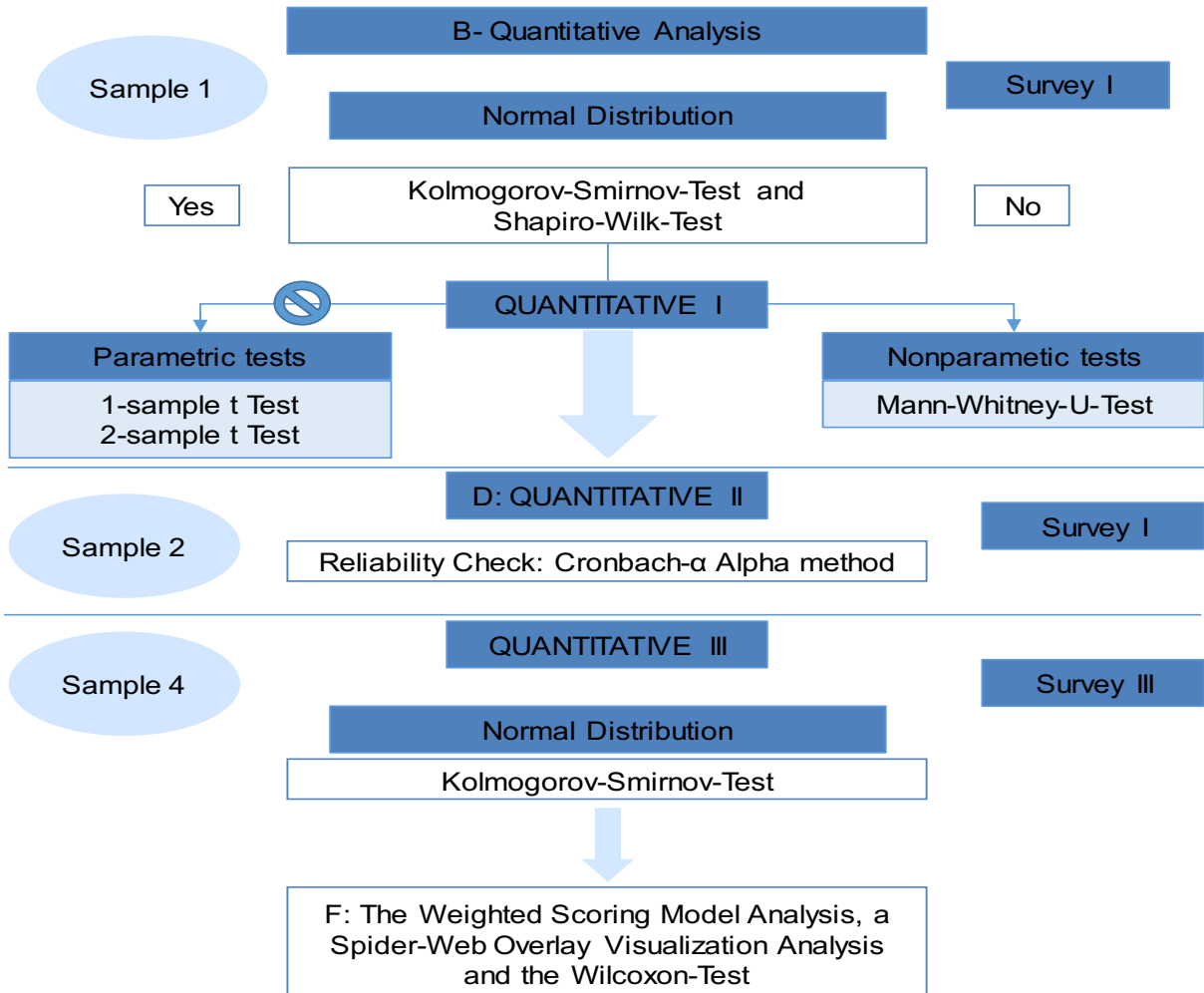


Figure 37: Approach for Analysing Quantitative Data

Source: Author's own illustration based on author's empirical research results.

Before starting any prediction, a **test of normality** has to be conducted to determine whether sample data is normally distributed or not. The main tests for the assessment of normality in sample population as applied by the author are **Kolmogorov-Smirnov** and **Shapiro-Wilk tests**. The Kolmogorov-Smirnov test is an empirical distribution function in which the theoretical cumulative distribution function of the test distribution is contrasted with the empirical distribution function of the data, while **the Shapiro-Wilk test** is based on the correlation between the data and the corresponding normal variables and thus it provides a better power than the Kolmogorov-Smirnov. The Shapiro-Wilk Test is more appropriate for the small sample sizes (< 50 samples), while it can also test large sample size. Therefore, the Shapiro-Wilk test as chosen here as the numerical means of assessing normality.

Power is the most frequent measure of the value of a test for normality; hence it is the ability to detect if a sample is observed from a non-normal distribution and thus making Shapiro-Wilk test as the best choice for testing the normality of data. Statistical errors reduce the validity of research in scientific literature and about 50% of the published articles have at least one error, therefore the assumption of normality must be evaluated for many statistical methods as parametric tests, hence, their validity depends on it (cf. Curran-Everett, Benos, 2004 & Ghasemi, Zahediasl, 2012). The assumption of normality is especially critical when constructing reference intervals for variables. Normality is one of the essential assumptions in SPSS and needs to be taken seriously, hence, if the assumption does not hold, it is, therefore, impossible to draw accurate and reliable conclusions about the observed reality (cf. Ghasemi, Zahediasl, 2012). It can be seen from the results that the data is not normal distributed and therefore a nonparametric test must be used for prediction. The Mann-Whitney-U Test / Wilcoxon signed rank Test was chosen to analyse two samples. Non-parametric tests distinguished from the parametric test in that the model structure of the test by taking from a natural professional environment (no laboratory test) is not specified a priori but determined and obtained from the data collected. The term non-parametric is used in statistics to define that such models do not completely lack parameters but moreover that the number and nature of the parameters are flexible and not fixed in advance of the research conducted. The **Mann-Whitney-U Test** corresponds best to answer the questions of the author concerning the difference between below groups (Group 0) and (Group 1), hence it is among the most commonly used tests to compare observation from the first group with each observation from the second group.

For the **Mann-Whitney-U Test** to be applied, a number of specific assumptions ought to be met, most essentially 1) **coincidence of the sample size** and 2) **independence of observations**, implying “... *that each observation can be counted only once...*,” (Pallant, 2009, p. 214) observations must not appear in “... *multiple categories or groups and that data referring to one subject cannot affect the data of others*” (Milenovic, 2011, p. 74).

The basic hypothesis of the evaluation is as follows:

H0: There is no significant difference in the answers of the individual questions between both groups, Group 0: Porter’s Five Forces Model; Group 1: The Author’s Six Forces Model.

The significant level of α (α -value) had to be smaller than 5%.

According to the T & MRM, a system of classification was developed for the purpose of increasing validity. Therefore, for the purpose of reducing any bias and enhancing the validity of the empirical evidence an additional test was performed by applying the **Cronbach- α Alpha** method. This test

is used to measure the internal consistency or reliability of the questionnaires. In addition, the Cronbach Alpha Test has been also applied as the **pilot testing** strategy and measure so that high validity and optimal results are obtained.

In the completion of the comparative variables testing procedures, an additional comprehensive analyses and tests were conducted in form of *Weighted Scoring Model Analysis, a Spider-Web Overlay Visualization Analysis and finally the Wilcoxon- Test.*

4.5.2. Approach for Qualitative Data (C – QUAL I – Sample I, E – QUAL II – Sample III)

The approach for analysing qualitative data is visualised in Figure 38:

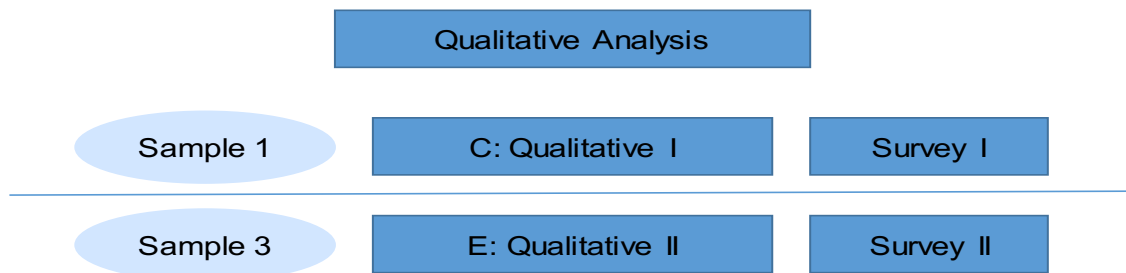


Figure 38: Approach for Analysing Qualitative Data

Source: Author’s own illustration based on author’s empirical research results.

For the qualitative approach descriptive statistics were used to analyse the results, such as measures of central tendency and measures of variability. The qualitative analysis was conducted for both questionnaires for the FFM as well as for the SFM. The questions are quoted as percentages (qualitative), thus establishing hypotheses are not appropriate.

In addition, a case-based-analysis applied research was conducted as a qualitative analysis, where the model was applied in a project on the PLG.

4.6. Research Population and Samples

To establish the high validity and quality of the results, the diverse QUAL/QUANT tests based on the mixed research method, as described in 4.2 and 4.3 were necessary. In order to ensure the validity of the sampling and thus avoiding professionals and experts’ bias, which would result in strongly validating the SFM, different sample sizes had to be created. To validate a model externally by ensuring its predictive performance, additional and separate datasets are the essential criteria and a vital consideration in high quality and precisely empirically-driven QUAL/QUANT model validation. In order to achieve this task, the following sampling strategy was pursued.

4.6.1. Sampling Strategy

Sampling as it relates to research refers to the selection of individuals, units and settings to be studied. In this research, a criterion-based sampling strategy is applied that has the characteristics relevant to the research questions. It selects people of similar backgrounds and

experiences per sampling groups. Resulting in samples collected, which in themselves are homogenous, within all groups, thus representing the whole population from all professional levels from young academics (future professionals) to experienced consultants and managers as well as professional academic experts. This was necessary to obtain a representative set of samples that mirrors the population, which was needed to be targeted in its entirety. The following steps will be examined for all sampling sizes and groups questioned and tested (cf. Laerd Dissertation, 2018). The sampling strategy will be examined in a **four-step procedure**. Firstly, there will be a description of what was studied, then the sampling techniques available and the selection of the most appropriate one will be explained and finally a justification for the sampling strategy choice will be given.

Step 1: Description of what was studied

The **sample of the research** consists of the diverse groups of individuals, who have participated in this research study. The units of the research that make up the population are individual participants further classified in the following table). While they may have differing professional or academic backgrounds, they all share a common understanding of the main stream models of CS & SM and the theories tested in this research. The population of the research is the broader group of people to whom the research’s results will apply. This group includes and is distinguished by the following criteria as described in Table 6, where a solid distribution of managerial know-how and experience within the academic as well as the vocational training needs to be guaranteed.

Table 6: Populations of the Empirical Research to whom the Research Applies

| | |
|--|--|
| Managers in multiple levels of organizational hierarchies in diverse fields of work in SMEs and MNCs | Who are constantly looking for better approaches, models and frameworks to solve their diverse analytical and pragmatic business analyses’ iterations and heuristic |
| Business, management and strategy consultants | Who want to have a solid and robust model to apply it to their fields of analysis and strategy creation of their clients |
| Students studying business administration at advanced undergraduate and graduate level | Who want to achieve better and more profound results by the application of more sophisticated models than the mainstream strategy models are able to deliver and how may be embarking on creating and founding new businesses and enterprises |
| Professors and lecturers and administrative staff of business schools | Who are seeking adequate and well-suited models that can help them construct more intensive discussions during class, give much more relevance to the essential themes of the complex and global world of today and connect the diverse fields of business administration. This will also study the relations in between diverse fields. |
| Researchers and practitioners in business administration | Who are confronted with strategic tasks that are complex in their nature and to make sense of their organizational realities |

Source: Author’s own illustration based on author’s empirical research results.

To summarize the essential aspects of the population and the diverse units, the results of the author's research will apply to the population based on actors (German and international) within the field of strategic development and application within the realm of business administration and management related functions of SMEs, MNCs and academe (students undergraduate, postgraduate and their training faculty), who need to make sense of the essential issues of today's global and complex business world by designing a solid strategy to help coping with the complex challenges of the globalized world.

Step 2: Explanation of types of sampling technique applied

For this research, a non-probability sampling technique was used. This technique can sometimes be viewed as inferior to probability sampling, because units are not selected for inclusion in a sample based on random selection. However, non-probability sampling techniques can provide researchers with strong theoretical reasons for their choice of units to be included in their sample. Drawing on theory (i.e. the academic literature) and practice (i.e. the experience of the researcher) to generate a sample. This is, because the author was interested rather in the intricacies of the sample being studied than making generalizations. Whilst making generalizations from the sample to the population under study may be desirable, there can often be additional problems of bias and transferability (or validity). Apart from these theoretical reasons for a non-probability sampling, there are some practical reasons as well. The procedures used to select the units for inclusion in a sample are more time- and cost-efficient compared with probability sampling. It is also particularly useful in exploratory research, where the aim is to find out if a problem or issue exists and there is limited or no research that currently supports such a theory, as it is the case for the author's research aim.

Step 3: Stating of sampling strategy used

For selecting the participants of the research, the author chose purposive sampling, which relies on the judgment of the researcher when selecting the units that are to be studied. The goal of purposive sampling is not to randomly select units from a population to create a sample with the intention of making generalizations from that sample to the population of interest. The focus here lies on particular characteristics of a population that are of interest, which will best enable the author to answer the research questions. The sample being studied is representative of the population. The specific sampling techniques used are homogeneous sampling and judgment sampling combined. Homogeneous sampling is a purposive sampling technique that aims to achieve a homogeneous sample, i.e. whose units (people) share the same (or very similar) characteristics or traits. It is often chosen when the research question addressed is specific to the characteristics of the particular group of interest, which is subsequently examined in detail.

Judgment sampling is another type of purposive sampling technique that is used when the research needs to glean knowledge from individuals that have particular understanding of the topic being observed.

Step 4: Justification for choice of sampling strategy

As the nature of the research topic investigated requires specific knowledge and understanding, a purposive sampling strategy was applied. Due to the mixed research methods design of the study, which compares and connects the results of homogeneous groups of research units with a minimum of knowledge of the subject matter, a homogeneous and judgment sampling strategy was combined.

In order to substantiate the theoretical foundation of the sampling choice, the research paradigm could be described as holistic based on the view of the holism thesis. *“Holism can be interpreted as the thesis that evidence rest on theories as wholes and not on individual parts of a theory. Hence, in general scientific pictures lack a secure empirical content taken in isolation from one another. But conjoined into series of pictures or corpus of pictures, the depicted phenomenon has an empirical content... Taken together with the underdetermination thesis i.e. that observations alone do not determine theory; holism can be used for at the same time acknowledging a theory’s fallibility and preserve a scientific realism (Bayer, 2007).”* (Höög, 2017, p. 1)

Therefore, multiple aspects of a model were constructed and tested based on a constructivist methodology by integration of an interdisciplinary approach.

It is essential to highlight that in terms of practicality and feasibility of the research, the target population with a representative number needs to be approached and investigated. This required the author to choose participants, where it is ensured that they are matching the needed minimum knowledge standards. Therefore, the broader participants have affiliation with the ISM-International School of Management and have sufficient amount of knowledge based on their vocational and academic training backgrounds. Furthermore, additional managers, consultants and academics in business studies were contacted. This was essential because of the wider outreach of the ISM, as it has been used as a solid platform for accessing and acquisition of participants in an acceptable time frame. Altogether 465 individuals, who were trained on the subject matter or had prior and sufficient knowledge of the FFM and the SFM and in addition sufficient knowledge of the most important CS & SM models were contacted and pursuit. Knowing the essentiality of the diverse constrains as lack of time, lack of interest, unwillingness to participate, scheduling issues etc., three set of emails within an interval of two weeks each and diverse phone calls to pursuit the participants to engage in due time and to participate in the special training organized by the ISM-International School of management, were conducted. Especially it was highly challenging to engage the international participants,

hence their schedule was very loaded and due to some cultural issues in punctuality some participants could not join the final empirical surveys conducted. From the **465** people, who were contacted, and pursuit **141** people participated.

Table 7: **Response Ratios**

| Sample | I | II | III | IV | Total |
|-----------------------|----------|-----------|------------|-----------|--------------|
| Recruited | 209 | 39 | 30 | 187 | 465 |
| Participated | 63 | 12 | 9 | 57 | 141 |
| Response Ratio | 30.1% | 30.8% | 30.0% | 30.5% | 30.3% |

Source: Author's own illustration based on author's empirical research results.

As has been displayed in Table 7, all samples have response ratios above the threshold of 30% and therefore are representative. While Sample III has the lowest response ratio with exactly 30.0%, Sample II has the highest response ratio with 30.8%. The total response ratio therefore is 30.3%. According to (Fryrear, 2017), a ratio of above 30% of the number of participants to the number of people recruited gives a valid sample and the results of the tests executed on this sample is representative of the collective opinions of the population examined.

4.6.2. Sample I

For Sample 1 in total 63 people participated. The sample size was further divided into Group 0 (n = 25) to analyze Porter's FFM model and Group 1 (n = 31) to analyze the authors' SFM model. The groups were guided into a large lecture room and spitted randomly into two halves. This method of simple random sampling was selected where participants are chosen entirely by chance and each member of the population has an equal chance, or probability, of being a part of the selection. In addition, another group of **Senior Academics** with (n = 7) was constructed to validate questions, where a deeper experience is required and to understand how applicable the strategies are in scientific settings (teaching and research) and real-world practice as this academic group are also consultants in diverse businesses. To meet the defined criteria of a homogenous group the following sub-groups were constructed.

Table 8: **Overview of Sub-groups for Sample Size 1**

| Group | Number of Academics | Number of Business Professionals |
|--------------|----------------------------|---|
| Group 0 | 13 | 12 |
| Group 1 | 18 | 13 |
| Group SAE | 7 | |

Source: Author's own illustration based on author's empirical research results.

The group of (Junior) Academics includes in total 31 participants with an average age of 19.8 years and in minimum a bachelor's degree, so mainly male students (70.1%) from various countries with a professional experience of Ø 2.2 years.

The group of Business Professionals comprises of 25 participants with an average age of 25.7 years and a professional experience of Ø 4.8 years, whereas the group of Senior Academics has 7 participants with an average age of 26.3 years and a professional experience of Ø 4.2 years. Both groups are male dominated, and the participants are coming from various countries. This mix of multi-ethnicity and diversity was chosen to obtain enriched data from actors working and embarking on entrepreneurial endeavors from diverse spatial-socio-cultural work environments. In the age of advanced globalization and digital interconnectivity and thus for developing and validating models that must be applicable globally, research that is obtained from global actors is essential and therefore a must-fulfill criterion to validate the model. Furthermore, the sample for **survey I** was chosen from a population, which resembled the following characteristics:

1. Participants have obtained business degrees
2. Participants come from family business enterprises, who are chosen to be trained to lead the company into the future
3. Participants are embarking on a start-up enterprise or would play an important role there
4. Participants require new tools that add to their knowledge base and to sharpen their managerial mind sets
5. Participants are chosen from international and intercultural work environments
6. Participants are trained at a professional level in strategic management and they have granted access to the researcher to gather precise information of the nature understanding, evaluating and diagnosing the SFM.

It is essential for the research that the participants are able to establish a thorough understanding and specifically of judging the differences between the diverse models of CS & SM, the diagnostic power of the SFM and the FFM, and also predicting the successes of the applicability of the models based on their judgements. This notion requires a good access to the people that are the needed population for this research. Therefore, diverse groups were contacted and selected, and trained on the subject matter. The author as a professor at the University of ISM has successfully trained and consulted many professionals who participated at this empirical research.

The chosen research sample therefore consists of a representative selection of business students and management professionals, whose knowledge, decision and behavior can be regarded as representative for business management strategy builders.

The groups for sample 1 were contacted and chosen in cooperation with diverse institutions that are co-operating with the ISM-International School of Management, University of Applied

Sciences in Dortmund Germany, which is the academic base of the author. The participants were members of international school seminars visiting Germany for the special skills of obtained advanced level training in strategic management. Therefore, sample 1 is regarded as “*Professionals’ group*”.

