Professional MBA
Entrepreneurship & Innovation

Pro-active Market Opportunity Identification as a key element in the development of Innovation Strategy

A Master's Thesis submitted for the degree of
“Master of Business Administration”

supervised by
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Vienna, 29.06.2019

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Affidavit

I, **PATRICK BADE, BA**, hereby declare

1. that I am the sole author of the present Master's Thesis, "PRO-ACTIVE MARKET OPPORTUNITY IDENTIFICATION AS A KEY ELEMENT IN THE DEVELOPMENT OF INNOVATION STRATEGY", 104 pages, bound, and that I have not used any source or tool other than those referenced or any other illicit aid or tool, and
2. that I have not prior to this date submitted the topic of this Master's Thesis or parts of it in any form for assessment as an examination paper, either in Austria or abroad.

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Signature

I. Abstract

This paper studies managerial and entrepreneurial aspects of pre-entry market opportunity identification and strategic market choice, with special reference to new frameworks available in this area and their relevance to innovation management.

New and ground-breaking research discoveries in the theoretical background of this field have enabled the creation of new strategic tools which are developed for and aimed at entrepreneurs, strategy professionals, managers, venture capitalists and investment professionals. In doing so, the *Market Opportunity Navigator* (Gruber & Tal, 2017a) builds a bridge between the theory of and practice in the field.

Analyzing and observing empirically how market opportunity identification is conducted presently, the paper further seeks potential factors that may hinder the adoption of such frameworks as part of the overall strategy development process. To this end, an interview-based qualitative study of fifteen high-level strategy practitioners is conducted to add further insights of how such frameworks are adapted and employed in practice.

A Swiss drone technology startup is used as a case study for the successful application of the mentioned pre-entry market opportunity identification tools. Further, looking at large enterprises, a second empirical study of ten of the largest automotive companies in the world is conducted, exploring whether market choice is regarded as part of their strategic outlook.

Methodologically, both the interviews and the large company study are based on the principles of qualitative content analysis, according to Mayring (2011).

The study aims to add a new perspective of practitioner's use of the recent market opportunity identification frameworks to the growing body of knowledge and debate in this field.

Keywords: Entrepreneurship; Pre-Market Entry Planning; Market Opportunity Identification; Strategic Market Choice; Early Stage Ventures, Start-Ups, Innovation Management; Strategy.

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II. Preface

The questions of market opportunity identification and strategic market choice are both primordial and straight forward at the same time as they are cutting-edge and abstract. We all chose markets and the opportunities contained within them frequently and often unconsciously. Their application is fascinating, and this has been a fantastic end to my MBA journey: The work on this thesis concludes two years spent commuting to Vienna and a summer at MIT, Harvard, Babson College and Columbia Business School in New York.

My thanks go first to my wife, Ana. Herself busy with a successful academic career, she has been a constant source of love, inspiration, brilliance and patience. I dedicate this thesis to her, with all my love. My extended family may excuse MBA conference calls around the clock. I thank them too.

Prof. Dr. Marc Gruber has been a very generous teacher and an excellent supervisor. His professionalism, talent for collaboration and leadership are a lesson to students at any level. His work at EPFL follows in this vein and I am convinced that Sharon Tal and his *Where to play* (2017a) will continue its successful journey towards being adopted as a key strategic tool for navigating the increasingly complex and fluid global marketplace.

Lastly, my MBA cohort and program managers at the TU Vienna CEC and the WU Vienna Executive Academy deserve a special thanks. The participants of the empirical interviews made the process very thought-provoking. Also, the academic directors Sabine T. Köszegi (TU) and Nikolaus Franke (WU) made it possible that we can aspire to graduate from a unique MBA in Europe: one offered jointly by a leading technical and a leading business university.

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VI. List of abbreviations

AG	=	*Aktiengesellschaft* (Joint Stock Company)
APAC	=	Asia Pacific
B2B	=	Business to business
B2C	=	Business to consumer
CEE	=	Central and Eastern Europe
CEO	=	Chief Executive Officer
CIO (Innovation context)	=	Chief Innovation Officer
CIO (IT Context)	=	Chief Information Officer
CIO (Investment Context)	=	Chief Investment Officer
COO	=	Chief Operating Officer
CTO	=	Chief Technology Officer
DACH	=	Germany, Austria and Switzerland
EMEA	=	Europe, Middle East and Africa
EPFL	=	École polytechnique fédérale de Lausanne
EU	=	European Union
EVP	=	Executive Vice President
GmbH	=	Limited liability company
IPO	=	Initial Public Offering
LMU	=	Ludwig-Maximilians-Universität München
PE	=	Private Equity
SA	=	*Société Anonyme* (Joint Stock Company)
SE	=	*Societas Europae* (Joint Stock Company at EU-level)
MIT	=	Massachusetts Institute of Technology
MO	=	Market opportunity
MOI	=	Market opportunity identification
MON	=	Market opportunity navigator (Gruber & Tal, 2017a)
SMC	=	Strategic Market Choice
RBV	=	Resources-based view
R&D	=	Research & Development
S&P	=	Standards and Poor's
S&P 500	=	The Standards & Poor's listed equity index (S&P 500)
VC	=	Venture Capital
VP	=	Vice President

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1. Introduction

This study seeks to understand the application of recent advances in the field of *Strategic Market Choice* (SMC) and *Market Opportunity Identification* (MOI). Recent findings in this domain indicate that considerable unused and tacit resources (Schilling, 2017) can be unlocked in companies and ventures of varying sizes by using a pro-active approach to both these strategic actions; especially if these are applied early in the entrepreneurial process (Gruber, 2005). The scope of these findings and the frameworks that have been created based on them range from the individual (who may want use them to choose a new job, career path or country to live and work in) all the way to large multi-national corporations, which may benefit from adding this strategic step to their innovation strategy.

Following this introduction, in chapter 2, the paper gives a critical survey of the theory of this comparatively new field and presents break-through studies by Gruber, MacMillan and Thompson (2013) in their theoretical context. Especially, the compelling longitudinal studies which show a clear correlation between MOI at an early stage of venture creation (*i.e.* pre-market entry) and the venture performance at the diversification stage are crucial.

The resources-based view (RBV) (*e.g.* Penrose, 1959) is part of the theoretical underpinnings of these developments, while the theories are truly cutting-edge and enable new ways of seeing entrepreneurial behavior and have profound implications for entrepreneurship theory. As Gruber says, one part of the motivation for this work for its creators was to "demystify" the market choice element of the venture creation process (Gruber, 2019).

In chapter 3, the empirical part of the study, the focus shifts to the emerging application of this new body of knowledge and the associated tools, such as the *Market Opportunity Navigator* (MON), which Gruber & Tal added recently (2017a). The MON is an agile[1] framework that is designed to work with other strategy development tools and is designed to be applied in the venture creation process before moving on to frameworks such as Osterwalder and Pigneur's *Business Model Canvas* (2010).

[1] The concept of *agile* is here used in the sense of the agile framework for the development of computer software, which has since been applied more widely to the organization of teams, which seek to be ever more responsive and adaptive to the challenges they face. Agile was originally based on a 2001 on-line manifesto that formed the basis for the philosophy, please see: https://agilemanifesto.org/. It was then applied to project management and eventually management. For an illuminating overview of the history of the concept, please see Mimbs Nyce (2017). For a more technical view on Agile for project management see the classic book by Highsmith (2002) and for Agile and management, Richet (2013) gives a clear overview.

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Three pillars of empirical analysis will be presented. First, a qualitative content analysis based on Mayring's methodologies (2015) will evaluate interviews with fifteen entrepreneurs (or serial or repeat entrepreneurs) and corporate actors. Second, a well-documented and published case study, "*Flyability SA*", a Lausanne-based drone technology start-up (now SME), which emerged from the École polytechnique fédérale de Lausanne (EPFL) is considered as a reference point of a company, having successfully and consciously implemented strategic market choice from the outset. Third, a second qualitative content analysis of ten full-year financial reports of listed companies focuses on strategies seeking to create revenue from "new products" or "innovations", asking if they show signs of awareness of the importance of strategic market choice.

Chapter 3.1.2 then proposes six dimensions of entrepreneurial and managerial behavior: (1) Awareness, (2) Knowledge, (3) Application, (4) Experience, (5) Interaction and (6) Performance, which are relevant to the successful conduct of MOI and SMC. These points require development and analysis which is performed in the final two sections (chapters 5 and 6), which are dedicated to interpreting the results of the empirical part, linking them back to the theory studied in the first part and drawing conclusions from the combination of both.

Based on this, the overall conclusions regarding the significance of Strategic Market Choice as part of the strategy development process both in entrepreneurial and managerial contexts are drawn. Does MOI/SMC remain underestimated, especially in large enterprises? The study is approached from the perspective, that considerable untapped potential and tacit resources exist both for large established and newly founded companies. This fact could be successfully demonstrated by the empirical part.

Finally, the overall strategic relevance of MOI and SMC is encapsulated by Peter Drucker. Underlining the fact that MOI/SMC are judgement-based rather than measure based, he explains how the field may have a profound strategic importance for the future development of a company (Drucker, 1985, p. 161):

> Equally, a company must choose between a new way to service customers, which enables the company to retain an important account it would otherwise have lost, and a new product, which gives the company leadership in markets that, while still small, may within a few years become big and important ones. These are judgments rather than measurements. But they are not arbitrary; they are not even subjective. And they are quite rigorous even though not capable of quantification. Above all, they do what a "measurement" is meant to enable us to do: to take purposeful action based on knowledge rather than on opinion or guesswork.

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1.1 Problem formulation

Compelling academic proof of the utility and value of pre-entry, pro-active market opportunity identification (MOI) has been provided by Gruber (2007, 2010) (please also see chapter 2) and through a vast study of 496 technology ventures focusing on the pre-entry knowledge and composition of their founding teams Gruber, MacMillan and Thompson (2013). The establishment of an agile strategic framework has recently made this knowledge available to a broader, practice-orientated audience in form of the MON (Gruber & Tal, 2017a). The large-scale study shows that the introduction of a strategic step is highly useful to the venture creation process. De-linking a new venture idea from its initially intended application, examining it broadly and methodically and then re-linking it back to said initial idea, improves the likelihood of venture survival and is strongly positively correlated with superior performance at the venture's diversification stage (Gruber, MacMillan & Thompson, 2013). The authors refer to this process as "escaping the prior knowledge corridor" (*Ibid.*).

The question this paper seeks to answer is twofold and incorporates a positive and a negative questioning as a basis for the empirical interviews it conducts. First, how are pro-active MOI and SMC frameworks and strategies applied by practitioner's in 2019? Secondly, given the compelling nature of the theoretical knowledge, what are possible hurdles or points of resistance that could counter act their wider use and implementation, especially in larger enterprises?

The second dimension is based on the interesting application of the MOI and SMC theories to the Venture Capital (VC) industry (Petty & Gruber, 2009). The compelling results from this study could be applied more widely within larger firms with relative ease, akin to Barber & Goode's (2007) suggestion that large firms may emulate the Private Equity (PE) industry's approach to sell profitable businesses in the PE "sweet-spot", *i.e.* following a turnaround and rapid performance improvement.

Given the strong theoretical backbone of the recent framework for MOI by Gruber & Tal (2017a), its application presents a potential win-win situation for companies and ventures of varying sizes. For the resource allocation of less than a day's work for a founding team or unit team, usually in the form of a workshop or break-out session, statistically significant performance improvement is available. Far from promising a magic potion, the authors highlight that their framework merely unlocks awareness and positive associations that are

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already present in the founding teams, albeit in tacit form. This question around awareness inspires aspects of the empirical study.

In brief, the paper studies the *status quo* of MOI and SMC amongst practitioners and asks what entrepreneurial and managerial behaviors influence the successful application of Gruber & Tal's (2017a) agile framework, *The Market Opportunity Navigator*. Further we explore what behavioral points of resistance (*i.e.* attitudes, organizational designs, or systems) it might encounter as it is disseminated, and we observe how ventures can avoid these to take full advantage of this highly useful new strategic tool.

1.2 Formulation of Propositions

Moving into the empirical study, we formulate four propositions which we will then revisit in the concluding chapter. Based on the theoretical part, we can postulate with some accuracy how entrepreneurs and managers engaging in MOI may approach the choices and challenges they face. These four propositions will also guide the overall research process, and therefore be revisited and evaluated at the end of the paper in the concluding chapter 6.

1.2.1 First Proposition (P_1)

A clear divide appears to exist between the entrepreneurial application of a MOI framework (*i.e.* in a startup) and its managerial application (*i.e.* in a large organization) (Gruber, 2005).

- **P_1:** *This division remains virtually unchanged, despite the economic and technological developments and changes to the business landscape since the financial crises of 2007 – 8.*

The success of the MON indicates that a shift of focus in entrepreneurship research towards small and medium enterprises (SMEs) and new venture creation itself, proposed by Gruber (2005), may well have produced a framework that many large companies can now benefit from in their on-going fight to innovate and find new markets to exploit with their economies of scale.

1.2.2 Second Proposition (P_2)

- **P_2:** *Strategy practitioners display a certain resistance to methodological frameworks by labelling these as constraining to the "entrepreneurial process".*

This second proposition aims to point out a deeply-rooted behavioral pattern, which might be in the process of disappearing but was both present in the MBA classroom and the

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empirical sample of this paper: the tendency amongst those who make strategic decisions to seek to mythize the venture creation or idea formulation process along with its translation into entrepreneurial or managerial action.

1.2.3 Third Proposition (P_3)

- **P_3:** *A frequently occurring misunderstanding of MOI and SMC frameworks is that they are designed to extract maximum benefit from a given market or market opportunity.*

Amongst those practitioners who are learning about MOI for the first time (*i.e.* had no previous knowledge of methodic strategy frameworks in this field, MON or other) frequently display a tendency to say or imply that these are new models seeking to commoditize entrepreneurial markets.

1.2.4 Fourth Proposition (P_4)

- **P_4:** *MOI is a non-threatening framework that has a very clearly defined downside: the loss of the time allocated to a structured MOI and SMC process such as the MOI.*

This fourth and final proposition aims at an diffuse effect that affects many behavioral economics based insights: as with Thaler & Sunstein's concept of *nudges* (Thaler, 1993 and Thaler & Sunstein, 2008), the simplicity of the concept is accompanied by a combination of both logical and counter-intuitive directions, which take time to get used to. In Thaler's case the subsequent recognition has removed the doubt of its validity. This paper suggests that Gruber and Tal's work represents an interface between entrepreneurship strategy and behavioral economics, which has highly useful applications for practitioners.

1.3 Objective of the Master Thesis

The objective of this paper is to add to the discourse about the way individuals acting in an entrepreneurial or managerial function identify and choose market opportunities for their ventures and markets for their products or services. In the spirit of the authors of the key research behind this (Gruber 2007, 2010; Gruber, Kim & Brinckmann, 2015; MacMillan & Thompson, 2013 and Gruber & Tal, 2017a), it seeks to emulate especially the latter two authors approach to make the insights apply to different scales of ventures and companies and on varying organizational levels alike.

The interpretation of the empirical research (chapter 4) introduces the idea of varying dimensions of entrepreneurial or managerial behavior required for the successful application

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of methodological MOI. Here, we seek to identify patterns in qualitative data gathered in the interviews conducted in chapter 3. As Mayring (2015) demands in his developments on qualitative content analysis based on summarizing and inductive categorization, the abstraction level will be defined in this step (3.2.1.3.) with the goal to observe patterns that would not become visible through quantitative research alone.

1.4 Course of investigation

This study is the result of readings and re-combination of both pre-existing and newly acquired knowledge as part of the WU Vienna & TU Vienna Professional MBA specialized in Entrepreneurship and Innovation. It draws on the MBA module taught by Prof. Dr. Marc Gruber (EPFL Lausanne) together with Prof. Dr. Joachim Henkel (LMU München) as part of the program module: *Strategy of Innovation* (Gruber, 2018 & Henkel, 2018). The idea for the paper and the paper itself have gone through several iterations, which will be illustrated in the coming sections.

At the beginning of the process, a phase of literature review led to deeper interest in the underlying concepts and economic underpinnings of the field. This was followed by the realization that the insights may well be at least a change of step or even a fully-fledged paradigm shift in the understanding of the early stages of venture creation.

Following this, the design of the questionnaire for the empirical interviews acted as a bridge between the literature, the methodology (Mayring, 2015) and the resulting paper itself. The search for interview partners was both interesting and formative. Some promising early leads had to replaced (ams AG, Sauber F1, Intercontinental Hotels). Yet, work continued without delay and was boosted by a personal conversation with Prof. Dr. Gruber in late April 2019, which was highly useful and insightful.

Further, the suggestion by one early interviewee, Sjors van der Sterren (2019), led to the creation of a three-minute, six-slide "pitch" or presentation of the paper explaining very briefly to the busy practitioners what the question and motivation for the qualitative interviews was (See Appendix 8.2). This in turn helped to fine-tune the overall direction of the thesis and to discover the second question, *i.e.* what possible patterns of resistance to such a captivatingly useful framework might practitioners have? What observations could we add to help the speedy dissemination of such a useful framework, that beyond the world of corporate strategy and

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high-growth start-ups is equally applicable in a social entrepreneurship context (Thompson & MacMillan, 2010b)?

1.4.1 Overall methodology employed in the paper.

The methodology employed for the writing of this thesis bases itself on a combination of theoretical study and empirical research. For the theory part, the goal was to reach a near-exhaustive coverage of the recent literature in the field. Beyond this, a basic understanding of the theoretical underpinnings in form of the *Resources based view* (RBV) of management studies, micro-economics and the Penrosian view of the firm, as well as her contributions to the understanding of skills, resource allocation, and the interface between the firm and the wider economic system were essential. The latter creates an important bridge between the RBV and strategic management (Rugman and Verbeke, 2002).

As outlined in 1.2., for the empirical part the teachings of Philipp Mayring are employed and followed as closely as possible for a study of this limited scope. This approach allows a combination of inductive and deductive thinking to take place. It also allows the paper to contribute, within its limitations of scope, to a body of knowledge that benefits from well-funded, collaborative multi-year longitudinal studies with samples sizes comparable to the S&P 500 equity market indices (Gruber, MacMillan & Thompson 2018 and Danneels, 2007).

Mayring's approach (2011) allows the observation of useful patterns beyond the "hard data" provided by these seminal studies (Gruber, 2005, 2007 and Gruber, MacMillan & Thompson, 2013) and thus allows a paper of the present scope to make a contribution. For this, it is important to be aware of the implicit biases and limitations of the sample employed with a sample size of n = 15, for the qualitative interviews. This main part of the empirical study will be referred to as its Pillar I.

The second empirical item, and Pillar II, of the analysis is the well-documented and published success story of *Flyability SA*, an EPFL start-up. The company has knowingly employed SMC, MOI and the knowledge that has since helped create the MON and have profoundly benefited from the process. Here the case study plays the role of a control variable in this context: aspects of the company's success can be found in qualitative examples where methodologies similar to the MON was applied implicitly or unknowingly.

The final third pillar applies Mayring's (2011) approach to a study of ten annual corporate reports of the financial year 2017, of the world's ten largest automotive companies and groups

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(n=10). This pillar combines frequency, content and context analyses with the aim to understand the approach to MOI in large organizations better.

1.4.2 Balance between theory and empirical research

The balance between attaining a better understanding of the theoretical literature and applying it to the practical world of venture creation and corporate venturing is key to making this paper useful to the reader and successful in its bid to contribute to an interesting debate about possible optimizations of the early stage of venture creation.

Since the conception stage of the study it was clear that the theoretical part and the empirical part would create some level of tension between each other. In the spirit of the MON and its authors (Gruber & Tal, 2017a), the intention has been to harness this and employ this tension as an iterative force that may drive forward the agile process of adapting to new findings the authors describe.

The result has been a thoroughly positive process and one that has made it possible to attract an interesting sample of contributors in the form of the generous interview partners. These, as well as a more detailed description of the methodological frameworks for the empirical part will be discussed at the beginning of chapter 3.

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2. Theoretical foundations of strategic market choice

It is precisely because the unexpected jolts us out of our preconceived notions, our assumptions, our certainties that it is such a fertile source of innovation.

Peter Drucker, Innovation and Entrepreneurship, 1985, p. 85.

This section seeks to achieve three aims, while adding a centrally important theoretical dimension to the paper. First, it provides a critical overview of the recent advances in MOI and SMC. In doing so, it will map, explain and analyze the literature in this area since the turn of the millennium ("recent literature", 2.1) and explore its historical underpinnings in Edith Penrose's work and the RBV ("origins", 2.2.) and this view's renaissance in the mid-2000s which, in turn, coincided the big successful steps forward in MOI and SMC. Secondly, it will clarify the use of terminology for the subsequent empirical parts of the paper. Lastly, it will showcase four interfaces contained in the field of MOI and SMC: i) Entrepreneurship theory / Strategy, ii) Entrepreneurship Strategy / Innovation Management, iii) Business Management / Entrepreneurial Behavior and the previously mentioned iv) Entrepreneurship Strategy / Behavioral economics (see 1.2.4.).

Beginning with the recent theoretical breakthroughs, their origins and a description of how scholarly collaboration has led to an interconnected map of knowledge and insights, casting a truly novel light on this early stage of the venture creation process. The first theoretical distinction has to be made between the field of study (MOI and SMC) and the strategic tools that have been developed based on the decades-long theoretical body of knowledge. As we will see, the literature and associated body of knowledge reaches back to the early 2000s and have their origins in Strategic Marketing, Entrepreneurship and pre-entry venture planning and marketing planning (Gruber, 2005). The strategic toolset were created much later based on this long and collaborative academic work (Gruber & Tal, 2017a). Gruber (2018) underlines that the interest was sparked by a perceived imbalance in literature, giving business plans and business models more weight than the question of how to choose the correct opportunity or how to test a potentially exciting idea for a venture, before leaping to the inception stage (Gruber, 2018 and Gruber, MacMillan & Thompson, 2008). Gruber and Tal compare the idea of "running fast" and "where to" (2017a).

