



**UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW**

**Lean Startup Approaches (LSAs) as Means for
Business Model Innovation (BMI): Insights from
Swedish AI Startups**

William Anderberg & Adrian Svanlind Urdal

Graduate School

School of Business, Economics and Law, University of Gothenburg, Sweden

Spring 2025 Master's Thesis in Knowledge-based Entrepreneurship

Supervisor: Ethan Gifford

Acknowledgement

The completion of this thesis has been possible through dedication and collaboration, and several individuals and companies have been of utmost importance. First and foremost, the support from our supervisor Ethan Gifford has been invaluable. His experience and knowledge has been crucial for the completion of this thesis. We would therefore like to direct our appreciation towards Ethan and the School of Business, Economics and Law at the University of Gothenburg. Additionally, we would like to direct our appreciation towards AI Sweden as well as all participating case companies and respondents. Your willingness to participate has certainly been valued. Moreover, your support, experiences, and perspectives have enriched this thesis, ensuring insightful findings of great quality, which helps promote further research within this particular field.

William Anderberg & Adrian Svanlind Urdal

Gothenburg, June 2, 2025

Abstract

Business Model Innovation (BMI) has gained momentum in relation to AI startups that attempt to navigate exceptionally volatile environments steered by swift trends and consistent progress. To manage successful BMI in this context, Lean Startup Approaches (LSAs) have become increasingly topical, mainly due to their emphasis on continuous improvements and adaptations. The literary contributions on this relationship, including AI startups, BMI, and LSAs are however scarce, and consequently there is currently a gap in practical perspectives on this matter. This master thesis therefore delves deeper into real-world experiences beyond solely theory in an attempt to discover how LSAs can enhance BMI in Swedish AI startups. The qualitative research approach conducted through a multiple-case study and semi-structured interviews with five Swedish AI startups shows that LSAs in practice can enhance BMI, which is demonstrated in six distinctive themes. Hence, the case evidence shows that there is a clear connection between theory and reality with regards to how LSAs can be used to promote BMI in AI startups.

Abbreviations

AI	Artificial Intelligence
BM	Business Model
BMI	Business Model Innovation
LSAs	Lean Startup Approaches
LSM	Lean Startup Methodology
CDP	Customer Development Process
JIT	Just-In-Time
BML	Build-Measure-Learn
MVP	Minimum Viable Product
KPI	Key Performance Indicator

Overview of Tables and Figures

Table 1	<i>Overview of conducted interviews</i>	p. 28
Table 2	<i>Illustrative overview on the LSAs applied on BMI among the case companies</i>	p. 37
Figure 1	<i>Disposition of the thesis</i>	p. 10

Table of Contents

1. Introduction.....	6
1.1 Background and Problem Discussion.....	6
1.2 Purpose.....	8
1.3 Research Question.....	8
1.4 Delimitations.....	9
1.5 Disposition of the Thesis.....	10
2. Literature Review.....	11
2.1 Business Model Innovation.....	11
2.1.1 Defining Business Model Innovation.....	11
2.1.2 Explaining Core Attributes in Relation to Value Creation, Delivery, and Capture...	12
2.1.3 Dynamic Capabilities and Ambidexterity as Prerequisites for Successful BMI.....	14
2.2 Lean Startup Approaches.....	15
2.2.1 The Inception and Progression of Lean as a Concept.....	15
2.2.2 Defining Lean Startup Approaches.....	16
2.2.2.1 The Lean Startup Methodology and The Build-Measure-Learn Feedback Loop..	16
2.2.2.2 The Customer Development Process.....	17
2.2.3 A Container of Lean Startup Approaches.....	19
2.3 Artificial Intelligence and AI Startups.....	21
2.3.1 Defining Artificial Intelligence.....	21
2.3.2 Defining AI Startups.....	21
2.4 Combining the Concepts - LSAs as a tool for BMI in Digital (AI) Startups.....	22
3. Methodology.....	24
3.1 Research Strategy.....	24
3.2 Research Design.....	25
3.3 Research Method.....	25
3.3.1 Primary Data Collection.....	25
3.3.1.1 Sampling and Selection of Case Companies.....	25
3.3.1.2 Sampling and Selection of Respondents.....	26
3.3.1.3 Semi-Structured Interviews and Interview Guide.....	26
3.3.1.4 Conducting Interviews.....	27
3.3.1.5 Overview of Conducted Interviews.....	28
3.4 Secondary Data Collection.....	29
3.4.1 Collection of Literature Review.....	29
3.5 Data Analysis.....	30
3.5.1 Transcription.....	30
3.5.2 Thematic Analysis.....	30
3.6 Research Quality.....	31
3.6.1 Trustworthiness.....	31
3.6.1.1 Credibility.....	32

3.6.1.2 Transferability.....	32
3.6.1.3 Dependability.....	33
3.6.1.4 Confirmability.....	33
3.6.2 Authenticity.....	34
4. Empirical Findings.....	35
4.1 Concise Overview of The LSA Philosophy - Usefulness and Challenges in Relation to BMI.....	35
4.2 Illustrative Overview of the LSAs Applied on BMI Among the Case Companies.....	36
4.3 LSAs in Relation to BMI and Its Value Dimensions.....	37
4.3.1 LSAs and Value Creation.....	37
4.3.1.1 Customer-Centric Engagement to Enhance Continuous Learning.....	38
4.3.1.2 Rapid Experimentation, Testing, and Iteration.....	40
4.3.2 LSAs and Value Delivery.....	43
4.3.2.1 Identifying and Systematically Establishing Supportive Networks.....	43
4.3.2.2 Expanding the Fields in Which Value Can be Delivered.....	45
4.3.3 LSAs and Value Capture.....	48
4.3.3.1 Gradually Identifying and Elaborating Appropriate Revenue Models.....	48
4.3.3.2 Decreasing Costs Through Efficiency.....	51
5. Discussion.....	55
5.1 LSAs as Means For Enhanced Value Creation.....	55
5.1.1 Relating Customer-Centric Engagement to Enhance Continuous Learning to The Literature on Value Creation and LSAs.....	55
5.1.2 Relating Rapid Experimentation, Testing, and Iteration to The Literature on Value Creation and LSAs.....	56
5.2 LSAs as Means For Enhanced Value Delivery.....	58
5.2.1 Relating Identifying and Establishing Supportive Networks to The Literature on Value Delivery and LSAs.....	58
5.2.2 Relating Expanding the Fields in Which Value Can be Delivered to the Literature on Value Delivery and LSAs.....	59
5.3 LSAs as Means For Enhanced Value Capture.....	61
5.3.1 Relating Gradually Identifying and Elaborating Appropriate Revenue Models to The Literature on Value Capture and LSAs.....	61
5.3.2 Relating Decreasing Costs Through Efficiency to The Literature on Value Capture and LSAs.....	62
6. Conclusion.....	64
6.1 Revisiting the Research Question.....	64
6.2 Theoretical and Practical Implications.....	66
6.3 Suggestions For Future Research.....	67
References.....	68
Appendix.....	73
Appendix 1: Interview Guide.....	73

1. Introduction

The following introduction chapter begins with a background to the conducted research intertwined with a problem discussion which highlights a current gap in the literature. The core concepts of the thesis are here introduced for the first time: Business Model Innovation (BMI), Lean Startup Approaches (LSAs), and AI startups. Moreover, based on theoretical contributions, certain relationships between these concepts are outlined. The chapter then continues with the purpose of the thesis and the stated research question. Lastly, delimitations are highlighted and the disposition of the thesis is illustrated.