The group members were randomly divided and separated into two groups (Table 8) and were given precise descriptions and information on one of the most troubling cases in German production history — the Volkswagen Diesel Engines Manipulation Scandal (cf. Schuetz and Woo, 2016). For support of the “real case analysis,”¹ the groups were trained in-depth and briefed; furthermore, supporting material on strategy models was handed out. Both of the groups were then asked to solve the problems of “their firms” based on the lessons learned from the cases and particularly based on Porter’s FFM model (Group 0) and author’s SFM model (Group 1). Both groups were separately and then independently additionally briefed. A large questionnaire, which was developed particularly for this empirical evidence, was developed, tested by the group and then evaluated on the obtained results.

4.6.3. Sample II

Sample II was created to circumvent and spread the number, age, gender, and origin of the participants in comparison to sample I. The criteria to select participants for the sample II was similar to those of sample I.⁵⁹ According to the statistics of high quality, avoiding same peer groups increases the value of the mean, which enables an adequate prediction. Under the premise of avoiding same peer groups, sample II was drawn and chosen by the same characteristics as sample I, with the addition to provide more equality in terms of gender. sample II consists of $n = 12$ participants, of which $n = 7$ (58.3%) were female and $n = 5$ were male, so the gender distribution is to be regarded as approximately equal. The average age of this group is 24.5 years, mainly from the academic environment. This group was crucial to validate the author’s constructs, as shown in subchapter 4.7.5, a viable pre-testing method was applied using the Cronbach’s alpha method. So sample II was used to perform a feasibility/pilot study with another peer group to validate the research methods used. An essential method for analyzing the questionnaires and making sure it is accurately capturing the intended information is to pretest the criteria of “*reliability*” and “*validity*” of the questionnaire. **Therefore, the method for checking questionnaires and making sure it accurately resembles the gathered information was to pre-test the whole empirical research among a smaller subset of the larger sample size and respondents** (cf. Roopa & Rani, 2012). Thus, according to Moore et al. (2011) “*Small samples may be appropriate for aims such as pilot-testing a data management*

⁵⁹ See: The criteria for choosing sample II is similar to the 6 points criteria established for sample I

system, demonstrating the ability to execute a specific research protocol or testing acceptability and adherence....” (p. 334). Therefore, a smaller number of participants was chosen to attend in sample II to ensure the constructs of the questionnaire are accurate and valid. Hence, the Cronbach’s alpha method is an important and essential tool to assess the questionnaires, thus according to Tavakol and Dennick (2011): “It is mandatory that assessors and researchers should estimate this quantity to add validity and accuracy to the interpretation of their data”.

4.6.4. Sample III

In addition to the analysis described above, a case-based-analysis applied research was conducted, where the model was applied in a consultancy project of the author on the PLG. In this case company owners, a managers, scholars, professional consultants and professionals (n=9) working and leading a branch, a region, or a country at PLG, who have a good view of the academic and practical world in terms of Drucker’s “*knowledge worker*” (Drucker, 1959) were consulted and interviewed during their major transition phase of the firm. The first transition was that the firm based on its 150 years of history was undergoing a generational transition into the fifth generation of the firms’ establishment and the second transition was that the firm was pursuing to change its organizational structure and strategic pursuits by aligning their global operations via standardization, agility and responsiveness. This was an ideal consultancy project to apply the author’s SFM model and validate its diagnostically power in real business world application. To select the experts, it was necessary that all of them have a scientific training and professional work, management and competitive strategy expertise and experience and have an understanding of real-world problems in terms of understanding applying science into practice. Therefore, only the direct managers and navigators of the firm were involved for this empirical real-world test. Thus, according to Drucker—knowledge workers are “... *the most valuable asset of a 21st-century institution, whether business or non-business, will be its knowledge workers and their productivity*” (Drucker, 1959, p. 49). It is also essential to note here again that the author’s SFM is chosen as a strategic foundation for PLG for their generation’s transition and internationalization strategy.

4.6.5. Sample IV

A further testing scenario was developed to evaluate different strategy models based on pre-defined indicators with the aim to get an overview of the applicability and completeness of different strategy models by a professional and experts/academics group. The criteria to select participants for sample IV were:

Experienced academics with a deep understanding of business strategy theory, and with a solid professional experience outside of university. The diverse groups (samples) include experts from different walks of vocations, e.g., company owners, managers, academics, NGO managers

and consultants with diverse work experiences and scientific backgrounds and coming from multiple nationalities. This diversity was essential for the high quality of the results collected to evaluate a holistic model by different cultural backgrounds and through different lenses in the contemporary globalized and multipolar environment. This diverse sample and different investigation methods were essential to validate the hypothesis and the SFM based on the M & MRM method analysis.

Business professionals (studied) with an understanding of business strategy theory and of applying competitive strategic management methods in their vocational settings, with in minimum of 5 years of professional experience.

As described in Appendix 39 (Table 137/ p.230) a total number of 187 participants of different fields were contacted of which 57 participants answered the survey. This result is a response rate of 34.8% and therefore lies above the average expected 30% of participants. The participants were grouped into different expert and professional groups divided into consultants (n = 6), academics (n = 13), field experts (n = 8) and potential professionals (n = 30) within the spectrum of academe and professional vocations. This grouping allows having a potential diversified perspective, whereupon accurate and representative results on the populations' opinions can be obtained.

4.6.6. Bias in Sampling Size

There are five important potential sources of bias that should be considered when selecting a sample, irrespective of the method used. Sampling bias may be introduced when:

1. *Any pre-agreed sampling rules are deviated from*
2. *People in hard-to-reach groups are omitted*
3. *Selected individuals are replaced with others, for example if they are difficult to contact*
4. *There are low response rates*
5. *An out-of-date list is used as the sample frame (for example, if it excludes people who have recently moved to an area)*
6. *Due to the young or old age bias of participants' replies may not be representative*

In order to dissolve the young age bias and question of the participants selection criteria, research has shown evidence, as studies of Spisak et al. (2014), and the postulated “*age-biased leadership endorsement hypothesis*” which states: “*First, younger leadership is preferred when followers are looking for a leader in times of exploratory change. Second, when followers are focused on the need for stable exploitation they look to older leaders. Third, replication across three diverse experiments suggests we have reasonable justification for our hypothesis. These results, consequently, help to clarify how leadership selection is biased by a leader's age—especially as it relates to the exploration and exploitation dilemma. This is potentially a*

significant insight given that all organizations face this dilemma and who we endorse as a leader can have a dramatic impact on organizational fitness” (Spisak et al., 2014, p. 812).

Furthermore, it is to highlight that the author’s chosen population with the young age is essential, thus, it relies on additional research conducted by Zenger and Folkman (2015) indicating the bias that is naturally assumed by veteran managers, who are potentially regarded to be more effective on almost all dimensions of managerial work. However, a test on more than 65,000 leaders was conducted, which focused on managers 30 years of age and younger (455 leaders) and established a comparison to other leaders over 45 years of age (4,298) by determining the distinguishing characteristics of each age group (Zenger & Folkman, 2015).

The Results showed, that: *“Forty percent of the younger group were female compared to 38.5% of the older leaders. This partly satisfied our desire for similarity between the groups. Yet the very fact that the younger managers were promoted to managerial positions at a relatively young age indicated that they were primarily high potential individuals. To be elevated into management at an early age is not common. So already, these individuals stood out. Of the younger group, 44% ranked in the top quartile for overall leadership effectiveness when compared to all leaders in our database. In contrast, the older group had only 20% in the top quartile. This finding sends an interesting message about senior managers”.* Thus, many essential dimensions wherein younger leaders have displayed a significant advantage, are the following dimensions: 1) They are welcoming change; 2) They are inspiring; 3) They are extremely open to feedback; 4) They are dedicated to continuous improvement and are more willing to challenge the status quo; 5) They are focused intently on their objectives and results; 6) They are more willing to setting stretch goals (cf. Zenger and Folkman (2015). One additional evidence on the characteristics of the young can be delivered by the large study of Zukin and Szeltner (2012) that distinguished the desire to make a difference within their work, where the college students and millennials excelled on this virtue in comparison to the other age groups.

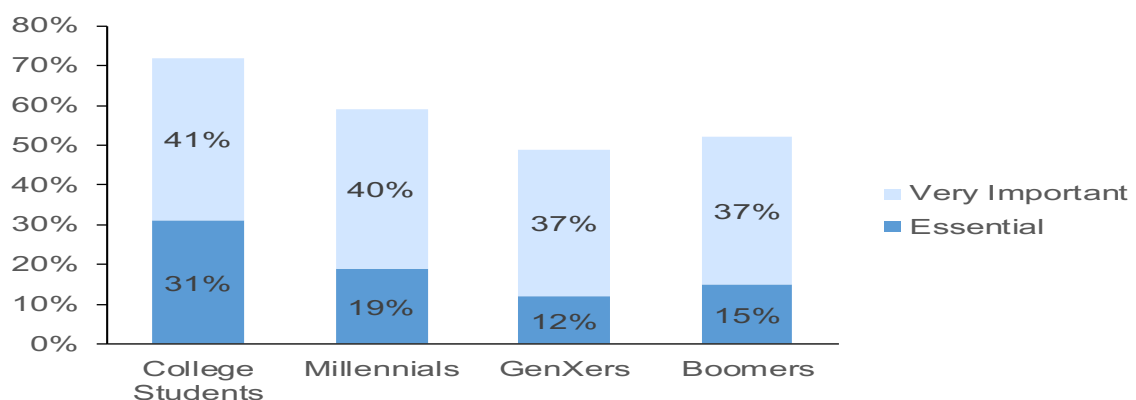


Figure 39: Desire for a Job That Can Make a Difference by Generation

Source: Zukin and Szeltner (2012).

Therefore, the selection and investigation of this group was essential to raise the quality of the results and thus their opinion is highly representative for the population.

4.6.7. Summary Sample Selection

All together the author analyzed the following **samples: Sample I: (n=63) + Sample II: (n=12) + Sample III: (n=9) + Sample IV: (n= 57) = in total (n=141)** participants and attendees, which were analyzed empirically and evaluated scientifically. These diverse sample sizes and different empirical methods were necessary for the T & MRM, thus as established above the T & MRM is among the most recognized methods of inquiry in strategic management: “... *Strategy scholars have used quantitative and qualitative methods since the inception of the field, and this categorization has been taken into account in studies of research in mixed methods in SMJ shows that development was the main purpose, different rather than equal method status was the most common type of priority, and sequential implementation was dominant*” (Molina-Azorin, 2012 p. 49). Table 9 below describes all sample sizes, surveys used and methods.

Table 9: Overview of Sample Sizes, Survey Design and Method of Analysis Conducted

| Samples | Survey | Survey Method/Scaling | Analysis |
|--|--|---|---|
| Sample I (n=63; Professionals Group 0 n=25; Professionals Group 1 n=31, Senior Academics n=7) | FFM Survey, SFM Survey, Professionals Survey (Survey I) | Likert/Rating Scale, open-ended questions | Quantitative Test I Mann-Whitney-U-Test (Group 0 & 1); Kolmogorov-Smirnov Test; Shapiro-Wilk Test; Qualitative Test I |
| Sample II (n=12 Professionals) | Professionals Survey (Survey I) | Likert/Rating Scale, open-ended questions | Quantitative Test II Cronbach Alpha |
| Sample III (n=9 PLG Project Managers) | Field experience – Survey/Peter Lacke Survey (Survey II) | Likert Scale | Qualitative Test II & field application of the model to a real business- The Peter Lacke Group |
| Sample IV (n=57 Professionals & Experts) | Professionals & Experts Survey (Survey III) | Rating Scale | Quantitative Test III Weighted Score Modeling Analysis; Wilcoxon Test |

Source: Author’s own illustration based on author’s empirical research results.

4.7. Empirical Research Results

Based on the above pre-conditions, preparations and dimensions established, the results of the research questions are presented. The research project is established with an in-depth of review of the literature on the subject and an analysis of all of Porter’s work within the spectrum of the last 39 years and the best literature available on competitive strategy. This work has stretched into the spring of 2019, always keeping up with the state of the art of new publications within the field. The primary empirical evidence gathered below displays and underpins the author’s findings within the most essential publications in the field. As the purpose of the empirical research was to collect and

gather precise statements about the nature of how participating professionals give evidence by validating the author’s newly developed SFM model and proving the theses and the hypotheses. Thus, the SFM is a corroborated model based on the following broad and precise empirical findings, which are collected and analysed based on the mixed research and triangulation methodology: The results of the tests via the questionnaires according to the described approach are presented in the below sub-chapters.

4.7.1. QUANTITATIVE Test I: Test of Normality: Kolmogorov-Smirnov & Shapiro-Wilk Test (B – QUANT I – Sample I)

As already stated the tests of normality are the following: 1) the Kolmogorov-Smirnov Test and 2) the Shapiro-Wilk Test. Table 10 below presents the results. Thus, if the Sig. value of the Shapiro-Wilk Test is greater than 0.05, the data is normal. If it is below 0.05, the data significantly deviate from a normal distribution. As Table 10 indicates, the Kolmogorov-Smirnov test and a Shapiro-Wilk test are used to evaluate the normal distribution of all variables, hence mostly the result display not normally distributed data. Therefore, a non-parametric test (Mann-Whitney Test) will be used to evaluate significant differences between the “Porter’s FFM” (Group 0) with the “SFM” (Group 1). Consequently, these tests include the following hypotheses: **H₀: Data is normally distributed** (H₀: Data = normally distributed) and **H₁: Data is not normally distributed** (H₁: Data ≠ normally distributed). The p-values (sig.) in Question 3 to Question 36 are smaller than the α-value and therefore, H₀ can be rejected in favor of H₁. This leads to the result that **Question 3 to Question 36 are not normally distributed**. Therefore, a **non-parametric test (Mann-Whitney U Test)** will be used to evaluate significant differences between the Porter’s FFM (Group 0) and the SFM (Group 1).

Table 10: Frequency Table Test of Normality

| | Kolmogorov-Smirnov ^a | | | Shapiro-Wilk | | |
|---------------------------------------|---------------------------------|----|------|--------------|----|------|
| | Statistic | Df | Sig. | Statistic | Df | Sig. |
| Q2 | .202 | 18 | .051 | .924 | 18 | .153 |
| Q3 | .359 | 18 | .000 | .658 | 18 | .000 |
| Q4 | .268 | 18 | .001 | .856 | 18 | .011 |
| Q5 | .227 | 18 | .015 | .882 | 18 | .028 |
| Q6 | .223 | 18 | .018 | .836 | 18 | .005 |
| Q34A | .244 | 18 | .006 | .850 | 18 | .008 |
| Q34B | .240 | 18 | .007 | .859 | 18 | .012 |
| Q35A | .279 | 18 | .001 | .776 | 18 | .001 |
| Q35B | .197 | 18 | .063 | .857 | 18 | .011 |
| Q35C | .329 | 18 | .000 | .736 | 18 | .000 |
| Q35D | .259 | 18 | .002 | .815 | 18 | .002 |
| Q36 | .434 | 18 | .000 | .609 | 18 | .000 |
| a. Lilliefors Significance Correction | | | | | | |

Source: Author’s own illustration based on author’s theoretical and empirical research results.

The sample size was chosen to be larger than 100 participants in order to ensure that correlations and outliers would be clearly visible and their effects on the average results to be appropriate. A larger sampling size would have been raising issues regarding the feasibility of the surveys and a smaller sampling size would not have been sufficient to justify the statistical validity of the testing method and its results.

As stated above, there has been the pilot testing procedure due to the high complexity of the concepts evaluated in the surveys and solid preparation e.g. time and procedures necessary for each sampling process. All participants in the survey have been informed thoroughly on the relevant concepts and their implications to ensure an optimal objective judgment of all participants. The case-study on the Volkswagen Diesel manipulation scandal and the resulting questionnaire to finalize the comparative analysis, have been tested on advanced level students as the author has been working as fulltime faculty professor of international management, teaching at the ISM-International School of Management, where many case-studies have been conducted and prepared with the students. Thus, additional pilot-testing efforts, therefore, except, where the **Cronbach's alpha test** was conducted, were not necessary, due to the advanced level of skills acquired by the students in the final semesters and special prepared courses for family business owning students, working in globally oriented firms. Appendix 36 (p. 192) aims to test the validity and significance of the individual layers later included in the SFM and the sufficiency of the FFM in a practical, professional setting. It was used to develop the distinctive layers of the SFM and recognizing the need for each individual aspect in relation to other factors included in the FFM. The survey displayed in Appendix 37 (p. 204) aims to test the significance and validity of the SFM while also comparing it to the FFM in terms of comprehensiveness, applicability and effectiveness. Each layer of the SFM is tested individually to differentiate the respective importance and significance for the participants.

4.7.2. QUANTITATIVE Test I: Mann-Whitney U-Test⁶⁰ (B – QUAN I – Sample I)

All questions were analyzed by using a Mann-Whitney U-Test to compare two population means to find out if the two samples' means are equal or not. If there are no significant differences between the samples, we cannot compare them. Therefore, in the following all questions are listed where there is a significant difference between the samples.

1. Question 3 statistical results

Table 11, Table 12 and Table 13 describe the statistical results of the question 3, which are evaluated and interpreted below:

⁶⁰ see: Appendices 34-39 describe in detail how the research was conducted, pp. 59-275

Table 11: Frequency Table Ranks of Question 3

| | G | N | Mean Rank | Sum of Ranks |
|----|-------|----|-----------|--------------|
| Q3 | 0 | 25 | 37.72 | 943.00 |
| | 1 | 31 | 21.06 | 653.00 |
| | Total | 56 | | |

Source: Author’s own table. Described in “Question 3” below.

Table 12: Frequency Table Test Statistics of Question 3

| F3 | |
|-------------------------|--------|
| Z | -3.990 |
| Asymp. Sig. (2-tailed) | .000 |
| a. Grouping Variable: G | |

Source: Author’s own table. Described in “Question 3” below.

Table 13: Frequency Table Question 3 of Professionals and Senior Academics

| | somewhat | | | | |
|------------|------------|------------|------------|-------|---------------|
| Question 3 | not at all | frequently | frequently | often | all the times |
| in total | 0 | 4 | 3 | 0 | 0 |
| in % | 0,0% | 57,1% | 42,9% | 0,0% | 0,0% |

Source: Author’s own table. Described in “Question 3” below.

Evaluation and interpretation: Main results of expert evaluations on “How frequently have you applied Porter’s FFM or Kamran’s SFM or similar model in your professional settings?”

| | |
|--|--|
| Question 3: “How frequently have you applied Porter’s FFM or Kamran’s SFM or similar strategic model in your professional settings?” | |
| H ₀ | No significant difference in the answers of Question 3 between both groups |
| H ₁ | There is significant difference in the answers of question 3 between both groups |
| Test – Results | |
| To sum up, empirical evidence infers that there is a significant difference between Porter’s FFM (Group 0) and the author’s SFM (Group 1). A glance at the mean rank reveals that for Group 0 the mean ranking is greater (37,72) than for Group 1 (21,06). In that regard, empirical evidence determines that Group 0 and Group 1 have not applied the author’s SFM very frequently, which leads us to the result that Porter’s FFM is more often used and known than author’s SFM in business administration. This means also that no additional strategy and management models were known to these groups, therefore making the inception of a more holistic model as SFM highly necessary. | |
| Frequency Table | |
| SA & P have applied Porter’s FFM “somewhat frequently” (57.10%) and “frequently” (42.90%). There are two likely causes for this result: The limitation of Porter’s FFM and the different practical background of the Professionals and Senior Academics. By and large, Porter’s FFM is well known for all because it is an established term, but no additional model is known to the sample group, thus making the construction of SFM necessary. | |

2. Question 5 statistical results:

Table 14, Table 15 and Table 16 describe the statistical results of the question 5, which are

evaluated and interpreted below:

Table 14: Frequency Table Ranks of Question 5

| | G | N | Mean Rank | Sum of Ranks |
|----|-------|----|-----------|--------------|
| Q5 | 0 | 25 | 20.78 | 519.50 |
| | 1 | 29 | 33.29 | 965.50 |
| | Total | 54 | | |

Source: Author's own table. Described in "Question 5" below

Table 15: Frequency Table Test Statistics of Question 5

| F5 | |
|-------------------------|--------|
| Z | -3.075 |
| Asymp. Sig. (2-tailed) | .002 |
| a. Grouping Variable: G | |

Source: Author's own table. Described in "Question 5" below.