The strategic tools developed as a result of this theoretical work and the importance of compatibility of these tools, to create the above-mentioned toolsets with other existing and successful ones, have been shown to be paramount (Gruber 2018, 2019 and Gruber & Tal,

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2017a). The MON, discussed here and in the empirical part of this paper, is designed to work in conjunction with both Osterwalder and Pigneur's *Business Model Canvas* (2010) and was created as an *Agile* framework that is fully compatible with the *Lean Startup* approach pioneered by Steve Blank (2003), a set of strategic tools used widely by entrepreneurs, venture capitalists, educators and management consultants globally. The writing of this study in May 2019 coincides with the inclusion of the MON and the containing book *Where to Play*, by Gruber & Tal (2017a) into the "Lean Startup Toolset" by Steve Blank (2019) (Venturelab.ch, 2019). Blank is the founder of and initiator of the *Lean Startup* movement (2003), which received a renewed boost in 2011 by Eric Ries's *The Lean Startup*, which became a *New York Times* best-seller. This inclusion of the MON underlines the importance of the compatibility and collaboration that lies at the heart of these significant advances.

The clarification of the terminology is equally important. While treated as a single field of research for the purposes of this study, MOI may be perceived as part of SMC: while MOI is a strategic action within a chosen market (*i.e.* the market opportunity of "mass market hydrogen cars" within the "market for automobiles"), SMC studies the choice of the markets *per se* (*i.e.* "Energy"; "Transportation" or indeed a geographical market such as "Western Europe"). The attempt has been made not to conflate these two concepts in the theory part, because scholarly precision demands that the reader knows at which scale and in which context an argument is made. However, the empirical part will go on to show that MOI and SMC are often intimately linked and that the most successful practical tools (Gruber & Tal, 2017a) function independently of the scale at which they are applied. We may therefore close this introduction by stating that this paper seeks to investigate the behavior of entrepreneurs and managers when being faced with the requirement to either identify a market opportunity for a venture or strategic initiative (MOI) or to choose a market to drive a corporate or innovation strategy, or new venture (SMC), seeking to allocate company and individual resources optimally.

2.1 Recent advances in the field of Market Opportunity Identification and Strategic Market Choice

The field of MOI and SMC has enjoyed active scholarly attention and both successful and progressive theoretical development since their emergence in the early 2000s. In the factors that have shaped the origins and developments of MOI and SMC, the dimension of "planning" stands out. It is present both in Gruber's habilitation thesis on the importance of marketing

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planning as part of new venture creation (2005), his subsequent articles exploring a contingency perspective (2007) and in MacMillan and Thompson's paper on the societal benefits of the creation of new markets (2010a). As the focus and interest will shift to new venture creation and helping startups optimize the use of their ideas and resources, this planning aspect will be central to reconnect these findings to the usefulness of MOI frameworks in large enterprises (see chapters 4 and 5).

Shane and Venkataraman (2000) helped move "opportunity identification and exploitation" to the core of the "entrepreneurial process", as Gruber, MacMillan and Thompson (2008) observe that, at the time, only two then recent books on the pre-entry venture creation planning process (or even guidance for entrepreneurs) existed: Mullins (2003) and McKnight (2004). The remaining prior literature in the field of MOI and SMC is acknowledged in Gruber's early work (2005): this body of knowledge can be described as fragmented, both into different domains and often only available in German language during this period (*Ibid.*). Gruber establishes here, through the application of a multitude of analytical tools and models, an empirical *status quo* of new venture creations in Germany, using a German VC firm as a data source. It was the first study of its kind in Germany. This enables a wide array of fascinating observations and conclusions. Key amongst these are, first, an often too late placing of marketing planning in the sequence of the new venture creation after the completion of R&D activities, creating a *post fact* scenario for subsequent strategy development. The second is a tendency to employ financial methodologies to assess alternative market opportunities and to limit written marketing planning to formal aspects such as the marketing mix, which would be required by a formal business plan (*Ibid.*). More generally, Gruber (2005) underlines the fact that new job creation happens primarily in SMEs and new ventures, rather than in the large incumbent companies on which most scholarly attention is focused. This view was put forward again as recently as 2018, when Veugelers, Ferrando, Lekpek and Weiss made similar observations and asked if the same was true for the driving forward of innovation with a focus on European SMEs. However, the role and importance of VC in enabling entrepreneurship in this process (Gruber, 2005) remains the overarching observation of the economic benefit of new venture creation and its early and sound methodological strategic planning. Gruber's previous work (2000a, 2000b, 2002) was in part focused on shifting strategic priorities for SMEs. This is another trend that remains entirely intact at the time of writing, as Büchler notes with reference to "hidden champions" (2018).

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From a practitioner's view, Artley, Dobrauz, Plasonig and Strasser (2003) noted along similar lines, but with an "inverse" focus on technology exploitation, that monetizing technology should only be attempted through new venture creation if pre-entry analysis and planning have established that it is the safest way to extract value from it. Both views show the importance of pre-entry planning and MOI.

Gruber goes on to introduce the importance of the use of strategic "toolkits" (2007). In the same paper he argues that authors such as Bhidé (2000), who ascribe less importance to pre-entry planning, may benefit from the absence of a of a "coherent theory on business planning" (*Ibid.*). The current advances have dramatically changed this picture in favor of pre-entry planning in form of MOI and SMC.

Danneels (2007) adds a valuable longitudinal view on technology leveraging[2] to the picture presented by Gruber (2005). The methods Danneels employs are reminiscent, while applied on a very large scale, of the methodologies of qualitative content analysis suggested by Mayring (2011) (see chapter 3). By revisiting the same technology SME over an eight-year period and conducting dozens of in-depth interviews across departments, he was able to demonstrate many interesting patterns of resistance to the reapplication of an existing technology to new markets. While not directly concerned with MOI or SMC, Danneels demonstrated how human and organizational interactions can lead to an avoidable failure to leverage or re-apply an existing and proven technology to new markets and products. A key observation was that the unstable longer-term allocation of financial resources to the products. While Danneels was generally focused on the allocation of fungible resources, he found that the allocation of resources in stronger financial periods and the withdrawal in weaker ones profoundly fatigued the employees at the firm in question and led to a loss of interest in innovation and technology leveraging projects.

Gruber, MacMillan & Thompson (2008) proceed to develop the theoretical framework for MOI, integrating the dimensions of "prior entrepreneurial experience and market opportunity search" and "pre-entry market opportunity search and post-entry performance". The authors were able to show, using statistical models, that pre-entry entrepreneurial and

[2] Terminologically, a difference between "technology exploitation" and "technology leveraging" can be made: the former being an existing technology that an entrepreneur or company seeks to employ beneficially (see: Artley, Dobrauz, Plasonig and Strasser (2003)). The latter is a later stage application of an existing and already exploited technology to other market opportunities (see: Danneels, 2007).

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managerial experience had a positive impact on post-entry venture performance, while previous technical and marketing experience had a negative performance impact in this context.

Dencker, Gruber and Shah (2009) then go on to enlarge the scope of the field by combining the previous question of pre-entry market knowledge with the notion of "learning" and their effect on new venture survival in a non-technological sample. The results are both clear and eye-opening. The impact of previous knowledge is shown to be direct (*Ibid.*). Furthermore, the authors state that the link between this learning and the founder's pre-entry knowledge may be "constrained or facilitated" (*Ibid.*).

Team composition is a further important area of advancement for the fields of MOI and SMC. Franke, Gruber, Harhoff and Henckel (2008) link team composition with VC decision making, asking how VCs assess the teams that present their startup ideas. The findings introduce the notion of "utility trade-offs" in startup team compositions, showing that certain such characteristics (*e.g.* a university degree or leadership experience) remain key "gatekeepers" in the VC process, and that more experienced VC are better in navigating these tradeoffs (*Ibid.*).

As various samples of companies used by Gruber and his co-authors have been VC backed (*e.g.* 2005, 2007). This makes perfect methodological sense and increases the interest in Petty and Gruber's (2009) "longitudinal study of VC decision making". This looks at the processes involved in screening deals and making investment decisions. It adds a further facet to MOI and SMC.

The theoretical backbone of MOI and SMC was thus nearly complete with these qualitative, quantitative, statistical and hybrid studies by the authors contributing to the field (Gruber, 2005; Gruber MacMillan & Thompson, 2008; Dencker, Gruber & Shah 2009). A very large study published in 2013 may be considered one of the key papers to the understanding of the field today: Gruber, MacMillan and Thompson's landmark study stipulates that some technology startups should aim to achieve "escape from the prior knowledge corridor".

The study followed 496 technology startups, *i.e.* a number comparable to the S&P500 and employed complex analytical tools to derive important observations of the pre-conditioning of venture paths (Gruber, 2010). This study may be considered a breakthrough because it compressed much of the previous decade's knowledge into one useful and diverse paper. As the authors themselves say regarding the assembly of the market opportunity set (*Ibid.*):

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> This paper considerably advances our understanding of opportunity identification, because the extant literature highlights the constraining effects of prior knowledge in opportunity identification (the prior knowledge "corridor") yet has not offered insights into the factors that may help founders to enrich the pool of opportunities available for exploitation. Our results show in some detail how the founders' industry and technological knowledge as well as the founders' activities in external knowledge sourcing shape the number and the variety of pre-entry opportunities in the creation of new technology firms. In so doing, we not only document important patterns that lead to larger and/or more varied opportunity sets but also reveal the key enabling effect of technological experience in creating opportunity variety. (p. 295)

The findings are wide ranging and introduce both the importance of external knowledge sources and the use of these as an important factor, and the concept of "knowledge constraints". However, one key conclusion for the purposes of explaining the importance and usefulness of the since emerged MOI framework, the MON, is the importance of variety of the market opportunities identified by the founding team pre-market entry (*Ibid.*).

Further, the authors show the founding teams are subject to combined "first-degree" (direct effect of their previous knowledge *of* market opportunities) and "second-degree" (effect of their previous knowledge to "assimilate external knowledge") effects of their previous knowledge. This is what the authors dubbed the "prior knowledge corridor", derived in part from Ronstad's "Corridor Principle" (1988). A successful escape from this will be directly observable in the *Flyability SA* case study in chapter 3.3.

In the following Figure 1, a graphical illustration presents the evolution of the theoretical venture creation process in the decade and a half from c. 2000 to c. 2015. It shows how the iterations of MOI and SMC should clearly be moved to the pre-entry stage and seeks to illustrate Gruber, MacMillan and Thompson's findings that ventures which apply such a methodology are not only more likely to survive, but likely to perform better when they have scaled up and reach the diversification stage (2013).

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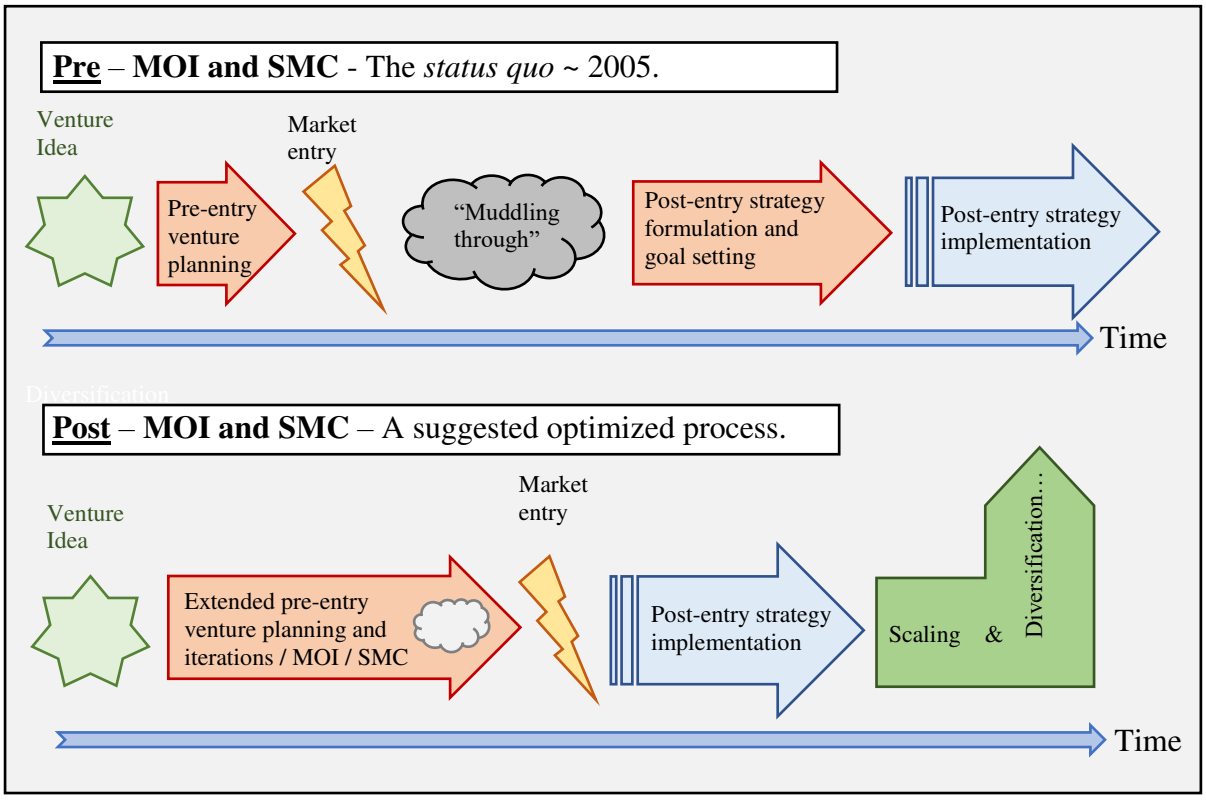
Figure 1: New Venture Creation processes and the place of MOI and SMC[3]



Poetz, Franke and Schreier give a summary of the evolution of search behavior amongst new ventures and established firms, showing that the open innovation paradigm (Chesbrough, 2003a, 2006a, 2006b; Chesbrough & Appleyard, 2007; von Hippel, 2005) applies in this context. Katila and Ahuja (2002) had made a connection between search behavior and new product development in a longitudinal study. Dencker and Gruber further studied the dimension of "opportunity riskiness" and founder experience along with their relation to new firm performance (2015). This highly focused paper added an important aspect, covering a crucial dimension of the overall field, especially for a financially minded audience[4]. They find that different opportunity types exist and that while entrepreneurial activity is inseparable from its

[3] This figure is entirely based on and adapted from Gruber (2005, 2008), Gruber, MacMillan & Thompson (2013) and Gruber & Tal (2017a). Any mistakes are the authors. The term "muddling through" is quoted by Gruber (2005) from Lindblom (1959).

[4] It is important to distinguish between the riskiness Dencker and Gruber (2015) work on, and the notion of corporate "risk management", which is observed in the third pillar of the empirical study. The former is a measure of the riskiness of a venture idea pursued by an entrepreneur.

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context and riskiness, the key is the correct combination of the "opportunity structure" and the skills of the founder (Dencker & Gruber, 2015).

Gruber, Kim & Brinckmann (2015) return to a fundamental question as they complete the picture of recent major advances in MOI. In seeking to define what exactly an "attractive business opportunity" is, more psychological and individual dimensions of the "technologists, managers and entrepreneurs" are brought into play. The categorization itself is highly interesting: given that the context of managerial MOI and entrepreneurial MOI may differ profoundly with regards of the risk of failure involved, this may work both ways depending on the context (*Ibid.*). Some managers may be bound by crippling fear of failure from an unforgiving corporate culture (*e.g.* Japanese firms such as *Toshiba*), while some entrepreneurs may be very comfortably funded and exposed little to no reputational risk (*e.g.* Silicon valley serial entrepreneurs or those funded by a family office venture fund) – and vice versa. Gruber, Kim & Brinckmann (2015) find that technologists, managers and entrepreneurs favor clearly distinct market opportunities. Linking this back to previous observations about team composition and diversity (Franke, Gruber, Harhoff & Henckel, 2008; Gruber, Hoisl & Conti, 2017) and the idea of their correct alignment (Eesley, Hsu & Roberts, 2013) this clearly reinforces the idea to compose founding teams as diversely as possible.

Gruber & MacMillan (2017) build on Fauchart & Gruber (2011) and Gruber, Sieger, Fauchart and Zellweger (2016), by advancing the behavioral and psychological dimensions of the entire field by drawing upon identity theory to reconceptualize the field of entrepreneurial behavior. Here, they show that existing theories constrain the concept to entrepreneurs which are mainly economically motivated. The authors suggest an approach which is more flexible and can accommodate those businesses and their founders which go beyond a purely economic motivation. Bridges between the field of MOI and SMC towards demographic change of developed country economies and to social (or hybrid for profit with a social aspect) entrepreneurship are therefore created.

We conclude this section by highlighting the link between the previously discussed theoretical advances form the early 2000s to the late 2010s to the publication of Gruber and Tal's *Where to play* (2017a). The creation of the latter was a laborious (Gruber, 2018) but useful quest to translate the previous theoretical findings into a practical framework that would be compatible with other strategy development frameworks (Gruber, 2018). In doing so it supplies entrepreneurs or strategy practitioners of any field or context with a framework that

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guides methodological thinking in a way that avoids the behavioral biases and errors uncovered in the previous fifteen years of research. The book *Where to play* and the contained MON successfully create this connection to the work of practitioners.

2.2 The Resource-based view and Edith Penrose as foundations of the field of market opportunity identification and strategic market choice

The successful theoretical advances by the authors studied in the previous section in turn have theoretical underpinnings in economics and the way the firm (or venture) is understood conceptually.

Here, the economist Edith Penrose is the base from which we depart. Frequently quoted by the authors studied in the previous section (*e.g.* Gruber, Kim & Brinckmann, 2015), her *Theory of the Growth of the Firm* (1959) remains a classic text which foreshadows the partial dissolution of competitive boundaries observed in today's more volatile and fluid business global environment. This makes her text striking to today's reader as, in its fourth edition, it does not seem to have "aged" in the sixty years since its first publication.

Penrose's slim volume reads like a *tour de force* spanning from a distinction between the roles of managers (who sell their services) and entrepreneurs (who are displaying "temperament") to the roles of small and large enterprises in the overall economy (*i.e.* "the continued existence of small firms") (*Ibid.*). The author (1959) also displayed a profound understanding of risk, which appears more advanced and multi-dimensional than many models of financial risk employed today. Her developments on "unavoidable uncertainty" combine aspects of planning, finance and what would today be called *risk management*. These areas of her research are directly applicable to MOI and SMC, especially as theoretical guides. It is further equally clear, how the inter-cultural and international author would have been a great asset to the many oil companies she advised in her later career (Pitelis, 2009).

The wider implication of Penrose's theory was a critique of firms using resources to create "isolating mechanisms" from competitors, to seek to establish and maintain a competitive advantage (Rugman & Verbeke, 2002). Penrose's view was much more dynamic in its reading of resource allocation and focused on the achievement of optimal growth patterns (*Ibid.*). According to Pitelis (2009), Penrose did not go as far as Coase (1937), nor was she influenced by him. Coase's theory of the firm was to perceive it as a social construct that was in essence an extension of the price mechanism in the economy itself (1937). An entrepreneur

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used a firm to reduce her or his cost to access and use the central price mechanism (*Ibid.*). Penrose's profoundly resource-focused and dynamic view of the economy created the basis for later developments of the RBV (Barney, 1991; Mahoney & Pandian, 1992).

The relevance of this to the field of entrepreneurship research and MOI and SMC becomes evident, as venture creation and market opportunity exploitation has moved to the center of these fields (Shane and Venkataraman, 2000). Arguably, Penrose's foundations of the RBV provide the economic "what" part of the answer of Gruber, MacMillan & Thompson's (2008, 2013) "how" of MOI.

In summary, the structuralist view of the firm as proposed by Chandler (1962) has been challenged by Penrose's school of thought (1959). The modern contributions to the RBV (Prahalad & Hamel, 1990; Barney, 1991, Mahoney & Pandian, 1992) and the new understanding of resource fungibility and the use of dynamic capabilities (Helfat, Finkelstein, Mitchell, Peteraf, Sing, Teece and Winter, 2007) have added further useful insights and bases for MOI and SMC. In the same vein, Gruber, Heinemann, Brettel & Hungeling (2010) contributed to this body of knowledge by demonstrating the interrelation of resource configurations and performance consequences (using technology ventures as an example).

In conclusion, the RBV and Penrose's views in *The Theory of the Growth of the Firm* (1959) provide a central practical approach for the present study. While she treats entrepreneurs and managers distinctly from a functional point of view, a closer appraisal of her overall view of the economic system indicates that, while performing different functions within the economic system, the two groups of economic actors do appear to be different sides of the same coin for her. Arguably, a successful individual or practitioner displays a combination of entrepreneurial and managerial traits. This integrative view is one the bases of the empirical study performed in chapter 3.

2.3 The Future importance of Market Opportunity Identification

In the over fifteen years of intensive research discussed in 2.1, the global economy has changed dramatically. These changes have brought SMC to the foreground for established companies and made MOI an essential tool for entrepreneurs and aspiring entrepreneurs. Hence the introduction of MON as a strategic framework to facilitate both these processes is highly timely. Even with the rise of financial market and political uncertainty in many parts of the global economy, the MON can help to avoid pitfalls and to identify the valuable and

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worthwhile market opportunities. “Big data” (or “smart data”) and machine learning may further improve and accelerate the market research dimension that is required to obtain the market knowledge necessary for sound decision making.

Apart from a perceived rise in political risk (*e.g.* US – China trade tensions 2018/19, Russian threats and meddling, Middle East tensions, etc.), the political sphere holds another key driver for the future of MON. With traditional employers stagnating, governments have turned to new venture creation as a driver for the “gig economy”, where workers move from assignment to assignment, project to project (Economist, 2018). The startup scene as whole has thus moved closer to the center of economic discourse, which further underlines the need for and likelihood of the field of MOI and SMC to prosper.

2.4 Conclusions from the theoretical part

The theoretical background, MOI and SMC field can be assessed as immensely advanced in the past decade and a half. A look at its economic underpinnings has shown that the theories and approaches employed are very timely and compatible with the overall development of business landscape at the time of writing. The outlook for the field therefore seems assured by this combined timeliness and market requirement for simple and intuitive assistance from well-structured strategy development tools.

This theoretical survey has been instrumental in demonstrating the multitude of interfaces between different fields of study which are contained within MOI and SMC. These were introduced in the introduction as i) Entrepreneurship theory / Strategy, ii) Entrepreneurship Strategy / Innovation Management, iii) Business Management / Entrepreneurial Behavior and the previously mentioned iv) Entrepreneurship Strategy / Behavioral economics.