1.1 Background and Problem Discussion

The ever-growing trend of Artificial Intelligence (AI) has certainly made it one of the most disruptive technologies in the 21st century (Reim et al., 2020). With its global reach, it has in fact been depicted as a technology of a different magnitude, making it incomparable to other technologies currently utilized (Soltanifar et al., 2021). Hence, as a major transformative force, AI is reshaping business landscapes and is currently initiating a lasting paradigm shift in how industries, companies, and entrepreneurs pursue and foster advancements in increasingly dynamic environments (Aagaard, 2024). Consequently, AI has also been described as a catalyst for Business Model Innovation (BMI), more precisely innovative approaches towards value creation, delivery, and capture (Katsamakos & Pavlov, 2020). This is because AI provides organizations of different scale with numerous groundbreaking opportunities to refine and develop competitive processes, products, and services (Reim et al., 2020; Lee et al., 2019). As a result, more focus has been directed towards AI entrepreneurs, who nowadays are empowered to explore entirely new Business Models (BMs) and strategies to an extent never possible before. In fact, it appears that AI startups, namely early-stage enterprises using AI to ensure competitiveness (Lee et al., 2023; Mahendra, 2023) by means of BMI can challenge current norms and compete in markets previously dominated by incumbents (Aagaard, 2024).

Despite the fact that BMI provides countless opportunities to add value, flourish creativity, and ensure continuous improvement, adaptation to changing conditions is often experienced as complicated. This is mainly due to insufficient knowledge of necessary capabilities and methodologies, which makes entrepreneurs and business leaders incapable of achieving desired outcomes of BMI (Reim et al., 2020). It is not uncommon that the focus is aimed at AI technologies to an extent that causes, among others, startups to overlook essential elements of BMI, namely aspects in relation to value creation, delivery, and capture (Jorzik et al., 2024). In fact, despite an outspoken need to understand the market and its customers (Osterwalder & Pigneur, 2010), no existing market need and failure to pivot inferior ideas are key influencing factors that make AI startups develop inadequate BMs (Baek et al., 2023). The high degree of uncertainty and volatility often associated with BMI, particularly experienced by AI startups (Aagaard, 2024) therefore requires a balance of innovation and efficiency. In this context, agile methodologies, dynamic capabilities, and ambidextrous strategies have been highlighted as particularly important (Teece, 2007; Iñigo et al., 2017; Løbner & Goduscheit., 2022; Sjödin et al., 2023). That being said, there is a gap in the literature on how AI startups can best ensure these courses of action, and relevant approaches facilitating these attributes are therefore still to be found.

Lean Startup Approaches (LSAs) are particularly interesting in this regard, and have recently gained more attention as potentially effective in relation to BMI. This especially in digitally driven entrepreneurial environments (Ghezzi & Cavallo, 2020), but also slightly in the context of AI startups that act in highly dynamic environments (Tang et al., 2025). The foundation of LSAs is built on the Lean Startup Methodology (LSM) and the Customer Development Process (CDP), two concepts that share the importance of iteration, experimentation, and agility. However, since the inception of LSAs, a number of additional approaches have gained more attention (Ghezzi, 2019; Ghezzi & Cavallo, 2020), meaning there are now numerous advantageous methods to be utilized by AI startups pursuing BMI. More in depth, it has been argued that LSAs can provide solid foundations to better navigate uncertainty while innovation is pursued (Bocken & Snihur, 2020). Consequently, it is suggested that these approaches can promote significant strategic improvements with regards to digital entrepreneurship (Ghezzi, 2019; Ghezzi & Cavallo, 2020) and AI startups (Tang et al., 2025)

As illustrated, research on AI startups in relation to either BMI or LSAs is gaining momentum. However, the literature focusing on either one or more of these concepts does predominantly emphasize a rather theoretical perspective with only a few exceptions (Ghezzi, 2019; Ghezzi & Cavallo, 2020; Bocken & Snihur, 2020). Efforts to examine all these concepts and their connections in practice are therefore limited, which makes the aim of this thesis unique. Only a scarce number of researchers have made attempts to understand a relationship including all three components so far, among them Tang et al. (2025). Hence, it is expressed that additional research initiatives including practical experiences, insights, and learnings are decisive to better grasp if a relationship between LSAs, BMI, and AI startups actually exists, and if so, to what extent (Tang et al., 2025). Accordingly, this thesis seeks to contribute to this emerging area of inquiry.

1.2 Purpose

Due to the contemporary and emergent focus on Lean Startup Approaches (LSAs) in relation to Business Model Innovation (BMI) and AI startups, practical contributions on this matter remain limited. Hence, to address this gap and complement existing theoretical contributions, the aim of this thesis is to explore potential relationships of LSAs and BMI grounded in reality, this by including perspectives of Swedish AI startups. More precisely, the purpose is to identify enhancing effects of LSAs on BMI in this particular context. In turn, the ambition is to promote further research on this topic, which is necessary to continuously flourish innovation and advancements in AI-driven entrepreneurial ecosystems.

1.3 Research Question

- *How can Lean Startup Approaches enhance Business Model Innovation in Swedish AI startups?*

1.4 Delimitations

Considering the purpose of this thesis, its theoretical foundation focuses primarily on three core concepts, namely BMI, LSAs, and AI startups. To ensure a comprehensive understanding of these cornerstones, both in isolation and intertwined, a number of necessary angles have been included. However these perspectives closely align with the theoretical scope to guarantee a common thread while avoiding confusion. That being stated, there are other theoretical contributions that could have been insightful and relevant in relation to this thesis that have not been extensively emphasized. For instance, the connection between AI startups and BMI could have been further examined within the scope of dynamic capabilities and organizational capabilities. The authors argue that these angles could have been very insightful, however including these perspectives could at the same time harm the depth and focus of this thesis. Moreover, considering the multiple-case study approach in this thesis, the empirical findings have been retrieved from Swedish AI startups exclusively. The decision to include only Swedish case companies has been important to ensure comparability in a context where the overall conditions are fairly similar. In addition, Sweden has made certain efforts to bolster AI companies, meaning the Swedish AI landscape is arguably broad in comparison to other countries. Furthermore, the decision of including only AI startups has been essential to ensure alignment with the research question and purpose of this thesis. With these delimitations transparently described, the authors hope that the scope of this thesis is comprehensively demonstrated.