Table 16: Frequency Table Question 5 of Professionals and Senior Academics

| | somewhat | | | | |
|------------|------------|------------|------------|-------|---------------|
| Question 5 | not at all | frequently | frequently | often | all the times |
| in total | 0 | 4 | 2 | 1 | 0 |
| in % | 0,0% | 57,1% | 28,6% | 14,3% | 0,0% |

Source: Author's own table. Described in "Question 5" below.

Evaluation and interpretation: Main results of expert evaluations on "To what extent has (or may) the application of Porter's FFM or Kamran's SFM contributed (will contribute) to solving problems in your professional settings?"

| | |
|---|---|
| Question 5: "To what extent has (or may) the application of Porter's FFM or Kamran's Six Forces model contributed (will contribute) to solving problems in your professional settings?" | |
| H₀ | No significant difference in the answers of Question 5 between both groups |
| H₁ | There is significant difference in the answers of question 5 between both groups |
| Test – Results | |
| As it can be seen from the statistics in Question 5, the p-value (Asymp. Sig. (2-tailed)) is smaller than the α -value of the Mann-Whitney U test (p-value: 0,002 < α -value: 0,05). Consequently, empirical evidence rejects H ₀ in favor of H ₁ . This leads to the conclusion that there are significant differences between Porter's FFM (Group 0) and the author's SFM (Group 1). | |
| But even so, the mean ranking for Group 1 (33,29) is greater than for Group 0 (20,78) . The evidence from these Figures suggests that after knowing the author's SFM the application is in great demand. Empirical evidence determines that Group 0 is not being the opinion that the application of the Porter's FFM will contribute to solving problems in their professional settings. | |
| Frequency Table | |
| Regarding the SA & P the number of votes is projected to drop sharply by half after question option two ("somewhat frequently") followed by "frequently" (28.60%) and "often" (14.30%). It is important to mention that none of those academics indicated that the application of Porter's FFM would contribute or contributed to solving problems in their daily practice. A possible explanation for this might be that Porter's Five Forces suffer from some serious drawbacks and therefore, they are seeking for innovative models such as Author's SFM. | |

3. Question 6 statistical results:

Table 17, Table 18 and Table 19 describe the statistical results of the question 6, which are evaluated and interpreted below:

Table 17: Frequency Table Ranks of Question 6

| | G | N | Mean Rank | Sum of Ranks |
|----|-------|----|-----------|--------------|
| Q6 | 0 | 25 | 23.18 | 579.50 |
| | 1 | 30 | 32.02 | 960.50 |
| | Total | 55 | | |

Source: Author's own table. Described in "Question 6" below.

Table 18: Frequency Table Test Statistics of Question 6

| F6 | |
|-------------------------|--------|
| Z | -2.133 |
| Asymp. Sig. (2-tailed) | .033 |
| a. Grouping Variable: G | |

Source: Author's own table. Described in "Question 6" below.

Table 19: Frequency Table Question 6 of Professionals / Senior Academics

| | somewhat | | | | |
|------------|------------|------------|------------|-------|---------------|
| Question 6 | not at all | frequently | frequently | often | all the times |
| in total | 0 | 2 | 1 | 2 | 2 |
| in % | 0,0% | 28,6% | 14,8% | 28,6% | 28,6% |

Source: Author's own table. Described in "Question 6" below.

Evaluation and interpretation: Main results of expert evaluations on "How important do you consider the normative layer, missing in Porter's FFM or in Kamran's SFM?"

| Question 6: "How important do you consider the normative layer of missing in Porter's FFM or in Kamran's SFM?" | |
|--|--|
| H ₀ | No significant difference in the answers of Question 6 between both Groups |
| H ₁ | There is significant difference in the answers of question 6 between both groups |
| Test – Results | |
| <p>From the Figures in Question 6 it is apparent that the p-value (Asymp. Sig. (2-tailed)) is smaller than the α-value of the Mann-Whitney U test (p-value: 0,033 < α-value: 0,05). As a result, empirical evidence rejects H₀ in favor of H₁. Empirical evidence determines that for both groups (Group 0 and Group 1) the normative layer of missing in Porter's Five Forces is important. There is a significant difference between "Porter's FFM" (Group 0) and the author's SFM (Group 1). The mean ranking for the author's SFM Six Forces (32,02) is greater than for Porter's Five Forces (23,18). Empirical evidence resolves that the normative layer in the author's SFM circumvents the limitations, which Porter neglects in his approach totally. These results display the essential role of the normative layer for business administration and strategy.</p> | |
| Frequency Table | |
| <p>According to SA & P the consideration of the normative layer in Porter's FFM is "totally important" (28.60%), "very important" (28.60%), and "somewhat important" (28.60%). None of those who responded indicated that the consideration of the normative layer in Porter's approach would be "not at all important". Because of the results, a possible explanation might be that Porter's Five Forces suffer from some serious drawbacks due to the limitation of important layers.</p> | |

4. Question 34 statistical results:

Table 20, Table 21 and Table 22 describe the statistical results of questions 34 a-b, which

are evaluated and interpreted below:

Table 20: Frequency Table Ranks of Question 34a-b

| | G | N | Mean Rank | Sum of Ranks |
|----------|-------|----|-----------|--------------|
| Q34 a | 0 | 24 | 19.15 | 459.50 |
| | 1 | 31 | 34.85 | 1080.50 |
| | Total | 55 | | |
| Q34 b | 0 | 21 | 20.71 | 435.00 |
| | 1 | 28 | 28.21 | 790.00 |
| | Total | 49 | | |

Source: Author's own table. Described in figure "Question 34a-b" below.

Table 21: Frequency Table Test Statistics of Question 34a-b

| | F34A | F34B |
|-------------------------|--------|--------|
| Z | -3.723 | -1.967 |
| Asymp. Sig. (2-tailed) | .000 | .049 |
| a. Grouping Variable: G | | |

Source: Author's own table. Described in "Question 34" below.

Table 22: Frequency Table Question 34a-b of Professionals and Senior Academics

| Question 34a/b | lowest importance | low importance | rather low importance | rather high importance | high importance | very high importance |
|----------------|-------------------|----------------|-----------------------|------------------------|-----------------|----------------------|
| Q34a in total | 0 | 1 | 0 | 4 | 2 | 0 |
| Q34b in total | 0 | 1 | 2 | 1 | 3 | 0 |
| Q34a in % | 0,0% | 14,3% | 0,0% | 57,1% | 28,6% | 0,0% |
| Q34b in % | 0,0% | 14,3% | 28,6% | 14,3% | 42,8% | 0,0% |

Source: Author's own table. Described in "Question 34" below.

Evaluation and interpretation: Main results of expert evaluations on "Based on your academic and practical experience, to what extent do you suggest that Porter's FFM or Kamran's SFM will help you to cope with the complex and global world of tomorrow?"

| | |
|--|--|
| Question 34: "Based on your academic and practical experience, to what extent do you suggest that Porter's FFM or Kamran's SFM will help you to cope with the complex and global world of tomorrow?" | |
| a) Based on your academic judgment and point of view | |
| b) Based on your practical judgment and point of view | |
| H ₀ | No significant difference in the answers of Question 34a,b between both groups |
| H ₁ | There is significant difference in the answers of question 34a,b between both groups |
| Test – Results | |
| Taking into account the statistical data in Question 34a and 34b the p-value of Question 34a and Question 34b (Asymp. Sig. (2-tailed)) is smaller than the α -value of the Mann-Whitney U test (p-value of a: 0,000 < α -value: 0,05 and p-value of b: 0,049 < α -value: 0,05). Consequently, empirical evidence rejects H₀ in favor of H₁ with the result that there are significant differences between Porter's FFM (Group 0) and the author's SFM (Group 1). | |
| The mean ranking for the author's SFM (28,21) is greater than Porter's Model (20,71). Empirical evidence concludes that based on the academic and practical experiences of the participants Porter's FFM will not help Group 0 to cope with the complex and global world of tomorrow. This finding enables the solution that the author's SFM would help business administrators to cope with the complex and global world of the future. | |
| Frequency Table | |
| Most of the SA & P answered that Porter's Model has "rather high importance" to cope with the complex and global word. 28.6% of those who responded indicated that Porter's model has even "high importance" and only 14.3% of those highlighted that Porter's Model has "low importance" to solve the complex and global word of tomorrow. Based on the practical judgment and point of view, most of the Professionals and Senior Academics (42.8%) indicated that Porter's Model has "high importance", thus substantiating that no other model is as known as the FFM. | |

5. Question 36 statistical results

Table 23, Table 24 and Table 25 describe the statistical results of the question 34 a-b, which are evaluated and interpreted below:

Table 23: **Frequency Table Ranks of Question 36**

| | G | N | Mean Rank | Sum of Ranks |
|-----|----------|----------|------------------|---------------------|
| Q36 | 0 | 9 | 32.06 | 288.50 |
| | 1 | 29 | 15.60 | 452.50 |
| | Total | 38 | | |

Source: Author's own table. Described in "Question 36" below

Table 24: **Frequency Table Test Statistics of Question 36**

| F36 | |
|---|-------------------|
| Z | -4.411 |
| Asymp. Sig. (2-tailed) | .000 |
| Exact Sig. [2*(1-tailed Sig.)] | .000 ^b |
| a. Grouping Variable: G b. Not corrected for ties. | |

Source: Author's own table. Described in "Question 36" below.

Table 25: **Frequency Table Question 36 of Professionals and Senior Academics**

| | apply fully without changes | apply partially | apply with revision |
|-------------|-----------------------------------|--------------------|------------------------|
| Question 36 | | | |
| in total | 1 | 3 | 3 |
| in % | 14,3% | 42,8% | 42,8% |

Source: Author's own table. Described in "Question 36" below.

Evaluation and interpretation: Main results of expert evaluations on "Please indicate from your academic and practical experience, what is your suggestion in applying Porter's FFM or Kamran's SFM?"

| | |
|---|--|
| Question 36: "Please indicate from your academic and practical experience, what is your suggestion in applying Porter's FFM model or Kamran's SFM?" | |
| H₀ | No significant difference in the answers of Question 36 between both groups |
| H₁ | There is significant difference in the answers of question 36 between both groups |
| Test – Results | |
| The answers were rated on a scale from "apply fully without changes" to "apply with revision". According to the statistics in Question 36 the p-value (Asymp. Sig. (2-tailed)) is smaller than the α -value of the Mann-Whitney U test (p-value = 0.000 < α -value = 0.05). Therefore, we can reject H ₀ in favor of H ₁ and conclude that there is a significant difference between Porter's Five Forces and Author's SFM. The mean ranking of Porter's Model (25.64) is greater than the mean ranking of Author's Six Forces (14.67). | |
| Frequency Table | |
| From an academic and practical experience point of view, the participants are more used to applying Porter's FFM than Author's Six Forces. From the point of view of SA & P, one cannot apply Porter's Five Forces fully without changes. These findings reinforce Author's Six Model assertion that Porter's Five Forces cannot adjust fully to the recent changings in business environment. | |

4.7.3. QUALITATIVE Test I: Descriptive Analysis of Qualitative Empirical Investigation (C – QUAL I – Sample D)⁶¹

With the following analysis the different layers (Table 26) which are not considered in Porter's Five Forces are tested. These additional layers contribute to embracing the necessary total environment that is missing within the spectrum of the Porterian FFM dimension. The table below illustrates these layers.

Table 26: Layers of the SFM and the Respective Questions in the Survey

| Layer | Question / Test |
|-------------------------------|-------------------------|
| Normative Layer | Q7 / 8a – e / 9 |
| Resource Based View RBV Layer | Q10 / 11a – i / 12 |
| Technology & Innovation layer | Q13 / 14a – h / 15 |
| Ecology layer | Q16 / 17a – f / 18 |
| Stakeholder Value layer | Q19 / 20a – f / 21 |
| Legal Perspective layer | Q22 / 23 / 24a – f / 25 |
| Societal Layer | Q26 / 27a – g / 28 |
| Complex-Strategy layer | Q 29 / 30a – f / 31 |

Source: Author's own illustration based on author's empirical research results.

The empirical analysis shows the following results:

1. Normative Layer: As in the Dissertation (p. 123-124) described, the essentiality of adding the normative layer into strategic dimension was analyzed by the 3 essential parameters of **missing, importance** and **applicability**. The results as below in Table 27 illustrated describe the validity by the Porter group, SFM group, and the Professionals/Senior Academics.

⁶¹ In Appendix 34, QUALITATIVE Analysis, the QUALITATIVE research and all the necessary steps are thoroughly described.

Table 27: Results of Three Essential Parameters in Testing/Comparing "the Normative Layer of the FFM to the SFM"

| Parameters | Normative Layer | Porter | Kamran | Professional/Senior Academics |
|-------------|--|---|---|--|
| Missing | | "very missing" | "very missing" | "somewhat missing" |
| Importance | <i>Shared Value</i> | "high importance" | "high importance" | "high importance" |
| | <i>Care Value</i> | "very high importance" "rather low importance" | "very high importance" "high importance" | "very high importance" |
| | <i>Corporate Social Responsibility</i> | "rather low importance" | "high importance" | "high importance" "rather high importance" |
| | <i>Ethics</i> | "high importance" | "very high importance" | "very high importance" "rather high importance" |
| Application | | "applicable" | "very applicable" | "applicable" |

Source: Author's own illustration based on author's empirical research results.

Results: Based on the results above and as described in the Appendix 34 (5.1/5.2/5.3. p. 84-93), empirical evidence concludes that the normative layer is an essential layer in strategic management for business administration, thus:

1. *Empirical evidence concludes that the participants of Porter's Questionnaire are aware that Porter's Model misses the normative layer in his approach, which has significant relevance for today's business sector. The participants of the SFM Questionnaire firmly believe that there are shortcomings such as the normative layer in Porter's Five Forces. After knowing the SFM Six Forces the participants of the SFM Questionnaire are certain that a holistic model fits better in a present fast-changing business environment. However, all the Senior Academics agree that the normative layer is missing in Porter's model.*
2. *To sum up, empirical evidence determines that the normative layer is among the most essential spheres that strategist can apply and to which the SFM has brought much significance. The normative layer is a filter against myopic actions by the strategist that can ensure a long-term survival of the firms.*
3. *In comparison to Porter's Questionnaire, one can see that more people of the SFM Questionnaire think that the normative layer is "totally applicable" in daily practice. According to Professionals, empirical evidence summarizes that the normative sphere is an important aspect of the professionals' daily work and practice. Any further information about descriptive statistics of the qualitative questionnaires belonging to the Normative Layer, including frequency tables and bar charts for questions 7, 8a-e and 9 can be found in APPENDIX 34, p.85-94, 5.1-5.3, table 32-40, bar chart 10-18.*

2. Resource Based View layer: As in the Dissertation (p. 118-119) described, the essentiality of adding the RBV layer into strategic dimension was analyzed by the 3 essential parameters of

missing, importance, and applicability. The results as below in Table 28 illustrated describe the validity by the Porter group, the SFM group, and the Professionals/Senior Academics

Table 28: The Results of Three Essential Parameters in Testing/Comparing "the RBV Layer of the FFM and the SFM"

| Parameters | Resource Based View Layer | Porter | SFM | Professional/Senior Academics |
|-------------|--|--------------------------|---|--|
| Missing | | "somewhat missing" | "missing" | "somewhat missing" |
| Importance | <i>Structure is Strategy Lens</i> | "high importance" | "high importance" | "high importance" |
| | <i>Care Processes</i> | "rather high importance" | "very high importance" "rather low importance" | "very high importance" |
| | <i>Corporate Social Responsibility</i> | "high importance" | "rather high importance" | "high importance" |
| | <i>Ethics</i> | "rather high importance" | "rather high importance" | "very high importance" "rather high importance" "low importance" |
| | <i>Human Capital</i> | "very high importance" | "high importance" | "very high importance" |
| | <i>Information</i> | "high importance" | "very high importance" | "very high importance" "high importance" |
| | <i>Core Capabilities</i> | "rather high importance" | "high importance" | "very high importance" "high importance" |
| | <i>Material</i> | "high importance" | "rather low importance" | "rather high importance" |
| Application | | "applicable" | "applicable" | "very applicable" |

Source: Author's own illustration based on author's empirical research results.

Results: It is important to bear in mind the possible divergence in these responses due to the fact that there is a degree of uncertainty around the terminology in 'daily practice' by the great amount of young participants, which can be explained by their limited work experience, thus:

1. *To sum up, most of the participants for the **Porter Questionnaire** indicated that the RBV layer is "somewhat missing" in Porter's Model. Nevertheless, one can see that more people think that the resource-based view is very missing after knowing about **the SFM**. According to **Professionals**, empirical evidence concludes that the disagreement between "not at all missing" and "totally missing" lies in the fact that the practical experience and background of these academic professionals is diverse.*
2. *To sum up the RBV sphere and its extension by the author, it delivers a unified picture of what the term actually means and how it can be unified based on operand and operant views of the notion of RBV. The author extended this understanding. Unified the essential components of RBV and thus contributed by adding another important layer on the basis of the Six Forces Model.*
3. *The average in **Porter's Questionnaire** is between "not at all applicable" and "applicable", whereas the average of **the SFM Questionnaire** is between "somewhat applicable" and "totally applicable". The evidence presented thus far supports the idea that after knowing the SFM more people think that the resource-based view is very applicable in daily practice. In the trial, the average in Porter's and The SFM Questionnaire concur that the resource-based view is 'applicable' while the average in **Professionals and Senior Academics** be complete in*

agreement that the resource-based view is between “very applicable” and “totally applicable”. A possible explanation for these results may be the lack of practical experiences for the participants of Porter’s- and the SFM Questionnaire. Any further information about descriptive statistics of the qualitative questionnaires belonging to the RBV layer, including frequency tables and bar charts for questions 10, 11a-1 and 12 can be found in APPENDIX 34, p.93-105, 5.4-5.6, table 41-49, bar chart 19-27.

4. **Technology & Innovation layer:** As in the Dissertation (p. 119-120) described, the essentiality of adding the **Technology & Innovation layer** into strategic dimension was analyzed by the **3 essential** parameters of **missing**, **importance**, and **applicability**. The results as below in Table 29 illustrated describe the validity by the Porter group, the SFM group, and the Professionals/Senior Academics. **As the result**, empirical evidence concludes that the notion of technology and innovation layer is missing in Porter’s model and this is an essential contribution to extending the Porterian dimension for business administration.

Table 29: **The Results of Three Essential Parameters in Testing/Comparing “the Technology & Innovation Layer of the FFM to the SFM”**

| Parameters | Technology & Innovation Layer | Porter | SFM | Professional/Senior Academics |
|-------------|-------------------------------|---|---|---|
| Missing | | "somewhat missing" | "somewhat missing" "missing" | "somewhat missing" |
| Importance | <i>Blue Ocean Strategy</i> | "very high importance" | "very high importance" | "very high importance" "high importance" |
| | <i>Big Bang Disruption</i> | "very high importance" | "high importance" | "rather high importance" |
| | <i>Disruptive Innovation</i> | "high importance" "rather high importance" | "very high importance" "high importance" | "very high importance" "high importance" "rather high importance" |
| | <i>Strategy Cockpit</i> | "rather high importance" | "very high importance" | "rather high importance" |
| | <i>Internet of Things</i> | "high importance" | "high importance" | "rather low importance" |
| | <i>Core Processes</i> | "high importance" | "very high importance" "high importance" "rather high importance" | "very high importance" |
| | <i>Machinery</i> | "rather high importance" | "high importance" | "rather high importance" |
| Application | | "applicable" | "applicable" | "applicable" |

Source: Author’s own illustration based on author’s empirical research results.