Following the analysis of the theoretical work that has led to the breakthroughs discussed in 2.1, it can be argued that the many interfaces, while a sign of the inert complexity and multi-dimensionality of the field, are also indicative of the profoundly inter-disciplinary approach that has led to these truly novel insights.

Whilst making solid contributions to the RBV and entrepreneurship research, the authors were happy to work across boundaries, much like implied by Penrose herself, to achieve new insights. It is likely that this interdisciplinarity and willingness to work across the boundaries of research fields which has enabled the multi-dimensional insights which span from psychological (or psycho-social) to highly structural. The humbleness of the authors and their

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generosity in making many of the supporting materials available openly, adds to the "enabling" nature of the contributions in the field (Gruber & Tal, 2017a). This will now be explored empirically in the following chapters 3 to 6.

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3. Empirical part

3.1 Introduction to the employed methodology based on Mayring

This part of the paper seeks to apply the theoretical framework established to a real-word problem. As previously outlined in 1.1, concretely this is the question why not more companies switch to pro-active MOI approaches more quickly when their merits are so clearly demonstrated. The answers will attempt to produce further arguments as to why the adoption is a win-win for most market actors. Arguably, MOI and the strategic toolset associated with it, the MON, are ideal strategic initiatives for multiple fundamental challenges that large companies encounter: the erosion of traditional industry boundaries and the risk of disruption from unexpected sources and players. As previously underlined, the publication of the MON is still recent, so complete market dissemination is still unlikely.

Mayring's approach arguably represents an interesting chest of tools for an analysis of the type and scope proposed here. The following developments rely on his rich study of the field (2011). Mayring's understanding of "qualitative content analysis of communication content[5]" is that it stands in contrast to its quantitative peer in its scientific approach, while not being less exigent with regards to precision. His motivation is therefore by no means only to be able to work with smaller sample sizes, but a critique of complex quantitative evaluation models, which limit the scope of questions asked to respondents because of their rigid data format requirements (*Ibid.*). Mayring cites five basic approaches to achieve this: hermeneutic, critical, narrative, descriptive and explorative / theorizing. Each is, in turn, built on deep theoretical roots from within the social sciences, humanities and philosophy. Mayring cites sources as varied as the French philosopher Paul Ricœur[6] (1975) and the Chicago School in sociology (Bulmer, 1984): both approach analysis based on the phenomena observed (as in phenomenology). Mayring explains that this goes back to the overall distinction between a natural sciences-based psychology which seek to explain phenomena and a human sciences-based psychology which seeks, rather, to understand them. Overall, it is his aim to detect latent structures of meaning by proposing a new methodological approach, summarized as qualitative

[5] This term has originated form the translation form Mayring's (2011) use of the German expression, where the word content is used twice. The repetition is maintained in English for reasons of precision. What is meant, is the application of "content analysis" as a methodology to "communication contents", such as the contents of empirical interviews.

[6] In this context it is interesting to note that Ricœur had himself contact with the Chicago School of sociology.

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content analysis, which enables respondents to speak and elaborate more freely and which allows the evaluator to detect and uncover patterns and details which a quantitative study would likely have missed.

For the purposes of this stud, a sample of fifteen strategy practitioner respondents to a structured interview is meant when using "the sample". In Mayring's view it is rather to be understood as a sum of single-case studies (*Einzelfallstudien*) that in their totality allow the observation of phenomena, patterns and testing of these through further deepening or elaboration (*Vertiefungen*) of the inductively found observation (Mayring, 2011). The sum of single-case studies goes on to form a "communication chain" and must therefore be understood and evaluated as part of a "communication model" (*Ibid.*).

This leads us to the conclusion that qualitative content analysis, for all its merits, and precisely because it enables inductive thinking requires to be conducted with great care by the student or researcher, as it places itself precisely at the center of the debate between inductive and deductive scientific and economic reasoning (Johnson, 1996).

Mayring's developments regarding the development of a qualitative content analysis are central for this study. Even in psychological or psycho-social contexts, the methodology allows us to: i) build on intuitive everyday comprehension processes; ii) systematically summarize the spoken material; iii) divide the findings into clearly defined categories previously defined through the psychology of category definition (*Psychologie der Kategorienbilding*); and iv) to then proceed to reduce the findings into core observations (Mayring, 2011). The application of this model in this paper sees the creation of six dimensions *ex ante* (awareness, knowledge, experience, application, interaction and performance) (please see 3.1.2 below), which will serve as the analytical categories for all of the three pillars of this section of the paper (3.1.1). Mayring suggests a revision of the category system for scaled structured analyses (*Ibid.*). Based on this, we will narrow down the initial six dimensions of entrepreneurial and managerial behavior into three pairs which for ease of reference we shall call categories. This idea was the result of iterative analysis, as Mayring (2011) suggests: during the interview increasing overlap between statements and answers referring to these dimensions was observed, so the categorization was based on a first level of empirical observations. Hence, as a stepping-stone to the more strongly generalizing observations in the final step, categorization makes practical sense and is in holding with the methodological framework:

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Table 1: Summary of the step from dimensions to categories

***Initial* Dimensions of entrepreneurial and managerial behavior**	***New* Categories of interrelated or overlapping Dimensions**
Awareness Dimension Knowledge Dimension	Category A
Application Dimension Experience Dimension	Category B
Interaction Dimension Performance Dimension	Category C

3.1.1 The three pillars of the empirical part

This empirical part rests on three distinct but mutually reinforcing pillars. The first is a set of fifteen practitioner interviews, which will be subject to a qualitative content analysis following Mayring's methodologies (2011).

Second, *Flyability SA*, a Swiss startup that has successfully spun out of the support network around EPFL will be analyzed on the basis of existing documentation to examine the benefits of pro-active MOI in the pre-entry phase at first hand. The experience of *Flyability SA* will also serve as a positive model for the subsequent analysis.

Third, ten annual reports of leading global automotive companies will be studied in depth based on a different variant of qualitative content analysis and the textual content and context analysis, equally from Mayring's chest of tools (2011). This will seek to reinforce the dimension of studying pro-active MOI in the context of stock-market listed large companies.

Following this, chapter 4 will present and analyze the results from the empirical study, whilst chapter 5 will go on to interpret and discuss them in the context of the theoretical background established in chapter 1.

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3.1.2 Definition of six entrepreneurial and managerial behavioral dimensions for the application of Market Opportunity Identification frameworks

In the course of the iterative process of writing this thesis these, six dimensions have been developed for three purposes: i) seeking to better understand the induvial behavioral process of applying new – and proven (Gruber, MacMillan & Thompson, 2013) – frameworks of MOI and SMC to real entrepreneurial situations; ii) to use these established dimensions as evaluation criteria of the qualitative content analysis after Mayring (2011) and iii) to probe the empirical answers provided for signs of points of resistance to the application of these new and valuable frameworks.

3.1.2.1 Awareness Dimension

This first dimension forms the basic prerequisite for the subsequent ones: the entrepreneur or manager has been *aware* that market choice can be performed in a methodological and agile way, as the MON suggests. Published in 2017 in English and being rolled out in other languages, including Chinese, the MON is likely to increase awareness amongst practitioners exponentially in the coming years. This means that the timing of the present study comes at an interesting time. The strategy practitioner-focused book has been available for some time but is still in the steep part of its dissemination curve. This means we expect low numbers of affirmative answers in the question aimed at awareness.

3.1.2.2 Knowledge Dimension

The knowledge dimension is the logical following step from the previous one. Once awareness is given, knowledge is gained by studying the material and the potential that it contains. Like with any framework or strategy tool, going through the steps, in this case of the MON but equally for other similar methodologies, *i.e.* Porter's Five Forces (1979), it is key that the tool is applied fully a few times by a practitioner for it to become embedded in the analytical thought process. For MON, this can be done in a workshop (at a Startup fair or bespoke), an MBA or EMBA class (as in this case) or even remotely, in a Massively Open Online Course (MOOC) on the edX platform (Gruber & Tal, 2018).

3.1.2.3 Experience Dimension

The experience dimension seeks to describe in a direct observation the extent to which a practitioner has gained experience in i) applying MOI and SMC frameworks and ii) making these choices in varying entrepreneurial or managerial situations.

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3.1.2.4 Application Dimension

The application dimension, on the other hand, seeks a more qualitative observation on how and in what way such methodologies or strategic thinking may have been applied and if the practitioner used iterations from one MOI or SMC situation to the next.

3.1.2.5 Interaction Dimension

For the interaction, we seek to observe the entrepreneur's or manager's lateral use of resources, *i.e.* to what extent does a person's use experiences and knowledge from one aspect or application of MOI or SMC in another. Does she or he draw upon external resources (*i.e.* contacts) and do they perform a variation of distant search? An example might be a senior manager who uses her/his experience as a VC mentor to make better MOI decisions in the corporate context. This dimension has been subject to Mayring's (2011) methodology of refinement. It was initially designed as a fairly simple set between application and performance, hoping to cover some of the interfaces previously mentioned. However, as the empirical study will show, it is the dimension which yielded the most interesting and surprising observations.

3.1.2.6 Performance Dimension

Rounding off our proposed model is another simple measure of the long-term performance of MOI and SMC decisions of an individual. It is of course intimately linked to the previous ones in the sense that it is the outcome of the application of these. Further, how does this on-going performance of MOI and SMC impact an individual's own career?

3.1.3 The interrelation and modelling of the six dimensions

The six dimensions introduced and outlined above possess points of contention amongst each other and overlap in parts. It might not always be possible to distinguish exactly to which dimension a certain observation may be attributed. Especially dimensions 3, 4 and 5 overlap and interact frequently. To illustrate this, a visualization of the model may help to underline this interrelation. This also illustrates the reason why Mayring's framework (2011) is so useful in this context.

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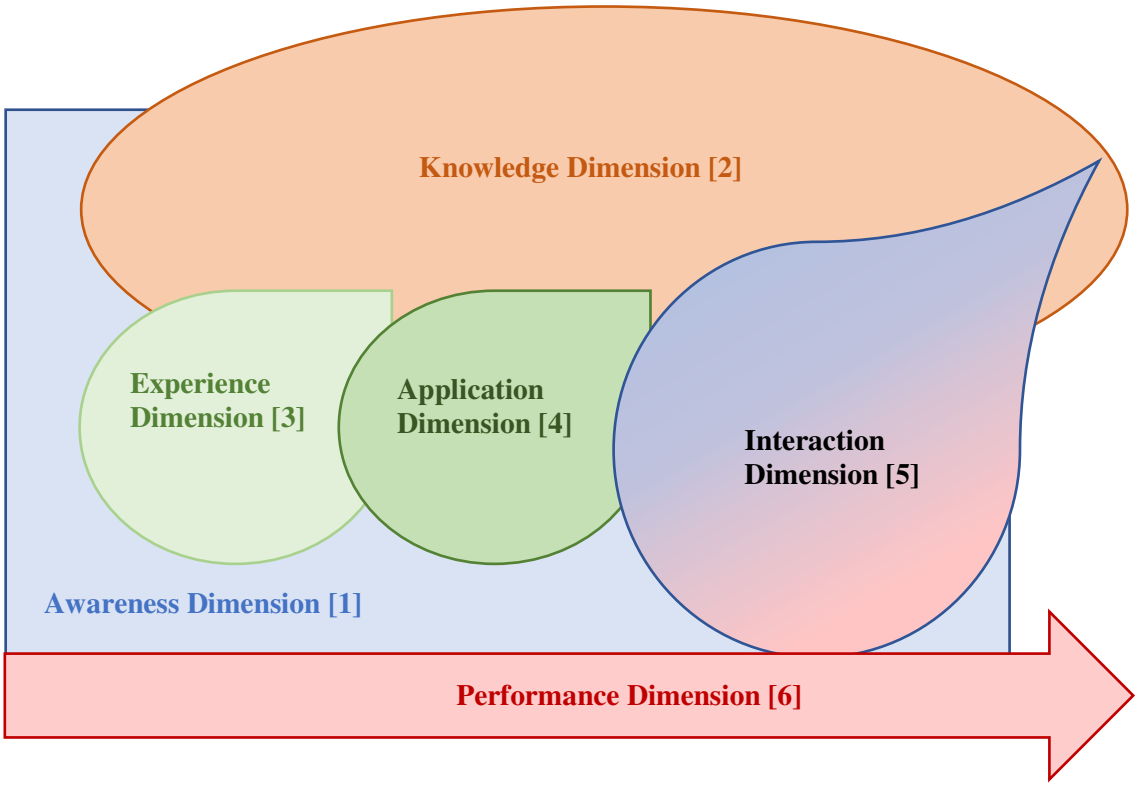
Figure 2: Visualization of the six dimensions for MOI and SCM



Above figure 2 attempts to visualize how the different entrepreneurial and managerial behavioral dimensions interrelate. Awareness is the basis, performance the outcome. But as the empirical part of this study will show, it is upon interaction which the successful application of MOI frameworks such as the MON appear to hinge. Mixing awareness and resulting in performance increases it this element of "lateral connection making" that practitioners require most to make sounds MOI and SMC decisions, it appears.

3.1.4. Limits of the division of entrepreneurial and managerial behavior into dimensions

It is important to be realistic regarding the likelihood of such a model covering all possible qualitative observations in a content analysis as is performed here. Like with any model, it remains an approximation and an attempt to categorize different aspects of a genuinely complex, multi-faceted and often inter-related field. The aim of this part of the empirical study is therefore to identify possible areas and aspects of entrepreneurial behavior that can help to understand the overall application of MOI and SMC frameworks.

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3.2 Qualitative Content Analysis of fifteen interviews on Market Opportunity Identification with strategy practitioners (Pillar I)

The following development is the principal empirical study of the three pillars included in the empirical part. It has both taken, by far, the most time and energy and is considered the backbone of the empirical work.

3.2.1 Composition of the Sample

The selection of the sample of entrepreneurs and managers for the elaboration of this qualitative study had to strike a balance between the experience and current roles of the participants while assuring diversity. During this process it was increased from an originally planned n = 10 to n = 15 to achieve this.

The sample thus strikes a balance between startups and established firms and includes practitioners of various age groups, both genders and multiple experience levels. A special interest has been given to those respondents who either have very deep expertise in one field or possess experience in various related fields of practice, *i.e.* corporate decision making and venture capital.

3.2.1.1 Constraints and biases

The sample employed includes several known biases, which we will attempt to consider in the evaluation to neutralize their effects as far as possible. A first known bias, which has already been pro-actively addressed in the increase of its size, is a male dominance of the gender balance (4 women, 11 men). The second is of geographical nature: London as a location is overrepresented, while many of those based "out of" London frequently work and interact across Europe and globally.

3.2.1.2 Balancing of the sample

The sample has been assembled aiming to be balanced along two axes: firstly, entrepreneurial to managerial, *i.e.* persons who have started and now run their own venture(s), including "serial entrepreneurs" and secondly those who engage in market choice within larger corporations, versus themselves directly as creators of new ventures or investments within them. Both dimensions influence the immediacy of MOI in which the interviewees engage. The sample includes not only direct practitioners but also those who advise others on strategy in general and market choice in particular. The size of the ventures represented in the sample vary from one-person consultancies to huge global banks like UBS or IT-services companies

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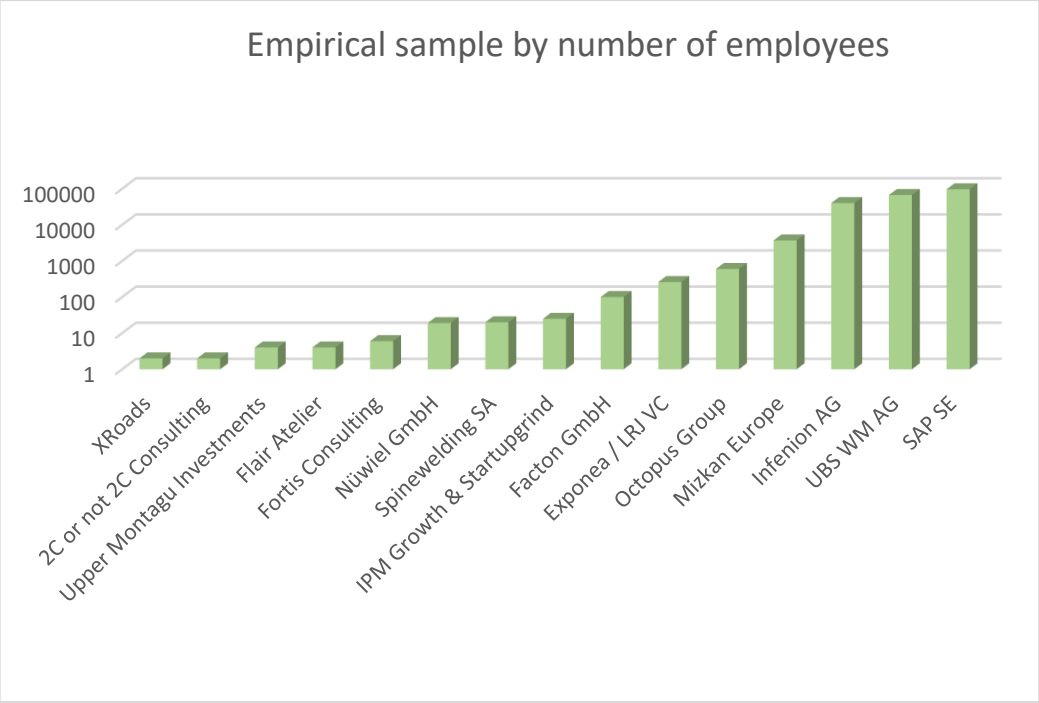
like SAP. However, in the spirit of Mayring, it is necessary to state that this sample is only interesting in a qualitative context.

3.2.1.3 Level of abstraction

The abstraction level needs to be clearly defined for this process to comply with the stringent requirements of qualitative content analysis. For the purposes of the empirical interviews (Pillar I), the level of abstraction is relatively low. Of course, statements and comments that refer to the same idea cannot be summarized without some level of certainty of understanding the respondent correctly (Mayring, 2011). Hence, frequently clarifying questions (not part of the formal questionnaire) were woven into the conversations. Such questions were able to intercept four cases of potential wrongful attribution. These cases usually occurred, where answers cut across functional boundaries, especially, R&D and Innovation Management, Business Model Innovation and B2B versus B2C markets.

For the study of the ten largest automotive groups (Pillar III), the level of abstraction is much higher. Here two approaches from Mayring are used which together allow for a qualitative assessment of the question posed. However, it is clear the high level of abstraction makes the observations here less certain. Therefore, the observations made here will be used primarily for the macro-level conclusions and for ideas for future research.

Figure 3 – Visualization of Empirical Sample by number of employees ($\log_{10}$ scale)



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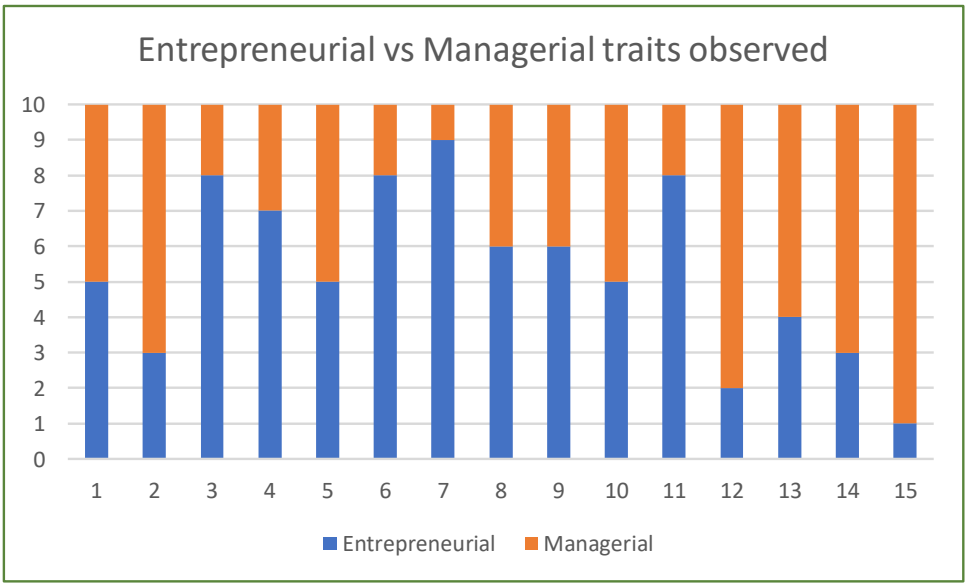
The difference in company size between the six startups, four SMEs and five large companies was so great, that for a sensible visual representation, a logarithmic scale (base 10) had to be employed. SAP SE nears 100,000 employees with UBS employing nearly 67,000.

Figure 4: Entrepreneurial vs Managerial traits observed in answers



After the individual interview, the respondents were evaluated for their managerial and entrepreneurial traits and behaviors displayed in their responses. With 10 points awarded to each person, this measure seeks to place them on a spectrum between the two (Pensrose, 1959). As an example, a respondent may score 2 for her or his entrepreneurial bias and 8 for their managerial one. It is important to note that this is not a psychometric measure and the scores are strongly guided by the person's current role corporate or entrepreneurial role. Figure 4 shows that the overall sample has, expectedly, a slight entrepreneurial bias with a total of 80 points awarded to this trait versus 70 for the managerial one with a total of 150 attributed.

3.2.2 Questionnaire outline for qualitative interviews

The carefully designed questionnaire contained thirteen questions in total and was pre-timed in dry runs to take between 22 and 30 minutes to complete. Many interviews lasted longer than this, as many respondents showed high levels of interest and enthusiasm for the subject. The interview process was hugely rewarding and interesting to complete and the quality of the answers will be showcased and analyzed in the following chapter 4 and then interpreted in chapter 5.

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All interviews have been referenced as primary sources upon their evaluation. However, they will be referred to in the text as the "Interviewee, 2019" (*i.e.* Kunkel, 2019) for ease of reference (please see 7.2.1).

This questionnaire, as part of Mayring's methodological framework, together with the three-minute presentation distributed to all respondents, forms part of the "previous understanding" of the interviewees (2011). Given the sample contains individuals who are experts in the field (*e.g.* Munday, 2019 or Plasonig, 2019), it also contains respondents who are less familiar with the subject matter. The distribution of the presentation aimed to have a standardizing effect in the sense that all respondents had a good idea what was going to be discussed. There was no detrimental effect for those with greater previous understanding, because it would simply have represented a brief recap for them. The presentation and the questionnaire have been designed to avoid the guiding of respondent's answers, while allowing the required fluidity to clarify answers given with a secondary question.