1.5 Disposition of the Thesis

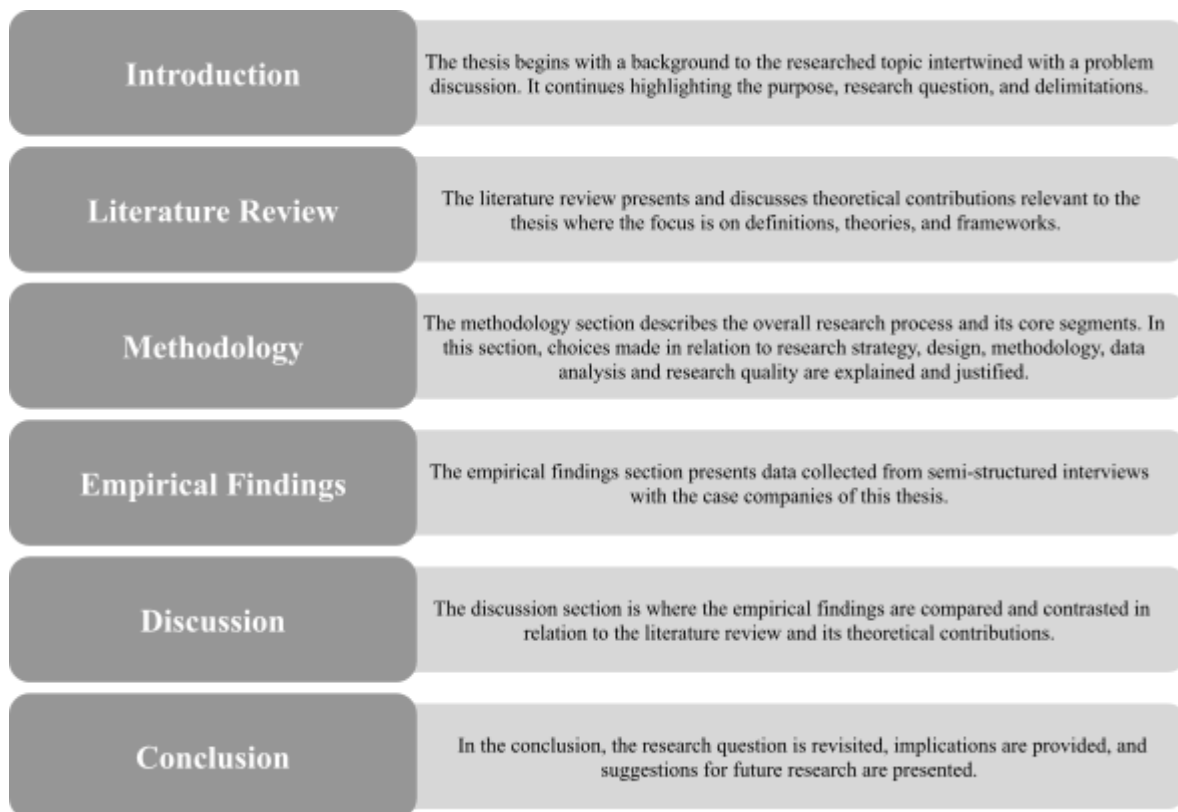


Figure 1 - Disposition of the thesis

2. Literature Review

The subsequent literature review elaborates on the central concepts of the thesis in more detail by bringing together theoretical contributions made up until this point. To provide clarity, Business Model Innovation (BMI), Lean Startup Approaches (LSAs), Artificial Intelligence (AI), and AI startups are defined and eventually discussed in separate subsections where key aspects of each concept are outlined. Finally, all concepts are intertwined and discussed in relation to each other to provide an overview of the literary scope as well as its relevance in the field of entrepreneurship.

2.1 Business Model Innovation

2.1.1 Defining Business Model Innovation

In order to ensure a comprehensive understanding of Business Model Innovation (BMI), it is fundamental to initially understand the purpose of a Business Model (BM). Osterwalder and Pigneur (2010) argues that BMs unfold: “...*the rationale of how an organization creates, delivers, and captures value*”, which may seem abstract at first glance. Concisely, what is meant with this is that a BM provides a strategic overview of how offerings are designed, distributed, and monetized (Osterwalder & Pigneur, 2010).

Having clarified the essence of BMs, the widely recognized purpose of BMI is to explore and implement innovative approaches towards value creation, delivery, and capture (Katsamakas & Pavlov, 2020). Accordingly, BMI is rooted in continuous efforts to refine one or more components of the BM with the ambition of ensuring differentiation and competitiveness (Reim et al., 2020). To date, there is no universally accepted definition of BMI, however an increasing number of contributing definitions have emerged in recent years. One definition of BMI that is particularly recurrent in the literature was initially provided by Foss and Saebi (2017), who greatly capture the essentiality of the concept: “*designed, novel, non-trivial changes to the key elements of a firm’s business model and/or the architecture linking these elements*”.

Building on this definition, the concept has been further elaborated and closely related to highly technological environments, mainly since BMI is increasingly apparent in this context.

Although not definitive for the scope of this study, the related discussions contribute to a comprehensive understanding of the current trajectory of BMI. According to Veit et al. (2014), BMs are more frequently constructed based on significant technological advancements that drive transformative and disruptive changes in industries. The definition provided by Foss and Saebi (2017) has thus been refined by, amongst others, Trischler and Li-Ying (2023): “... *purposeful, non-trivial, dynamic changes made to the key elements of the business model by transforming analog, physical objects, processes, or content into primarily (or entirely) digital formats.*”. As illustrated, this definition closely mirrors the foundational view of BMI previously outlined, which is still the one employed in subsequent chapters. However, these additions highlight the centrality of technology in relation to BMI, which justifies the concept’s role in this thesis.

2.1.2 Explaining Core Attributes in Relation to Value Creation, Delivery, and Capture

Building on Foss and Saebi’s (2017) definition of BMI and Osterwalder and Pigneur’s (2010) definition of the BM, it has been clarified that value creation, delivery, and capture constitute the core elements that predominantly undergo refinements or radical transformations. Given their centrality, the subsequent paragraphs further discuss these elements along with core attributes to consider in order to succeed with BMI.

As already hinted, value creation revolves around the process of designing, developing, and refining products or services to align with shifting customer demands and expectations. According to Teece (2010), it is therefore important to intelligently manage resources, assets, and capabilities in accordance with specific conditions. Thus, considering the centrality of customers in this context, it is argued that companies must understand the degree to which specific offerings are perceived as valuable (Teece, 2010). Given that perceptions vary across individuals, an extensive understanding of the contextual environment is therefore necessary to successfully create value. According to Euchner and Ganguly (2014), this necessitates extensive market research and customer involvement as these attributes help identify hidden needs and market gaps. Rintamäki and Saarijärvi (2021) echo this vitality, arguing that such insights are vital to eventually identify competitive solutions and customer profiles. To summarize, the mentioned attributes are essential to successfully establish a value

proposition, which in turn clearly articulates how value is actually created (Rintamäki & Saarijärvi, 2021).

Value delivery on the other hand is essentially about ensuring efficient mechanisms through which the created value can reach relevant customers (Teece, 2010). Thus, this dimension is dependent on various attributes, for instance customer segments, networks, and partnerships. In combination, it is argued that these interdependent attributes ensure appropriate distribution channels through which value can be continuously delivered (Codini et al., 2023). Moreover, to guarantee value delivery without losing competitiveness, several aspects are of utmost importance. Highlighted by Teece (2010), it is particularly important to continuously experiment with value delivery mechanisms and approaches to identify competitive and differentiated methods through which customers can be reached. This necessity is reinforced by Codini et al. (2023), stating that emergent trends and fluctuations in behavior often result in changing market demands. Hence, previously bypassed customer segments can become significantly relevant by time, and by being aware of these shifts while responding to new opportunities, value delivery mechanisms can be successfully elaborated.

Lastly, the value capture dimension explains the company's ability to monetize products and services (Teece, 2010; Chesbrough et al., 2018), an aspect dependent on internal operations as well as the degree to which customers are enticed by specific offerings (Sjödin et al., 2020). There are mainly two attributes that constitute this dimension, namely revenue streams and cost structures (Codini et al., 2023), however, Teece (2010) extends revenue streams with the importance of revenue models to capture value. In this context, considering these components, the generated value of an offering must exceed the costs required to realize it. Hence, these elements must be carefully balanced through appropriate strategies (Teece, 2010). In relation to cost structure, it is therefore important to carefully outline how resources are spent and to what degree investments are justified in different situations. On the other hand, when it comes to revenue streams and revenue models, understanding the contextual environment is crucial as it reveals trends, customer preferences, and convenience factors. Building on this, there are various revenue models that can be effective, but their success depends on how well they are aligned with the offering at hand and characteristics of certain customer profiles (Teece, 2010).

2.1.3 Dynamic Capabilities and Ambidexterity as Prerequisites for Successful BMI

Since BMI as a concept emphasizes the importance of elaborating BMs in alignment with changing competitive conditions, continuous adaptation is regarded as essential. Hence, while pursuing BMI, it has been argued that companies must become increasingly agile and responsive, which according to Iñigo et al. (2017) makes dynamic capabilities foundational. According to Teece (2007), dynamic capabilities are built on three equally decisive functions, namely sensing, seizing, and reconfiguring. Sensing is comprehensively illuminated as the ability to identify threats and opportunities, seizing as the ability to act on detected opportunities, and lastly reconfiguring as the ability to establish new competencies, strategies, and structures (Teece, 2007). Building on the meaning of these three attributes, Sjödin et al. (2023) further discuss their importance in relation to BMI, outlining a number of decisive aspects to reflect on in relation to sensing, seizing, and reconfiguring. In this context, it is argued that sensing is dependent on exploratory and experimentative capabilities to efficiently scan the external environment. Seizing instead requires rapidness, responsiveness, and flexibility to effectively act upon identified opportunities. Finally, reconfiguring calls for extensive learnings and experiences to continuously scale competitiveness over time.

Building on this discussion and the necessity of dynamic capabilities in relation to BMI, ambidexterity has also been described as foundational. According to Løbner and Goduscheit (2022), ambidexterity is about the ability to balance exploration with exploitation, elements of equal importance, but particularly useful in various contexts. It is here argued that the explorative component promotes experimentative and dynamic initiatives to mitigate uncertainty, a recurrent aspect in the context of BMI. The exploitative component on the other hand seemingly promotes efficiency and thoughtfulness, which enables efforts to reconfigure and leverage existing strengths (Løbner & Goduscheit, 2022). Hence, by balancing these elements, clear advantages in relation to the BM can remain, while disadvantageous aspects can be progressively addressed.