1. **Results:** In summary to some extent similar replies from both of the **Porter’s- and the SFM Questionnaire** respondents were observed. Due to the fact that either the participants may not have been used to apply an inclusive way of integrating the above layer in one model the respondents of **Porter’s Questionnaire** were clear that the sphere is missing. However, the same number of participants replied it as missing within the **SFM**, while the **“Technology and**

Innovation Layer” is actually integrated. Empirical evidence concludes that opinions are very scattered in all questionnaires. These findings cannot be extrapolated at all participants. Due to a fast-changing environment in business administration, it is important to bear in mind the possible bias in these responses. Based on the analysis of the below **Senior Professionals**, the author’s original critique that the notion is missing in Porterian consideration and strategic logic can be validated, thus all of the below participants indicated this fact.

2. To sum up, the results of the entire questionnaires on the topic of “Technology and Innovation Layer” concludes that integrating the sphere is crucial to the field and business administration and that the SFM based on integrating the topic into the model has realized a major contribution for the field.
3. Finally, in the information and technological age of today the applicability of the above sphere is clearly demonstrated by the results of Porter’s Questionnaire. Empirical evidence concludes that there is a similarity in Porter’s, the SFM and Professional’s Questionnaire thus this leads us to the result that the majority of participants think that the technology and innovation layer is applicable in daily practice. Any further information about descriptive statistics of the qualitative questionnaires belonging to the Technology layer, including frequency tables and bar charts for questions 13, 14a-h and 15 can be found in APPENDIX 34, 105-116, 5.7-5.9, table 50-58, bar chart 28-36.

4. Ecology layer: As in the Dissertation (p. 122) described the essentiality of adding the **Ecology layer** into strategic dimension was analyzed by the **3 essential** parameters of **missing, importance, and applicability**. The results as below in Table 30 illustrated describe the validity by the Porter group, the SFM group, and the Professionals/Senior Academics.

Table 30: The Results of Three Essential Parameters in Testing/Comparing “the Ecology Layer of the FFM to the SFM”

| Parameters | Ecology Layer | Porter | SFM | Professional/Senior Academics |
|-------------|--|---|---|---|
| Missing | | "missing" | "totally missing" | "totally missing" |
| Importance | <i>Green Competition</i> | "high importance" | "rather high importance" | "high importance" "low importance" |
| | <i>Environment</i> | "high importance" "rather high importance" | "very high importance" "high importance" | "very high importance" "rather low importance" |
| | <i>Ecology</i> | "high importance" "rather high importance" | "high importance" | "very high importance" "low importance" |
| | <i>Sustainable Global Value Chains</i> | "very high importance" | "rather high importance" | "very high importance" |
| | <i>Carbon Footprint</i> | "rather low importance" | "rather high importance" | "rather low importance" |
| Application | | "applicable" | "very applicable" | "very applicable" |

Source: Author’s own illustration based on author’s empirical research results.

Results: *'Nature and Ecological Layer'* entered Porter's thinking in the mid-nineties to early 2010's. So, this notion is totally missing within the FFM with vital negative implications for business administration and the environment. The VW case clearly confirms how essential it is to compete based on having a high regard for nature and ecological layer embedding the sphere in making strategic decisions.

1. *In summary, **Porter's Model** being based on the economic lens does not incorporate the ecological dimension. The results of the respondents confirm this fact. To summarize, one can see that the majority of participants of **the SFM Questionnaire** think that the ecology layer is totally missing in Porter's model. As can be seen from the **Professionals and Senior Academics** opinion there are similarities to the SFM Questionnaire. Over half of those who responded indicated that the nature and ecological layer is "totally missing" in Porter's FFM.*
2. *All in all, one can say, that the environmental concerns have entered the room of strategic management and good and solid models do include this essential aspect as the results of all the 63 participants declare the role of the "Nature and Ecology Sphere" for competitive strategy as very important.*
3. *Empirical evidence concludes that including the nature and ecology sphere into the daily application (vocational duties) of the **Professionals** is possible, applicable and will be a rewarding aspect of the form, the individual, and the environment. Based on the results of the participants from **the SFM Questionnaire** empirical evidence determines that the notion is highly applicable and therefore needs to be a part of the daily practice of the strategist. To sum up, it can be seen from the results of **Porter's Questionnaire** that more participants think that they can incorporate the ecology layer into their daily practice after knowing about the SFM. Any further information about descriptive statistics of the qualitative questionnaires belonging to the Ecology layer, including frequency tables and bar charts for questions 16, 17a-f and 18 can be found in APPENDIX 34, p.116-126, 5.10-5.12, table 59-67, bar chart 37-45.*

5. Stakeholder Value layer: As in the Dissertation (p. 120-121) described, the essentiality of adding the **Stakeholder Value layer** into strategic dimension was analyzed by the **3 essential** parameters of **missing, importance** and **applicability**. The results as below in Table 31 illustrated describe the validity by the Porter group, the SFM group, and the Professionals/Senior Academics.

Table 31: The Results of Three Essential Parameters in Testing/Comparing “the Stakeholder Value Layer of the FFM to the SFM”

| Parameters | Stakeholder Value Layer | Porter | SFM | Professional/Senior Academics |
|-------------|-----------------------------------|---|--|--|
| Missing | | "somewhat missing" | "missing" | "totally missing" "missing" "somewhat missing" |
| Importance | <i>Shared Value Perspective</i> | "rather high importance" | "very high importance" | "high importance" |
| | <i>Government/ Political Risk</i> | "high importance" | "very high importance" | "high importance" |
| | <i>Unions/ Workers</i> | "high importance" "rather high importance" | "rather high importance" | "very high importance" |
| | <i>NGOs</i> | "very high importance" "high importance" | "high importance" "rather low importance" | "low importance" |
| | <i>Non-Industry Competition</i> | "rather high importance" | "rather high importance" | "high importance" "rather high importance" "rather low importance" |
| Application | | "somewhat applicable" | "applicable" | "applicable" |

Source: Author’s own illustration based on author’s empirical research results.

To summarize, the above results clearly indicate that the stakeholder value sphere is missing and based on the research conducted it will be of a significant importance that the layer is included within the daily strategic dimension of the strategists to navigate businesses with foresight.

1. *Empirical evidence concludes that **Porter’s FFM** does not include the ‘Stakeholder Layer’.*
2. *More than a third who responded for **the SFM Questionnaire** indicated that the stakeholder value layer is “missing” in Porter’s Model.*
3. *According to the **Professionals**, the findings reveal that the majority of participants think that the stakeholder value layer is totally missing after being informed by the SFM. Any further information about descriptive statistics of the qualitative questionnaires belonging to the Stakeholder Value layer, including frequency tables and bar charts for questions 19, 20a-f and 21 can be found in APPENDIX 34, p.126-135, 5.13-5.15, table 68-76, bar chart 46-54.*

6. Legal Perspective layer: As in the Dissertation (p. 121) described, the essentiality of adding the **Legal Perspective layer** into strategic dimension was analyzed by the **3 essential** parameters of **missing**, **importance**, and **applicability**. The results as below in Table 32 illustrated describe the validity by the Porter group, the SFM group, and the Professionals/Senior Academics.

Table 32: Results of Three Essential Parameters in Testing/Comparing “the Legal Perspective Layer of the FFM to the SFM”

| Parameters | Legal Perspective Layer | Porter | SFM | Professional/Senior Academics |
|-------------|--|--|-------------------|---|
| Missing | | "somewhat missing" | "totally missing" | "totally missing" |
| Importance | <i>Antitrust & Competition Law</i> | "high importance" | "high importance" | "rather high importance" |
| | <i>Labor & Tax Laws</i> | "rather high importance" | "high importance" | "high importance" |
| | <i>Compliance</i> | "high importance" "rather low importance" | "high importance" | "very high importance" |
| | <i>Intellectual Property Law</i> | "low importance" | "high importance" | "very high importance" "high importance" "low importance" |
| | <i>Regulation & Deregulation</i> | "very high importance" | "high importance" | "high importance" "rather high importance" |
| Application | | "applicable" | "very applicable" | "somewhat applicable" |

Source: Author’s own illustration based on author’s empirical research results.

Several noteworthy results were that more respondents of the SFM Questionnaire think that the legal perspective is very applicable in daily practice as well as totally applicable within the dimensions of strategy for business administration.

1. *Empirical evidence concludes that **Porter’s dimension of the FFM** can be extended thus the missing aspect of the legal sphere is a clear strategic challenge. Most SME’s and MNC’s have a legal persona and can be seriously disrupted by not understanding or calculating legal risks into their models. The legal dimension has a vital importance for strategists and that the integration as bar chart 58 (Appendix 34, p. 140) delivers has a solid strategic importance, since most of the participants (**The SFM Questionnaire**) declared the model to be missing in Porter’s model. One can see that in **all** questionnaires a large number of participants think that the legal perspective is very missing in Porter’s model.*
2. *To sum up, the legal sphere is an integral part of a competitive strategy based on the replies evaluated. Empirical evidence concludes that the legal sphere has a high importance and the chosen components indicate the essentiality of them e.g. compliance and regulation deregulation etc., thus having a solid understanding of legal matters in business administration as the different legal boundaries an MNC or a globally operated SME faces in different countries. Any further information about descriptive statistics of the qualitative questionnaires belonging to the Legal Perspective layer, including frequency tables and bar charts for questions 22, 23/24a-f and 25 can be found in Appendix 34, p.135-148, 5.16-5.19, table 77-88,*

bar chart 55-66.

Based on the individual duties of the **professionals** the legal dimension is applicable to their spectrum of vocation perused. Empirical evidence concludes that the legal perspective is applicable also to the participants of **the SFM** group, where most of the participants indicated the applicability of the legal sphere into their vocational duties and businesses.

7. Societal layer: As in the Dissertation (p. 122) described, the essentiality of adding the **Societal layer** into strategic dimension was analyzed by the **3 essential** parameters of **missing, importance,** and **applicability**. The results as below in Table 33 illustrated describe the validity by the Porter group, the SFM group, and the Professionals/Senior Academics.

Table 33: **The Results of Three Essential Parameters in Testing/Comparing “the Societal Layer of the FFM to the SFM”**

| Parameters | Society Layer | Porter | SFM | Professional/Senior Academics |
|-------------|--|---|---|--|
| Missing | | "somewhat missing" | "totally missing" | "totally missing" "missing" |
| Importance | <i>Global Citizenship</i> | "very high importance" "rather high importance" | "very high importance" "rather low importance" | "very high importance" "rather high importance" |
| | <i>Local & Global / Transnational Strategies</i> | "rather high importance" | "very high importance" | "very high importance" "low importance" |
| | <i>Culture</i> | "high importance" | "very high importance" | "very high importance" |
| | <i>Trends</i> | "high importance" | "very high importance" | "rather high importance" |
| | <i>Non-State Actors</i> | "rather high importance" "low importance" "lowest importance" | "rather low importance" | "rather high importance" "low importance" |
| Application | | "applicable" | "applicable" | "very applicable" |

Source: Author’s own illustration based on author’s empirical research results.

As a result, the societal layer of the organization is strongly missing within Porter’s dimension; hence Porter has actually published in 2011 and 2012 the logic of shared value model. However, in 2015 he still substantiated the FFM bid on having applicability in today’s digital world. So, there is a clear need in business administration to include the above parameters into a holistic model, which the SFM delivers.

1. *According to Porter’s Questionnaire, there is a need for integrating the societal understanding into the room of the strategic models. This notion as illustrated above is missing within Porter’s dimension. Empirical evidence concludes that after learning the dimension of societal concerns with all of its essential components is clearly missing within Porter’s logic of competition based on FFM. Thus, one can see that more participants of the SFM questionnaire think that the*

societal layer is very missing in Porter's model. Regarding Professionals, the societal layer of the organization is strongly missing within Porter's dimension.

2. *The societal layer is a major concern to the strategists and a model including this essential layer is a vital contribution to enhancing Porter's dimension of FFM. The societal layer of the organization also confirmed by the results of the SFM group represents a vital contribution to the field. The results of the questionnaires were confirmed also by the Professionals, thus, indicating with the diverse importance of the individual components the essential role of the societal layer of the organization.*
3. *Most of the participants for the Porter's- and the SFM Questionnaire conclude that the societal dimension is practically applicable. However, one can see that the opinions of the Professionals are very shattered in the questionnaire, which is justified by the different educational qualifications and respective professional backgrounds. Any further information about descriptive statistics of the qualitative questionnaires belonging to the Societal layer, including frequency tables and bar charts for questions 26, 27a-g and 28 can be found in APPENDIX 34, p.148-159, 5.20-5.22, table 89-97, bar chart 67-75.*

8. Complex-Strategy layer: As in the Dissertation (p. 124) described, the essentiality of adding the **Complex-Strategy layer** into strategic dimension was analyzed by the **3 essential** parameters of **missing, importance, and applicability**. The results as below in Table 34 illustrated to describe the validity by the Porter group, the SFM group, and the Professionals/Senior Academics.

Result: As demonstrated throughout the thesis the notion of holism is very important for competitive strategy in business administration.

Table 34: The Results of Three Essential Parameters in Testing/Comparing “the Complex-Strategy Layer of the FFM to the SFM”

| Parameters | Complex-Strategy Layer | Porter | SFM | Professional/Senior Academics |
|-------------|---------------------------------------|---|--|--|
| Missing | | "somewhat missing" | "missing" | "missing" |
| Importance | <i>Cybenetics & Holistic Lens</i> | "rather high importance" "rather low importance" | "rather high importance" | "ver high importance" "rather low importance" |
| | <i>Multidisciplinary Lens</i> | "high importance" | "rather high importance" | "very high importance" "high importance" |
| | <i>Emergence & Adaptation</i> | "low importance" | "high importance" | "very high importance" |
| | <i>Applied Ashby's Law</i> | "very high importance" | "very high importance" "rather high importance" | "high importance" |
| | <i>Service Dominant Logic</i> | "rather high importance" | "high importance" | "rather low importance" |
| Application | | "applicable" | "applicable" | "applicable" "somewhat applicable" |

Source: Author's own illustration based on author's empirical research results.

1. *The results from Porter's Questionnaire indicate that Complex-Strategy layer is missing within*

*a Porterian dimension. Empirical evidence concludes that more participants of **the SFM Questionnaires** think that Complex-Strategy layer is very missing in Porter's model. Furthermore, the results of the Porter/the SFM groups are validated by the senior academics validating that the holistic understanding of organizational realities in business administration is missing within the Porterian FFM.*

2. *Empirical evidence concludes that "Complex-Strategy Layer" is highly essential for strategists thus this is a vital contribution to the field, via Ashby's Law and SDL-logic etc., embracing a much wider understanding of the field of competitive strategy. The results confirm the author's logic of integrating the cybernetics lens into competitive strategy thus this vital synergy within a model is necessary so that a holistic model can be therefore contracted. The results validate that the points confirmed by the results of the two prior questionnaires (Porter/The SFM) are also validated by the senior professionals thus Cybernetics & Holistic lens, Ashby's Law and Emergence & Adaptation etc. were again confirmed as highly important.*
3. *The notion of the Complex-Strategy layer while introduced by the author to the strategic thought has a high resemblance validated by the three groups' results analysis as described in detail in Appendix 34 (p. 59). Empirical evidence concludes that the opinions are very similar in both questionnaires (Porter and the SFM). The applicability of the Complex-Strategy layer is confirmed by the results thus the senior professional validated that the layer has applicability within their vocational duties in the respective businesses. Any further information about descriptive statistics of the qualitative questionnaires belonging to the Complex-Strategy layer, including frequency tables and bar charts for questions 29, 30a-f and 31 can be found in APPENDIX 34, p.159-170, 5.23-5.25, table 98-106, bar chart 76-84.*

4.7.4.QUALITATIVE Test II: Validating Case Study- A Qualitative Evaluation of Applied Test Results by Professionals at Peter Lacke Group (E – Qual II – Sample III

As Kamran (2017a) in detail indicates, the SFM was applied at PLG, a large German SME. The firm is a German, traditional and family operated paint producing, and coating firm currently handed over to its 5th generation with over 150 years of history (cf. Kamran, 2017b, 2017a). The SFM was fully integrated into the PLG and has delivered a foundation for the company's strategic management. Below are the results of the survey conducted with the project managers of PLG after the project was successfully realized.

1. *To what extent does Porter's FFM provide a holistic market and internal analysis to PETER/LACKE?*
2. *To what extent does the SFM provide a holistic market and internal analysis to PETER/LACKE?*

Result Q1 and Q2: Upon the expert's perspective, which is illustrated in **Appendix 40 (p. 275)**, it can be distinguished that FFM solemnly provides limited input towards a holistic market and internal analysis (cf. Kamran, 2017b, 2017a) It considers only direct factors, in terms of competitive rivalry, buyer power, supplier power, the threat of new entry, and the threat of substitution, whereas the SFM enhances a holistic approach, regarding various environmental and business internal layer, which will be discussed more in detail below. (See Appendix 40, p. 276)

1. **Structure is Strategy Lens:** *To what extent is the viable system model applicable to PETER/LACKE?*

Result: The professional's perspective on the application of the viable system model can be identified as overall positive, as PETER/LACKE fulfills the needed conditions for the integration of the viable organizational structure, especially due to its global focus, which enhances additional complexity (cf. Kamran, 2017b, 2017a), (see Appendix 40, p. 276)

2. **Economics layer** – How important is the recognition of the red ocean perspective to PETER/LACKE?

Result: The project team professionals evaluated the importance of the recognition of the red ocean perspective as **very important due to the reason of PETER/LACKE being a part of the highly competitive paint and coating industry.** This means that the author's analogy to not disregard the red ocean perspective was correct. **The red ocean perspective is a part of the SFM-the economics layer.**

3. **Normative layer** – How can PETER/LACKE's core values be considered as its core competencies?

Results: As core values are a major part of a company's core competencies, the question arises to what extent PETER/LACKE's core values can be considered as core competencies. The professionals' opinion towards this approach is unanimous and evaluates PETER/LACKE's core values as certainly being a core competency, as the company lives through its values and its long and successful history.

4. **Resource Based View Lens** – To what extent are operant and operand resources given at PETER/LACKE?

Result: It has been evaluated that operand and operant resources are certainly given at PETER/LACKE, as the PLG is a highly knowledge-based company and certainly capable of using its knowledge to transform its resources to a valuable output.

5. **Technology and Innovation Lens** – To what extent are aspects as Real-Time Communication, Internet of Things, Blue Ocean Perspective, Disruptive innovation, and Ubiquitous Computing important to PETER/LACKE?

Result: The professionals acknowledged the fact that some of these factors are not available

yet but were certain about the future possibilities these would provide for PETER/LACKE. If the organization can use the layer of Complex-Strategy to the fullest, it is prepared to achieve results none of its competitors will be able to match. Currently, however, they are only somewhat important for the operations and strategic implications of the company.

6. **Nature and Ecological Lens** – To what extent could green competition influence PETER/LACKE's strategy?

Result: The nature and ecological lens is a key factor for the coating industry. Due to strict regulations, especially in Germany, the incumbents are forced to keep reinventing themselves and their products in order to meet these requirements. PETER/LACKE sees the opportunities arising from this, as new innovations can come to light with increasing regulation of the market. If the company is able to exceed their competitors' abilities in research and development, the professionals were certain that this will result in a competitive advantage with a major impact.

7. **Stakeholder Value** layer– What kind of value proposition does PETER/LACKE provide to its stakeholders?

Result: Regarding PETER/LACKE's stakeholder approach and what kind of values PETER/LACKE delivers to them, the expert team said that PETER/LACKE's core values are not only addressing its employees and customers but moreover all its stakeholders. Therefore, PETER/LACKE delivers values in terms of being a family and long-term oriented business, which stands out through its precision and viability.

8. **Legal Perspective** – Which importance do the following components have in terms of the **legal perspective** of PETER/LACKE?

Result: Not only is the coating industry challenged with strict environmental and technological regulations, but also with legal forces restricting the market incumbents. Whereas Antitrust & Competition Law and Regulation & Deregulation are only of minor importance for PETER/LACKE, Compliance and Labor & Tax Law are of high significance. Especially regarding the society and nature & ecological lenses, these can become crucial and make-or-break factors for the company, per the professionals.

9. **Societal Lens** – To what extent can PETER/LACKE be considered as a global citizen?