The questionnaire contained the following questions. In square brackets the behavioral dimensions of practitioners (acting as entrepreneurs or managers) to which they refer are indicated. It occurred in multiple interviews that questions 1. and 3. were answered together. With hindsight, these should have been sub questions of the same as per the design of question 4 or similar.

1. *In what way does your current role or activity include choosing market opportunities or market strategy?*

   [Baseline Question]

2. *Are you aware of new theories discussing market choice and market opportunity analysis or publication aimed at practitioners?*

   [Awareness Dimension (AD)]

3. *Please describe briefly your role in market choice and strategy development (for your start-up or company).*

   [Knowledge Dimension (KD), Experience Dimension (ED), Performance Dimension (PD)]

4. *Recent studies by Gruber, MacMillan & Thompson have found that future performance of a start-up is positively correlated with going through a structured market choice analysis. They further state that the diversity of the skill and experience set possessed by the founding team directly influence firm performance (2013).*

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4.a *Have you applied such a market opportunity identification framework in the past?*

[Application Dimension, Interaction Dimension]

4.b *Have you applied such knowledge to the composition of teams?*

[Application Dimension, Interaction Dimension]

5. *The authors refer to the pre-conditioning of the founders by their knowledge, education and experience as the "prior knowledge corridor". New ventures (start-ups, intrapreneurs or indeed corporate ventures) must seek to break out from this by assessing alternative markets and market opportunities to unlock the true potential contained in their initial idea. Do you already, or could you imagine integrating such a step into your innovation strategy development methodology?*

[Knowledge Dimension]

6. *Was there a specific difference between your first market choice decision and subsequent ones? Do you have anecdotes to share?*

[Experience Dimension, Performance Dimension]

7. *Could you share a specific instance where you were required to choose a market or a market opportunity for a start-up, venture or product?*

[Experience Dimension, Knowledge Dimension]

8. *How much time did you spend on the decision-making process in different situations of market choice and have you refined the methodology over time?*

[Application Dimension]

9. *Does this (8.) vary from situation to situation?*

[Knowledge Dimension, Experience Dimension, Application dimension, Interaction Dimension]

10. *How would you define the link between the overall strategy and the innovation strategy at your company?*

[Application Dimension, Interaction Dimension]

11. *Have there ever been situations, where a few years later you wished you had seen a market or market opportunity which you "missed" because you weren't aware of it at the time you had to make the market choice?*

[Experience Dimension, Performance Dimension, Application Dimension]

12. *Are there any other, possibly auxiliary, anecdotes you would like to share?*

[Knowledge Dimension, Experience Dimension]

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13. *Is there anything you believe could aid our research?*
[Dimension-independent / Cross-Dimension]

3.2.3 Empirical interview respondents

In the following, the fifteen respondents themselves and their companies or ventures are briefly introduced in a first part, followed by a second part that outlines why they were approached for the qualitative study (n=15). In some cases, this foreshadows aspects of their contributions and responses, which are all included in the evaluation of chapter 4.

As Mayring (2011) requires for the correct application of his methodological framework, qualitative content analysis, the following discussions (3.2.5.1 – 3.2.5.15), along with the analysis of the sample and its known biases serves as the "source study" (*Quellenkunde*).

3.2.3.1 Nüwiel GmbH, Hamburg, Natalia Tomiyama, Co-founder (CFO & CMO)

Natalia Tomiyama is Co-Founder at Nüwiel GmbH in Hamburg, where she oversees both the financing and the marketing function of the successful transportation startup that specializes in bicycle trailers which, propel their own weight (including payload) when pulled behind a (delivery) bicycle. Nüwiel is a new force in the last mile parcel delivery, having successfully onboarded both IKEA and DHL as pilot clients. Natalia previously worked at StartupDock.de, the government-led innovation center for Hamburg based universities, which she was instrumental in developing. She holds a Master's Degree in International Production Management from the Hamburg University of Technology (TUHH) and an MBA from the NIT Northern Institute for Technology Management. Other experiences in her career have included positions at VTG, Körber and Airbus Group.

Natalia is a very interesting respondent because she combines stellar technical know-how with a very well-developed entrepreneurial instinct and strong theoretical and practical business training. Her activity at Nüwiel underlines this clearly, she is involved in all aspects of the company's growth and formally oversees both the finance and the marketing functions. It was great to have an entrepreneur and venture on board that combines such youthful dynamism with profound and real experience. Her answers and shared insights were of a clarity and analytic rigor that was truly impressive. Her extrapolation from hearing about the MON to Nüwiel's own pivot, which she designed, from children's products to transportation during their early startup phase was fascinating. Further, her methodologies for the choice of new

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geographical markets for her company's expansion and diversification were ideal examples for this study.

3.2.3.2 XRoads, Vienna, Mathias Nell, Founder & CEO

Dr. Mathias Nell is an economist by training and, in his day-job, and expert in compliance questions. A WU & TU Vienna Professional MBA in Entrepreneurship & Innovation alumni, he received his Doctorate from the University of Passau. He is an emerging serial entrepreneur with ventures in hospitality and now a travel app to his name, with the next venture already in the pipeline. An excellent interlocutor, Dr. Nell was very generous in sharing his personal thoughts and feelings that accompany strategic entrepreneurial decisions. This level of insight is hugely useful for a study of this nature. This current main venture, XRoads, was born out of his own experience as a very frequent business traveler: a smartphone app, that shows the whereabouts of social media connection across platforms (LinkedIn, Facebook, etc.) and avoids travelers missing old friends in joint destinations. Discussions about market choice further benefited from the joint experience of the material 12 months earlier. Dr. Nell resides in Vienna with his young family while continuing to clock up the airmiles.

Dr. Nell's contribution was very profound and well balanced. He was quick to link the concepts enquired about to a vast array of theoretical underpinnings.

3.2.3.3 Fortis Consulting, London, David Stringer-Lamarre, Managing Director

David Stringer-Lamarre is an international Management Consultant and entrepreneur in the Business Development sphere. Within Fortis, his consulting, coaching and training business, he has successfully implemented a for-profit network of experts which facilitates business across sectors (*i.e.*, technical to non-technical) and has established itself as a leader for business with the People's Republic of China, Malaysia and Korea for the London region. David is an active member of the City London Livery Courts and is Chairman of the Institute of Directors (IoD), London Region (encompassing the Central London and City of London branches). He travels extensively and visits APAC multiple times a year. David holds an LLB in Law from the University of Liverpool, and a BA (Politics & Sociology) and MA (International Relations) from the University of East Anglia (UEA), as well as an MBA from Imperial College Business School in London. Further, he is an Honorary Senior Visiting Fellow at CASS Business School in the City of London. David can often be seen at technology focused events in London and internationally. He is an active mentor and advisor to numerous startups in different sectors.

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David was an invaluable respondent because, beyond his excellent answers and rich experience in choosing markets, he was very kind in suggesting other suitable interview partners across Europe. More directly, his experience in entrepreneurship and advisory roles made his responses extremely well rounded. His ability to cut across technology and non-technology fields, along with a genuine interest in the behavioral aspect of entrepreneurship made the conversation even more interesting.

3.2.3.4 UBS AG Wealth Management Zürich, Maximilian Kunkel, CIO Germany & Austria

Maximilian Kunkel, originally from München, has achieved a steady and speedy rise within UBS Wealth Management to become its Chief Investment Officer for Germany and Austria. Zürich based, he reports directly to UBS's Global CIO, Mark Häefele. Before joining the CIO Office, Maximilian led the Latin American Ultra-High-Net-Worth team at UBS in Zürich and was exposed to a wide array of successful entrepreneurs, giving him a unique combined view of global markets, both in developed and emerging markets. He was educated at King's College London (BSc), the London School of Economics and ESADE Business School in Barcelona (CEMS MIM). For both degrees he came top of his class and received respective honors. He is widely published in the business and stock market press and contributes actively to UBS's vast array of in-house publications. He can often be seen on CNBC Europe or Bloomberg TV as a specialist on global markets.

Mr. Kunkel's razor-sharp and well-balanced answers and analytic insight made him not only a great respondent, but one who immediately took to the concept of SMC. He linked this to several strategic initiatives within his bank which work on seeking to actively encourage the market opportunity identification of its clients, through special entrepreneur's networks which UBS curates. His experience in working directly with entrepreneurs shone through his eloquent answers which are an invaluable bridge between the corporate, financial and entrepreneurial spheres for this paper.

3.2.3.5 Facton GmbH, Potsdam, Alexander Swoboda, CEO

Alexander M. Swoboda is Chief Executive Officer of FACTON GmbH in Potsdam, the global market leader in Enterprise Product Costing (EPC) software. After graduating from the WU Vienna majoring in Corporate Finance and Financial Markets, his career moved with great momentum from high technology venture capital to entrepreneurial and managerial roles in IT and technology companies, Strategy Consulting for McKinsey & Company and on to M&A

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advisory and investment management in the private equity space. This culminated in a leadership role in the European family office sphere. While Investment Management and Technology are the two constants in his vast experience, he has also successfully applied these to the luxury goods industry and ventures in digital marketing and advertising. He complements his leadership role at FACTON with lectureships at his alma mater in Vienna, at the Institute for Entrepreneurship & Innovation and the Hasso Plattner Institute in Potsdam, where he lectures regularly on the role of the CFO in start-ups. His membership of startup300 AG supports the Austrian start-up ecosystem.

Mr. Swoboda was the first CEO to take part in the interviews and was generous with his time. His answers were special because they benefited from his wide experience of financial and strategic functions, held before taking on his current executive decision-making role. His experience working at a deal-making venture capital focused Family Office adds to this interesting profile.

3.2.3.6 Upper Montagu Investments (FO), London, Hitesh Tailor, Managing Director

Hitesh Tailor is a Family Office (Investment) Professional and international Real Estate investor & developer. A Chartered Accountant training at Deloitte, Mr. Tailor came top of his class (1st Class Honors) at London South Bank University (LSBU), an institution where he remained involved until retiring as Vice Chair of the Governing Board. After 9 years with Age UK as Deputy Chair of their Audit Committee, he was recently appointed to Chair a Multi-Academy Trust focusing on Engineering students from the age of 11 to 18, in a socially deprived area of London. He is a former Chairman of the Reform Club in London.

His early professional career spanned successful positions in Professional Services (Deloitte, Arthur Andersen) and subsequently Oil & Gas (Schlumberger, NL Industries). His greatest successes came following the call of entrepreneurship, building various successful businesses in residential, leisure and corporate real estate in Europe and Canada. This avenue saw him rise to the head of a European and Canadian Family Office, which he led successfully for over 15 years. Today, he remains very active with non-executive positions at various charitable institutions and schools and now manages his own Family Office and property investment business.

The depth of Mr. Tailor's experience led to a very detailed and hugely useful interview in which many early-stage venture strategies were discussed. Team diversity and the interface between employee retention and venture success were key points also. 'Passion' for the initial

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venture idea figured prominently in the developments along with the need for innovation, even in the most rigid institutions or industries.

3.2.3.7 Infineon AG, Graz, Stefan Rohringer, Vice President

Stefan Rohringer is Vice President at Infineon AG, leading the company's R&D site in Graz, Austria's largest research facility for microelectronics. Close to a quarter of all Infineon Group R&D staff are employed by Infineon Austria. His responsibilities include overlooking and managing co-operations with local and federal authorities and academic institutions. Mr. Rohringer is central to Infineon's Innovation Management effort and active in advising and guiding team members with new ideas to develop these. He has built his extensive network in over 20 years with the company and possesses deep knowledge and expertise of market research and technology transfer. This was preceded by eight years at Siemens, from which Infineon was spun out in 1998/99. For the past three years, Mr. Rohringer is also Managing Director of DICE (Danube Integrated Circuit Engineering) GmbH, which since 2000 focuses on the development of MMICs (*Microwave Monolithic Integrated Circuits*) for automotive and industrial radar sensors within the Infineon family. Educated at the TU Vienna, Mr. Rohringer also holds a M.S. in Computer Science from the University of Delaware which he completed under a Fulbright scholarship.

Mr. Rohringer's answers were extremely useful as they came from a person who is deeply involved in a corporate innovation process and manages the ideas, energies and expectations of a vast research & development operation. Infineon's market leadership position in innovation management becomes even more impressive after hearing about his day-to-day running of the processes required for its smooth and on-going operation.

3.2.3.8 GP International SA, Risch, Gerhard Plasonig, Founder & Managing Director

Prof. Dr. Ing. Plasonig is founder and CEO of GP International SA, a technology investment company and incubator in Risch, Switzerland. He sits on the boards of multiple technology venture which have spun out from GPI in the MedTech area SpineWelding SA and BoneWelding SA, as well as material sciences platform WoodWelding SA in Schlieren, Zürich. He was educated and holds an undergraduate degree in automotive engineering, and a master's degree and doctorate in economics and business administration (University of Vienna). He was a Fulbright doctoral fellow (1987/88) at MIT's Sloan School. Since 2009 he is an honorary Professor at the Technical University of Munich. Before this, he worked with Generics (Inter Ikea Group) in Boston and the Cambridge Science Park (UK).

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Drawing on his combined deep knowledge of technology commercialization and entrepreneurship theory, along with his excellent structured answers, Prof. Dr. Ing. Plasonig was one of the most fascinating respondents. Especially, his developments of the innovation space in general over the past thirty years went way beyond the formal questionnaire and where a *de facto* masterclass in technology entrepreneurship, innovation and strategic management. Particularly his developments around skills and their interrelation with often mis-guided self-understanding that firms have of their own activities core skills was illuminating. In the face of profound market developments and long-term market dislocations occurring frequently, this remains highly relevant.

3.2.3.9 Exponea / LRJ VC, London & Prague, Peter Irikovsky, Founder & CEO

Peter Irikovsky was educated at Prague's Charles University in Computer Science and is a successful serial entrepreneur and venture capitalist. His journey included working at McKinsey & Company, KPMG and a regional directorship for Groupon, the digital coupon and offers pioneer. In his previous venture, Slevomat, he was highly successful and surpassed the US$ 100m barrier, making the firm one of the fastest growing of its type in the CEE region. Currently he is running and growing Exponea, a highly innovative customer experience provider with an excellent track record in the UK and across Europe. Mr. Irikovsky balances his duties as CEO with time spent on his Venture Capital Fund LRJ Capital. At the same time, he is an avid expert speaker and has addressed may prestigious events including Forbes, the US Embassy and EU Commission events.

Mr. Irikovsky was a thought-provoking interview partner, because he is truly in the thick of running a successful growth business. His energy and interest are contagious. Especially his views on team composition and skills combinations for new market entries were truly interesting and directly relevant. It is interesting how Mr Irikovsky combines incremental and disruptive strategies to drive Exponea to new levels of success.

3.2.3.10 2C nor no 2C Consulting, London & Amsterdam, Sjors van der Sterren, Director

Mr. van der Sterren is enjoying an illustrious career which took him from his early days in investment banking at N. M. Rothschild & Son in London to venture-focused Family Office, Janivo Holdings, in the Netherlands. He then joined Canon Europe, where he rose to become European Head of Internal Audit, based in Amsterdam and London. Following this, he switched to NEC Europe, spending four years as its Chief Compliance Officer; a role, that gave

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him control of three departments: IT, Internal Audit and Product Support. Most recently, after two years at Mizkan Europe, he works as an international management consultant where he advises clients on complex audit issues and new regulatory implementations. He is an avid book and art collector and travels frequently, both for business and leisure.

The interview with Mr van der Sterren was fascinating and drew on his diverse managerial and financial background. It was fascinating to learn about the differences he perceived between entrepreneurial decision making at a new venture level and in large corporations. Being very active in various ventures, his recent experiences in FinTech and real estate ventures gave further color to the interview answers.

3.2.3.11 Flair Atelier, London & Venice, Marianna Ferrero, Founder & CEO

Marianna Ferro is the founder & CEO of Flair Atelier, a partly crowd-funded luxury online ladies' tailoring venture. Marianna was educated at Bocconi Business School in Milan and started her professional career at YOOX, with is today Prêt-à-Porter YOOX, part of Richemont Italy. Here she caught the entrepreneurial bug and refers to the high energy level experienced while working directly for the CEO of the young company. She then became an investment banker, working in sales and sales trading roles for equity capital markets in Milan and London at UniCredit, Société Générale and HSBC. She then joined an entrepreneurial Private Equity firm, followed by an international development consultancy. After two years back in academia at Peking University and the London School of Economics, she founded Flair Atelier in 2015. Originally from Venice, she is also collaborating with a European Union program to help Italian companies innovate more.

Speaking with Ms. Ferro, her entrepreneurial drive and methodical strategic thinking stood out immediately. She elaborated with great interest on her own pre-entry planning phase for Flair Atelier and underlined the requirements to use and channel previous experiences in this process. Her developments on team composition were extremely interesting. It struck me that, as a luxury fashion entrepreneur, one of her ethical maxims was to pay suppliers in good time, as she opposes industry standards where suppliers end up waiting more than six months for payment.

3.2.3.12 SAP SE, London, Daryn Edgar, Vice President – Strategic Initiatives EMEA

Ms. Edgar was educated at the University of Alberta and holds an MBA from Calgary in Finance and New Venture Creation. She is a Chartered Professional Accountant (Canada). Her career took her from various fascinating roles in the Oil & Gas and Energy industries, on to

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professional services and software. Career highlights included PwC (Canada and UK), WellPoint Systems, Aperian, Allegro and Avanade – the world's largest technology integrator on the Microsoft Enterprise platform. Today she balances her duties at SAP with a Senior Sector Partnership at Athene Capital serving institutional and Family Office investors as well as various startup initiatives such as mentorships and advisory roles at Level 39, Microsoft Ventures, Delta Gamma and Pitch@Palace, the Duke of York's venture accelerator. She is an avid advocate for women in business, both within SAP and beyond.

Ms. Edgar sits only two steps removed from SAP's CEO, Bill McDermott. As VP for Strategic Initiatives for the EMEA region, she oversees the strategic collaboration between SAP and Accenture, the consultancy. She has an excellent firsthand insight into almost all innovation and strategic processes within SAP and extremely generous in sharing some of the internal functioning of such a large and leading enterprise software company. Her vast professional experience coupled with her high level of technical insight made her an extremely valuable respondent.

3.2.3.13 IPM VC / StartupGrind, London, Marian Gazdik, Partner / Director

Mr Gazdik is a Partner at IPM Growth, a venture capital firm focusing on Energy, Transportation and InfraTech. In parallel he is a director and highly visible leader of the StartupGrind conferences Globally, where he hosts leading thinkers and entrepreneurs. Previous experiences include regional and global senior roles at Werner & Merz, JD Software and Orange where he served as Global Marketing Manager. Mr Gazdik was educated at the Matej Bel Research University in Slovakia, Ashridge Business School (today Hult-Ashridge) in the UK and he holds an MBA from ESCP Europe. Alongside his many board and advisory board memberships he is a member of the acquisition board at Tate Galleries.

A genuinely generous respondent, Mr. Gazdik shared deep insights into the way leading venture capital companies like his think and operate. Interesting in this context is the profound disruptions which portfolio companies seek to exploit. Knowing many of the authors quoted in this paper personally, it was fascinating to be taken on a highly efficient *tour de force* of the VC view of Innovation and SMC. His razor-sharp and lighting fast thinking was deeply impressive.

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3.2.3.14 Mizkan Europe, Bury St. Edmunds & London, Sarah Munday, Head of Innovation & Product Development

Ms. Munday is Mizkan Europe's Head of Innovation and New Product Development. She has deep skills in the food industry and is an expert innovator and new product development expert at Mizkan Europe, areas she is in charge of at the firm's European operation. She was educated at the University of Leeds (Food Science) and the University of East Anglia (MBA with Distinction). She rose to her current position as part of a career in the food industry that included positions at Samworth Brothers, Heaven Made Foods and Hain Daniels Group. This means that her knowledge and expertise span all aspects of innovation and new product development, including the underlying technological processes and the complex regulatory dimension.

Ms. Munday spoke passionately about her work, team and also her academic interest in entrepreneurship research, as she increasingly works with partnerships and adapts an incubation approach to working with food industry startups that often lack technical expertise, a company like Mizkan Europe can help with. Finally, she engages actively with Mizkan's parent company and headquarters in Japan. The company has been under family control for over 215 years and continues to innovate to keep alive for a further 215. Mizkan is the world's largest vinegar producer (large volumes come from Sushi vinegar in Japan) and its products include drinking vinegars with health functions in Japan. Especially her view from a new product point of view in a highly competitive market was a strong basis for a good interview.

3.2.3.15 Octopus Group, London, Chris Hulatt, Founder & CEO

Chris Hulatt is the Founder and CEO of one of the UK's most innovative investment management firms, Octopus Group. He was Ernst & Young's 2017 Entrepreneur of the Year (London). Educated at Cambridge University where he read Natural Sciences (MA, First Class) and also a CFA charter holder. Chris founded Octopus in 2000 together with a partner after stints at Mercury Asset Management, a traditional City of London asset manager, now part of BlackRock. Octopus prides itself on serving its customer's needs better than its direct competitors. It today comprises both the original investment management business and a consumer facing energy supply business, which also is clear market leader in customer satisfaction ratings. This market switch from investment management to energy supply (both B2C) is very interesting in a MOI and SMC context.

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Mr. Hulatt was very sharp and eloquent in his responses to the questionnaire and gave fascinating insights into his own entrepreneurial process and management style. It soon became evident that he applies the values Octopus prides itself on to all aspects of the business and makes sure that his team members both feel part of the company and that their ideas are heard and discussed. His views on team composition and skills were fascinating, as well as his cautionary developments of assuring cultural fit, a prerequisite that, if not present, is very serious. It was enriching to hear Mr. Hulatt's views and interesting to listen to some of his experiences and anecdotes.

3.2.4 Evaluation of the interviews conducted

To evaluate these fifteen interviews, ranging from 25 minutes to 125 minutes in length and of varying informational density, it was necessary to make use of various of Mayring's techniques (2011), which were previously introduced (3.1). The results hereof are presented and analyzed in chapter 4 and interpreted and discussed in chapter 5.