Reviewing the above, appropriate strategies and methodologies that emphasize these aspects must be found to guarantee desired effects of BMI. Hence, this discussion directs the focus towards the second core concept, which is further elaborated in the subsequent section.

2.2 Lean Startup Approaches

2.2.1 The Inception and Progression of Lean as a Concept

Lean as a concept is by no means a recent addition to the literature, but rather a concept that has been consistently reshaped throughout the years. In the 19th century, pioneers by the likes of Henry Ford experimented with a philosophy that would go on to revolutionize the manufacturing industry. The initial aim was to reduce time and costs through attempts of making the assembly line increasingly efficient, and owing to its demonstrated success, the philosophy gradually gained room among an increasing number of devoted companies (Dave, 2020). Many scholars agree that Toyota, led by Kiichiro Toyoda and Taiichi Ohno, eventually laid the foundation for Lean through the Toyota Production System (Stone, 2012; Fujimoto, 2012). In the 1930s, Toyota recognized that Ford's mass production model failed to meet Japan's diverse customer demands. Consequently, Toyoda and Ohno developed their own production philosophy centered around efficiency and adaptability. Thus, by the 1940s, a concept referred to as Just-In-Time (JIT) emerged based on an idea of only producing what was needed, when it was needed, and in the exact quantity required (Stone, 2012; Fujimoto, 2012).

Later on, it was noticed that similar philosophies could be useful beyond solely manufacturing, and as a result, the concept of Lean Thinking was introduced (Kakouris et al., 2022). The framework constructed by Womack and Jones (1997) aimed at maximizing value while minimizing waste. It was argued that value is defined by the customer, and that their expectations and preferences therefore must be carefully considered. By mapping the value stream, it was illuminated that both value-adding and non-value-adding activities could be identified and managed more efficiently. A key principle of the philosophy was therefore to transform forecast-driven processes to customer-driven processes, mainly to promote agility while reducing excess inventory and unnecessary investments. Hence, Lean Thinking clearly emphasized the pursuit of perfection grounded in the principle of continuous improvement (Womack & Jones, 1997).

As a consequence of the evolution discussed thus far, Lean Startup Approaches (LSAs) have emerged and gained prominence in the field of entrepreneurship. Since its inception, the

concept has been discussed in various ways and different components have been illuminated as foundational. The meaning of LSAs in this thesis is therefore clarified next.

2.2.2 Defining Lean Startup Approaches

According to Ghezzi (2019), LSAs is essentially an umbrella term with its foundation in two core concepts, namely the Lean Startup Methodology (LSM) and the Customer Development Process (CDP). Thus, to comprehensively understand the meaning of LSAs, these concepts must be discussed in more detail.

2.2.2.1 The Lean Startup Methodology and The Build-Measure-Learn Feedback Loop

The LSM and its main principles initiated by Ries (2011) are essentially highlighted through the iterative Build-Measure-Learn (BML) feedback loop. This framework emphasizes the importance of initially developing hypotheses about the contextual environment on which a *Minimum Viable Product* (MVP) is constructed. The MVP is a simplified prototype or idea that at the time only includes basic features that require minimal resources. Starting in this end is, according to Ries (2011), foundational as MVPs subsequently allows startups to engage early adopters in their development processes. In turn, this enables close user engagement, collaborative relationships, and real-time feedback, from which valuable and non-essential elements can be identified and evaluated, a process referred to as *validated learning* (Ries, 2011; Frederiksen & Brem, 2017). In that sense, building is not about reaching instant perfection, but is rather about validating progression. Hence, LSM makes sure that the quality of an offering is gradually enhanced and tailored to the right customers (Ries, 2011; Frederiksen & Brem, 2017).

With regards to measurement, LSM emphasizes metrics that accurately capture the extent to which progression is experienced, both internally and externally. This strategic form of measurement referred to as *Innovation accounting* emphasizes KPIs that are actionable, meaning KPIs that are customer-centric rather than numeric (Ries, 2011). Hence, these measurements yield insights on customer engagement, communicative capabilities, and retention rates, which are often more critical than vanity measures that seldom correlate with the actual progress achieved (Ries, 2011; Frederiksen & Brem, 2017). Vanity measures are in this context described as traditional accounting metrics, for instance revenues and profits, and

it is argued that these aspects make startups blinded by deception. Consequently, innovation accounting is more appropriate to accurately measure the product-market fit (Ries, 2011).

As briefly mentioned, validated learning is very central in the context of LSM, mainly since it enhances a startups ability to accurately learn from its measures before progressing. Ries (2011) argues that this form of learning is necessary to promote a decision-making methodology referred to as *pivot or preserve*. This principle guides startups in whether to proceed in a certain direction, focus on refinements, or even start over from scratch. If a decision is made to preserve, the cycle becomes continuous and refinements can be made to gradually improve offerings. However, if a decision is made to pivot, the process emphasizes the possibility of starting over without having significant investments attached (Ries, 2011; Frederiksen & Brem, 2017). Hence, pivoting does not translate to failure, instead it is a means that makes startups embrace constructive criticism, which is decisive to progress in the right direction. Ultimately, considering all the attributes discussed in relation to LSM, startups can rapidly, cost-efficiently, and iteratively improve various elements of their businesses (Ries, 2011).

2.2.2.2 The Customer Development Process

The Customer Development Process (CDP) is a well known customer-centric, four phase model, outlining various deliverables that startups should pursue to discover the right customers to build a business on (Blank, 2020). The initial focus of the model is a term called customer discovery, which is about investigating the problems customers actually have instead of relying on inadequate and misleading estimations (Blank, 2020; Blank & Dorf, 2020). To ensure valuable insights about the target market, a variety of methods can be used such as dialogues, surveys, and observations. Regardless of the approach selected, the core of customer discovery lies in what Blank (2020) describes as: “*getting out of the building*” and “*engaging directly with potential customers*”. Thus, startups are encouraged to identify a problem of interest, formulate hypotheses about that particular problem, and lastly evaluate it based on customer feedback from interactions and conversations (Blank, 2020; Blank & Dorf, 2020; York & Danes, 2014). Hence, by focusing on customer discovery, startups can easily discover if the problem exists and to what degree customers demand a solution for it (Blank, 2020).

Eventually, CDP emphasizes customer validation, which is mainly about validating whether the startup's findings about the customers and their needs can be resolved through their proposed solution (Blank, 2020; Blank & Dorf, 2020). In this context, it is important to understand that the product cannot be sold to anyone, which reinforces the importance of validating customers with an actual interest in the solution (Blank, 2020). Hence, Blank (2020) argues for the importance of employing a MVP to drive iteration. The MVP provides the startup with well-founded information and a higher degree of certainty about various customers and their attitudes towards a certain offering (York & Danes, 2014), which is vital before either pivoting or preserving an idea (Blank, 2020; Blank & Dorf, 2020).

When the customers have been validated, the customer creation phase can be initiated, which is where the startup can actually pursue growth by scaling their customer base. To succeed in this phase, it is particularly important to ensure awareness of the idea, meaning marketing campaigns and customer acquisitions systems must be employed (Blank, 2020). Customer creation is therefore mainly about communicating and building relationships, which requires continuous support and collaboration. In that sense, it is largely about providing consistent updates and refinements that invite more customers beyond the initially validated customers segment, which often is relatively limited (Blank, 2020).

The previously highlighted phases encourage experimentation, assumption testing, and iterations. Company building on the other hand, which is the last phase of the CDP, requires the startup to understand its target customer to an extent that the entire BM can be validated (Blank, 2020). In that sense, with the foundation established, the focus is here on executing, which implies a transition towards a more scalable and structured business (Blank, 2020; Blank & Dorf, 2020). In order to scale the business, a capable team with specific roles and departments is needed. This team often requires additional capabilities differing from the previous phases since the aim is more about formalizing a go-to-market strategy (Blank, 2020). It is however important to ensure a culture built on the same vision, meaning the same capabilities utilized in previous phases should be protected to avoid becoming bureaucratic in the future (Blank, 2020; Blank & Dorf, 2020).