Result: The layer covering societal challenges raises the question if PETER/LACKE can be considered a global citizen. This certainly is the case when considering the environmental advancements of the organization, but also the legal perspective, as the company strives to enable their employees and customers a satisfying experience exceeding governmental regulations.

10. **Complex-Strategy** – To what extent is the notion of SDL important to PETER/LACKE?

Result: PETER/LACKE not only embraces the idea of supplying products that are leading edge

in the industry but providing a holistic service-value experience for their customers. This embodies the layer of Complex-Strategy.

11. **Culture and Trends** – To what extent are culture and trends important to PETER/LACKE?

Result: As the coating industry is highly innovative and competitive from the outset, PETER/LACKE always needs to be au courant of current and future developments and opportunities of the market. Thus, culture and trends are of significant importance for the organization's future operations and developments. The layer can especially be of major importance in creating and sustaining a competitive advantage and exploring new market opportunities with a first-mover advantage.

12. **Strategic Foresight** – To what extent is strategic foresight important to PETER/LACKE?

Result: The professionals especially stressed the relevance of obtaining a strategic foresight. Not only does it ensure the viability of current market segments, but also targeting future impulses regarding market opportunities. This conclusion was derived unanimously by the professionals and is crucial for PETER/LACKE's strategic and operational activities.

13. **Holistic Multidisciplinary Lens** – *To what extent is the notion of holistic multidisciplinary lens important to PETER/LACKE?*

Result: All professionals are certain that **holistic view is of key importance when PETER/LACKE** is being faced with complex challenges and enables the company to oppose them in a sustainable way. The field research/ applied survey conducted with the project managers of PLG confirm the author's theory construction and the SFM. This further substantiates the claim that the SFM is applicable and there is a high demand for holistic model based on cybernetics and Ashby's Law. In Kamran (2017a)/ Appendix 40 (p. 276), the table describes all the results generated by the survey at PLG in a nutshell. The PLG case study and the applicability of the SFM displayed the vital diagnostic power of the author's model and thus, it has very positive implications of business administration.

4.7.5. QUANTITATIVE Test II: Hypotheses Test: Cronbach Alpha (D -QUAN II Sample II)

To measure the internal consistency of the items, a Cronbach Alpha test was conducted. This was done to ensure a high reliability of the questionnaire. Alpha can be negatively infinite to 1, where a high positive value indicates a high reliability. If different items are used in a survey, you can determine with the help of Cronbach Alpha a certain pattern in which the participants response (cf. Cortina 1993). As the results in show, a high reliability for the constructs "demand", "importance/meaning" and "integrability" was obtained.

4.7.5.1. Preparations of the Constructs

The questions of the questionnaire can be divided with a high reliability into three constructs, and this enables statements about higher-level aspects in relation to the services and content of the

authors SFM. The selected constructs are ‘demand’, ‘importance/meaning’ and ‘ease of integration’. If different items are used in a survey, researchers can determine with the help of Cronbach Alpha a certain pattern in which the participant’s response (cf. Cortina 1993 & see: Appendix 35, p. 179ff for precise details & See: Diagram 1).

Table 35: **Main Statistic Indicators of the Constructs of ‘Demand’, ‘Meaning’, and ‘Integrability’**

| Statistics of the Constructs "Demand", "Meaning" and "Integrability" | | Demand | Meaning | Integrability |
|--|-----------------------|--------------------------|-----------------------|---------------|
| N | Valid | 12 | 8 | 12 |
| | Missing | 0 | 4 | 0 |
| Mean | | 3,15 | 4,66 | 3,33 |
| Median | | 3,5 | 4,5 | 3,5 |
| SD | | 0,94 | 1,02 | 0,64 |
| Minimum | | 2 | 3 | 2 |
| Maximum | | 5 | 6 | 4 |
| Different scales were used to obtain the most precise empirical evidence. The meaning construct based on importance dimension was better suited to be evaluated based on a 6-point-likert-scale while the other constructs could be evaluated on a 5-point-likert-scale. | Scale | Scale | Scale | Scale |
| | 1=not at all | 1=lowest importance | 1=not at all | |
| | 2=somewhat missing | 2=low importance | 2=somewhat applicable | |
| | 3=missing | 3=rather low importance | 3=applicable | |
| | 4=very missing | 4=rather high importance | 4= very applicable | |
| | 5=absolutely missing | 5=high importance | 5=totally applicable | |
| | | 6=very high importance | | |
| | Consists of Questions | Consists of Questions | Consists of Questions | |
| | Question 7 | Question 8 | Question 9 | |
| | Question 10 | Question 11 | Question 12 | |
| Question 13 | Question 14 | Question 15 | | |
| Question 16 | Question 17 | Question 18 | | |
| Question 19 | Question 20 | Question 21 | | |
| Question 23 | Question 24 | Question 25 | | |
| Question 26 | Question 27 | Question 28 | | |
| Question 29 | Question 30 | Question 31 | | |

Source: Author’s own illustration based on author’s empirical research results.

Table 35 above shows that throughout all three constructs, a significantly high mean and median above the average of the scales were measured. Also, a low standard deviation indicates that there is only a small deviation from the mean values in the answers. There were also, in none of the constructs, answers at the possible minimum of the scale – minimum values are at least 2, whereas the scale has a minimum of 1.

4.7.5.2. Construct ‘demand’

The System ‘demand,’ consists of eight questions that address different dimensions of the Author's SFM and ask to what extent it is missing in Porter's SFM. The precise details on the ‘**Construct (demand)**’ are documented in **Appendix 35 (p. 179)**. **With a Cronbach Alpha of 0.887, a very high value was observed, and a high reliability is provided.** In the construct ‘demand’ where 100% of the questionnaires are valid, **there was found a mean value of 3.15 on a scale from 1 to 5, where 1 stands for ‘not at all missing’ and 5 for ‘absolutely missing’.** The participants rated,

on average, the considered dimensions of the SFM as "*missing*" in Porter's Model. Inadequate or non-existent consideration was found. This substantiates the holistic nature of the SFM (see Appendix 35, Table 130, p. 188).

4.7.5.3. Construct "importance/meaning"

The System 'importance' consists of eight questions that address different dimensions of the Author's SFM and its components, and ask, what is the importance of the individual components. The precise details on the 'Construct (importance/meaning)' are documented in **Appendix 35 (p. 189)**. **With a Cronbach Alpha of 0.939, a very high value was observed, thus providing a high reliability. In the construct of 'importance' where 66.6% of the questionnaires are valid, there was found a mean value of 4.66 on a scale of 1 to 6, where 1 stands for 'least important' and 6 for 'very high importance' (see Appendix 35, Table 132, p. 188-189).**

4.7.5.4. The Construct of "integrability"

The System 'integrability' consists of eight questions that address different dimensions of the Author's SFM and investigate their integration into the daily practice. The precise details on the 'Construct (integrability)' (see: Appendix 35, p. 190) are documented in **Appendix 35**. **With a Cronbach Alpha of 0.865 a very high value was observed and, therefore, a high reliability is provided. In the construct of 'integrability' 100% of the questionnaires are valid and a mean value of 3.33 was determined, on a scale from 1 to 5, where 1 stands for 'not at all' and 5 for 'absolutely applicable'.**

4.7.5.5. General questions regarding the theories

The answers of questions 32,33 and 34a-b, that were not condensed into constructs, showed the following results:

From the empirical validation, the following conclusion can be drawn: The Six Forces Model performed significantly better with a very positive view, regarding the possibilities of use in everyday practice. By considering the normative layer, a significantly better impression could be detected for the Six Forces Model. A distinction has been made between the practical and academic evaluation; the Sixth Force Model is evaluated to be very suitable to handle the complex challenges of the globalizing world (cf. Kamran, 2017a).

Table 36 below shows the significant means of Question 32-34a and b. Medians on all questions also show significantly high values above the average of the scale, with standard deviations around a value of 1 indicating only small deviations from the means in the answers. The minimum values of the scale were also only chosen at question 34 with a value of 1, whereas all other questions were answered with at least a value of 2.

Table 36: Main Statistic Indicators of Expert Evaluations on Survey Questions 32-34a/b

| Statistics of Questions 32-34a/b | | | | | |
|----------------------------------|---------|--|--|---|--|
| | | Q32 / Define the role and Importance of organizational structure in your strategic endeavors. To what extend do you think a solid organizational structure will make you become an effective strategist? | Q33 / How important do you consider the role of the VSM and its application to your organization ? | Q34a / based on your academic judgement and point of view | Q34b / based on your practical judgement and point of view |
| N | Valid | 11 | 12 | 12 | 8 |
| | Missing | 1 | 0 | 0 | 4 |
| Mean | | 4,82 | 4,50 | 3,50 | 3,13 |
| Median | | 5,00 | 4,50 | 3,00 | 3,50 |
| SD | | 1,168 | 1,000 | 1,087 | 1,356 |
| Minimum | | 2 | 3 | 2 | 1 |
| Maximum | | 6 | 6 | 5 | 5 |
| | | Scale | Scale | Scale | Scale |
| | | 1=lowest importance | 1=lowest importance | 1=lowest importance | 1=lowest importance |
| | | 2=low importance | 2=low importance | 2=low importance | 2=low importance |
| | | 3=rather low importance | 3=rather low importance | 3=rather low importance | 3=rather low importance |
| | | 4=rather high importance | 4=rather high importance | 4=rather high importance | 4=rather high importance |
| | | 5=high importance | 5=high importance | 5=high importance | 5=high importance |
| | | 6=very high importance | 6=very high importance | 6=very high importance | 6=very high importance |

Source: Author's own table based on author's empirical research results

In Question 32, respondents were asked, to what extend a solid organizational structure will make the participants become an effective strategist. 91,7% of the respondents answered the question in a valid form: The majority indicated a "very high" or "high" importance (of 72.8 valid percent), whereas the remainder is distributed in "rather high" importance (18.2%) and in "low" importance (9.1%). The average is scaled with 4.82% from 1 (low importance) to 6 (very high importance) and the Median is rated with 5, which implies that a solid organizational structure has "very high" importance for an effective strategy.

Question 33 is about the importance of the Viable System Model and its application for an organization. Exactly half of the participants plead for a "high" to "very high" importance and 33.3% seeing a "rather high" importance to the VSM. Only 16.7% of the participants consider the VSM as "less" important. On average, the VSM receives a rating of 4.5, on a scale from 1 to 6, where 1 stands for a "low" importance and 6 for "very high" importance. None of the participants considered the VSM in this context as insignificant or of little importance (see: Frequency Table of Question 33, Appendix 35, p. 185).

Question 34 asks about the suitability of Porter's FFM to tackle the complex and global markets of the future. Distinction is made between judgment following an academic assessment and a judgment that is based on the practical experiences of the participants. From an academic point of view, 58.4%, which is a slight majority, called a "low" or "rather low" importance for the FFM. 16.7%, however, measure Porter's model as a "rather high" importance for the future, and 25% as "high" importance. With a Median of 3 on a scale from 1 to 6, where 1 stands for the "least" importance, and 6 for "very high" importance is attributed to the FFM from an academic perspective, which is a "rather low" suitability for detecting and coping with the future.

4.7.6. QUANTITATIVE Test III: Weighted Scoring Model Analysis, the Map-Overlay-Visualization Modelling Method and the Wilcoxon Test (F -QUAN III – Sample IV)

It is the methodological link between the researchers' philosophy and subsequent choice of methods to collect and analyze data (cf. Jackson, 2013). Following the **objectivist ontology**, a **positivist epistemology** and therefore a **quantitative approach**, the survey strategy has been chosen as data collection method. The **survey strategy** is usually associated with a **deductive research approach** (cf. Saunders et al., 2016). Survey strategies using questionnaires are popular as they allow the collection of standardized data from a sizeable population in a highly efficient way, allowing easy comparisons. In addition, the survey strategy is perceived as authoritative by people in general and is comparatively easy both to explain and to understand (cf. Saunders et al., 2015). The survey strategy allowed the author to collect quantitative data that was analyzed quantitatively using **descriptive and inferential statistics**. In addition, data collected using a survey strategy can be used to compare different variables and to produce models of these relationships.

4.7.6.1. Survey Design

The survey and empirical investigation were designed in order to **evaluate different strategy models** based on **17 pre-defined indicators**. The aim of the survey was to get an overview of the **applicability** and **completeness** of the different strategy models and to **rank them** according to the defined indicators. Furthermore, it was of the researcher's interest to evaluate the different indicators based on their **importance** for the experts. The researcher was strongly perused to obtain high-quality results that are **objective and reliable** and therefore, the indicators were defined based on an in-depth and broad **literature review**. A comparison between the SFM and Porter's FFM was conducted but moreover to display the high diagnostic power of the SFM in comparison with all of the available strategy models in academe and practice was conducted. Five different strategy models (Table 37) have been subject to analysis in order to validate the SFM:

Table 37: Different Strategy Models for Validating the SFM

| | | | | |
|----------------------------|--|--|---------------------------|-----------------------------|
| 1. Five Forces Model (FFM) | 2. SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis | 3. PESTEL (Political, Economic, Social, Technological, Ecological, Legal) Analysis | 4. Value Chain Model (VC) | 5. Sixth Forces Model (SFM) |
|----------------------------|--|--|---------------------------|-----------------------------|

Source: Author's own table based on author's empirical research results

The models were selected based on their importance in the current academic and practical discussion. Each of the models has its strengths and weaknesses and can be applied to the development phase of a company's strategy. The SFM seeks to gain strategic foresight of complexity and provides a holistic model for companies to deal with highly complex uncertainties and environmental turbulences to make sense of the situation. The empirical investigation was conducted to display the diagnostic power of the SFM based on the comparative expert survey with a Weighted Scoring Model Analysis. Analyzing the importance of the individual indicators and combining these results with the evaluation of the different strategy models enables having a profound analysis of the correlation between the importance of the indicators resulting from the author's SFM Model's systemically designed nine essential layers and their subsystems and parts, and their availability in the diverse models respectively how important they are and if they are missing in other models within the field of business administration. The participants were asked how much the notions described by the **indicators 1-17** are included in the different strategic models (**FFM, SWOT, PESTEL, VC, and SFM**) and how they value their importance.

Furthermore, they were asked to score the models between **0 (not at all); 1 (low); 2 (medium) and 3 (high)** that best fits their judgment of the models' quality. Figure 40 illustrates the survey representing the 17 indicators vertically and the different strategy models as well as the valuation of the importance horizontally. A total number of **164 experts** of different fields were contacted of which **57 answered** the survey. This results in a response rate of **34.8%** and therefore lies above the average expected **30% of participants** (cf. Surveygizmo, 2017). The experts were grouped into three different expert groups divided into **consultants, academics and field experts**.

This grouping allows having a broadly diversified perspective on the results. Subsequently, the survey has been sent to them with the request sending the completed survey back to the author. Appendix 39 (p. 229) summarizes the respondents and gives information about their background and experience.

How much are the notions described by the items 1-17 included in the different strategic models (FFM; VC Model; SWOT; PESTLE and SFM) and how do you evaluate the importance of the indicators?

For each item identified below, select a number between **0 (not at all)**; **1 (low)**; **2 (medium)** and **3 (high)** that best fits your judgement of its quality. Use the scale above to select the quality number.

Name:

Institution:

| | Importance | FFM | SWOT | PESTLE | Value Chain | SFM |
|--|------------|------|------|--------|-------------|------|
| | 0123 | 0123 | 0123 | 0123 | 0123 | 0123 |
| 1. Ease of implementation | | | | | | |
| 2. Applicability for SMEs | | | | | | |
| 3. Applicability for large companies | | | | | | |
| 4. Holistic analysis of the environment | | | | | | |
| 5. Holistic analysis of the company | | | | | | |
| 6. Complexity of the model* ¹ | | | | | | |
| 7. Applicable for development phase of the company | | | | | | |
| 8. Incorporation of environmental complexity | | | | | | |
| 9. Internal structure analysis of the company | | | | | | |
| 10. Applicability for large companies | | | | | | |
| 11. Legal environment | | | | | | |
| 12. Economic environment | | | | | | |
| 13. Technology & Innovation | | | | | | |
| 14. Resource based view | | | | | | |
| 15. Long-term survival | | | | | | |
| 16. Objectivity | | | | | | |
| 17. Comparability* ² | | | | | | |

*¹ = do you think that the model covers everything needed for a good strategic model?

*² = do you think that companies using this model can compare their results or is the model more based on subjective indicators?

Figure 40: Survey Developed to Compare Different Strategy Models

Source: Author's own illustration based on author's empirical research results

4.7.6.2. Data Analysis

On the basis of the completed survey, the author conducted a quantitative analysis. For this, the results from the survey were collected in a quantitative way and subsequently analyzed with regard to their empirical value. The author conducted a comparative analysis of the different strategy models with regard to their incorporation of the major indicators (indicators 1-17) and the resulting difference to the valuated importance of the indicators. Furthermore, it was of high interest to illustrate the correlation between the variables and the corresponding strategic models. Therefore, a **trinomial data** analysis has been conducted. First of all, the data has been translated into a **weighted scoring model** to compare the different strategic models directly based on relative and absolute numbers. Subsequently, the relative numbers have been transferred into an **importance-valuation template**. It illustrates the difference between the desired and actual valuation of the **17 variables** in the models.

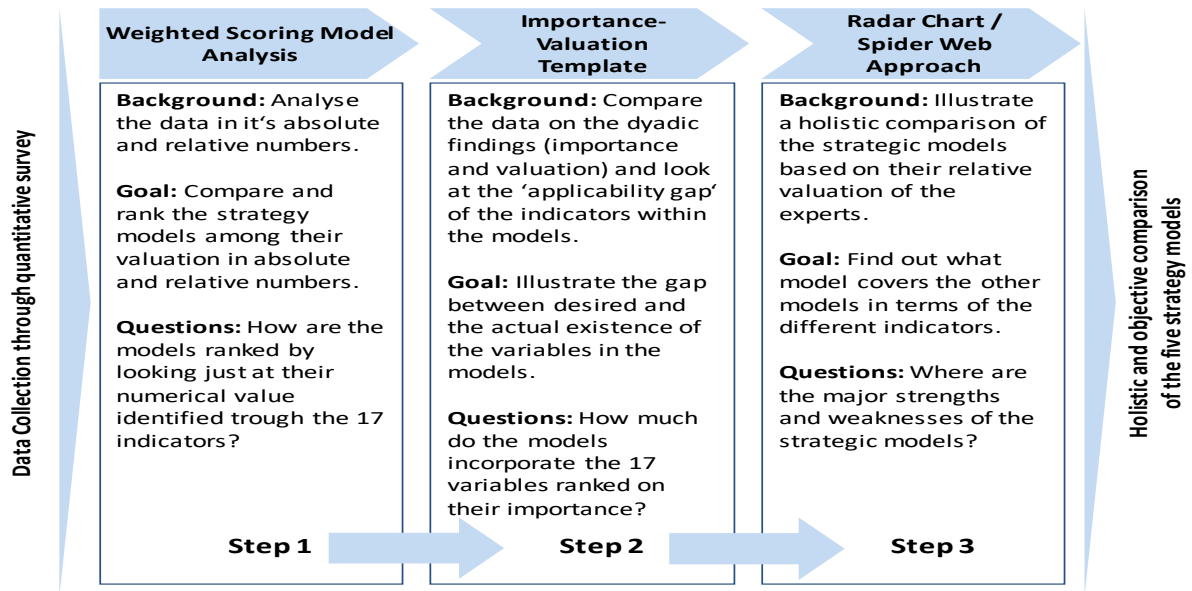


Figure 41: Trinominal Data Analysis Approach

Source: Author's own illustration based on author's theoretical and empirical research results

As a third step, the results of the valuation of the variables in the different strategy models have been transcribed into a **radar chart/spider-web models** enabling a direct comparison of the models and the different indicators. By using this trinomial data analysis, the models have been holistically compared and validated. Figure 41 illustrates the trinomial data analysis approach followed by the author. The sum of absolute evaluations (SAE) was built using the mathematical formula

$$SAE_{k,l} = \sum_{i=1}^m \sum_{j=1}^n x_{i,j,k,l}$$

i = respective indicator

j = respective participant

k = importance/valuation

l = respective model analyzed

m = number of indicators

n = number of survey participants

The results have been presented in absolute and average/relative numbers to generate an overall comparison of the data. The average of absolute evaluations (AAE) was built using the mathematical formula

$$AAE_{k,l} = \frac{1}{n} \sum_{i=1}^m \sum_{j=1}^n x_{i,j,k,l} = \sum_{i=1}^m PRE_{i,k,l}$$

This leads to the partial relative evaluations (PRE) which was built using the mathematical formula

$$PRE_{i,k,l} = \frac{1}{n} \sum_{j=1}^n x_{i,j,k,l}$$

Wherein i is representing the indicators 1 to 17, k represents the importance or valuation and l represents the respective model (FFM, SWOT, PESTLE, VC or SFM).