3.3. Flyability SA: A reference case for the successful application of pro-active Market Opportunity Identification (Pillar II)

Flyability SA is a Swiss drone technology startup based in Lausanne. *Flyability SA* is interesting in the context of this study, as it represents a well-documented (Carron, 2017, 2018, 2019; Flyability 2019a, 2019b, Gruber, 2018, Gruber & Tal, 2017a; Schencker, 2018, Startup.ch, 2019) example of how a startup has used MOI as strategic tool, integrated it at the "correct" stage of its venture creation process and achieved extraordinary results.

The story of *Flyabiliy SA* is that of a team of EPFL students who successfully developed a small drone with a simple but ingenious innovation and unique selling point: a flexible rotating cage which makes the drone (Products *Elios 1* an *Elios 2*) virtually "crash-proof" or "collision tolerant" (as per *Flyability*'s own definition). The inspiration for this innovation was the founder's concern for the engineers inspecting the Fukushima nuclear reactor following the disaster in there in 2011: he felt a drone could keep them out of harm's way (Gruber & Tal, 2017a). Moreover, the cage has been developed and refined in such a way, that the drone can use the cage to "creep" up along surfaces (façades, industrial installation, etc.). It can fly beyond the line of sight, in confined spaces and in inconstant air flow. Overall, the drone increases worker safety by making human inspections no longer necessary and making hard-to-reach places accessible. This opened completely new markets to *Flyability*, such as

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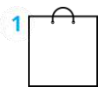
inspection of industrial installations, maritime applications and so on. With the introduction of *Elios 2*, the operation has been further simplified for non-expert drone operators. Where *Elios 1* required "a few hours of training" (Flyability SA, 2019), *Elios 2* can be operated by any inspection professional out of the box, due to seven improved stabilization sensors. *Flyability*'s marketing slogan seems to bear in mind the MON: "*The Possibilities are endless*" (*Ibid.*).

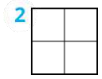
Moving towards the development of a coherent and agile strategy, the founders consulted the MON. To use Gruber & Tal (2019) own words:

> *"Adrien Briod, the co-founder, envisioned how a collision-tolerant drone would assist in managing such dangerous situations. Yet, very soon he and his team discovered that their drone can perform many different jobs, for different types of customers.*
>
> *So, where should they begin building their business?*
>
> *The answer is definitely dazzling, because there are numerous options. That is exactly where the Market Opportunity Navigator comes in handy."*

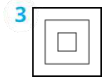
Overall, the guiding principle is: "3 steps for discovering your most valuable market opportunities" (Gruber & Tal, 2017a):



Search Broadly:
Generate and identify your set of market opportunities



Assess Deeply:
Evaluate your options and compare their attractiveness



Strategise Smartly:
Focus on the most attractive option while remaining agile

3.3.1 Application of Market Opportunity Identification at Flyability SA

The experience of *Flyability SA* is a clear case where MOI led to the combination of two pre-existing technologies to create a completely novel product, with unique features and vast, new markets. Before analyzing the MOI aspect of this success, it is necessary to say that the firm's success is also an example of technology leveraging, innovativeness and inventiveness. However, MOI played a pivotal role in selecting the correct target markets and in laying the planning foundations for the company's successful initial growth phase and additional product launch.

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In the spirit of the MON, we retrace the three steps proposed by its authors in our discussion of its successful application at *Flyability SA* (3.3.1.1 – 3.2.1.3). Please also refer to the facsimile reproduction of these worksheets in the annex of this study, both the materials in the annex and the following re-construction are cited from Gruber & Tal (2017a). Some emphasis is added. The MON contains three steps and three worksheets. The worksheets may be considered the "process" while the steps record the "outcome" (*Ibid.*):

Table 2: Steps, Processes and Outcomes: an overview of the MON

Step	**Process**	**Outcome**
1	*Worksheet 1*: Evaluate Market Opportunity Attractiveness	***Market Opportunity Set***
2	*Worksheet 2*: Evaluate Market Opportunity Attractiveness	***Attractiveness Map***
3	*Worksheet 3*: Design your Agile Focus Strategy	***Agile Focus Dartboard***

(Gruber & Tal, 2017a)

3.3.1.1 MON Step 1: "Generating a Market Opportunity Set"

The opening question the *Flyability SA* team, that is convinced of the ingenious merits their product the *Elios 1*, ask themselves is "where could such a drone could be most usefully applied?".

We recall the merits listed above (flying in confined spaces, beyond line of sight, etc.) and add that it can even fly in contact with humans without harming them, can operate from 0°C to about +50 °C and has a thermal imaging camera as well.

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The elaboration of the market opportunity set is the first step of the MOI framework that is the MON. Based on this information a market opportunity set of five options is drawn up (MON worksheet 1). These have been identified to be the below five (I – V).

Each of these is now ranked along the parameters of "Potential" and "Challenge" form "Low" to "Super-high":

I. Inspection of boilers and heaters in thermal plants
[Potential = 'high' / Challenge = 'low-mid']

II. Inspection of rooms in nuclear power plants
[Potential = 'mid-high' / Challenge = 'high']

III. Inspection of storage tanks in the oil and gas industry
[Potential = 'high' / Challenge = 'high']

IV. Vessel inspection in the maritime industry
[Potential = 'mid-high' / Challenge = 'mid-high']

V. Intelligence and surveillance for police forces.
[Potential = 'high' / Challenge = 'super high']

Gruber & Tal (2017a).

3.3.1.2 MON Step 2: "Evaluating the attractiveness of market opportunities"

According to the previous assessment the market opportunity set is transferred and visualized to *MON Worksheet 2* (Gruber & Tal 2017a), the *Attractiveness Map*. This aids the visual evaluation of the market opportunities. This is a 2x2 matrix and is also a good tool for group discussion when seeking to compare views on different opportunities and discussing "Potential" and "Challenge" scores given. Differing scores may be indicative of different knowledge levels regarding a market.

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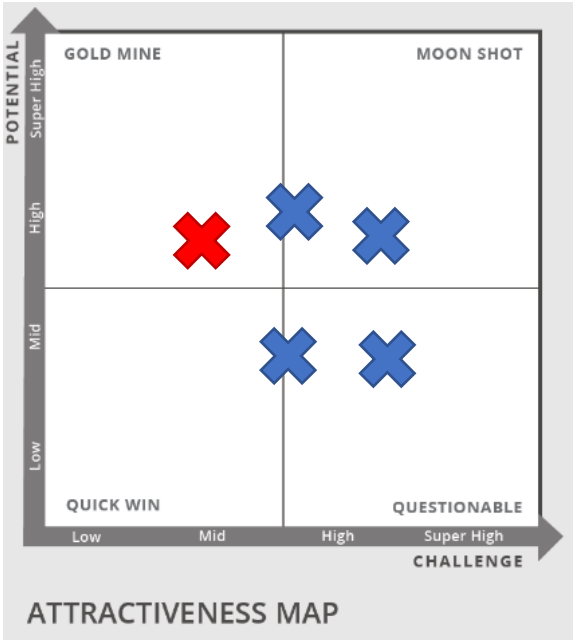
Figure 5: MON Attractiveness Map 2x2 matrix (Gruber & Tal, 2017a, adapted)



This process visualizes the previously established assessment along the potential and challenge axes. The conclusion is that Option 1 (marked red) is the most attractive market opportunity for Flyability SA. However, the other ideas generated and evaluated are not discarded, but added to a "smart portfolio of Backup and Growth Options" (Gruber & Tal, 2017a). This is a direct link to the improved venture performance at diversification stage discussed by Gruber, MacMillan and Thompson (2013).

3.3.1.3 MON Step 3: "Designing the Agile Focus Strategy"

The final step on the MON – with the subtitle "strategize smartly" – seeks to integrate the findings into an agile focus strategy. Here MON Worksheet 3 is used, and special attention is payed to "product relatedness" and "market relatedness". Based on this, the remaining identified market opportunities are categorized into "pursue now" (already chosen to be I.), "keep open" (goes into the Backup or Growth Portfolio and marked accordingly), or lastly "placed in storage". These are the source for sound decision making at later stages of the venture development and growth stages (*i.e.* diversification).

3.3.2 Observations on positive outcomes

Flyability SA is truly a model for the application of the MON and its theoretic underpinnings in MOI and SMC theory. The company has won numerous prizes (Carron, 2017,

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2018, 2019) and has shown the expected pattern of successful diversification with the *Elios 2* and the idea that such drones can interact safely with humans the next breakthrough is surely not far in the – well planned – future (Flyability SA, 2019). Further analysis on the case will be conducted in section 4.1.2.

3.4. A qualitative content analysis of ten full-year company reports of listed companies (Pillar III)

This third pillar is designed to act as both a qualitative "control group" to Pillar I (3.2), and to add observations directly relating to large enterprises, which were already included in the sample for the practitioner's interviews in the form of UBS AG, SAP SE and Infineon AG.

While the previously discussed behavioral dimensions do not apply here directly. Due to the high level of abstraction, the main contribution of the third pillar of the empirical study will be a deeper exploration of MOI and SMC in large companies. To facilitate this and to make the sample compatible with the methodological framework by Mayring (2011), a single sector has been chosen: the automobile industry. This industry is very much at the nexus of the overall observations this study has made about the state to the global marketplace and economy. Large and wealthy incumbents are under intense pressure to innovate and to reapply their core competences in new and more profitable ways.

This third and final part of the empirical study seeks to apply some of Mayring's (2011) methodologies to the formal (*e.g.* regulatory compliance) documents that are annual corporate reports. The idea is to use some of the ideas contained in Mayring by combining a frequency analysis with a content and context analysis (*Ibid.*). The procedure will be to seek out pre-defined keywords in the annual reports and analyze, in a first step, their overall frequency and, in a second, the context in which these terms are employed. In the evaluation of this we will focus on any traces and connectors to MOI or SMC.

For this analysis, we have chosen the automotive sector and used eight of the world's largest automotive groups (BMW, Daimler, Volkswagen, Toyota, Honda, PSA Group, FCA Group, Renault-Nissan) plus two of the highest-margin ones (Ferrari NV and Porsche SE). The latter two both have many similarities, especially cross shareholdings with their mothership (FCA – Ferrari and Volkswagen – Porsche).

With this overall "n=10" this study places itself clearly at the qualitative end of the spectrum. The used annual reports are all from the financial year 2017. The two-fold logic

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behind this is that i) this is the most recent year where all companies, who adhere to different regional accounting periods, have a full report available (*i.e.* with narrative, not only financials) and ii) it coincides with the year of publication of the book containing the MON (Gruber & Tal, 2017a), *i.e.* it creates a "level playing field" in the sense that, until 2017, any existing knowledge inside these groups would have had to be gained through the academic channel or strategy consulting.

Limitations are obvious, the first and clearest is that annual returns are public documents that are available freely. It is unlikely they contain any sensitive strategic data. However, it is the aim to see if there are any specific references to SMC or MOI. If so, do these refer to well-known trends or do they go beyond this. If companies formulate Key Performance Indicators (KPIs) of the kind that a certain share of revenues should come from new markets, does it acknowledge the challenge of MOI and SMC in this context?

Returning briefly to Pillar I of the empirical part, in the interview conducted with a senior strategy manager at SAP (Edgar, 2019), the reality of competitive advantage and new product development in very large corporations was discussed. An impactful comment here was that SAP had such profound market share, that its new products are often developed from customer needs. It is a variant of von Hippel's lead user focus, that incorporates the long-term nature and mutual dependency of SAP and its largest clients (customer lock in). Are traces of this visible in the automotive world also? Dahlander and Gann posed the question of the relative openness of innovation previously (2010).

As Gruber and Tal state themselves in their section about the applicability of the MON to large corporations, the usefulness of the MON in the context of the corporate strategy process is multiple. The authors note that it may help to i) cast a wider net or market opportunities, ii) help the decision making process regarding MOI and SMC, iii) bring forward "relatedness", iv) help the risk management aspect of new strategic initiatives or ventures and v) help individuals to sell an idea inside the company (Gruber & Tal, 2017a).

The results of the study will be discussed in the following chapter alongside the rest of the empirical research conducted.

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4. Results

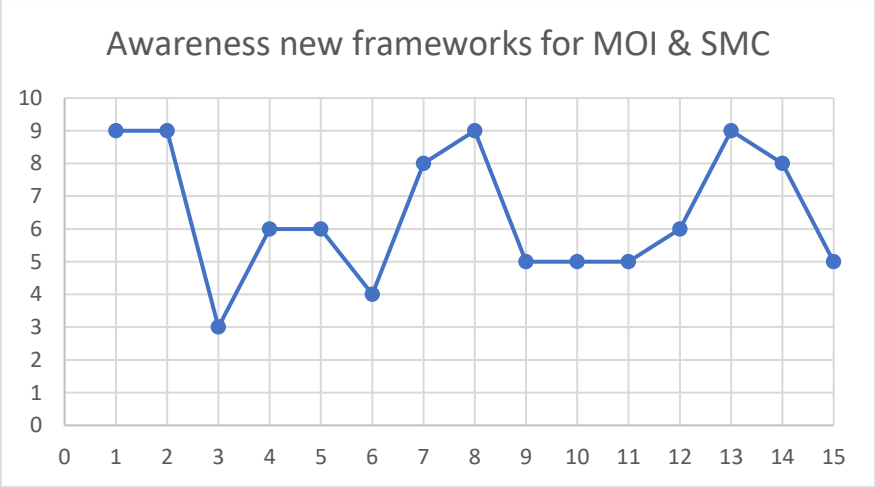
This section will present the results of all three parts (Pillars I, II and III) of the empirical analysis. The results overall were highly interesting and yielded positive and surprising results in pillars I and III.

4.1 Presentation of results

The three parts will be treated separately, to give the best possible view on the "raw" results. The interpretation and discussion are treated separately in chapter 5.

To begin the pre-existing level of awareness of MOI and SMC as an area of strategy was analyzed. This showed overall high awareness levels in the qualitative sample. Little to no correlation between those respondents in entrepreneurial functions and those in managerial roles was observed. The interviewees, as previously established, all had a baseline understanding of the subject matter due to the previous reading of a short presentation about the research project. The below observation-based score looks at the various respondent's previous awareness of MOI and SMC frameworks.

Figure 6: Level of awareness of new frameworks for MOI and SMC



The interrelation of "awareness" and "knowledge" was almost immediate. There was no respondent who as aware of new practices in MOI and SMC and had not followed this up by acquiring knowledge about it. This can be seen in very similar results for the curve of the knowledge score in Figure 7. One outlier, respondent 15, was unaware of recent theories but displayed deep knowledge in the dynamics of MOI and SMC.

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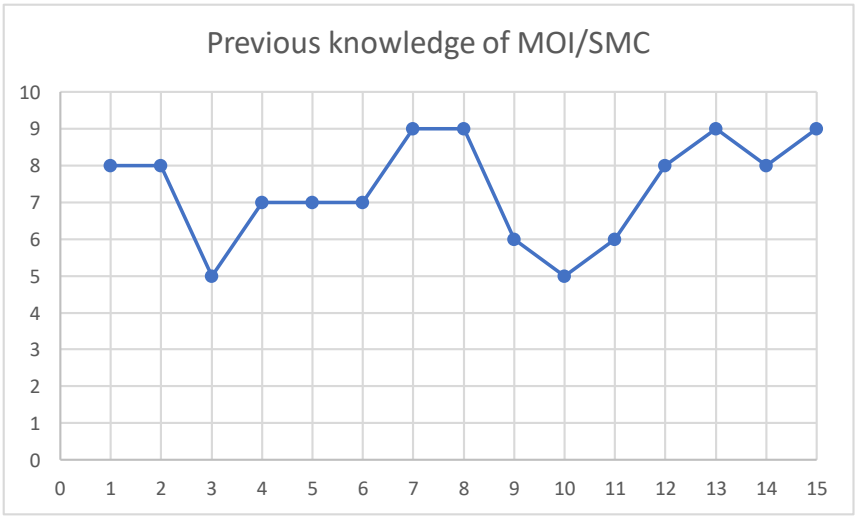
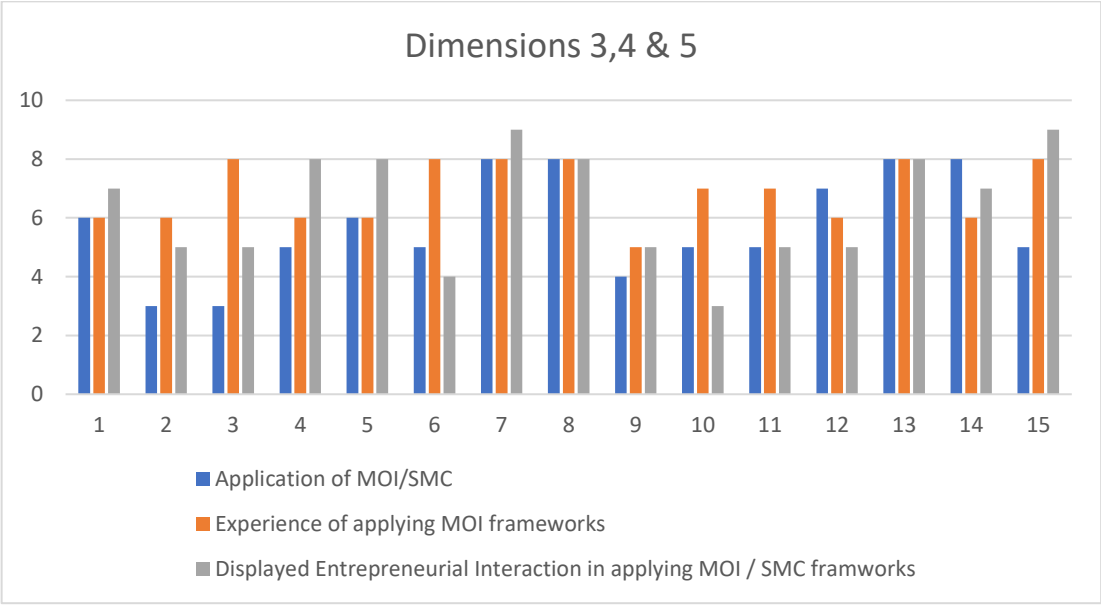
Figure 7: Previous Knowledge of MOI and SMC frameworks



These two figures 6 and 7 were the inspiration for the combining of the two dimensions into a category. The correlation between awareness and knowledge was clearly visible. Below, Figure 8 goes on to compare observed dimensions application, experience and interaction.

Figure 8: Results for the application, experience and interaction dimensions



This shows that dimensions 3 (blue) and 4 (orange) are closely correlated, and hence candidates for combination in the next step. However, the interaction dimension (grey) seems untethered by the other two. Overlaying it with the final dimension, performance, yields a more interesting picture:

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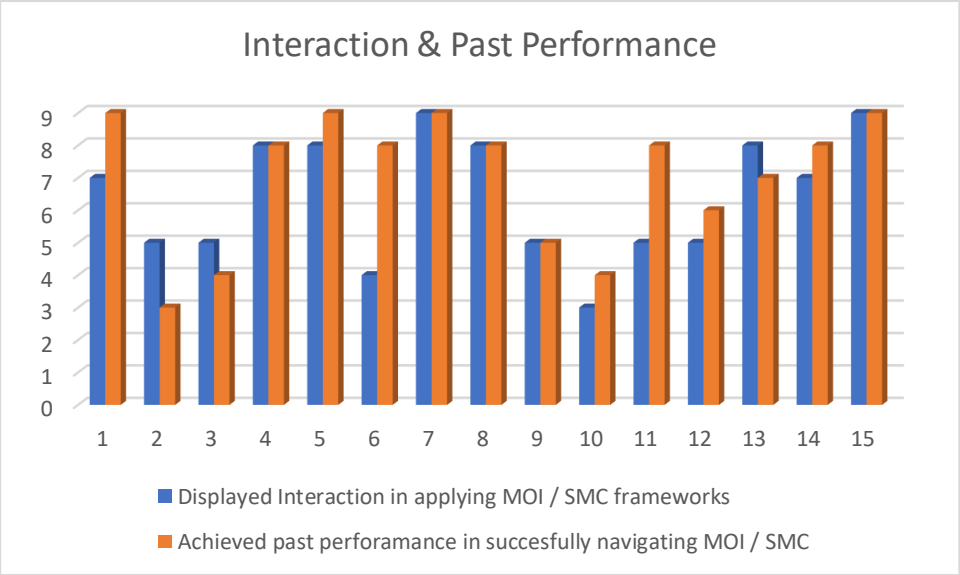
Figure 9: Results for the interaction and performance dimensions



While not correlated as closely as the related dimensions 1 and 2 (in figures 6 and 7), it becomes evident that some qualitative relationship must exist between these two fairly distinct dimensions. Interaction and Performance seem to go hand in hand. This point will be taken up in chapter 5 as an unexpected observation of great interest.

4.1.1 Results of qualitative interviews (Pillar I)

The evaluation of the largest and central pillar of the empirical study has yielded several results that promise an interesting discussion. As may be expected given the methodology employed, some of the emerging patterns are surprising, while others are not. Overall, the fifteen interviews were genuinely enlightening and generated valuable responses to the main axes of this study, namely MOI/SMC, its relevance to Innovation Strategy and the overall outlook for frameworks to improve this pre-entry planning and market choice dimension of venture creation, such as the MON (Gruber & Tal, 2017a).

In a preliminary step we set out to showcase a few highlight thoughts and quotes that have been selected from the extensive interview process. These results are key to the subsequent analysis, but are presented here first in their original state, before the various lenses of methodology, categorization and analysis have been applied.

A very basic description of the interview process and results is that for the fifteen interviews used in this study, all of which were scheduled to last between 20 and 30 minutes,

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only two were shorter than half an hour[7]. The upper range longest was a two-hour session that managed to remain on-topic throughout. While of course length on its own is no indication of quality, all interviews did cover all the questions included in the questionnaire presented in 3.2.2. As Mayring (2011) foreshadowed, this method truly allows expert practitioners to elaborate on key areas of their expertise. This is much to the benefit of the person conducting the interview process and hugely instructive at the same time.

To afford this section a certain structure, we shall follow the three above-mentioned broad axes: i) practical application of MOI/SMC and its usefulness; ii) interface of MOI/SMC and Innovation Strategy and iii) other relevant entrepreneurial or managerial consideration related to MOI/SMC.