2.2.3 A Container of Lean Startup Approaches

Inspired by the foundational philosophy of the previously mentioned cornerstones, a number of methodologies that draw attention to similar attributes have gained more recognition in the literature on LSAs. According to Ghezzi (2019), the concept of LSAs is therefore not strictly limited to LSM and CDP in isolation. Hence, to better understand the evolution of LSAs, the subsequent paragraphs discuss a number of additions of relevance in this context.

Cagan's (2008) *product discovery and product delivery* is one of the additions in this context. A common mistake, he argues, is jumping straight on to product delivery without first validating accompanying risks attached to certain decisions. There are four attributes that must be evaluated and dealt with before delivering a product, namely value, usability, feasibility, and business viability. Since the product delivery component is often costly, product discovery is mainly about understanding these attributes while not wasting time and resources on something that might be invaluable (Cagan, 2008). Product delivery on the other hand is about building, launching, and scaling products. Hence, in relation to this component, it appears especially important to ensure high quality, which is often not achieved without extensive testing. In fact, one reason why businesses fail is that shortcomings are noticed when it is too late to correct them, and this approach mitigates these outcomes through accurate validations (Cagan, 2008).

Another branch in relation to LSAs are *design sprints*, a concept initially developed by employees at Google. This approach emphasizes agility and rapidness to quickly address issues inherent in an idea, product, or service (Knapp et al., 2016). Since its inception, this concept has been praised, especially with regards to entrepreneurship and startups. Essentially, design sprints are five-day processes during which a problem is defined and various solutions to it are drafted. Eventually the best solution is rapidly prototyped and tested through user engagement (Wangsa et al., 2022). Another concept sharing this philosophy is *pretotyping*, which does not require a strict time frame to the same degree. More in detail, pretotyping promotes companies to come up with a number of strictly simplistic ideas simultaneously to rapidly compare benefits and shortcomings before deciding on which alternatives to pursue (Brix & Jakobsen, 2015). In turn, both these approaches have similarities with another approach referred to as *split testing*, or if preferred *A/B testing*. This

concept is built on the idea that two different variants of something can be tested and compared by end users, which requires a high degree of experimentation and customer engagement (Quin et al., 2024).

Scrum has also been discussed in relation to LSAs, despite originally being a tool for software development. The scrum framework is built on time-boxed iterations referred to as sprints, which are often executed during a limited number of weeks (Hron & Obwegeser, 2022). To ensure incremental change, based on collaboration, transparency, and continuous improvements, the scrum methodology requires three distinct roles, namely a scrum master, product owners, and a development team. The scrum master encourages, leads, and supports the development team, often formed by developers and designers. The product owner on the other hand bridges the gap between the development team and relevant stakeholders to ensure that value is ensured. The progress identified is then illustrated through backlogs, which yield new indications on how to continuously improve. (Hron & Obwegeser, 2022).

Lastly, *customer journey mapping* is considered a highly relevant contribution to LSAs. Customer journey mapping is a very customer-oriented approach, employed to comprehensively understand shifting needs and attitudes experienced among target customers (Chabán & Ruz-Mendoza, 2024). In this approach, customers are given a central role where their experiences and suggestions determine the potential of both existing and new ideas. Consequently, customer journey mapping enhances a company's ability to identify various touch points, pain points, and opportunities over time. By analyzing customer journeys from the time where awareness is created, altered preferences can be efficiently mapped and categorized, which is essential to drive continuous innovation and improvement (Chabán & Ruz-Mendoza, 2024).

In summary, the meaning of LSAs has evolved beyond its original frameworks, encompassing a range of additions that emphasize similar essential attributes. Altogether, it can therefore be stated that LSAs is an umbrella term for various approaches that collectively ensure continuous improvements of various business elements.

2.3 Artificial Intelligence and AI Startups

2.3.1 Defining Artificial Intelligence

Defining Artificial Intelligence (AI) is inherently challenging since scholars provide diverse perspectives and additions on a continuous basis. Consequently, no universally accepted definition exists at this moment. Multiple theoretical contributions have therefore been considered to provide a well-rounded explanation of the concept. Beginning with Sheikh et al. (2023) AI is described as: *“the imitation by computers of the intelligence inherent in humans.”*. While accurate and concise, this definition is relatively simplistic, thus to offer a more comprehensive understanding, further elaborations are necessary. Haenlein and Kaplan (2019) define AI more comprehensively as: *“a system’s ability to interpret external data correctly, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptations.”*. Including this definition in the discussion sheds light on the inherent learning mechanisms of AI, and this definition is therefore used for the remainder of this thesis. Building on this definition, Vomberg et al. (2023) illustrate AI as a virtuous cycle in which the quality of systems, solutions, or technologies improves iteratively over time. Further echoed by Lee et al. (2019), AI becomes gradually autonomous as the learning mechanisms become more advanced. Hence, we are currently moving towards a point where the capability of AI surpasses or rivals human cognition, which has made the concept increasingly topical in a business context (Aagaard, 2024).

2.3.2 Defining AI Startups

Having established the meaning of AI, the last core concept of this thesis can be discussed. To understand what defines an AI startup, it is initially essential to grasp the characteristics of startups. According to Olek (2023), startups are creative and knowledgeable companies in their early stages of existence. In attempts to become competitive, these companies often differentiate themselves through scalable and innovative Business Models (BMs). While AI startups share many of these characteristics, Lee et al. (2023) argue that a company is only categorized as such if it meets a specific set of criteria. More precisely, it requires that it is an early-stage enterprise that uses AI to strengthen its competitive position in a certain market. A similar view is provided by Mahendra (2023), who illuminates AI startups as young and technologically driven companies, leveraging AI as a core differentiator and key source for competitiveness.

Building on these definitions, the concept can be further divided into subcategories based on the role AI plays. Bessen et al. (2022) suggest that AI startups primarily utilize various algorithms to enhance either operational processes, products, or services. Considering these elements, Weber et al. (2022) depict four different types of AI startups: *AI product and service providers*, *development facilitators*, *data analytics providers*, and *deep tech researchers*. Thus, there are a variety of different AI startups that have clearly contrasting business ideas and capabilities.

Expanding on operational processes, Lee et al. (2023) argue that many AI startups have ambitions to make internal processes more autonomous, especially in relation to strategic planning and decision-making. This demonstrates that the technology itself must not necessarily constitute a core aspect of products and services, but can also be emphasised as a tool for more efficient and dynamic management of the startup as a business (Mahendra, 2023; Lee et al., 2023; Bessen et al., 2022).

2.4 Combining the Concepts - LSAs as a tool for BMI in Digital (AI)

Startups

According to Bocken and Snihur (2020), Lean Startup Approaches (LSAs) encourage startups to engage in experimental and continuous processes, thereby improving the conditions for BMI. More in detail, LSAs typically emphasize iteration over extensive planning, which aligns with core purpose of BMI, namely to foster creative, competitive, and ongoing improvements of BMs (Bocken & Snihur, 2020). Entrepreneurs who rigidly commit to original ideas without examining their strengths and weaknesses therefore risk becoming inflexible, whereas those who continuously innovate and refine their BMs are more likely to succeed (Zuzul & Tripsas, 2020). In light of this, and with regards to AI startups, LSAs are considered as advantageous tools when engaging in BMI (Tang et al., 2025). However, as stated in the introduction, research on the interplay between LSAs and BMI within AI startups remains limited. Only a small number of scholars have contributed with their insights in this field, and some of these perspectives are therefore further discussed to shed light on the literary scope of this thesis.

As illuminated in the beginning of this thesis, AI startups typically operate in dynamic environments directed by shifting customer demands and consistent inventions (Tang et al., 2025). This results in a volatile context where opportunities frequently arise to then disappear in a blink of an eye. Consequently, uncertainty and complexity become very apparent, and must be managed to avoid competitive downfalls (Ghezzi & Cavallo, 2020; Ghezzi, 2019). In such settings, continuous adaptations and refinements demanded in relation to BMI are made possible by integrations of LSAs (Ghezzi, 2019). As a result, LSAs have recently gained recognition for their potential impact on pioneering entrepreneurial ventures with AI in their core (Tang et al., 2025).