Table 38 shows the data in absolute numbers and a numerical ranking of the models. The relative numbers or comparative quantification enables the researcher to get an overview of the average data collected by the different participants relative to the number of respondents. The results of the calculation have been summarized in Table 39 showing the ranking of the strategy models.

Table 38: Sum of Absolute Numbers

| Model | $\sum x_1$ | $\sum x_2$ | $\sum x_3$ | $\sum x_4$ | $\sum x_5$ | $\sum x_6$ | $\sum x_7$ | $\sum x_8$ | $\sum x_9$ | $\sum x_{10}$ | $\sum x_{11}$ | $\sum x_{12}$ | $\sum x_{13}$ | $\sum x_{14}$ | $\sum x_{15}$ | $\sum x_{16}$ | $\sum x_{17}$ | \sum |
|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------|
| FFM | 137 | 134 | 137 | 97 | 74 | 74 | 104 | 101 | 59 | 108 | 63 | 107 | 73 | 62 | 87 | 91 | 98 | 1606 |
| SWOT | 155 | 142 | 133 | 97 | 104 | 65 | 108 | 83 | 101 | 89 | 66 | 88 | 87 | 81 | 92 | 71 | 101 | 1663 |
| PESTLE | 126 | 122 | 142 | 135 | 78 | 86 | 110 | 120 | 54 | 79 | 128 | 131 | 116 | 83 | 91 | 91 | 108 | 1800 |
| VC | 116 | 122 | 144 | 71 | 129 | 97 | 108 | 61 | 130 | 102 | 50 | 70 | 86 | 97 | 91 | 89 | 100 | 1663 |
| SFM | 79 | 102 | 153 | 155 | 150 | 146 | 125 | 155 | 140 | 144 | 133 | 150 | 143 | 135 | 139 | 116 | 106 | 2771 |

Source: Author's own illustration based on author's empirical research results.

Table 39: Average of Absolute Numbers

| Model | $\sum x_1$ | $\sum x_2$ | $\sum x_3$ | $\sum x_4$ | $\sum x_5$ | $\sum x_6$ | $\sum x_7$ | $\sum x_8$ | $\sum x_9$ | $\sum x_{10}$ | $\sum x_{11}$ | $\sum x_{12}$ | $\sum x_{13}$ | $\sum x_{14}$ | $\sum x_{15}$ | $\sum x_{16}$ | $\sum x_{17}$ | \sum |
|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------|
| | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | |
| FFM | 2,4 | 2,4 | 2,4 | 1,7 | 1,3 | 1,3 | 1,8 | 1,8 | 1,0 | 1,9 | 1,1 | 1,9 | 1,3 | 1,1 | 1,5 | 1,6 | 1,7 | 28,2 |
| SWOT | 2,7 | 2,5 | 2,3 | 1,7 | 1,8 | 1,1 | 1,9 | 1,5 | 1,8 | 1,6 | 1,2 | 1,5 | 1,5 | 1,4 | 1,6 | 1,2 | 1,8 | 29,2 |
| PESTLE | 2,2 | 2,1 | 2,5 | 2,4 | 1,4 | 1,5 | 1,9 | 2,1 | 0,9 | 1,4 | 2,2 | 2,3 | 2,0 | 1,5 | 1,6 | 1,6 | 1,9 | 31,6 |
| VC | 2,0 | 2,1 | 2,5 | 1,2 | 2,3 | 1,7 | 1,9 | 1,1 | 2,3 | 1,8 | 0,9 | 1,2 | 1,5 | 1,7 | 1,6 | 1,6 | 1,8 | 29,2 |
| SFM | 1,4 | 1,8 | 2,7 | 2,7 | 2,6 | 2,6 | 2,2 | 2,7 | 2,5 | 2,5 | 2,3 | 2,6 | 2,5 | 2,4 | 2,4 | 2,0 | 1,9 | 39,8 |

Source: Author's own illustration based on author's empirical research results.

Using the described formula, the models have been ranked among their overall results. Taking, for example, the valuation of the SFM compared to the FFM, the corresponding mathematical application in average/relative numbers has been computed below, where the SFM has achieved the highest mark in comparison by not only in comparison the FFM but moreover, it has challenged all the essential industry analysis models as they are indicated below. In addition, according to Bueno (2016): *“Diagrams are hybrid entities, which incorporate both linguistic and pictorial elements, and are crucial to any account of scientific and mathematical reasoning. Hence, they offer a rich source of examples to examine the relation between model-theoretic considerations (central to a model-based approach) and linguistic features (crucial to a language-based view of scientific and mathematical reasoning). In scientific practice, their role tends not to be evidential in nature, and includes: (i) highlighting relevant relations in a micrograph (by making salient certain bits of information); (ii) sketching the plan for an experiment; and (iii) expressing expected visually salient information about the outcome of an experiment.”* (p.3) Thus, this analogy is

applied in the below pages illustrating and visualizing the results of the weighted scoring analysis. Furthermore, the dimension of the visualization of the empirical results of this stage is also realized by the **radar chart/ spider web approach as a map-overlay illustration of the comparative analyses of the author's SFM towards the FFM and the additional models.**

(1) **For the FFM:**

$$\begin{aligned}
 f_{FFM}(x) &= \left(\frac{\sum_{i=1}^{57} x_1}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_2}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_3}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_4}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_5}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_6}{57}\right) \\
 &+ \left(\frac{\sum_{i=1}^{57} x_7}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_8}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_9}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{10}}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{11}}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{12}}{57}\right) \\
 &+ \left(\frac{\sum_{i=1}^{57} x_{13}}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{14}}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{15}}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{16}}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{17}}{57}\right) \\
 &= 2.4 + 2.4 + 2.4 + 1.7 + 1.3 + 1.3 + 1.8 + 1.8 + 1.0 + 1.9 + 1.1 + 1.9 + 1.3 \\
 &+ 1.1 + 1.5 + 1.6 + 1.7 = \mathbf{28.2}
 \end{aligned}$$

(2) **For the SFM:**

$$\begin{aligned}
 f_{SFM}(x) &= \left(\frac{\sum_{i=1}^{57} x_1}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_2}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_3}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_4}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_5}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_6}{57}\right) \\
 &+ \left(\frac{\sum_{i=1}^{57} x_7}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_8}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_9}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{10}}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{11}}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{12}}{57}\right) \\
 &+ \left(\frac{\sum_{i=1}^{57} x_{13}}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{14}}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{15}}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{16}}{57}\right) + \left(\frac{\sum_{i=1}^{57} x_{17}}{57}\right) \\
 &= 1.4 + 1.8 + 2.7 + 2.7 + 2.6 + 2.6 + 2.2 + 2.7 + 2.5 + 2.5 + 2.3 + 2.6 + 2.5 \\
 &+ 2.4 + 2.4 + 2.0 + 1.9 = \mathbf{39.8}
 \end{aligned}$$

These sample evaluations are illustrating how the different variables have been put in correlation and ranked. Given the fact, that the highest possible result for every model could have been 51

$$(f_{max}(x) = 17 \times 3 = 51)$$

the SFM is ranked the highest followed by PESTLE, SWOT and VC and finally the FFM. 51 as highest value would have been achieved, if every respondent of the survey has ranked every variable with 3 (high). The difference between 0 and 51 takes place because of the different evaluation of the models by the different experts. The colors used in Table 38 and Table 39 are representing the ranking of the different models. Green represents the best evaluated model (SFM) followed by yellow (PESTLE SWOT and VC) and red (FFM). Comparing the relative numbers to the absolute quantification, it becomes visible that the ranking does not changes. The absolute numbers however are not into correlation with the number of the experts that have been answering the survey. Looking at the absolute numbers alone would not allow classify the ranking of the different variables in the models because the missing measuring scale. The author defined a scale

from **0 (not at all) to 3 (high)** that makes the models comparable. Thus, looking at the absolute numbers (Table 38) gives an overall overview of the ranking of the models but only the relative numbers presented in Table 39 are illustrating a comparison within the scope of the predefined scale. Therefore, the relative numbers have been taken to further analyze them in a second step. They have been translated into “*Importance-Valuation Template*” in order to look at the difference of the desired and actual valuation of the **17 variables** in the models.

Using this model to evaluate the data fulfills a two-part effect. On the one hand, the data has been evaluated numerically and on the other hand, the results have been presented in a clear visual way. Looking at the consistency of the triangles (results of importance) and the squares (valuation of the model) provides information about the deviation of the current and desired situation. Analyzing these findings, they give a highly vivid image of the models and how they deviate from the target situation. As illustrated in Figure 42, the FFM has its strengths in its ease of implementation and applicability for SMEs as well as in the applicability for the development phase of the company and the incorporation of environmental complexity. Variables like ‘*holistic analysis of the company*’, internal structure analysis of the company and ‘*legal environment*’ however are clearly lower valued than the average importance of the indicators is. This ‘importance-valuation gap’ can be seen by the deviation of the valuation-data from the importance-data. The overall picture illustrated in Figure 42 indicates that the nominal and actual comparison clearly falls apart for the FFM. The identified “*importance-valuation gap*” becomes smaller when looking at the results of the SWOT analysis.

| FFM | 0 0.5 1 1.5 2 2.5 3 | | | | | | Importance ▲ | Valuation ■ | Difference |
|---|---------------------|--|--|--|--|--|-----------------|----------------|------------|
| Ease of implementation | | | | | | | 2,4 | 2,4 | 0,0 |
| Applicability for SMEs | | | | | | | 2,2 | 2,4 | 0,1 |
| Applicability for large companies | | | | | | | 2,5 | 2,4 | -0,1 |
| Holistic analysis of the environment | | | | | | | 2,4 | 1,7 | -0,7 |
| Holistic analysis of the company | | | | | | | 2,4 | 1,3 | -1,1 |
| Complexity of the model | | | | | | | 1,8 | 1,3 | -0,5 |
| Applicable for development phase of the company | | | | | | | 2,2 | 1,8 | -0,3 |
| Incorporation of environmental complexity | | | | | | | 2,2 | 1,8 | -0,4 |
| Internal structure analysis of the company | | | | | | | 2,3 | 1,0 | -1,3 |
| Sustainable competitive advantage | | | | | | | 2,5 | 1,9 | -0,6 |
| Legal environment | | | | | | | 2,1 | 1,1 | -1,0 |
| Economic environment | | | | | | | 2,3 | 1,9 | -0,4 |
| Technology & Innovation | | | | | | | 2,3 | 1,3 | -1,0 |
| Resource based view | | | | | | | 2,2 | 1,1 | -1,1 |
| Long-term survival | | | | | | | 2,7 | 1,5 | -1,1 |
| Objectivity | | | | | | | 2,2 | 1,6 | -0,6 |
| Comparability | | | | | | | 1,9 | 1,7 | -0,2 |

Importance: high = 3; medium = 2; low = 1; not at all = 0

Valuation: high = 3; medium = 2; low = 1; not at all = 0

Figure 42: **Weighted Scoring Model Analysis for the FFM**

Source: Author’s own illustration based on author’s empirical research results.

The strengths of the SWOT are clearly highlighted in the field of ‘*applicability for large companies*’, ‘*applicability for SMEs*’ and ‘*ease of implementation*’. All other indicators, however, are valued beyond the average value of their importance.

| SWOT | 0 0.5 1 1.5 2 2.5 3 | | | | | | Importance | Valuation | Difference |
|---|---------------------|--|--|--|--|--|------------|-----------|------------|
| | | | | | | | | | |
| Ease of implementation | | | | | | | 2,4 | 2,7 | 0,3 |
| Applicability for SMEs | | | | | | | 2,2 | 2,5 | 0,3 |
| Applicability for large companies | | | | | | | 2,5 | 2,3 | -0,2 |
| Holistic analysis of the environment | | | | | | | 2,4 | 1,7 | -0,7 |
| Holistic analysis of the company | | | | | | | 2,4 | 1,8 | -0,6 |
| Complexity of the model | | | | | | | 1,8 | 1,1 | -0,6 |
| Applicable for development phase of the company | | | | | | | 2,2 | 1,9 | -0,3 |
| Incorporation of environmental complexity | | | | | | | 2,2 | 1,5 | -0,7 |
| Internal structure analysis of the company | | | | | | | 2,3 | 1,8 | -0,6 |
| Sustainable competitive advantage | | | | | | | 2,5 | 1,6 | -0,9 |
| Legal environment | | | | | | | 2,1 | 1,2 | -0,9 |
| Economic environment | | | | | | | 2,3 | 1,5 | -0,8 |
| Technology & Innovation | | | | | | | 2,3 | 1,5 | -0,8 |
| Resource based view | | | | | | | 2,2 | 1,4 | -0,8 |
| Long-term survival | | | | | | | 2,7 | 1,6 | -1,1 |
| Objectivity | | | | | | | 2,2 | 1,2 | -1,0 |
| Comparability | | | | | | | 1,9 | 1,8 | -0,1 |

Importance: high = 3; medium = 2; low = 1; not at all = 0

Valuation: high = 3; medium = 2; low = 1; not at all = 0

Figure 43: **Weighted Scoring Model Analysis for SWOT**

Source: Author’s own illustration based on author’s empirical research results.

Figure 43 illustrates the SWOT analysis. Looking at the PESTEL analysis as a third strategic model that has been analyzed by the experts, a more fluctuating picture becomes visible. The model's strengths have been clearly identified by the experts in the fields of ‘*applicability for large companies*’, ‘*holistic environment analysis*’, ‘*economic environment analysis*’ and analysis of ‘*technology and innovation*’. The weaknesses, however, have been equally identified namely ‘*holistic analysis of the company*’, ‘*internal structure analysis of the company*’ and ‘*sustainable competitive advantage*’. Within the notion of an “*Importance-Valuation-Analysis*”, it is essential for every model to have a balanced evaluation between importance and valuation. This causality is only partly given for the PESTEL analysis as shown in Figure 44.

| PESTLE | | | | | | Importance | Valuation | Difference |
|---|---|-----|---|-----|---|------------|-----------|------------|
| | 0 | 0.5 | 1 | 1.5 | 2 | ▲ | ■ | |
| Ease of implementation | | | | | ▲ | 2,4 | 2,2 | -0,2 |
| Applicability for SMEs | | | | | ▲ | 2,2 | 2,1 | -0,1 |
| Applicability for large companies | | | | | ▲ | 2,5 | 2,5 | 0,0 |
| Holistic analysis of the environment | | | | | ▲ | 2,4 | 2,4 | -0,1 |
| Holistic analysis of the company | | | | ■ | ▲ | 2,4 | 1,4 | -1,0 |
| Complexity of the model | | | | ■ | ▲ | 1,8 | 1,5 | -0,3 |
| Applicable for development phase of the company | | | | ■ | ▲ | 2,2 | 1,9 | -0,2 |
| Incorporation of environmental complexity | | | | | ▲ | 2,2 | 2,1 | -0,1 |
| Internal structure analysis of the company | | | | ■ | ▲ | 2,3 | 0,9 | -1,4 |
| Sustainable competitive advantage | | | | ■ | ▲ | 2,5 | 1,4 | -1,1 |
| Legal environment | | | | | ▲ | 2,1 | 2,2 | 0,2 |
| Economic environment | | | | | ▲ | 2,3 | 2,3 | 0,0 |
| Technology & Innovation | | | | | ■ | 2,3 | 2,0 | -0,2 |
| Resource based view | | | | ■ | ▲ | 2,2 | 1,5 | -0,7 |
| Long-term survival | | | | ■ | ▲ | 2,7 | 1,6 | -1,1 |
| Objectivity | | | | ■ | ▲ | 2,2 | 1,6 | -0,6 |
| Comparability | | | | ■ | ▲ | 1,9 | 1,9 | 0,0 |

Importance: high = 3; medium = 2; low = 1; not at all = 0

Valuation: high = 3; medium = 2; low = 1; not at all = 0

Figure 44: **Weighted Scoring Model Analysis for PESTLE**

Source: Author's own illustration based on author's empirical research results.

By analyzing the Value Chain Model, the necessity of the correlation between importance and valuation becomes even clearer. The VC Model has a strong correlation in the field of 'ease of implementation' and 'sustainable competitive advantage'. The majority of the other indicators, however, have been ranked very low. This fact illustrates that the experts do not believe that the queried indicators are present in the VC Model (visualized by Figure 45). Finally, the SFM developed by the author has been evaluated based on the Weighted Scoring Model Analysis. The model shows clear weaknesses in the field of 'ease of implementation', 'applicability for SMEs' and 'comparability'.

| Value Chain | 0 0.5 1 1.5 2 2.5 3 | | | | | | Importance | Valuation | Difference |
|---|---------------------|--|--|---|---|---|------------|-----------|------------|
| | | | | | | | | | |
| Ease of implementation | | | | | □ | ▲ | 2,4 | 2,0 | -0,4 |
| Applicability for SMEs | | | | | □ | ▲ | 2,2 | 2,1 | -0,1 |
| Applicability for large companies | | | | | | ▲ | 2,5 | 2,5 | 0,0 |
| Holistic analysis of the environment | | | | □ | | ▲ | 2,4 | 1,2 | -1,2 |
| Holistic analysis of the company | | | | | | ▲ | 2,4 | 2,3 | -0,1 |
| Complexity of the model | | | | | □ | ▲ | 1,8 | 1,7 | -0,1 |
| Applicable for development phase of the company | | | | | □ | ▲ | 2,2 | 1,9 | -0,3 |
| Incorporation of environmental complexity | | | | | □ | ▲ | 2,2 | 1,1 | -1,1 |
| Internal structure analysis of the company | | | | | | ▲ | 2,3 | 2,3 | -0,1 |
| Sustainable competitive advantage | | | | | □ | ▲ | 2,5 | 1,8 | -0,7 |
| Legal environment | | | | □ | | ▲ | 2,1 | 0,9 | -1,2 |
| Economic environment | | | | □ | | ▲ | 2,3 | 1,2 | -1,1 |
| Technology & Innovation | | | | | □ | ▲ | 2,3 | 1,5 | -0,8 |
| Resource based view | | | | | □ | ▲ | 2,2 | 1,7 | -0,5 |
| Long-term survival | | | | | □ | ▲ | 2,7 | 1,6 | -1,1 |
| Objectivity | | | | | □ | ▲ | 2,2 | 1,6 | -0,6 |
| Comparability | | | | | □ | ▲ | 1,9 | 1,8 | -0,1 |

Importance: high = 3; medium = 2; low = 1; not at all = 0
Valuation: high = 3; medium = 2; low = 1; not at all = 0

Figure 45: Weighted Scoring Model Analysis of the Value Chain Analysis

Source: Author's own illustration based on author's empirical research results.

| SFM | 0 0.5 1 1.5 2 2.5 3 | | | | | | Importance | Valuation | Difference |
|---|---------------------|--|--|--|---|---|------------|-----------|------------|
| | | | | | | | | | |
| Ease of implementation | | | | | □ | ▲ | 2,4 | 1,4 | -1,0 |
| Applicability for SMEs | | | | | □ | ▲ | 2,2 | 1,8 | -0,4 |
| Applicability for large companies | | | | | | ▲ | 2,5 | 2,7 | 0,2 |
| Holistic analysis of the environment | | | | | | ▲ | 2,4 | 2,7 | 0,3 |
| Holistic analysis of the company | | | | | | ▲ | 2,4 | 2,6 | 0,2 |
| Complexity of the model | | | | | | ▲ | 1,8 | 2,6 | 0,8 |
| Applicable for development phase of the company | | | | | | ▲ | 2,2 | 2,2 | 0,0 |
| Incorporation of environmental complexity | | | | | | ▲ | 2,2 | 2,7 | 0,5 |
| Internal structure analysis of the company | | | | | | ▲ | 2,3 | 2,5 | 0,1 |
| Sustainable competitive advantage | | | | | | ▲ | 2,5 | 2,5 | 0,0 |
| Legal environment | | | | | | ▲ | 2,1 | 2,3 | 0,3 |
| Economic environment | | | | | | ▲ | 2,3 | 2,6 | 0,3 |
| Technology & Innovation | | | | | | ▲ | 2,3 | 2,5 | 0,2 |
| Resource based view | | | | | | ▲ | 2,2 | 2,4 | 0,2 |
| Long-term survival | | | | | | ▲ | 2,7 | 2,4 | -0,2 |
| Objectivity | | | | | | ▲ | 2,2 | 2,0 | -0,2 |
| Comparability | | | | | | ▲ | 1,9 | 1,9 | 0,0 |

Importance: high = 3; medium = 2; low = 1; not at all = 0
Valuation: high = 3; medium = 2; low = 1; not at all = 0

Figure 46: Weighted Scoring Model Analysis of the SFM

Source: Author's own illustration based on author's empirical research results.