The application of MOI/SMC was, after the awareness and prior knowledge questions a key early question. It was opened a wide array of interesting answers, which were both thought-provoking and instructive at the same time. Overall the reception of MOI/SMC and the MON was very positive amongst the interviewees.

4.1.1.1 Showcasing and contextualization of interview answers

As described in chapter 3, the questionnaire allowed a certain degree of leeway in how respondents chose to answer the various questions. This, according to Mayring's methodology (2011), is positive because it allows us to observe deep thought rather than binary "yes or no" answers.

The active and pro-active MOI and SMC strategies the respondents engage in ranges from the very direct pre-entry entrepreneurial MOI (*e.g.* Tomiyama at Nüwiel, 2019) to the macro choice of sectors and products and curation of MOI-focused social networks for Entrepreneurs ("Global Visionaries", Kunkel at UBS, 2019). This wide range includes many shades and many experts in their specific field, such as technology transfer and commercialization (Plasonig, 2019) and cutting-edge VCs (Gazdik at IPM, 2019).

Interesting, sometimes sweeping, statements gave deep insights into the way these practitioners operate and strategize successfully. An overarching observation was that the use of frameworks akin to the MON are not mentioned by any of the fifteen respondents. Some probing in this direction uncovers two distinct approaches. The first is a bottom-up approach

[7] The overall duration of the fifteen interviews has been calculated to have been approximately, 20 hours of direct contact time with the practitioners. This does not include scheduling and follow-ups. All participants will receive an executive summary of the results of the study upon submission and grading.

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which we will outline with the example of Natalia Tomiyama at Nüwiel (2019). This approach to MOI and SMC has a similar ultimate outcome to applying the MON but takes significantly longer. It appears to be based on deep knowledge of entrepreneurship, marketing and management theory, along with an iterative loop to find the best market opportunity. The second, is a network driven approach which seeks to marry an attractive target market with a previously known expert in that market or field. This shows certain parallels to approaches to innovation search put forward by Poetz, Franke & Schreier (2014) and can be very successful, as Peter Irikovsky of Exponea reports also.

At Nüwiel, which is a first mover in self-propelling bicycle trailers for last-mile delivery of goods, Tomiyama oversaw both marketing and funding in the pre-entry stage of the venture creation process. She was the architect of a pivot to which the company today owes much of its success. This pivot, while not based on the MON directly, was shaped by her experience working and building a university innovation centre in Hamburg in a previous role. She describes the pivot as follows, which was the result of six-months conception, MOI and funding stage:

> "We actually pivoted. So we changed the original content of 'electrical bicycle trailer for kids transport' to 'electrical bicycle trailer for goods transport' and could secure some first interest from UPS and go the financing and founded the company […] without UPS, we would never have founded a company."

Tomiyama speaks of "getting to know the market better" and the realization came after nearly six months studying the initially targeted "kids' market". Apart from the high regulatory burden, the deciding factor against the children's target market was pricing, she shared. The bicycle trailer Nüwiel was developing would have been too expensive for parents, Tomiyama underlines. The only tools reportedly used were the *Lean toolkit* because it was "too early [for tools such as Osterwalder and Pigneur's fully fledged *Business Model Canvas*]". This last statement is directly relevant to the MON and its planned deployment in the sequence of new venture creation: it confirms the need for a tool for the pre-modelling stage. This was equally underlined by Mathias Nell, who recommends the *Lean Canvas* (published by Ash Mauria in 2012) as quick and efficient tool for the evaluation of new ideas. The MON complements both.

At Exponea, which specializes in customer experience, CEO Peter Irikovsky speaks of the importance of knowing a person possessing deep knowledge of a market before combining the attractivity of the market with the availability and access to the market expert:

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> "I don't actually believe companies can win in new markets unless they have inside someone with strong experience in the market. So, for example, when we are now launching banking, we hired an ex-CEO of a Bank who worked with us on this, and we see that, without him, we wouldn't be able to be successful. Many things that seem to work from the outside, the insider can tell you why they wouldn't work."

He goes on to explain that confidentiality of a new market idea is key to its success also and agrees with the importance of combining different personal, technical and practical previous knowledge perspectives in the founding team. However, this network approach has become evident multiple times in the interview process in slightly different forms. Here, it is important to underline that the "breaking out of the prior knowledge corridor" is not to be confused with the idea of making rid of the previous knowledge; much more it is a conscious channeling of it (Gruber, MacMillan & Thompson, 201). A methodological approach to strategic market choice was applied when choosing between the banking and telecoms sectors for the firm's next diversification step. The initial gut feeling tended towards telecoms, but research showed that banking was an easier market to enter, due to the relatively simpler underlining systems infrastructure compared with telecoms.

Regarding the practical application of MOI/SMC, an interesting perspective was put forward by Sarah Munday (2019), in her leading role for New Product Development (NPD) and innovation. Discussing the methodology of MOI/SMC, she clarified the dynamic approach to the target market identification and the demographic aspect of this:

> "We do [MOI/SMC] as part of the process. We do try and analyze markets and then see what the growth opportunity could be, what the demographics are we are looking for, […] we do try to define that, and we do a kind of call work interview panel. We often do as well collaboration workshops, so we bring individuals in, either to just generate ideas from scratch or if we've got say, twenty ideas, we work with them to see if we can enhance them, to make them better. […] In my experience […] having worked in innovation, it is very much going in that direction."

For the large companies represented in the sample, the use and application of MOI and SMC differs widely. Two extremely large companies represented were UBS and SAP. For the former, Maximilian Kunkel (2019) summarizes the relationship between UBS's innovation strategy and overall strategy as follows:

> "We have an innovation lab at UBS […] and they try to integrate this into the overall strategy, but it highly depends on the area. For example, they ask: 'how we can use 'blockchain' for the bank overall'."[8]

[8] Directly translated from German, no emphasis added trough omission.

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He goes on to explain that this "innovation lab" is also centrally situated and controlled within the bank and plays a central role, especially regarding technology integration and scalability of technologically driven strategic initiatives. This indicates that business development and MOI are intimately linked for such a large global bank.

At SAP, Daryn Edgar reports directly to the CEO Office and sits only two steps from Bill McDermott, SAP's CEO. She explains three very different MOI/SMC approaches. The first is a close collaboration with Accenture, where the professional services company helps SAP to deliver tailor-made solutions for clients. This is a close echo to the theory proposed by Schilling and Phelps (2007). The second is using M&A as a SMC tool, where SAP acquired *Qualtrics* (2019), which was a strategic move to add the marketing functions the company offers to its portfolio. Given that SAP generally sells to the world's biggest companies, its strategy is, as Edgar says, "product driven" and often addresses very specific client needs. An example she was able to share was the "re-invention" of its oil & gas [Enterprise Resource Planning] platform, which is used by "all of the largest oil and gas exploration and production firms in the world", replacing its 40-year old predecessor platform with a "bottom-up new", "cloud native" architecture. For this, Edgar explains:

> "We [SAP] established a consortium of the world's largest energy companies who are contributing to that development. We've created a group of it, and they meet regularly and are influencing the design and the business models within the new platform and then, eventually, when it first releases to market those companies will be the first to take the product. So, it's basically engaging the customer before they have to buy anything, so they can influence what they will get when they do buy. […] And they are the largest companies in the world in that industry, so they will have an opinion. So, Shell is largest SAP client in the world, so what Shell say they think the platform should do is taken very seriously."

On a similar note to Edgar, from an entrepreneurial perspective, Mathias Nell, who is both an executive and quickly becoming a repeat entrepreneur, underlines regarding his second major venture, XRoads, a travel tech venture proposing a smartphone app:

> "What was crucial in the pivot was the distancing of oneself from the idea – don't fall too much in love with the idea…"

Comparing these two quotes, we can see that the dilemma companies and ventures face regularly with MOI/SMC strategies are independent from their size. The MON does indeed apply to companies of different sizes: the entrepreneur has a more straight-forward process to distance her or himself from their idea. While seeking the same effect, large companies may

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require different methods to achieve this critical distance, depending on their scale and the scope of the venture in question. More generally, about the very initial phase (even before the potential application of the MON), Hitesh Tailor (2019) summarizes:

> "I still think there is a step before all the theory [of MOI/SCM], what I call the 'entrepreneurial step'. I am sitting on the side of Penrose, which is that there are 'private perceptions', your fear factor, confidence, and at that stage […] I think that at the stage of the entrepreneur, I don't think the theory matters that much. […] But certainly, cautions builds in [over time] and you are more methodical than when you're a 21-year-old from MIT. You've got time on your side; you believe you're going to conquer the world – most of them don't – some of them do. I think that the successful businesses… you need to have a passion."

This theme of the 'entrepreneurial spark' or 'passion' has been a recurring theme for the entrepreneurs who have started and run their own ventures. An example is Marianna Ferro (2019), the founder of *Flair Atelier*, an online luxury women's tailoring business who spoke about the entrepreneurial energy at her very first job, assisting the CEO of the then quickly growing on-line luxury retailer YOOX. In her subsequent successful career in investment banking (sales and sales trading), PE and VC, she says she never found the same level of energy. She today reflects this in her approach to her own team composition:

> "In general, the more experience someone has, the more connections he can make in his mind. It is also a question of people they know. As a human being it is very important to be able not to live of what you know, and not to just improve in one sector […] I really enjoy it, the idea of the 'renaissance man', the one who knows a lot of things in different capabilities, because they are connected in the end. […] If you create a company you need to connect the dots and reach from one competency to the other. To me, my team is super important."

Skills are another key theme and were exemplified, like passion was previously by Tailor (2019), by the entrepreneur, consultant and honorary professor of technology transfer Gerhard Plasonig (2019). Adding to the skills and company competencies debate around Garry Hamel (Prahalad & Hamel, 1990), Plasonig develops:

> "[Hamel and others use the term] *Skills* in the sense of human, technical and organizational skills that in their sum constitute a competence. I am always sceptical when a company claims it has forty-four competences or key competences. A company has maximum two or three competences. But it has many skills on the level of the employees and these have to be developed and brought forward. If you understand those skills, then you can also do other things with them. That is this associative thinking, this innovative thinking is based on these skills. Many who remain set on a product-market strategy cannot be made to see this."

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This shows how key a lateral way of thinking truly is. Apart from the obvious link to the MON, this brings to mind how *IDEO* goes about their work (Kelley, 2007), a link we will explore further.

Marian Gazdik (2019), a senior VC partner whose portfolio investments are focused on "mobility, energy and applied Artificial Intelligence", which includes for example a maker of flying cars: "Every single bet we make, we make strategically on companies which have a chance to disrupt a market." Gazdink (2019) goes on to elaborate an interesting view on agility. He combines an anecdote about Prof. Clayton Christensen (quoted in this paper, 1997 and Christensen & Raynor, 2003) and a highly interesting back story to one of his portfolio investments:

> "You know, the gentleman we mentioned, who invented the disruption theory, Clayton Christensen, he's a friend of mine – he comes to speak to our conferences on a regular basis – he's an amazing guy and he always has a sign on his door at Harvard, a big sign which says 'anomalies welcome'. Because with these anomalies he always needs to confirm whether the theory is strong or is weak. The disruption theory which he invented 25 years ago is not the same as it is today. It keeps adjusting and improving.
>
> The way we do it, for example the [contactless plasma technology utilizing] drilling company, was invented by two brothers who sold a software business. And because they were software guys, one of them asked for a whole to be drilled next to his house, and when he saw the quote, he thought the quote was incorrect because it was too expensive. So, he learned that the cost of drilling rises exponentially the deeper you go. And it didn't make sense to him physically. The first 100 metres should be as expensive as the second 100 meters. That is why he hated the problem and wanted to solve it and he came up with contactless drilling, where you don't even have to have a drill, because the drill has to be changed.
>
> […] But because the [prior knowledge] corridor is real, we have to find ways we can avoid it. My personal philosophy is that it is always the crossroads where the magic happens. Steve Jobs brought the worlds of technology and design together. This is why every [Apple] product is both beautiful and functional. And we believe we have to bring these two worlds in all companies."

Contrasting this with a view from a senior R&D and Innovation executive at Infineon, the conversation with Stefan Rohringer (2019) was no less inspiring. He detailed the innovation process in highly regarded Austrian operation of the German semiconductor behemoth:

> [Development of market opportunities from an R&D perspective] happen usually as 'market push', that means one has a new technology at hand, or an improvement is starting to become evident for an existing one, or a breakthrough, and one asks oneself 'where could we use or apply this technology'. Or in other cases, 'where could I also use this technology, which I am today using in a known market, in a new one?'. And here is, where often conversations happen containing statements similar to 'this should work

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technically', but we simply do not know the market at all! We don't know the behaviors, maybe we don't know any relevant players in the market, which whom to exchange views as one does in the known market where oneself is known.' This is where very quickly a situation occurs where one would like to make this decision, but a lot of information is missing. […] Different strategic options exist: should one speculatively invest to see how it develops or should one find a partner who knows the market better. These are questions which arise over and over. […] What is often the case with consortia, is that one comes into contact with completely different companies and sectors. And, from this kind of scenario, the thought arises to find people and companies who know these markets but who, at the same time, have a communication basis with us with regard to language, time frames, opportunities, and production volumes."

This reinforces the perception of the "prior knowledge corridor" (Gruber, MacMillan & Thompson, 2013), which does appear to apply both to individuals and industries or sectors. Another respondent agreeing with this was David Stringer-Lamarre (2019):

> "The 'prior knowledge corridor', I think is a very interesting concept. We try to normalize ideas into our existing knowledge base, I suppose, to try to understand them a bit more."

He went on to elaborate with great insight on the debate between innovation strategy and overall corporate strategy, which he is a proponent of keeping separate. He underlines a risk in mainstreaming too many such important functions, including client engagement. This provided new insights on the interfaces between MOI/SCM and strategy and marketing.

A further highly interesting interface, that was the subject of a thought-provoking contribution by Sjors van der Sterren (2019), was that amid MOI/SCM and market research. Van der Sterren (2019), combined it with a novel input to the importance of skills and the network effect of MOI. The MON will eventually lead to increased requirements in this area, especially as ideas are being retrieved from the MOI portfolio (Gruber & Tal, 2017a). Van der Sterren (2019) explains, based on his extensive experience in this area, especially on the role of market research and the "self-selection" effect of founding teams:

> "I think, when you do market research, that is a process you go through of gathering information. And that is both in drafting your research questions and processing the research output and the feedback. That is a process whereby you do not only gather information, but you go through places and times with people. And to think a company – a successful company – is very often a combination of a great idea but then the right people, at the right place at the right moment. And there might be a part of that 'passion', but I have seen companies which are very good, and especially when you have a few people who are very good at working together, they tend to by coincidence have come together at the right time, the right moment and the right opportunity. And they have met each other through this process of finding out more about doing something. So, I think this combination between market research not only as 'gathering information' but as a

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process during which you expose yourself to the right place, the right people and the right opportunity may be the less rational part, but nonetheless a very important part."

Alexander Swoboda (2019) adds an equally fascinating view to this turbulent area of MOI/SMC, by underlining the requirement of a clear executive focus for leaders in the field. The two quotes share one central theme, applied inversely: focus. As Swoboda says:

> "It is sometime harder not to go into markets, than to go into them. There are always many possibilities for new products or product features you can explore and always new geographical markets to go into. But the challenge is that if you always follow every impulse you will quickly be too thin on the ground to fully exploit the various opportunities. Therefore, focus is very important. It is as important to define one's focal points and not to follow every opportunity."

This last comment is fully compatible with the MON, which specifically enables entrepreneurs and managers to choose and prioritize market opportunities. The mon is a key tool to reinforce this focus without losing valuable ideas which might appear at the wrong time for the venture.

As has been shown the interview process was not short of stimulating inputs and ample food for thought. Overall, both the field of study MOI/SMC and especially the proposed strategic tools proposed for the navigation of its intricacies received a warm reception and positive feedback. Particularly the interface MOI/SMC and Innovation Management appears highly relevant for the following empirical study.

4.1.1.2 Categorization of Key Observations in interview responses

Given that all interviewees responded to all questions and all made comments, statements and developed ideas regarding these, ample material to evaluate their answers regarding the six dimensions is available.

The below Table 3 is a collection of statements from the extensive interview process. It performs the categorization of the six dimensions (1 – 6) into three categories (A, B and C). In doing so, it further aims to present a more valuable visualization of the results and to share the key insights obtained from in chapter 3.

Table 4 then goes on to complete Mayring's (2011) methodological step of summarizing and aims to generalize – with caution – to translate the observed patterns into generalizable patters.

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Table 3: Key Observations from responses to qualitative interviews

N°[9]	**Key Observation 1**	**Key Observation 2**	**Key Observation 3**
	Relating to Category A *"Awareness / Knowledge"*	Relating to Category B *"Application / Experience"*	Relating to Category C *"Interaction / Performance"*
1	Understands potential merits of the concept and approach. Refers frequently "to gut feeling" and quick assessment of market opportunities as a basis for MOI.	States that both bad ideas and bad employees need to be "cut" quickly, as they are detrimental to culture. This seems a key management style.	Refers frequently to the surprise factor of past successful strategic decisions and reflection upon these as a source of new ideas.
2	Highly interested in the subject matter and probing in return questions. Very analytical in taking the theories on board. Displays profound knowledge of the field of entrepreneurship research.	Applies knowledge in practice with the team. Likes iterations in strategy development process. Uses different market research agencies for each project – finds returning to the same sees decaying provider performance.	Has very impressive track record and is culturally open to cross fertilize ideas and products across geographic regions (*e.g.* APAC → EMEA).
3	Did not know of MOI or MON but has expert knowledge on some aspects of SMC, especially within multinational companies. Is highly perceptive and quickly understands MOI/MON innovations.	Broad and high-level career across various financial, VC and corporate roles. Is an expert in market structure for opaque markets. Points out an interrelationship between management and entrepreneurship.	Does transfer knowledge but is an "expert" at heart. Has very profound and applicable knowledge to his areas of expertise. Has shown great adaptability in the context of new ventures in unknown sectors.
4	Immediately up to date on entrepreneurship theory and practice. Genuinely interested in MON, sees SMC and MOI as more pertinent at the venture scale.	Speaks about proximity to decision makers and importance of corporate collaborations as tools to deliver innovative products and accessing new markets. Speaks of highly methodological strategic MOI and SMC as pre-cursor to large corporate acquisition.	Has a very strong and clearly progressive track record. Is highly energetic and involved in several supplementary activities. Believes in a discreet market pull approach to MOI for large market-leading firms.
5	Fully informed about all new trends of MOI and SMC. Is more interested in commercialization aspects but integrates management, innovation and entrepreneurship in his well-reasoned and balanced answers.	Utilizes many of the managerial techniques of strategic management and corporate entrepreneurship on an on-going basis. Is very experienced in different search methodologies. Likes distant search. Agrees that networks of experts and introductions are key aspect of successful MOI-based commercialization.	Is very successful operating at the interface of strategic management, innovation management and technology commercialization. Appears to be constantly learning and is quick to distinguish transferrable and specific experiences from one MOI to the next.

[9] Please note that the order in which the responses are presented here is not the same as in which the interviewees were presented in in 3.2.5, the reason for this is anonymization of the responses. This rearrangement no influence on the outcome of the empirical study.

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6	Extremely knowledgeable in the field, both theoretically and practically. Knows many key authors personally through work on his conferences.	Makes a more distinct differentiation between MOI and SMC. MOI is more opportunistic, and people and contact driven, while SMC is built on rational assessment of megatrends.	Has very strong and multi-faceted portfolio of activities which comprises direct strategy and business development. Implicitly these reinforce each other.
7	Expert in entrepreneurship and technology leveraging. Is interested in MOI and SMC, suggests monetization strategies as further point of study.	Is very generous in sharing anecdotes and adamant about the team composition, linking the two previously separate concepts: skill-based founding team diversity and the intangible "passion" and "drive" elements. Feels these are primordial requirements for venture success.	Has long standing international record of success. Appears keener on venture development and managing or overseeing growth than passively managing investments. Excellent teacher to younger entrepreneurs.
8	Answers base line question with details about Penrose and the RBV. Is very experienced and immediately understands MOI/SMC. Sees a lot of MOI happening in disruptive scenarios.	Is an entrepreneur at heart although successful in corporate roles too? Says that opportunities are organic and difficult to synthesize. MOI is hugely dependent on people and valuable connections and introductions. Is open to the idea of distant search, especially for social enterprises.	Quotes imitation by competitors as a great compliment. Own track record is beyond question. Has used innovative deal models 5 – 10 years before main steam advisers use them. PE and real estate experience very impressive and often "ahead of its time".
9	Very highly trained and with a strong financial background. Has made conscious decision to seek non-standard strategic and investment experience in innovative emerging markets firms. Seeks knowledge beyond finance and corporate management.	Cites "energy" of a workplace a key success factor. Slightly different angle to other respondents focusing on the "excitement" over the "passion". Sees entrepreneurship as a vehicle for self-fulfillment. Very interested in MOI / MON with good theoretic foundation.	Has moved from successful mainstream financial positions progressively further towards VC and PE to entrepreneurship. Cites timing a big factor for strategic management and entrepreneurship.
10	Interested and very sharply observant. Is open to the possible usefulness on MON. Is practice focused and very successful at it.	Uses various techniques and logical approaches from SCM. Replies at length to a clarification question on application of a product to a completely new market. Logic in choice is coherent with MOI theories (distant search).	Has clear and strong entrepreneurial track record. Has obviously learned a lot from previous hybrid corporate/entrepreneurial roles. Underlines scarcity of sector experts and cites this as a decisive factor in choosing various identified market opportunities.
11	Knows field, but not particularly MON. Is positive regarding relevance and usefulness of MOI and the MON for startups.	Connects MON with career development aspects, moving to ever more entrepreneurial roles before moving to the C-Suite.	Highly successful directing an SME in a playing field dominated by global players. Is very strategic about expansion prospects.