The list of advantages to derive from the examined relationship is long, at least in theory. Ghezzi and Cavallo (2020), Tang et al. (2025), and Bocken and Snihur (2020) argue that some of the most substantial advantages in relation to BMI that can be reached through LSAs circle around cost-efficiency, agility, and rapidness. It is suggested that these elements resonate with the overall idea of BMI, and are therefore described as necessary to avoid problematic setbacks, for instance slowness, inflexibility, and misalignment. Moreover, given that a single AI solution can be deployed across multiple industries and individuals, continuous exploration of potential application areas has been illuminated as especially critical, not the least in the context of AI startups (Mahendra, 2023). Consequently, the effectiveness of BMI appears to strongly correlate with the degree to which user engagement is promoted. By involving diverse stakeholders in operations via LSAs, it is therefore possible to efficiently assess and validate value-enhancing opportunities across various customer segments simultaneously (Felin et al., 2020). However, to achieve all these advantages, AI entrepreneurs must be provided with more knowledge about how these approaches take place in practice. If future contributions on this relationship are held back, it is likely that AI startups are not encouraged to test their wings, and complexities experienced with BMI will remain.

3. Methodology

The subsequent chapter outlines the overall methodology employed in this thesis in relation to the conducted research. It begins with a description of the selected research strategy and design. Thereafter, the research method is demonstrated with a focus on primary and secondary data collection, which are illustrated using a number of sub-headlines. The chapter is then extended with data analysis, and lastly research quality to present the overall relevance of this thesis.

3.1 Research Strategy

The theoretical contributions addressing Lean Startup Approaches (LSAs) and Business Model Innovation (BMI) in the context of AI startups is currently limited. Consequently, this thesis aims to enhance both the theoretical and practical understanding of the interconnections between these different concepts. Hence, a qualitative research strategy and an exploratory approach is undertaken in this thesis to ensure a more nuanced view and deeper insights into how LSAs can enhance BMI in Swedish AI startups. The empirical research relies on interpretations, experiences, and various perspectives provided by founders and employees in Swedish AI startups. An exploratory approach is according to Bell et al. (2019) applicable and useful when investigating diverse interpretations, experiences, and perspectives, which further motivates the selection of this particular approach to fulfill the purpose of this thesis. Moreover, as the research question includes the word *how*, a qualitative strategy is better applicable than a quantitative one since such questions are commonly answered in words rather than numbers (Yin & Nilsson, 2007; Bryman & Bell, 2011). Moreover, as part of the research strategy, an abductive approach is used, meaning theoretical contributions are searched for by weaving back and forth between existing literature and empirical findings. This iterative approach ensures a certain degree of flexibility, which is decisive when conducting exploratory research, especially in qualitative research processes that are difficult to predetermine (Bell et al., 2019).

3.2 Research Design

Based on the qualitative research strategy selected and the context in which the overarching topic is researched, a multiple-case study is used in this thesis. The multiple-case study is essentially an extension of a single-case study and reduces the flaws of solely including one incomparable and isolated case (Bell et al., 2019). The multiple-case study thus ensures research on several cases, which allows the authors to follow a comparative process where collected data can be contrasted to yield impactful insights (Bell et al., 2019). This research design encourages the authors to highlight uniqueness and commonalities between selected cases, and therefore promotes frequent reflections in plural contexts. The multiple-case study is conducted using an organizational level since this dimension, according to Bell et al. (2019), aligns well with research conducted on organizations and processes, such as AI startups, LSAs, and BMI. Overall, the multiple-case study ensures that the authors understand the nature of selected cases, which is essential considering the purpose of this thesis. The nature and background of the case companies however remain anonymous throughout the remainder of this thesis. This is because a promise has been made to not share sensitive information that can harm or reveal certain aspects of their businesses or themselves. The authors are aware that more information about the case companies could further strengthen the choice of a multiple-case study, but that option is unfortunately not possible.

3.3 Research Method

3.3.1 Primary Data Collection

3.3.1.1 Sampling and Selection of Case Companies

Whereas a multiple-case study design ensures comparability, there are also accompanying risks, for instance, the risk of losing depth as more cases are included. Hence, case sampling is an aspect of great importance to ensure empirics of great quality (Bell et al., 2019). Since less attention can be aimed at each case when the number of cases increases, the thesis is limited to five Swedish AI startups. This limitation enabled a clear focus on each case which reduced the risk of overlooking important findings. The quality of findings was determined as more important than the ability to generalize results on a large sample of cases, which according to Bell et al. (2019), is reasonable considering the context of the thesis.

Cases included in this thesis were sampled and selected based on appropriateness and interest in relation to the topic, and a number of purposive sample approaches were therefore employed. To consistently ensure relevancy, criterion sampling was used, meaning several criterias were established (Bell et al., 2019). First, the cases had to align with the provided definition of AI startups in the literature review. Secondly, the sampled cases had to be located in Sweden, alternatively of Swedish origin, mainly due to the geographical delimitations of this thesis. Building on this, snowball sampling, a methodology highlighted by Bell et al. (2019), was used to a certain degree as the initial cases and their networks provided an opportunity to establish contact with other relevant contributors. The snowball sampling methodology was proven to be noticeably useful as it generated numerous interesting case candidates, some of which were selected for the empirical part of the study.

3.3.1.2 Sampling and Selection of Respondents

To ensure relevant and contributing respondents, purposive sampling was used once again, meaning respondents were selected based on appropriateness in terms of answering the stated research question (Bell et al., 2019). Thus, based on the judgment of the authors, certain respondents were strategically pinpointed with the intention of avoiding randomly assigned individuals with lacking expertise (Bryman & Bell, 2011). To pinpoint relevant respondents, stratification was applied, meaning varying roles and individuals within the selected AI startups were searched for to ensure varying perspectives (Bell et al., 2019). Moreover, a snowball sampling approach was used, meaning a small and purposive sample of interviewees was initially ensured, from which suggestions generated additional suitable interview subjects (Bell et al., 2019). An important note is that there at all times must be an alignment between the subjects and the stated research question, and therefore, respondents with no relevant expertise were not pursued (Bell et al., 2019). Instead, suggestions were carefully considered before deciding whether or not to contact them.

3.3.1.3 Semi-Structured Interviews and Interview Guide

Semi-structured interviews are commonly preferred in qualitative research (Bell et al., 2019), and were therefore used in this thesis due to the interview method's applicability on the multiple-case study employed. This particular interview method ensured a vital balance between a predetermined research agenda and open-ended views on discussed topics. In that

sense, it allowed the authors to steer the interviewees towards essential aspects of the thesis, while it simultaneously ensured room for elaborations, follow-up questions, and redirecting discussions (Bell et al., 2019). Leaving room for the authors to pick up on emergent topics provided by the interviewee was particularly important considering the limited initial knowledge about investigated operations. Moreover, considering the theoretical gap on the matter studied in this thesis, the flexibility promoted by a semi-structured interview method allowed for in depth expositions and novel insights of great vitality in answering the stated research question.

To ensure purposeful interviews, the interview guide is decisive (Bell et al., 2019). Hence, to enhance the applicability of semi-structured interviews in this research process, an interview guide was constructed. The interview guide was mainly based on key research components from the literature review since it ensured content specific questions. Moreover, room was left for open-ended questions to promote discussions on aspects initially not thought of or properly understood. The interview guide begins with introductory questions about the case company and the respondent(s) representing it in the interview. It then continues with more content-specific questions, focusing on LSAs and BMI, both in isolation and combined.

In addition to structure, the interview guide ensured that the time available for interviews was carefully considered, which was decisive considering the time-pressured schedules of several respondents. Moreover, it was kept consistent throughout the research process to increase comparability between answers provided during all interviews, an important aspect in relation to interview guides (Bell et al., 2019). For more detail on the employed interview guide, see Appendix 1.