This is shown by a derivation of about 0.5 on average. However, the results illustrated in Figure 46 are coinciding with the findings of the Weighted Scoring Model Analysis and Evaluation that ranked the SFM first. Besides the named weaknesses, the SFM nearly correlates perfectly between current and desired situation. This means, that the analyzed variables of the survey are in the same way present in the SFM as they have been evaluated by the experts concerning their importance. To further prove the ranking of the different strategy models, a **radar chart/ spider web approach** based on a mapping over lay method has been used to visualize the results per individual indicator. A radar chart/ spider-web model is a graphical method of displaying multivariate data in the form of a two-dimensional chart of three or more quantitative variables represented on axes starting from the same point. Using analysis enables a vivid and visual description of the connections between the different strategy models.

The relative position and angle of the axes are typically uninformative. The 17 indicators have been arranged radially around zero and value of each aspect has been depicted by the node (anchor) on the spoke (axis). The radar chart/spider-web model has been established for each analyzed strategy model uniquely and the results have been translated into one overall comparative model at the end illustrated in Figure 52.

Figure 47 illustrates the spider-web approach for the FFM, visualizing the weaknesses of the FFM are the lack of the ‘resource-based view’, an ‘incorporation of environmental complexities’ and the ‘holistic analysis of the company’. Using this method to visualize the models has the clear advantage of getting to know the strengths and weaknesses at first glance.

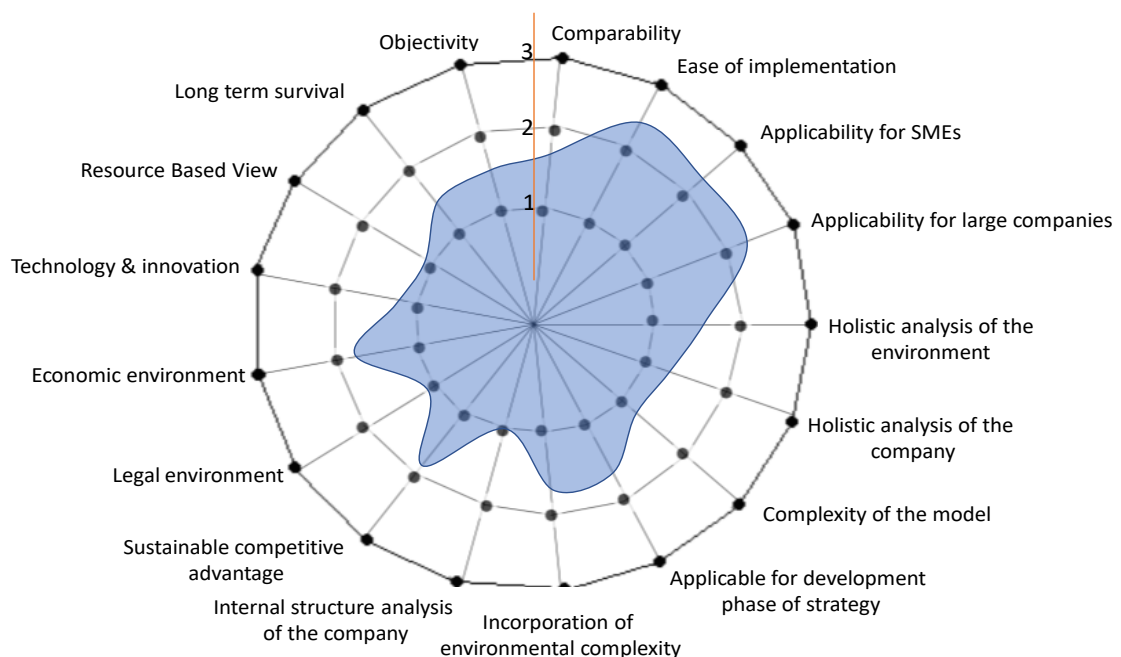


Figure 47: Radar Chart/Spider Web Model of the FFM

Source: Author’s own illustration based on author’s empirical research results.

A more compensated picture is given when looking at the SWOT Analysis plotted in Figure 48. Analyzing the SWOT analysis based on a Radar Chart/ Spider-Web approach visualizes that all indicators are valued on average at the same amount. That is why the picture seems more compensated. Nevertheless, the values given for each indicator are around 1.5 and therefore are not valued very high.

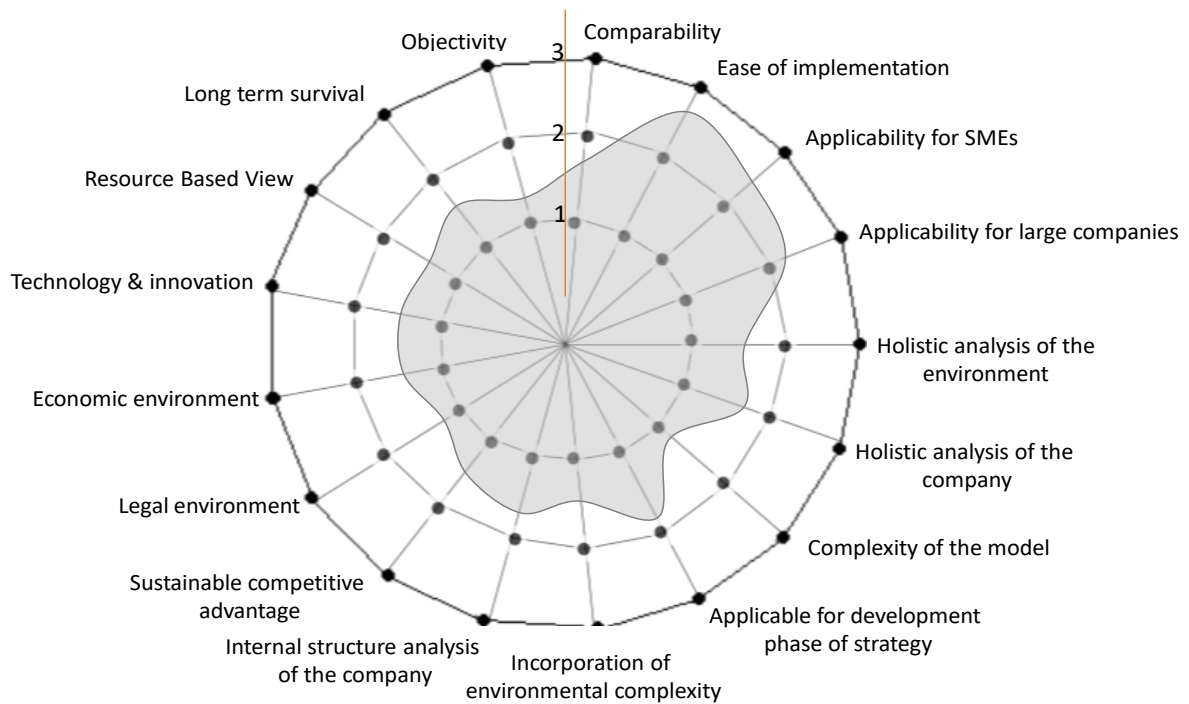


Figure 48: **Radar Chart / Spider-Web Model for SWOT**

Source: Author's own illustration based on author's empirical research results.

Thus, it becomes visible, that it is not only important for the strategy models to be valued with steady indicators (around the same amount) but also with high indicators displaying a holistic applicability. The more circular a model is, the better applicable it is ranked by the experts.

Based on the 17 indicators arranged radially the values of each aspect of the results display some additional strengths in terms of the dimensions (political, economic, social, technological, ecological and legal) as expected of the PESTEL model (Figure 49). However, the model ranks low on sustainability of competitive advantage, RBV and long-term survival of the firm. The indicators holistic view of the firm and objectivity have also been ranked not very high, purely based on the fact that the model does not take any regard of the internal affairs of the firm, thus making it indispensable not to simultaneously consult additional models, which does not make the model an all-inclusive tool for the strategist to have a broader view of the milieu, wherein he navigates the firm.

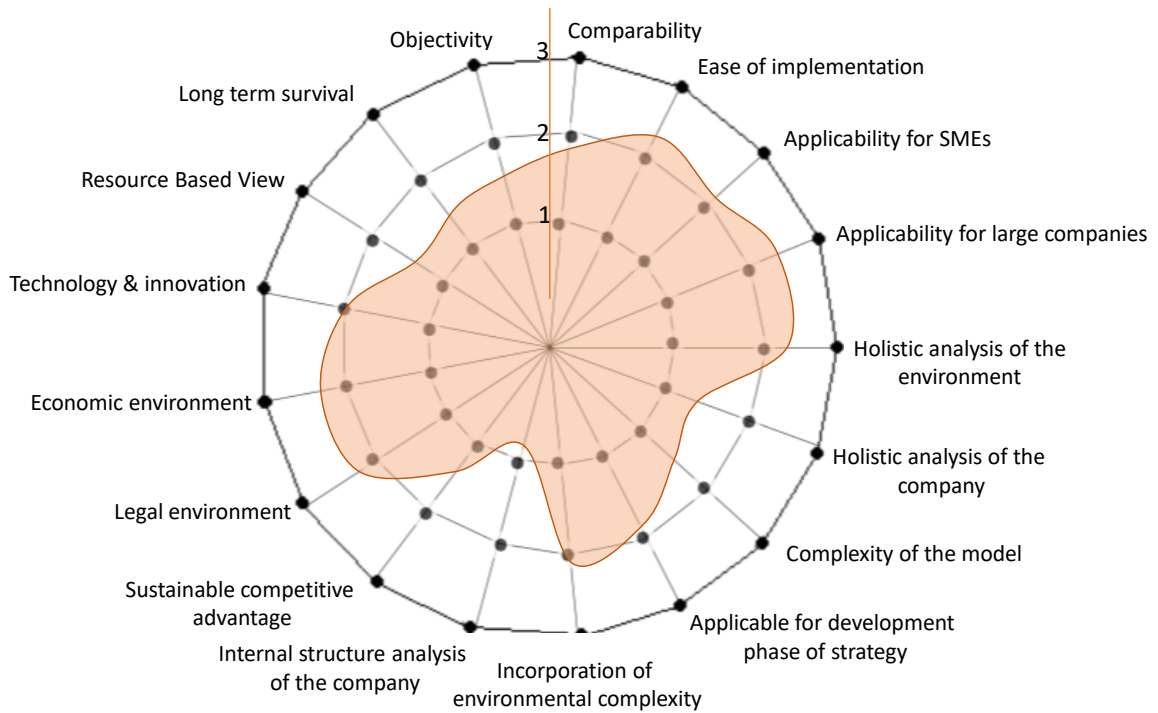


Figure 49: **Radar Chart / Spider-Web Model for PESTLE**

Source: Author's own illustration based on author's empirical research results.

The Value Chain model below in Figure 50 illustrates to the contrary the strengths in terms of the easiness of implementations to SME's and MNCs. Additionally, the indicators as internal firm dynamics and strengths during the strategy development phase are displaying vital robustness of the model, while all the notions relating to a holistic view of the environment and also objectivity of the model indicates weaknesses that are visible in Figure 50.

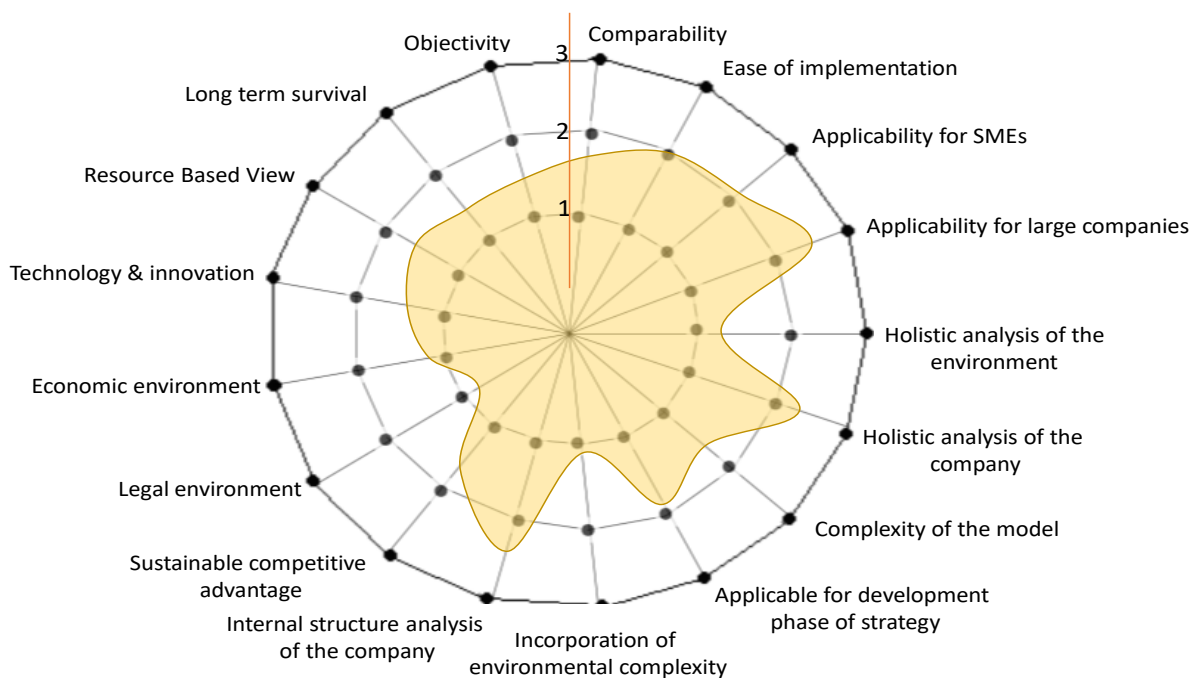


Figure 50: **Radar Chart / Spider-Web Model for the Value Chain**

Source: Author's own illustration based on author's empirical research results.

The SFM displays strengths on a multilevel and scale. The experts agreed that it is strongly holistic. The SFM illustrates vital strengths (2.5+) on nine indicators out of the total 17, an indicator of two on objectivity and scores low on the notion of ease of application (1.4).

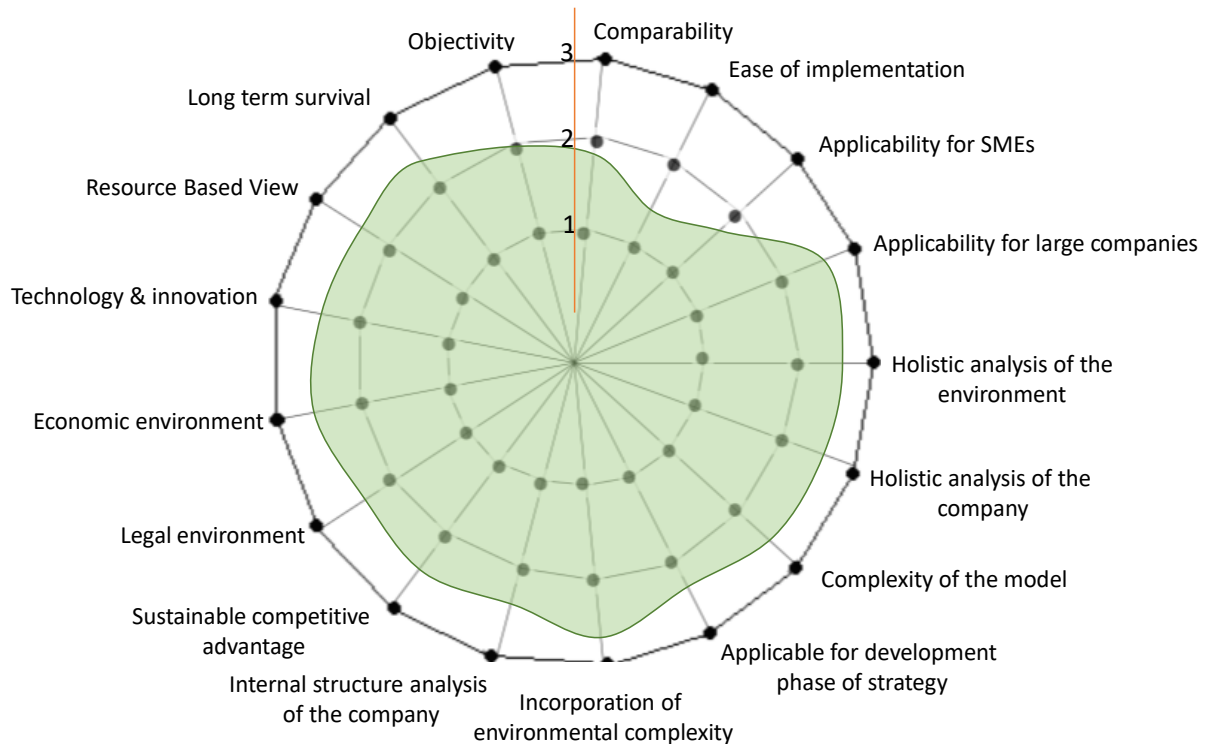


Figure 51: Radar Chart / Spider-Web Model for the SFM

Source: Author's own illustration based on author's empirical research results.

The reasons could be that the author's SFM is:

1) based on Ashby's Law requiring a level of complexity; 2) holistic models are difficult to implement, hence too many indicators and Weltanschauungs must be integrated within the dimension of strategizing; 3) the general training of the strategists has been based on rather simplistic models; 4) the general tendency of practitioners to shift favorably towards simplistic models is apparent⁶² and 5) the model requires professional application by a consultant and a corporate knowledge management, training and transfer within the SMEs. Finally, as the diagnostic power of the SFM can be demonstrated above, wherein based on the 17 indicators the SFM outperforms all the available models (Figure 52).

Figure 52 below illustrates all the strengths and possible weaknesses of all the models and what makes the SFM efficient is that it embraces a holistic spectrum based on diagnoses to develop a robust strategy for the firm thus enabling the strategist to navigate complex and turbulent environments and furthermore to function as an immunization tool against strategic risks in

⁶² The author has also the same experiences applying the model to Peter Lacke Group, where a solid training of the managers as displayed in Kamran, 2017a, was necessary to successfully launch the project and apply the SFM to the firm.

uncertain and shifting time out of its joint.