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12	Highly aware and interested in MON, can see clear transfers to VC and social enterprise. Is highly knowledgeable about management sciences.	Connects MOI / SMC very analytically and interestingly to social entrepreneurship and various aspects of entrepreneurship. Underlines social importance in making connections that lead to deals and new ventures.	Has long-standing experience in advising entrepreneurs on all aspects of their work.
13	Is generally aware of entrepreneurship research, but not directly of the strategy development tools or MOI frameworks.	Very habitual and seasoned strategic decision maker. Underlines the inevitability of underlying market forces and says this has to be balanced with critical analysis of 'herd mentality' (*i.e.* digitization for digitization's sake).	Special focus on cross cultural aspects of management, hugely successful both managerially and entrepreneurially. Recent successful business model innovation.
14	Has clear-cut previous knowledge of the field. Underlines his preference of the *Lean Toolkit* over the *Business Model Canvas*. Has direct knowledge of MON.	Is an active user of the Lean, Agile and MON, often uses reduced frameworks to guide the strategy development process due to time quoted constraints	Is a serial entrepreneur and takes big learning steps between rounds of ventures. Clearly committed to life-long-learning. Is very open to "lifestyle" ventures.
15	Agrees that MOI was for long underexplored, attributes great importance to key entrepreneurial process.	Believes that learning and applying experiences in an agile way is key to entrepreneurial success.	Finds MON application to geographical SMC especially interesting

Following this first categorization, in the next step observations attributed to the six behavioral dimensions, which have been categorized in table 3 above, are now summarized and generalized into three categories (A, B and C). This step is key for the further analysis of the qualitative interviews. The step introduces a further layer of abstraction, as Mayring warns (2011). However, the point of the qualitative approach he advocates is precisely, the study of emerging patterns. Already in chapter 3, the observation was made that some connections that were in interview answers came as a surprise. This methodological step therefore seeks to be as neutral as possible in its mechanic of its application.

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Table 4: Summarized patterns for each behavioral dimension

Dimension	**Key** Observations ***Summarized***	Category	**Core** Observations ***Generalized***
1	No real difference between "awareness" and "knowledge" is shown.[10]	**A**	The strategy practitioners interviewed have high levels of knowledge and awareness about MOI and SMC frameworks. This needs to be contextualized as the sample has a very high average level of business education and business experience. However, most would fall into the target-group of the MON framework due to their frequent MOI decision making.
2	Knowledge levels were surprisingly high. The question was not only aimed the MON, but MON and various new product development processes were mentioned.		
3	Application is highly varied: some have knowledge about MOI but have never actively or pro-actively applied a MOI framework. Other respondents believe they should apply these more frequently and would like to learn more about them.	**B**	Combining application and experience is highly useful, but the improvement of MOI and SMC decision making does not appear to be linked to the frequency of the application of the framework. This means that the subsequent performance dimensions are not driven by experience, but it appears likely that infrequent application is enough to sensitize practitioners to the usefulness of MOI tools.
4	Experience is highly role-driven in the answers. Different permutations exist of those who apply MOI tools frequently and		

[10] During the design phase of the questionnaire, the distinction was aiming at respondents who are aware (*i.e.* through an article in the business press) of MOI Frameworks, but are yet to explore and attain "knowledge" on the subject.

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	those who do so only every few years as per situational demand.		
5	The interaction dimension is establishing itself as an unexpected highlight of the analysis: originally designed as a steppingstone form experience to performance, it appears to contain some behavioral trait	**C**	The interaction dimension appears to contain some behavioral trait or action that leads to successful MOI and SMC decision making independently even from experience. Some experience is a prerequisite, but it is not a linear relationship, it appears. It seems this is a behavioral or cognitive observation contained within it. Further psychological and behavioral analysis is needed.[11]
6	The performance dimension is highly intriguing to the observer. It seems to be more closely related to the interaction dimension as to the expected relatedness to experience.		

These results will be analyzed and discussed in chapters 5 and 6. The results from the different pillars will be conflated carefully in chapter 4's analysis part (see 4.2.)

4.1.2 Results of documented case analysis Flyability SA (Pillar II)

The key to the successful application of the MON appears to lie in its "de-linking" and "re-linking" process of the initial venture idea (Gruber & Tal, 2017a). Behaviorally and psychologically, it forces users to take the idea away from its initially identified field of application (for *Flyability SA*, this was inspection of nuclear reactors) and re-assess it from a different, wider point of view. In doing so, it may act as a "filter" to behavioral biases and prior knowledge conditioning (Gruber, MacMillan & Thompson, 2013). The third step, the "agile focus strategy", contains a process of re-linking based on the above explained "portfolio"

[11] Gruber & MacMillan (2017) have published first papers in this direction, focusing specifically on identiy theory.

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creation approach (Gruber & Tal, 2017a). Thinking back to the six entrepreneurial and managerial dimensions established, we can observe that all six are required for the successful application of the MON to pre-entry venture plan.

However, as the previous empirical study of the interviews conducted in Pillar I has shown, the awareness and learning about the MOI (dimension 1) and a basic level of knowledge in the application of the MON, teaches (or reminds?) practitioners of a wide an creative way of assimilating lateral ideas and resources at their disposal. The serious "working through" of the MON, *i.e.* in a workshop or with a coach or consultant, might suffice to learn this cognitive approach. This underlying process is not necessary novel, but one that is frequently discouraged in expert-dominated work environments, as we heard from Dr. Rohringer (2019). At the same time, however, it is very clearly present in innovation contexts and most famously at the Innovation and Creativity market leader *IDEO* (Kelley, 2007). This foreshadows that the inter-disciplinary approach its authors followed in the creation of the MON, along with the wide search for the elaboration of the market opportunity set in step one of the MON, might be required for its successful application as well.

4.1.3 Results of qualitative content analysis of full-year company reports (Pillar III)

This third and final part of the empirical study was designed to seek patterns in corporate annual reports which might yield observations about the perception of MOI and SMC in large enterprises. If successful, it could help understand the scope for application of MOI frameworks such as the MON. The MON, as Gruber & Tal state (2017a), is clearly conceived to work both in early stage ventures and in large enterprises alike. Given that many large organizations are under considerable pressure to generate revenues from new markets, new products and new clients, often while doing "less with more" (*e.g.* following cost reductions), the following observations based on a qualitative sample from the automobile industry might be applied equally to many parts of the financial sector. The MON might also be used as a defensive strategic tool to anticipate disruption, if applied correctly.

The study performed two main steps, both based on Mayring's methodological framework around qualitative content analysis (2011), which are presented below. First, a

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frequency analysis[12] for four "keywords" which may be expected to be used in a MOI or SMC context ("market"; "market choice"; "strategy" and "innovation") was conducted.

Table 5a: Frequency analysis of Corporate Annual Reports

Company[13]	*Pages in Annual Report*	FREQ ("*market*")	FREQ ("*opportunities*")	FREQ ("*strategy*")	FREQ ("*innovation*")
BMW AG	*260*	268	140	32	19
Daimler AG	*345*	619	231	118	45
Volkswagen AG	*425*	591	88	117	53
FCA Group	*330*	410	1	28	7
Groupe Renault	*40*	32	4	9	5
PSA Group	*106*	71	1	4	0
Toyota	*52*	60	18	104	30
Honda	*42*	22	2	8	5
Porsche SE	*280*	147	71	30	10
Ferrari NV	*181*	285	25	47	49

A further limitation became evident during the analysis: the formats of the annual reports differ profoundly. Hence, to correct this a second frequency table of the same data has been drawn up, where fractions of "per page" figures of the mentions are shown. However, Mayring

[12] Mayring (2011) mentiones the frequency analysis and implies it is a universal, basic instrument, not one that is specifically attributed to either quantitative or qualitative approaches. In this analysis, the purely qualitative step is clearly the second, the context analysis and the following summarization and attempted generalization of the observations.

[13] The names in table 5 refer to the corporate annual reports by all the manufacturer's in the bibliography under section 7.2.3.

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(2011) was right in saying that qualitative samples can yield observations of interesting patterns: the same "pattern" persists in both tables 5a and 5b.

Table 5b: Frequencies re-based "per page"

	Freq (market)	Freq (opportunity)	Freq (strategy)	Freq (innovation)
BMW	1.03	0.25	0.12	0.07
Daimler	1.79	0.15	0.34	0.13
VW	1.39	0.00	0.28	0.12
FCA	1.24	0.13	0.08	0.02
Renault	0.80	0.01	0.23	0.13
PSA	0.67	0.30	0.04	0.00
Toyta	1.15	0.09	2.00	0.58
Honda	0.52	0.48	0.19	0.12
Porsche	0.53	0.09	0.11	0.04
Ferrari	1.57	0.09	0.26	0.27

In a second step, a *context analysis* after Mayring (2011) is applied to the found data above. In this step, the implicit question is "how" these words were used. Given that we are analyzing hybrid documents with both narrative texts, figures and infographics, this step is performed qualitatively, listing all occurrences.

Table 6: Qualitative Context Analysiss of Pillar III

Company[14]	**Context** of use of terms "market", "opportunity", "strategy", and "innovation"– **observations** relevant to MOI and SMC
BMW AG	p. 98: BMW has implemented an "**Opportunity management system and opportunity identification**" system". Process descriptions shows clear parallels to MON's portfolio approach. "Identifying opportunities is an integral part of the strategic planning process of the BMW Group."
Daimler AG	p. 155: Daimler states, that "The opportunity management system at the Daimler Group is based on the risk management system. The objective of opportunity management is to **recognize the possible opportunities arising in business activities** as a result of positive development at an early stage, and to use them in the best possible way for the Group by taking appropriate measures.".

[14] The same is the case for table 6.

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	Basing this important strategic tool on an existing risk management system shows a lack of market focus. A stark contrast to BMW.
Volkswagen AG	p. 169: Volkswagen, in the "*Power Engineering*" section writes: "*The underlying trends in the global economy, such as sustained growth and a greater international division of labor, Report 170 on Risks and Opportunities Group Management Report are set to continue, as are the resulting increase in global transport routes and volumes, the higher demand for touristic offers such as cruises, and the growing energy needs and the required forces for innovation in relation to global climate policy. We are* ***working systematically*** *to leverage these* ***market opportunities*** *across the world. In the medium term, significant potential can be leveraged by enhancing the aftersales business through the introduction of new products and the expansion of our service network.*" The referral to the fact that the company is "working systematically" is not further explained in the annual report.
FCA Group	p. 65: Fiat Chrysler, is fascinating. In their group-level annual report they do not mention opportunities at all. The single mention of the word in a standardized legal note which accompanies the section referring to the management of (financial) "*Liquidity Risk*". *I.e.* the liquidity risk is justified because it is necessary to "seize market opportunities". **No mention** of MOI or SMC.
Groupe Renault	In a strange Annual report format (that was difficult to obtain), Renault mentions opportunity exploitation only in strategic and HR contexts. No reference to MOI or SMC.
PSA Group	Presents exactly the same phenomenon as FCA above. Even the legal disclaimer is word-for-word identical. Equally, no mention of MOI or SMC.
Toyota	p. 19: opportunity is embedded in all aspects of the report (C-Level, Finance, Strategy. On page 19, the history section concludes with a similar statement repeated over and over: "*Toyota regards the tremendous changes in the automotive industry as opportunities. In accordance with this view, we are working to make ever-better cars and to implement a strategic shift toward electrification, information, and intelligence in order to build new business models*." The President integrates "innovation" and "opportunities" philosophically and allegorically without using the former expression: "*No one knows when we'll reach the summit we're seeking, or even if we're on the right path. What I do know is that only those who reach the summit can see the opportunities that lie beyond.*"
Honda	In stark contrast to its Japanese peer (see above), Honda has two brief mentions of opportunities with no reference to MOI or SMC in the context of operational optimization.

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Porsche SE	While making more frequent mention of opportunities and other MOI and SMC – related topics, these remain enshrined within the "Risk and Opportunities Report" which is strongly biased to the former. As in Daimler, the opportunity identification process (if it merits the description) is an extension of the risk management system. Other observations are specific mentions of "investment opportunities" (p. 48) which are "*examined on an on-going basis*" without any mention of the process for this.
Ferrari NV	Ferrari appears more market-focused than it is opportunity focused. The closest mention to MOI or SMC can be found in the "*Sustainability*" section (p. 89). Here Ferrari states: "*Our risk management approach is an important business driver and it is integral to the achievement of the Group's long-term business plan. We take an integrated approach to risk management, where risk and opportunity assessments are at the core of the leadership team agenda. The Board of Directors is responsible for considering the ability to control strategic, operational, compliance, financial and reporting risks crucial to achieving its identified business targets, and for the continuity of the Group.*"

The results of this part of the study are therefore three-fold: i) While some aspects of MOI and SMC are present, the only "central" and recurring place where they can be found in this type of organization and this type of report is within the "Risk & Opportunities" section. One manufacturer stands out, BMW, in mentioning and underlining a genuinely pro-active, forward looking and methodical MOI process. For others (Volkswagen, Daimler, Ferrari), these activities are integrated in and dominated by internal risk management systems. ii) For global groups, SMC is likely to be driven by geo-political considerations and increasing instability in emerging markets is a recurring factor in this. iii) Overall, BMW is the only proponent of pro-active MOI, while Toyota displays a "mainstreamed" approach regarding seeing change as opportunities. Profound cultural differences appear to persist.

4.2 Analysis of combined results

Running through the three pillars of the empirical analysis, the results observed fall into two distinct categories, those which – to some extent – feel intuitive and those which feel counter intuitive or even baffling. True to the methodological framework (Mayring, 2011), some surprises have come forward. This is interesting for the following chapters 5 and 6 but foreshadows the unlikeliness of 'proving' the propositions formulated at the outset.

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4.2.1 Expected results

Pillar I, the empirical interview series, was almost entirely surprising. An anticipated distinction between "awareness" and "knowledge" was clearly proven wrong and a more binary picture emerged. The singular previously expected result was the overall high rating of the performance dimension, which was expected due to the high educational levels of the respondents.

For the second pillar, the case study of successful MOI framework application at *Flyability SA* most results were expected. However, this is inherent in the idea of including a positive benchmark example.

The final pillar, as expected, showed that MOI and SMC are not fully implemented in most large automotive companies. Only BMW stood out as a pioneer in de-linking the MOI system from the internal risk management system that is inherently assesses market opportunities cautiously.

4.2.2 Unexpected results

Some unexpected results could be observed in Pillar I, where the true outlier and key takeaway from this this empirical study was the completely unexpected relatedness of what had been defined, analytically, but without any great expectations, as the "application dimension". This proved, instead of being related to the experience dimension, much rather to be closely correlated to the performance dimension. Given that this is an unexpected 'outlier', a false positive has to be excluded. Is it possible that what we categorize, to use Mayring's term (2011), is in fact another entrepreneurial trait? This question will be taken up in the following chapter 5.

Pillar II, as it was a well-documented case study, did not produce unexpected results, but it was interesting to observe that the second generation of the product, the *Elios 2*, does seem to follow the successful MOI/MON pattern and is showing the integration of other formerly "kept open" or "stored" ideas.

The third and final pillar produced two surprising results. First is the mere power of language in this entrepreneurship and management studies context. Mayring's (2011) promise of observing "patterns beyond the data" held true again and we learned that in large corporations the use of the MON or similar approaches is possible. The main cause of resistance to pro-active MOI appears to be complex and inter-linked risk management systems, which

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can only be “overcome” or redesigned when the C-Level displays willingness to do so. It would be interesting to follow up with BMW to explore what this decision was based on. This was an interesting observation and the stark contrast displayed by BMW shows that pro-active MOI/SMC can be a profoundly useful strategic tool for larger companies.

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5. Interpretation, Discussion & Future prospects

This section seeks to re-apply a theoretical lens to the findings from the empirical part and to interpret and discuss them critically.

5.1 Interpretation & Discussion of Results

The results of the empirical part of this study have yielded various interesting observations and patterns. Overall, items can be found that validate many theoretical statements from chapter 2.

Patterns emerge in all three pillars of the empirical research, which speaks once more both for the quality of the field's theoretical underpinnings and validate the methodology applied in pillars I and III, the qualitative content analysis, by Mayring (2011). It has performed well in the sense that it does allow observations that even a much larger quantitative study might miss. Such challenges were encountered firsthand in pillar III, where a frequency analysis was conducted as a basis for the content and context analysis.

5.1.1 Patterns observed in Pillar I of the empirical study

As outlined in chapter 4, the key observation of the main empirical study of this paper, the fifteen in-depth practitioner interviews focused around the fifth of the six established dimensions of entrepreneurial and managerial behavior proposed: "interaction". The idea here was that the individual already possessing the previous four dimension "awareness [of MOI & SMC](1)", "knowledge (2)", "experience (3)" and "application (4)" would begin to interrelate MOI frameworks with other types of knowledge and benefit from remembering tacit knowledge or forgotten contacts in other sectors. However, at the design stage this dimension did not appear key. The key then clearly appeared to be the final "performance (6)" dimension and the assumption was, that it would be driven by a combination of (3) and (4) and that (5) would possibly be a conduit or a source of distant search behavior.

Following the methodology of Mayring outlined (2011), it appears that, actually, it is the assimilative and 'lateral' thinking that this "interaction" presupposes which makes the application of the MON as a MOI framework valuable.

If we take a moment to reflect on this, we can find support for this in the theory (Gruber, 2010; Poetz, Franke & Schreier, 2014). The possible issue with the design of the empirical dimension, was that the link between an 'entrepreneurial spark' or 'energy' and this dimension

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was not immediately established. The interviews themselves uncovered two further patterns which reinforce this view. First, the "experience" dimension in the sense of "repeated application of the same MOI framework of process to new strategic or entrepreneurial activities does not seem to influence "performance" in doing so. Much rather, the big underlying benefit of MOI frameworks such as the MON appears to be cognitive. This means, if an entrepreneur or manager has once seen the effect of the de-linking, assessment and re-linking process, she or he retains this and applies it as and when they see fit. However, the repetition of this "application" in the form of "experience" does not matter very much at all. The interviews underline this too – the importance and attractiveness of the MON framework is its stability, as the multi-dimensional and complex market opportunities it is applied to differ greatly from one to the other. Gruber & Tal refer to this as "zooming in and out" and apply it to market segments equally (B2B, B2C, etc.) (2017a). It is therefore logical that the concept has found positive resonance amongst VC who "screen" a large amount of investment (market) opportunities on an on-going basis.

5.1.2 Patterns observed in Pillar II of the empirical study

Flyability SA might not have "gotten off the ground" without the application of the MON and its MOI process. The initial idea – inspection of nuclear plants was noble and useful, but the venture would doubtlessly have suffocated under the regulatory burden of the nuclear industry. Therefore, it was even more insightful to observe the many positive steps the team at *Flyability* have taken since founding the firm. The predicted pattern of "success at diversification stage" appears to be falling into place. A venture that has applied pre-market entry MOI correctly, and created a true "win-win" situation for itself.

The relevance of this was very direct. The presentation and analysis of the *Flyability SA* case study shows, how ideas can benefit profoundly from early stage, pre-market entry MOI and SMC in general and the MON framework in particular.

5.1.3 Patterns observed in Pillar III of the empirical study

The application of Mayring's methodology (2011) to a completely different and comparably "abstract" sample, yielded surprisingly useable results. The identification of risk management as a "culprit" of SMC and especially sub-optimal MOI in large automotive industries was surprising. However, it does point towards the overarching large enterprise problem of legacy IT and Enterprise Resource Planning systems, which increase strategic inertia on multiple levels. The doubt was based on the thought that studying annual reports,

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given the intense cost- and competitive pressures in the automotive industry, would be akin to Plato's cave allegory (360 B.C.): one would be studying the shapes of the shadows on the wall. While this is of course to a great extent the case, it was surprising what a powerful instrument language can be in a strategic and entrepreneurial context. Mayring's (2011) own theoretical foundations, of course do rely heavily on hermeneutics, as we have outlined in chapter 3.

5.2 Future prospects for research

Here a brief outlook is given on possible future research topics related to MOI and SMC. The field remains highly dynamic and the next step appears to be further expansion of the field towards behavioral psychology and identity theory (Gruber & MacMillan, 2017).

5.2.1 Innovation Management benefits from improved MOI/SMC

The interface between MOI/SMC and Innovation Management, mentioned multiple times throughout this study, was an area where very interesting answers could be observed during the qualitative interviews of Pillar I of the empirical study (please see 4.1.1.1).

This interface leads to a central question, that helps us explain the importance of MOI/SMC in the Innovation Management context. We have studied the behavioral traits and actions that entrepreneurs and managers display in their application of MOI/SMC. What relationship do the required "lateral" connections made in this context (of resources, persons, skills, knowledge and learning), have to the search behaviors and technology transfer skills that certain companies have developed? As the second pillar of the empirical study of this paper around the case study of *Flyability SA* underlines, these may well be two sides of the very same coin.

The required "de-linking" and implied "openness" to new ideas and markets along with the search behavior and access to networks of experts and persons with prior knowledge and experience in the target fields underline profound parallels between Innovation Management and MOI/SMC.

A motivation to do more of the former may inspire greater attention to the latter. Danneels (2007) showed with great clarity that, especially for SMEs, renewed withdrawal of resources (due to financial or economic fluctuations) from innovation or technology transfer projects can have such lasting impact that they can negatively influence the culture of a firm when discussing both new market opportunities and innovation as a company skill.

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At the same time, the de-mystification of the early venture creation and planning process that Gruber seeks and provides (2018, 2019), is a directly positive factor for an improved innovation effort. Regardless of the scale of the venture or firm in question, it encourages new connections between resources, ideas, knowledge, technologies and not least people to be made and facilitated.

It would be highly interesting to further investigate the manifestation of Gruber, MacMillan and Thompson's term of a "prior knowledge corridor" (2013), on an industry level. Some interview respondents felt strongly that business and joint ventures across traditional economic sector boundaries were considerably, if not prohibitively, more difficult to foster than those within a company's primary sector of activity (Irikovsky, 2019; Rohringer, 2017; Tailor, 2019;).

Overall, it is no coincidence that the recent novel framework for MOI/SMC, the MON, has grown out of the field of entrepreneurship research with roots in marketing planning. The result is a strategic tool (Gruber & Tal, 2017a), that is an enabler of innovation and that can be leveraged in this direction in companies of widely varying sizes.

5.2.2 Behavioral biases can be further analyzed with a larger sample

It would be very interesting to repeat this study on a larger scale with a combination of methodologies observed in the theoretical part (Gruber, 2007, 2010 & Gruber, MacMillan & Thompson, 2013). However, here one interface that the present papers did not possess the necessary scope to include, would have to be studied in earnest: behavioral psychology, entrepreneurial behavior (Gruber & MacMillan, 2017), personality types and the social identity of entrepreneurs (Gruber, Sieger, Fauchart and Zellweger, 2016).