3.3.1.4 Conducting Interviews

Before conducting the interviews, the authors thoroughly evaluated the quality of the established interview guide. The first set of questions were therefore tested through peer-interviews, while also being evaluated in relation to the collected literature constituting the topic. As a result of this process, the authors discovered areas of improvement in which refinements were made to better achieve quality and flow. Moreover, in time before the interviews, the respondents were informed about the overall topic, and the foundational

concepts were therefore briefly explained. This was an important aspect since it allowed the case companies to evaluate their own ability to contribute to the thesis. Additionally, all respondents were informed that they would remain anonymous throughout the thesis, and that no names of either themselves nor their companies would be used. Instead, pseudonyms were used, and each case company and respondent was attached to a specific code, see Table 1. Moreover, consent to record and transcribe the interviews was ensured before each interview session, which is particularly important to promote comfortability and honest discussions (Bell et al., 2019). By recording the interviews instead of taking notes, confusion and distraction was avoided, and this decision was important as it often affects both the interviewer and interviewees (Bell et al., 2019).

To further ensure consistency and equal conditions for all respondents participating in this thesis, every interview was conducted virtually through digital platforms. Two different platforms were used based on preferences expressed by the respondents, and these platforms were Zoom and Google Meet. Conducting interviews digitally is according to Bell et al. (2019) not always preferable since it can cause confusion and affect the overall quality of the answers given. However, due to limitations in terms of availability among the respondents, this approach was preferable, and allowed the authors to conduct interviews on short notice with case companies located in various Swedish cities.

3.3.1.5 Overview of Conducted Interviews

Case company	Number of respondents	Respondent(s) position within the company	Interview date	Duration	Location
Case Company AB	Two	Chairman & Co-founder and CEO & Co-founder	2025-03-18	55 min	Zoom
Case Company CD	One	CEO & Co-founder	2025-04-07	48 min	Zoom
Case Company EF	One	CTO & Co-founder	2025-04-08	66 min	Zoom
Case Company GH	One	CEO & Co-founder	2025-04-08	39 min	Zoom

Case Company IJ	One	Product Manager	2025-04-19	45 min	Google Meet
--------------------	-----	-----------------	------------	--------	----------------

Table 1 - Overview of conducted interviews

3.4 Secondary Data Collection

3.4.1 Collection of Literature Review

Considering the qualitative and abductive research approach of this thesis, a narrative review of literature was applied. This choice is justified since the intention of the literature review in this thesis is to ensure an initial overview and understanding of the concepts that constitute the overarching topic (Bell et al., 2019). Hence, a narrative approach helped establish a foundational, but not strictly predefined literature review, that facilitated the intended process of understanding a relatively unexplored relationship. The narrative literature review thus promoted a more flexible inclusion and exclusion process, which a strictly focused and systematic review would most likely prohibit (Bell et al., 2019). Moreover, since the intended outcome of this qualitative research is to provide theoretical and practical contributions on a not yet fully explored topic, it was problematic to define all aspects of essence before the primary data collection was initiated. This is something commonly experienced in the context of qualitative research according to Bell et al. (2019). Additionally, considering the exploratory approach employed in this thesis, abrupt discoveries not initially anticipated were proven insightful, and a narrative review was thus decisive as it ensured room to modify the literary foundation and its boundaries throughout the research process (Bell et al., 2019).

Secondary data was primarily retrieved from academic articles and business articles published in recognized and highly relevant journals. The collected information from these articles primarily relate to either one or more cornerstones of the overarching topic, namely LSAs, BMI, and AI startups. Moreover, relevant books covering similar aspects and concepts were included and constituted an additional source for the literary collection. The databases used for collection of secondary data were GU's digital library, Google Scholar, SSRN, and Emerald. To facilitate the data collection process while ensuring accurate search results, the following keywords were utilized: *Business Model Innovation (BMI)*, *Business Model (BM)*,

Lean Startup Approaches (LSAs), startups, Artificial Intelligence (AI), AI startups, Value creation, Value delivery, Value capture, and Innovation.

3.5 Data Analysis

3.5.1 Transcription

Compiling data gained from semi-structured interviews is foundational to facilitate the process of converting spoken content into a written format (Bell et al., 2019). Hence, after the conducted interviews, recordings were directly transcribed through the transcription function in Microsoft Word to make the data analysis process fluent. However, there are risks associated when utilizing transcription tools, mainly that transcribed material can be slightly inaccurate since it does not consistently capture all essential parts provided in the interviews. An additional phase of transcription was therefore included in which the authors relistened to the recordings, complementing overlooked parts or misinterpretations made by the transcription tool. Additionally, to facilitate the subsequent thematic analysis, all transcriptions from the conducted interviews were summarized in a collective document to ensure a structured and comprehensive textual representation of the respondents and their contributions.

3.5.2 Thematic Analysis

A thematic analysis approach was employed in this thesis to outline key findings. This approach is commonly used when analyzing qualitative data since it enables the researchers to comprehensively structure collected information efficiently (Bell et al., 2019). To identify themes, which is the intention of a thematic analysis (Bell et al., 2019), the authors searched for a number of codes, which were identified through a variety of indicators. The codes, which were eventually translated to comprehensive themes, were recognized mainly through occurring metaphors, repetitions, and transitions identified in the transcribed interview documents. Using such indicators is further strengthened by Bell et al. (2019) since they allow the researcher to pinpoint certain segments and elements while distinguishing irrelevant information. In this context, the authors primarily focused on recurrence to highlight key similarities and differences between the selected case companies and their contributions. Focusing on recurrence was essential to evaluate to what extent LSAs were experienced as enhancing in relation BMI. In addition, linguistic connectors were utilized to simplify the

process of identifying important connections made by participants in relation to the core concepts (Bell et al., 2019). The authors could in this way see if the interviewees discussed certain aspects in different or relatively aligned ways.

Another important aspect to focus upon in a thematic analysis is identifying missing data (Bell et al., 2019). Therefore, the authors consistently analyzed if valuable information was omitted from the overall dataset. By doing so from the beginning, missing data could be efficiently complemented, yielding more depth and substance. Moreover, theory-related material was included to decide on main themes covering the most important aspects in relation to the stated topic and its core concepts. Evaluating the constructed themes through both missing data and theory-related material eventually guided suggestions on what relationships to further investigate to efficiently relate the empirics to the literature. Six main themes were identified in total, and these are further demonstrated in the subsequent chapters.

3.6 Research Quality

Considering the qualitative approach employed in this thesis, the conducted research can be characterized as subjective, interpretive and contextual, meaning quality aspects such as reliability and validity are not necessarily applicable (Bell et al., 2019). Using validity and reliability is rather more sufficient for determining the quality of quantitative studies where it is decisive to ensure accuracy and consistency (Bell et al., 2019). Hence, to evaluate the quality of research in this thesis, alternative criteria demonstrated by Lincoln and Guba (1985) have been considered more relevant and are therefore highlighted in the remainder of this chapter.

3.6.1 Trustworthiness

Trustworthiness is considered the counterweight to validity and reliability in qualitative research, and is therefore decisive to ensure that findings are meaningful and rigorously conducted. The term underlines that conclusions are not drawn on personal opinions among the authors but rather based on obtained data (Bell et al., 2019; Lincoln & Guba, 1985). Ensuring trustworthiness has therefore been decisive to provide credible and truthful findings free from biases. To ensure the trustworthiness of this research, four components have been

considered in accordance with Lincoln and Guba (1985), more precisely: *credibility*, *transferability*, *dependability*, and *confirmability*.

3.6.1.1 Credibility

The authors of this thesis are aware of the fact that there are various social realities provided in research initiatives of this character, especially since perspectives, experiences, and interpretations tend to vary between respondents. Thus, to ensure credibility and acceptance of the provided insights in the subsequent sections, the authors have asked confirmatory questions throughout the interviews to promote reassurance, limiting the risk of misinterpreting the answers given. However, interpretations from the authors are simultaneously necessary to discover similarities and differences, and credibility can therefore not be entirely validated before the thesis is fully available to the targeted audience. Bell et al. (2019) further describe customer validation and triangulation as necessary methodologies to ensure credibility. However, these methodologies have not been employed in the research process of this thesis, mainly since they are considered very time consuming. The final thesis will however be shared with all participants, and its credibility will therefore be further evaluated later on.