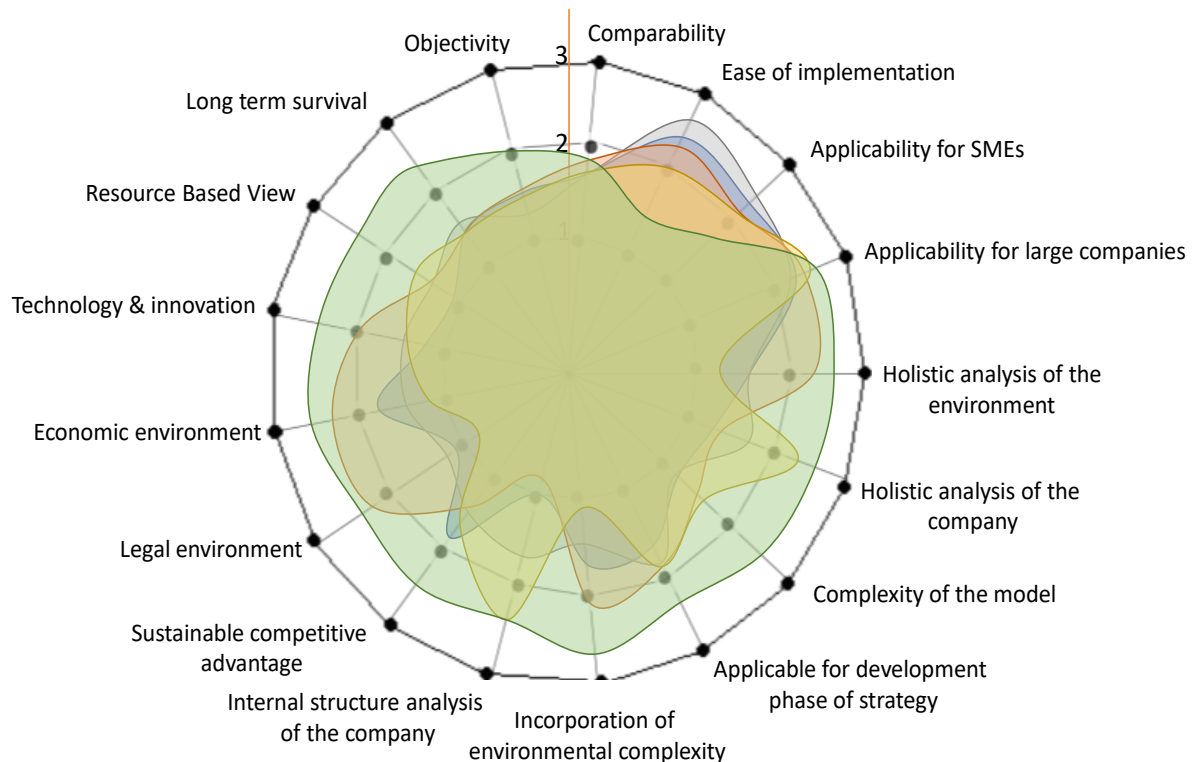


Figure 52: **Radar Chart/Spider-Web Model for all Models Based on Overlay Analysis**

Source: Author’s own illustration based on author’s empirical research results.

Time is the currency of the strategist, hence all firms competing in a global environment must proactively approach their strategic development based on cybernetics dissolves problems, rather than occupying a constant reactionary strategic mindset. Therefore, as corroborated based on the empirical evidence, the SFM is a solid model enabling strategist to act proactively and consciously to navigate the firm safely, shaping the environment favorably for the firm to prosper.

4.7.6.3. The Wilcoxon Test - Tendency of all Models

Furthermore, a Wilcoxon Test was conducted to measure the tendency of all models. The data of the test (survey III) was first tested for normal distribution with a single sample Kolmogorov-Smirnov test (Appendix 45, p. 362). All variables are normally distributed, so that a Wilcoxon-test was applied to measure the tendency of all models and the importance in relation to the evaluated data. The Wilcoxon test compares two variables in terms of direction – a highly negative value means that that the compared variables are not pointing in the same direction. A low value near zero means that the results of both variables are pointing into the same direction.

As the questionnaire of test III has a scale ranging from “0” (not at all) to “3” (high), the Wilcoxon test seems suitable for finding different tendencies between the models, and the importance scale. As shown in Table 40, in the first column “*SFM-FFM*” the evaluated data of SFM and FFM was compared, and results show a high significance. This means that for example the data of SFM and FFM do not have the same tendency, and therefore were judged differently by the tested population.

Table 40: Results of the Wilcoxon Test for Finding Different Tendencies Between the Models and Their Importance Scale

| | SFM-FFM | SFM-PE | SFM-VC | SFM-SW | IMPVALSFM | IMPVALFFM | IMPVALPE | IMPVALVC | IMPVALSW |
|-------|---------|--------|--------|--------|-----------|-----------|----------|----------|----------|
| 1 | -4,953 | -4,813 | -4,229 | -5,607 | -5,197 | -0,142 | -1,758 | -3,134 | -2,257 |
| 2 | -3,475 | -2,164 | -2,572 | -3,702 | -2,686 | -1,057 | -0,784 | -0,687 | -2,286 |
| 3 | -2,317 | -1,802 | -1,422 | -2,599 | -1,660 | -1,015 | -0,202 | -0,308 | -1,548 |
| 4 | -5,224 | -3,087 | -5,982 | -4,953 | -2,566 | -4,324 | -0,686 | -5,563 | -4,552 |
| 5 | -5,779 | -5,696 | -2,967 | -4,867 | -2,744 | -5,222 | -4,913 | -1,092 | -3,861 |
| 6 | -5,451 | -5,052 | -5,25 | -5,673 | -4,659 | -3,108 | -2,006 | -0,784 | -3,647 |
| 7 | -2,621 | -1,950 | -2,243 | -1,831 | -0,275 | -2,477 | -1,607 | -1,773 | -1,834 |
| 8 | -5,672 | -4,667 | -6,125 | -5,911 | -4,362 | -2,736 | -0,742 | -5,389 | -4,341 |
| 9 | -5,798 | -5,999 | -1,204 | -4,271 | -0,892 | -5,767 | -5,891 | -0,469 | -3,992 |
| 10 | -3,877 | -5,207 | -4,481 | -5,186 | -0,331 | -3,711 | -5,500 | -5,182 | -5,104 |
| 11 | -5,200 | -0,602 | -5,747 | -5,546 | -1,793 | -4,773 | -1,328 | -5,517 | -5,094 |
| 12 | -4,590 | -2,445 | -5,786 | -5,778 | -3,657 | -2,950 | -0,136 | -5,178 | -4,997 |
| 13 | -5,875 | -3,175 | -5,116 | -4,971 | -2,075 | -5,117 | -1,540 | -4,074 | -4,215 |
| 14 | -5,264 | -5,008 | -3,417 | -5,150 | -1,493 | -4,996 | -3,995 | -2,752 | -4,349 |
| 15 | -4,985 | -5,454 | -4,637 | -4,892 | -2,123 | -5,656 | -5,684 | -5,410 | -5,477 |
| 16 | -3,441 | -3,146 | -3,331 | -4,878 | -1,635 | -4,322 | -4,108 | -4,134 | -5,192 |
| 17 | -1,010 | -0,251 | -0,499 | -0,566 | -0,219 | -1,229 | -0,098 | -0,764 | -0,775 |
| TOTAL | -6,545 | -5,617 | -6,128 | -5,946 | -2,049 | -6,322 | -5,441 | -6,172 | -5,956 |

Source: Author’s own illustration based on author’s empirical research results.

The first four columns in Table 40 (SFM-FFM, SFM-PE, SFM-VC, SFM-SW) show the results of the analysis of SFM with each other model. Column five to nine (IMPVALSFM, IMPVALPE, IMPVALVC, IMPVALSW) show the analysis of the importance score with each other model, for every item in the questionnaire. It shows clearly that the IMPVALSFM column has the lowest average values – what means that the SFM scores highest for the chosen population in relation to the importance for strategic management models. Therefore, the SFM is nearest to what the population thinks is most important.

4.8. Summary of Research Findings

Interpretation of Results

The interpretation of the results will be discussed based on the validity model of Collins, Onwuegbuzie and Sutton (2006) represented in Figure 34. As described, the above empirical test uses the Weighted Scoring Model Analysis and Evaluation, and radar chart/ spider-web model to display the multivariate data in the form of a two-dimensional chart of three or more quantitative variables representation. However, a comparison of the data is limited by the sample size of observations for each model and the study in general. The results display, however, a strong

tendency and internal consistency towards similar results as also validated by the data in the Cronbach's alpha test conducted previously. The data were collected from diverse experts (consultants, academics, and field professionals/experts), thus, to ensure a solid diversity of participants/experts in testing the hypothesis and validating the model. Based on the expertise of the professionals and experts and the design of the empirical investigation, and in addition that the Weighted Scoring Model Analysis and Evaluation methodology was chosen and conducted, not only on the FFM but moreover by integrating the essential models (FFM/SWOT/PESTLE/VC/SFM) available for the development stage of strategy in business administration, the test ensures a holistic view on investigating the models' diversity, but simultaneously a high quality of data available to the author. **Therefore, a representative judgment can be made based on the evidence delivered here:**

1. ***The Notion of Chance or Bias Explain the Results***

Based on the description above the notion of chance and bias can be excluded. No subjective influence of the author in terms of formulating the questionnaire and gathering the data but also on collecting the data has been observed. Therefore, the notions of bias, which creates an association that is not true, or confounding, which describes an association that is true, but potentially misleading, can be excluded.

2. ***Comparison of Results with those from other Studies***

The novelty of the author's work as confirmed additionally by these results display that no similar comparative analyses and pursuits exist within the literature.⁶³ The study validates not only the results on the weaknesses of the FFM and additional strategy models as tested therein are observed, but the empirical evidence substantiates furthermore the claim that there is a need for a robust and holistic strategy model as the SFM.

3. ***Theories, Mechanisms, and Account for Findings***

The fundamental aspect of validating a model is the notion of describing a coherent reality based on an explanatory abstract, thus according to Davis et al. (2007, p. 481): "consisting of constructs linked together by propositions that have an underlying, coherent logic and related assumptions." Therefore, based on Holton and Lowe (2007) Patterson (1986) and Schwaninger and Grösser (2008), results will be interpreted on the following assumptions:

1. ***Refutability: the ability of a theory to be falsified (refuted) or supported. The SFM as corroborated by the results based on average cumulative points of 40,2 and 845 points on absolute value.***
2. ***Importance: a quality or aspect of having great worth or significance—acceptance by competent professionals may be indicative of importance— This part is validated based on***

⁶³ www.google.scholar.de (keywords: porter, five forces model, comparative analysis)

Figure 38 part I (logically based) of the model/questionnaire (importance of the individual variables).

3. **Precision and clarity: a state of being clear; hypotheses can easily be developed from the theory**— based on the Weighted Scoring Model Analysis and Evaluation postulated above the following hypotheses of the author can be validated:
 - **The SFM is superior to the FFM in terms of strategy development advantages (See: results for Weighted Scoring Model Analysis and Evaluation and radar chart/ spider-web model/Chart-Spider-Web).**
 - **The superiority of the SFM is based on the interdisciplinarity of its layers and their multidimensionality (See: the broadness and multi-dimensionality the model embraces based on the holistic notion it captures for strategist on 17 variables).**
 - **The robustness of the SFM is by embracing organizational viability and survivability as its foundation by bridging strategic management with cybernetic sciences (See: the VSM model as the core of the FFM and in particular the superiority demonstrated against the all the models herein examined). Chandler’s “structure follows strategy” thesis needs to be replaced by “structure is strategy” to enable companies to cope with complexity, turbulent environments and emergent phenomena (The proactive notion of the SFM based on an organizational immunization to the major spectrums neglected by strategists as the notions of long-term viability, normative layer etc., validate the author’s hypotheses based on the results obtained.)**
4. **Parsimony and simplicity: uncomplicated; limitation of complexity and assumptions to essentials**— while the SFM has scored the highest from all the models evaluated, the SFM is based on Ashby’s Law rephrased by the author’s analogy as: **“only complexity absorbs complexity”**, demonstrated that robustness of a model comes from its holism and varieties it incorporates especially the holistic picture it captures for the strategist.
5. **Comprehensiveness: covering completely or broadly the substantive areas of interest**— based on the evidence delivered throughout the thesis and also based on the model's validation through this empirical evidence, it is apparent.
6. **Operationality: specific enough to be testable and measurable**—the SFM is based on the results delivered testable and measurable.
7. **Validity: valid, accurate representation of the real system under study**—the SFM corresponds with Denning (1990) thus, it represents the author’s designed model based on the tree notions: 1) description of a reality and on pragmatism—how a model works; 2) computation to guide and to predict a reality and domain where a set of action is required, thus by guiding, measuring and autopoiesis.

8. **Reliability: free of measurement errors**—the results achieved based on the precise results delivered as collected by the empirical evidence. **Fruitfulness: statements are made that are insightful, leading to the development of new knowledge**—the SFM is based on unique sets of theoretical foundations by bridging cybernetics and system sciences with strategic management and paving the ground for much theoretical foundation to be extended.
9. **Practicality: provides a conceptual framework for practice**—while the notion of practicability has been ranked high on the corporate level, the ranking for the SME's has been low. This is a weakness of the model that could be addressed based on a professional consultant applying the model on a firm. The author's field experiences as applied on the PLG show to the contrary that the model is applicable to SME's requiring the pre-requisite that a trained consultant is applying the model. However, this weakness could be addressed in the future; once more experience and tests are gathered.

Chapter Analysis:

The fourth chapter analyzes and summarizes the research findings and validation of the SFM. Various common research methodologies have been applied to justify and prove the applicability and profoundness of the author's SFM in contrast to the FFM, SWOT Analysis, PESTLE Analysis and VC model. As a quantitative measure, the Mann-Whitney-U-Test was applied and tested on professionals and academics. Next, a descriptive analysis was used for the qualitative analysis. More quantitative measures were the use of the Cronbach's alpha Test and a Weighted Scoring Model Analysis and Evaluation and the Wilcoxon Test. For the Mann-Whitney-U-Test the randomized participants were split into two groups to ensure comparability. Using SPSS as an analysis tool, errors in measurement could be minimized and the test for normal distribution with the K-S-Test and S-W-Test was facilitated. The results indicated that the function is not normally distributed and therefore non-parametric tests were used for analysis. Diversification of the sample groups furthermore ensured the validity of research findings. With the number of participants totaling (**n=141**) the necessity for a T & MRM method was given. The results showed that the FFM is used more often and is better known to the participants but is not a suitable option for solving problems in professional settings. The SFM would help to cope with the complex and global world of the future. The descriptive analysis showed that the normative layer is essential in strategic management as a filter against myopic actions and ensures the long-term viability of the firm. RBV was proven to be a significant layer as well but is better applicable with the use of the SFM compared to the FFM. The other layers of the SFM are missing either in part or in total in the FFM developed by Porter but are valid and of high importance for professionals and strategists today. Followed by this is the **Cronbach-Alpha Test**, indicating that the SFM is significantly better in being suited for the use in everyday practice by delivering **values from 0,865 to 0,939** in all

variables –‘demand’, ‘importance’ and ‘integrability’. Another qualitative method was a validating case study applied at the PLG. The SFM was proven to be more holistic and the ‘*Structure is Strategy*’ Lens was integrated successfully in form of the VSM to shift the business model towards a global structure. For the PLG, the red ocean perspective was highly relevant to understand the tough competition they are facing on the global market. As a family-owned business, the normative layer was highly integrated in the company’s identity as well. Every other lens, which is part of the SFM, is important or highly important for the PLG as well, apart from the technology and innovation lens which is perceived as becoming significant in the (near) future.

“The Weighted Scoring Model Analysis and Weighted Evaluation” in combination with **“the Map-Overlay-Visualization-Modelling-Method and the Wilcoxon Test”** have delivered a solid and evidence-based research approach by using empirical gathered data to clearly demonstrate that the SFM has outperformed all available models in the descriptive and inferential statistics. Only applicability and ease of implications are minor drawbacks of the model, but that is due to the nature of a complex model application in general. Overall, it can be concluded that the SFM has significance superiority to the FFM in terms of multidimensionality and interdisciplinarity. Based on the Wilcoxon Test applied in is clear visible that the data of test III was first tested for normal distribution with a single sample Kolmogorov-Smirnov test. All variables were normally distributed (see Appendix 45, p. 362), so that a Wilcoxon-test was tested to measure the tendency of all models and the importance in relation to the evaluated data. The test has compared two variables in terms of direction – a highly negative value means that that the compared variables are not pointing in the same direction. A low value near zero means that the results of both variables are pointing into the same direction. As shown in Table 40, in the first column “*SFM-FFM*” the evaluated data of SFM and FFM was compared, and results show a high significance. This means that for example the data of SFM and FFM do not have the same tendency, and therefore were judged differently by the tested population.

CONCLUSION

The research results based on diverse tests corroborate the main theses and the hypotheses have been proven:

1. *The comparison of the Five forces and the Six Forces Model has empirically shown that the Five Forces Model is not embracing a holistic reality of today's environmental complexity in developing strategies.*
2. *The Six Forces Model has proven itself to be a holistic model in helping managers to improve their strategy development performance.*
3. *The empirical research highlights that managers see therein a vital potential to contribute to the long-term organizational success.*
4. *Based on the evidence obtained, the Six Forces Model is a more suitable diagnostic model applied to complex and turbulent environments of global business.*
5. *The Sixth Force Model designed for business strategy development, is indeed superior in terms of its holistic approach than the Five Forces Model in terms of expected contribution to business management success. Therefore, it closes the current gap in management science and in the practice of business administration by extending the managers ability to make better choices.*
6. *The model provides business managers and decision-makers with a viable set of tools for strategy building in business administration by combining strategic management, systems and cybernetic sciences.*
7. *The model provides nine diverse layers representing a firm's total environment in a coherent and systemic manner to address the challenges of a total global business.*
8. *The diverse tests conclude that the Six Forces Model is ranked the highest followed by PESTLE Analysis, SWOT Analysis and Value Chain Analysis and finally the Five Forces Model. It scores highest for the chosen population in relation to the importance for strategic management models. Therefore, the Six Forces Model is nearest to what the population thinks is most important (Wilcoxon test).*
9. *The Six Forces Model is applicable in real environments of global business and there is a high demand for holistic models. The Peter Lacke Group field application discovered the vital diagnostic power, thus it has very positive implications for business administration and strategy making for multinational small and medium-sized enterprises.*
10. *Effective strategy models as the Six Forces Model proactively shape the business' environment and thus the notions of ambidexterity and dynamic capabilities, which are embedded within the model are highly essential for firms to construct their strategic models based on "the structure is strategy" framework. Thereby, the empirical results have*

extended Chandler's thesis, and will enable the firms to generate sufficient requisite variety via the integration of the Viable Systems Model, and the designed nine essential environmental layers into the strategic framework.

The main hypotheses have been proven.

1. *The Six Forces Model is a better suited model for manager than the Five Forces Model by supporting managers to diagnose, formulate and execute more holistic strategies for today's global and complex reality of business administration.*
2. *Porter's Five Forces Model has displayed limitations to be an adequate model for today's global and complex reality of business than the Six Forces Model. The Five Forces Model does not capture the holistic spectrum required for strategist in business administration*

OUTLOOK AND SUGGESTIONS

In terms of outlook additional research needs are required thus conducting further ground-breaking research by unifying the fields of competitive strategy and cybernetics seems to be a promising scientific and practical venture. **Organizations of the contemporary era cannot only survive by producing the most high-tech devices possible, while their organizational foundations and strategic models have been laid on models of thirty plus years back.** A further much-needed collaboration must be held, where the scientists from diverse backgrounds come together to solve the most essential problem of this era. Complexity is a vital force affecting managers and strategists, which requires viable organizational structures and a holistic view of the environment to cope the proliferating variety.

The following suggestions are essential to highlight:

1. ***For professionals within the fields of management and strategic management practice, it is essential to understand the notion of interdisciplinary model-based-management and strategic diagnosis via a holistic model as the Six Forces Model.***
2. ***For management and strategy consultants, it is essential to highlight that robust models tend to achieve better and more profound strategies. Therefore, complexity is the challenge of management in this era and this complexity can be absorbed via variety attenuation of the internal organizational strength.***
3. ***For professionals within the field of family business management and start-ups, the Sixth Forces Model delivers a powerful tool of analyzing the intern and external challenges they face and may encounter in the near future. Their successes in terms generational transfer and embarking on a new business requires a holistic approach to enhance the chances of successes and thus firm's viability.***

4. *For academics as advanced undergraduate, graduate and senior academics is to suggest that based on the level of their academic pursuits the research needs to be put into a practical context and the reality of the environmental and organizational internal affairs as complex systems can only be diagnosed and properly managed, if the models applied deliver the needed requisite variety as control systems, to cope with the ever-increasing variety in complex settings. This analogy has vital implications for effective learning and better teaching within business schools.*

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