5.2.3 Uses for Intrapreneurship or Corporate entrepreneurship

As the authors of the MON say (Gruber & Tal, 2017a), the framework is highly useful in established and larger firms.

It would be fascinating to explore this in the context of corporate "spin-alongs" as has been proposed by Michl, Gold and Picot (2012). This would also give an opportunity to demonstrate that the MON is likely to increase organizational ambidexterity also.

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5.2.4 Implication for Corporate Foresight

Corporate foresight is a big and growing field and the appeal of MOI and SMC in general and the MON in particular is clearly visible.

Beyond this immediate appeal, it would be interesting to explore a further proposition: MOI (as a theoretical field) and the MON (as an agile strategic tool) may be the remedy for the (arguable) gap in the question "how" to implement corporate foresight (McGrath, 2019) and forward looking disruptive innovation strategies (Christensen, 1999, 2003), which have covered the "what" of this question.

5.2.5 A performance measure based on Market Opportunity Identification

This final idea has come from the combination of the third pillar of the empirical study of this paper and an early idea for an MBA thesis subject, the measurement of innovation. This facet remains elusive with a wide gulf between theory and practice (Richtnér, Brattström, Frishammar & Magnusson, 2017).

Reading and analyzing the annual reports, it would be a relatively simple strategic initiative to add "pro-active strategic market opportunity identification" as a key performance measure. A feasibility study would be very interesting.

Overall, a final and separate qualitative interview and e-mail exchange (*i.e.* not part of the qualitative sample of Pillar I of the empirical study) was conducted with Dr. Rudolf Dömömtör, the Director of Founder's Centre[15] (*WU Gründungszentrum or WU GZ*) at the Vienna University of Economics and Business (WU Vienna) (2019). Here the observed interrelation between pre-entry market choice and innovation management was probed from a technology transfer point of view with a strong start-up focus. Dr. Dömötör was very generous in describing his coaching, teaching and mentoring efforts to a large variety of student and alumni founders. He concurred with the observation and spoke in detail about the connection between MOI and search behavior for innovation searches (both new product development and technology transfer). This, again qualitative, validation was an encouraging conclusion to the empirical part.

[15] The Founder's centre at WU under Prof. Dömötor looks after ~100 sessions of *Founder's Advice*, gives ~35 lectures on the start-up process and is responsible for ~50 student start-up teams under the *Entrepreneurship Avenue* banner.

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6. Conclusions

Having arrived at the end of this study, it remains to summarize the findings and observations, along with a revisiting of the four propositions formulated in the introduction (chapter 1). Overall, after a two-year MBA program that has been evenly balanced between theory and practical considerations and applications, it is worth to record just how challenging and time consuming any, even humble, primary or empirical research is. At the same time, it is hugely rewarding, when a previously not visible pattern suddenly emerges.

6.1 Testing of Propositions

The proposition formulated in the introduction of this paper (please see 1.2 for reference) are placed in the context of the theoretical part (chapter 2) and the learnings drawn from the empirical part (chapter 3 and 4).

6.1.1 First Proposition (P_1)

The first proposition focused on the on-going division between entrepreneurial (*i.e.* startup and high growth) applications of MOI and SMC and stated that this, in spite of large corporations' attempts to harness the dynamism displayed by successful startups (Ries, 2017).

This has been generally proven to be the case. While the theory is correct that agile frameworks such as the MON can be successfully and usefully applied independently of scale, the division between nimble startups and inert slow-moving large enterprises remains to a large extent intact. Some companies discussed in this paper buck the trend and appear to have taken on board learning form authors studied about planning, strategy and agility (Gruber, 2007) and disruptive innovation (Christensen, 2003).

6.1.2 Second Proposition (P_2)

The second proposition looked at resistance on an individual level to frameworks such as the MON. Do practitioners resist frameworks because they find them restrictive, repetitive and maybe even feel threatened by them?

No evidence of this has been found in the empirical interviews. However, linking this back to P_1 above, on an organizational level this effect might exist. In general, the reception of the ideas behind the MON and the framework itself was universally positive during the

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interviews and many of the practitioners said they would use the book and its materials in workshops for strategy development, MOI, SMC and new product development.[16]

6.1.3 Third Proposition (P_3)

The penultimate proposition was concerned with a possible confounding and conflation of MOI frameworks such as the MON with practices that have recently come under fire in PE-owned companies may exist here. This has been shown not to be the case, namely amongst the practitioners interviewed.

While frameworks such as the MON certainly seek to optimize the venture performance and outcome over varying time horizons, MOI strategy frameworks are usually multifaceted and widely applicable and are a great source of learning which has given entrepreneurs a further tool to improve their chances of survival and success. The theory part (chapter 2) even contained applications of this wider body of knowledge to social enterprise (Thompson & MacMillan, 2010b).

6.1.4 Fourth Proposition (P_4)

Here the "capped downside risk" of MOI frameworks was placed center stage. The proposition has been confirmed during the months of work on this paper: the application of tools such as the MON is truly not much greater than the time spent by entrepreneurs or managers applying it. This further reinforces the positive overall take-aways from this study. If nothing else comes from a few hours spent strategizing with a well-designed tool, at least those involved will have taken critical distance from their computer screens and refreshed their mindset. However, as the previous sixty pages or so aim to demonstrate, the successful implementation of a MOI framework can achieve so much more.

6.2 Concluding observations

This paper was dedicated to strategic market choice and its application. Recent research displays a combination of ground-breaking usefulness based on strong and detail research, and the common sense and humility with which the authors themselves present the field. It is important to remember that prior to 2005, considerable scholarly attention has been placed on

[16] On a self-reflective note, the origin of this proposition may well be through a prior knowledge corridor in wealth management, where often new processes and especially systems are faced with intense resistance.

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what to do once a business idea has been formulated. At that time, not very much importance had yet been placed on the question if an idea is anywhere close to the optimum use of the entrepreneur's time, financial and human resources (Gruber, Kim & Brinkmann, 2015 and Gruber & Tal, 2017a).

These circumstances have enabled the field itself and the proposed framework MON to develop a disarming 'charm': it is a time-efficient strategic step that, as we explored in various ways, is highly likely to produce both positive immediate and long-term effects for a venture's performance. It stands in no way at odds with the idea of an entrepreneurial mindset, 'entrepreneurial spark' or the 'passion' many successful practitioners considered fundamental to the overall venture creation process. This was also observed in the empirical interviews (Tailor, 2019 & Irikovsky, 2019). Much rather, it is a way to fine tune these passionate and private ideas to optimize their application, longevity and success.

This paper has been able to show empirically, that this framework is useful for companies and ventures of varying sizes (chapters 4 and 5). Moreover, combining empirical and theoretical aspects it was able to outline a clear positive relationship between the lateral connections that entrepreneurs and managers are required to make when applying the MON for their MOI/SMC challenges and the wider field of Innovation Management (section 5.2.1). Such an associative way of thinking is a key attribute equally of the successful entrepreneur and competent innovation manager. In both cases, Edith Penrose's theories (1959) of a resource-based view of the economy shows that the art and science lie in the correct combination and deployment of resources available to them: tangible and intangible, fungible and tacit. The field of MOI/SMC has cast light on the profound behavioral underpinnings of this wider economic phenomenon. The MON (Gruber & Tal, 2017a) provides the world of business with a tool that is a great help in challenging and time sensitive strategic scenarios.

The three main conclusions of this study therefore are: firstly, the successful analogies drawn between MOI/SMC and Innovation Management, based on the behavioral dimension of "interaction", *i.e.* lateral application, search and re-combination of various types of resources.

Secondly, the study demonstrates that it adds the qualitative observation (albeit not proof) that, for large enterprises, the internal risk management systems appear to present the major (but not insurmountable) point of resistance for the large-scale application of MON.

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Thirdly and lastly, it adds empirical (qualitative) observations to the overarching usefulness and 'win-win character' of the MON. The observation and analysis of this third area, returns to the profound importance of associative thinking, the first one was based on.

It remains to add that the multi-dimensionality and inter-disciplinarily of the field of MOI/SMC and its associated fields remains very dynamic and a myriad of interesting further research topics (as outlined in 5.2) remain to be explored and studies.

* * * * *

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7.2.1 Qualitative Interviews conducted

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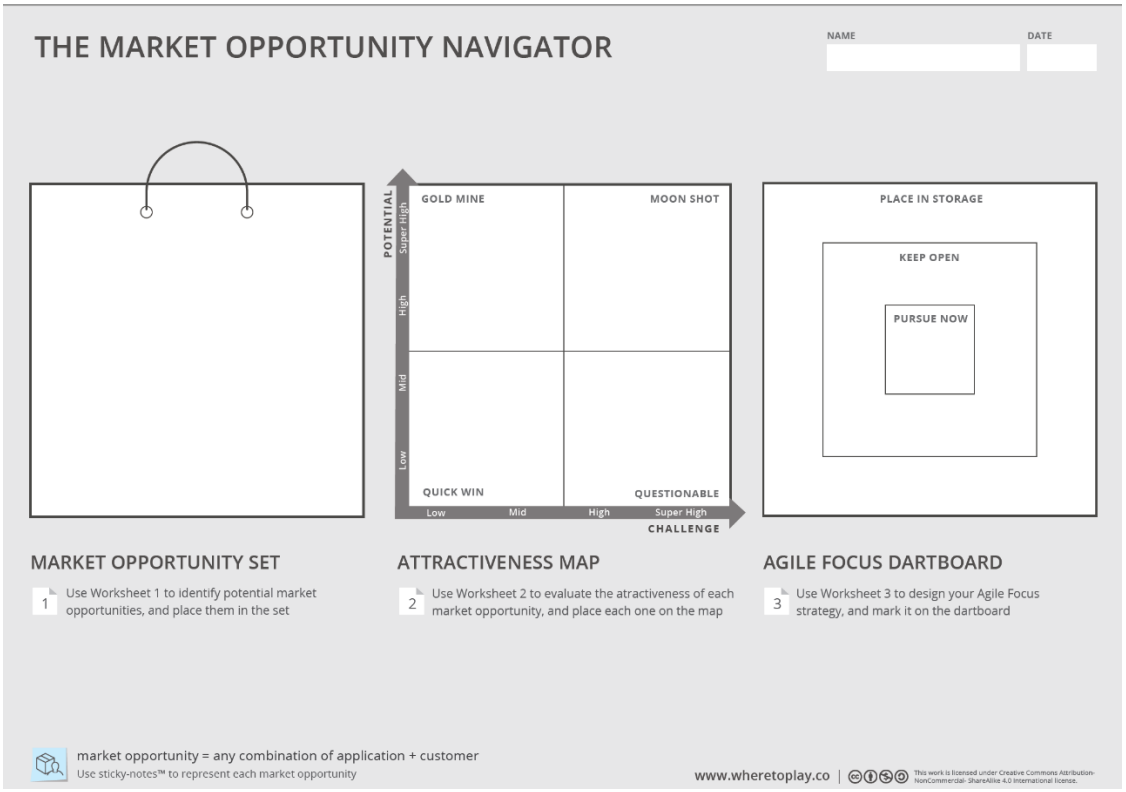
8. Appendix

8.1 Facsimiles of the *Market Opportunity Navigator* worksheets

From Gruber & Tal's 2017 Book, *Where to Play*[17], and their accompanying website www.wheretoplay.co here the empty worksheets are included to help readers who have not come into contact with the methodology imagine this agile strategic framework.



The *Market Opportunity Navigator* – Overview page. Gruber & Tal (2017c)

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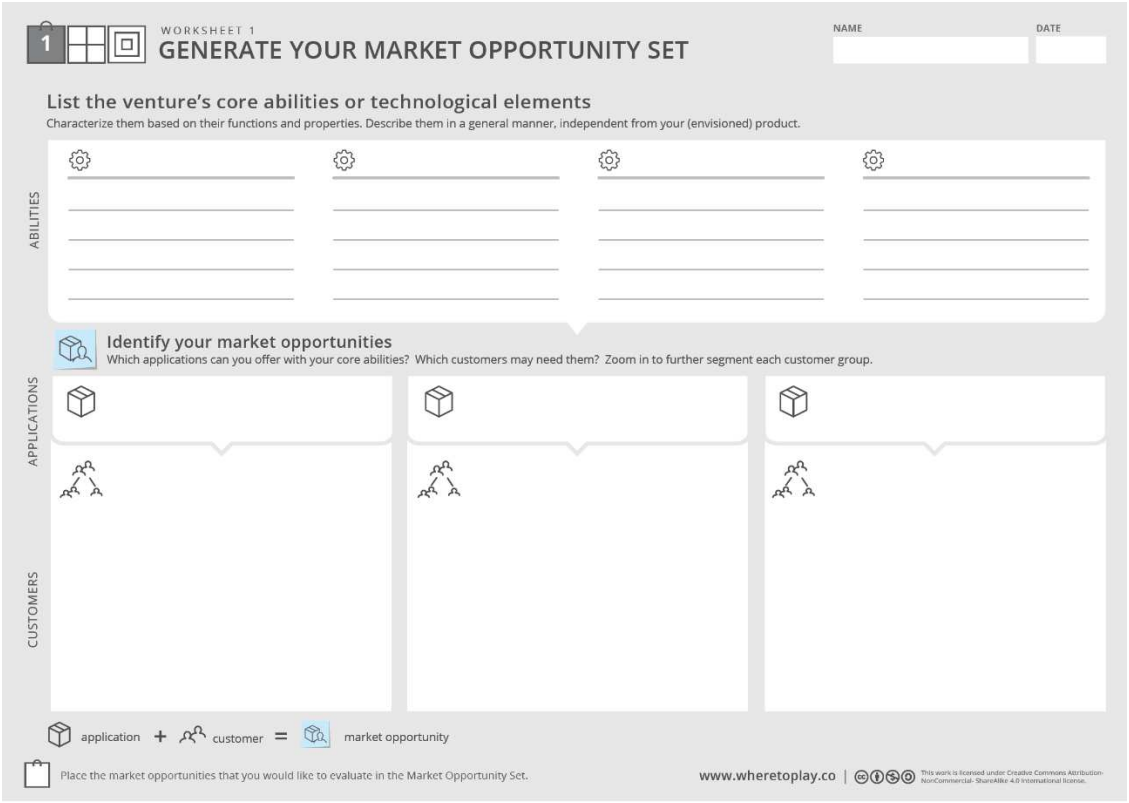

The *Market Opportunity Navigator* – Worksheet 1. Gruber & Tal (2017c)

The *Market Opportunity Navigator* – Worksheet 2. Gruber & Tal (2017c)

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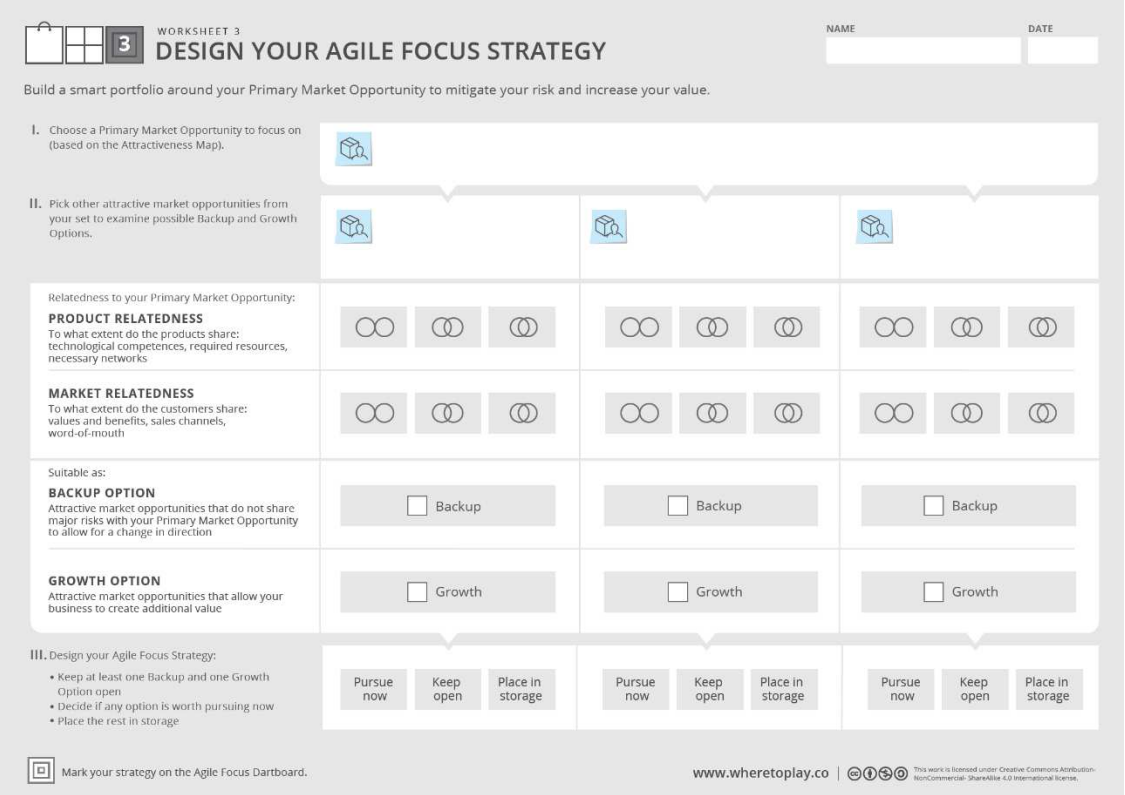

The *Market Opportunity Navigator* – Worksheet 3. Gruber & Tal (2017c)

8.2 180 – Second "Elevator" Pitch for this study

This document was created and used to give potential interview partners an idea of the field and to provide them with some background on the topic they would be questioned about. The presentation tried to balance the provision of information and background with the risk to pre-condition respondents.

Generally, it was well received and saved time in explaining the theoretical background, while usually clarifications remained necessary.

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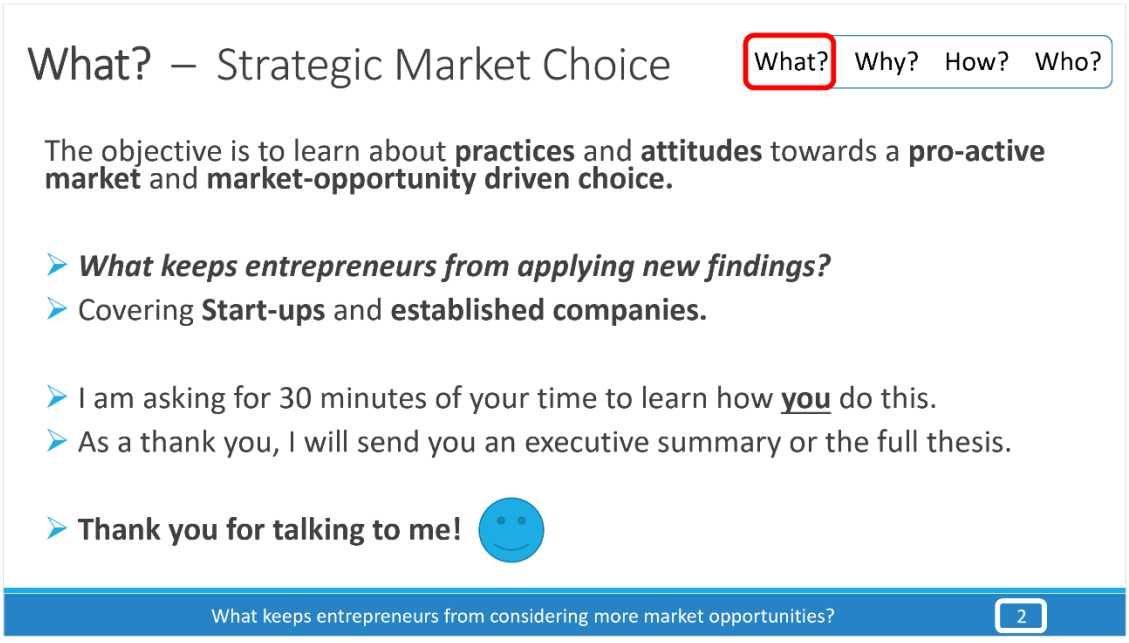
Slide 1 – MBA Thesis Presentation



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Why? – Compelling Evidence

What? **Why?** How? Who?

- The hypothesis is, that this new body of knowledge points towards huge untapped resources in companies of any size.
- Corporate Strategy and Innovation Strategy could benefit form more work on market choice.
- Why is this not yet more widely adapted?

→ ***I* would like to hear about your experiences in market choice.**

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Slide 3 – MBA Thesis Presentation

How? – Theory and Empirical

What? Why? **How?** Who?

- **This study builds upon** earlier studies by:
- **Prof. Dr. Marc Gruber,** (*EPFL*, Lausanne)
- **Prof. Dr. Ian MacMillan** and **Prof. James Thompson** (*Wharton School*, Philadelphia).
- The long-time studies by Gruber *et. al.* (2013) show that huge **resources remain unused** in most companies. Companies engaging in pro-active market choice outperform their peers.
- The book *Where to Play?* (2017), contains the "Market Opportunity Navigator", an **agile framework** for pro-active market choice.
- **The underlying theory,** the study is based on the *Resources-based view* and the work of Prof. Edith Penrose (1959)
- Overall the study seeks to capture important patterns **beyond** quantitative analysis.

Wharton University of Pennsylvania EPFL

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Who? - … is Patrick Bade?

What? Why? How? **Who?**

Swiss and Finnish. He founded *Elevo Strategy Consulting*, a London-based strategy consulting boutique specialised in the strategic requirements and investment projects of various European Single Family Offices (SFOs). He focuses on coordinating complex and high value strategic projects for private investors

Previously, he trained as a fund manager at Singer & Friedländer (part of Investec) in the City of London

Currently a student in the 2017 – 2019 joint WU Vienna and TU Vienna MBA on Entrepreneurship & Innovation. This programme is offered in collaboration with three leading US Universities: MIT, Harvard und Columbia Business School. It focuses on Technology, Entrepreneurship and Innovation Management.

He did his undergraduate studies in London (King's College, University of London) and Paris (Sciences Po / IEP) and completed various further courses in Finance and Management in Lausanne (IMD) and again in London (London Business School / LBS).

Patrick is fluent in German, Swedish, English, French, Spanish and along with basic Italian, he is rapidly improving his Finnish. Other interests include new technologies, cars, art, opera and travelling across Europe with his Spanish/French wife.

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Slide 5 – MBA Thesis Elevator Pitch

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