3.6.1.2 Transferability

The findings provided in this thesis are relatively context-specific due to the research being delimited to Swedish AI startups and a limited number of respondents. These limitations are common in qualitative research as depth is often emphasized over breadth, meaning it is generally difficult to ensure generalizability (Bell et al., 2019). Hence, since Swedish AI startups constitute a rather niched research segment in relation to the core concepts of this thesis, the findings may not be directly applicable in the context of for instance incumbents and businesses of scale. The core concepts of LSAs and BMI and their relationship can however be applied in other entrepreneurial settings and environments beyond AI, both nationally and internationally. Thus, the transferability of this thesis is somewhat limited depending on the context in which the findings are further applied and elaborated. This is an important note to clarify in terms of transferability, as the authors have no intention of leading future researchers astray.

3.6.1.3 Dependability

Dependability correlates with reliability and is another important aspect of trustworthiness according to Bell et al. (2019). In this thesis, dependability has been considered and employed to an extent that is arguably sufficient. However, considering the great size of the datasets derived from the semi-structured interviews, it is difficult to provide all transcriptions and draft documents used throughout the research process in this thesis. As a complement, the methodology chapter clearly illuminates how the research process has progressed as it includes an overview of its key segments. Despite all records not being provided in the final thesis, they have been consistently shared with selected peers to evaluate the quality of the research process. Considering secondary data, the literature used in this thesis has been both shared and discussed with relevant peers to evaluate their applicability. All sources used as secondary data are also discussed in the literature review and provided in the reference list at the end of the thesis. Moreover, since this thesis has undergone opposition by peers, the theoretical inferences have been transparent and evaluated as valid.

3.6.1.4 Confirmability

Ensuring confirmability is according to Lincoln and Guba (1985) particularly important when employing alternative criteria. Confirmability is arguably parallel to objectivity, but it is fairly difficult, if not even impossible to ensure complete objectivity in qualitative research. There are however a number of aspects to be considered, such as the importance of not intentionally or overtly inclining published theories or collected data to align with personal values and agendas (Bell et al., 2019). Hence, to ensure confirmability, the authors have consistently acted in good faith, and have never intentionally allowed personal interests to compromise the accuracy and quality of collected data and findings. In this context, considering the qualitative research conducted, the authors have however had to interpret information stated by both respondents and scholars. Consequently, there is a risk that information may have been misinterpreted, and it is something the authors are aware of. Furthermore, it is difficult to guarantee unintentional biases being completely excluded in the process, but biases have not been intentionally used to steer the findings of this thesis.

3.6.2 Authenticity

Authenticity is another important aspect to consider according to Lincoln and Guba (1985). This essentially means that the authors possess significant responsibility in terms of fairly representing various viewpoints and perspectives provided in the researched setting (Lincoln & Guba, 1985). In this thesis, authenticity has been emphasized, meaning the findings provided are accurately aligned with the insights obtained from respondents. Since the final thesis is shared with both participants and additional stakeholders, the authors have by no means intentionally amended or reformulated the dataset, but instead illustrated the findings in a transparent and truthful way. Due to the authenticity of this thesis, the perspectives and viewpoints provided are more likely to yield improvements within Swedish AI startups excluded from this research.

4. Empirical Findings

Drawing on the conducted interviews, the empirics chapter begins with a concise overview of perceived usefulness and challenges associated with the LSAs philosophy in a context where it is related to BMI. It then continues with an overview of the LSAs employed on BMI among the case companies, LSAs depicted as relevant but not yet used, and LSAs not utilized nor mentioned. The empirical findings then delves deeper into LSAs in relation to value creation, delivery, and capture. This is the heart of the chapter since it clearly illustrates in what contexts LSAs are experienced as enhancing in relation to BMI.

4.1 Concise Overview of The LSA Philosophy - Usefulness and Challenges in Relation to BMI

The underlying philosophy of LSAs has been widely recognized as valuable for BMI across industries, markets, and environments, and has been discussed as central in relation to the foundational value dimensions. The findings suggest that the meaning of LSAs is broad as the concept covers an extensive collection of beneficial approaches, often of varying appropriateness dependent on specific contexts. This view is recurrent throughout the dataset while being distinctly outlined in one of the interviews:

“I think it’s like a buffet, you can select approaches based on what best suits you.” - CTO and co-founder of case company EF

Moreover, all of the case companies have exhibited a strong understanding of LSAs, underscoring the concept’s significant usefulness with regards to BMI. It has on several occasions been clarified that approaches included in this umbrella term are essential to drive and maintain competitiveness. To be exact, LSAs ensure a competitive edge through unique attributes and elements that are often not understood by companies of scale:

“I think that it is the only way to work to be able to win against billion-dollar companies that have all the resources, but are the slowest in the world” - Chairman and co-founder at case company AB

Simultaneously, there is evidence in the data that LSAs bring with them a number of challenges in terms of executing BMI. It has been shown that efforts to balance these concepts are seldom straightforward, and that experience is required to better shape approaches to align with specific conditions. Specifically, it has been argued that LSAs sometimes manifest differently in practice compared to theoretical contributions:

“Reading the books is easy, but doing it in reality is difficult, and then I’ve probably read 100 books in this field” - CEO and co-founder at case company CD

To manage these challenges, it has been expressed that LSAs must be tailored to specific tasks, operations, and circumstances. Relying too rigidly on theoretical contributions while overlooking other crucial factors can therefore be detrimental since it hems the foundational mindset and philosophy:

“I think lean sometimes becomes a bit too strict, that people use it as a checklist or template rather than a way of thinking” - CTO and co-founder at case company EF

4.2 Illustrative Overview of the LSAs Applied on BMI Among the Case Companies

The findings indicate that a relatively great number of LSAs are applied on BMI among the case companies, and that certain methodologies are favored over others. A distinct selection of LSAs have been identified as frequently employed by a majority of the case companies while other less frequently used LSA have been identified among some of them. The LSAs illustrated in these columns have either been explicitly discussed or understood as unconsciously employed without referring to a specific approach. Thus, there are instances where LSAs occur without clear awareness demonstrated by the case companies. Moreover, a limited number of LSAs have been recognized as highly useful in relation to BMI, but are currently less applicable due to contextual constraints. These approaches have not been evaluated in terms of practical experience, but rather expressed as potentially favorable in the future. Lastly, one LSAs was neither mentioned nor showcased, and is therefore not of great relevance for the remainder of this thesis. These findings are summarized in Table 2.

	<i>Frequently employed by a majority of the case companies</i>	<i>Employed by some of the case companies</i>	<i>Perceived as useful but not yet employed</i>	<i>Not utilized nor mentioned by the case companies</i>
Lean Startup Methodology (LSM)	x			
Customer Development Process (CDP)	x			
Product Discovery & Product Delivery	x			
Customer Journey Mapping		x		
Split Testing / A/B Testing		x		
Design sprints			x	
Scrum			x	
Pretotyping				x

Table 2 - Illustrative overview on the LSAs applied on BMI among the case companies

4.3 LSAs in Relation to BMI and Its Value Dimensions

Given the centrality of value creation, delivery, and capture in the context of BMI, this section is divided accordingly in order to illustrate aspects expressed as enhanced by LSAs. A limited number of key attributes where LSAs provide notable advantages have been identified across all value dimensions, and these are highlighted throughout the remainder of this chapter.

4.3.1 LSAs and Value Creation

The empirical findings illustrate that LSAs are proven particularly effective in two closely connected areas with regards to value creation. First, it is apparent that LSAs foster customer-centric engagement, a mechanism that expressly deepens learnings about customer demands and broader market dynamics on a continuous basis. It has been made clear that these elements are key in evaluating the conditions on which value is eventually created.

Secondly, LSAs have been highlighted as especially suited to processes reliant on rapid experimentation, testing, and iteration. It has been stated that these elements are promoted by LSAs, and that they together form impactful value creation cycles.

4.3.1.1 Customer-Centric Engagement to Enhance Continuous Learning

A strong consensus among the case companies has been identified about customer-centric engagement and its importance in driving value creation. This notable aspect has been consistently described as a key mechanism for continuous learning, thereby underscoring the criticality of this relationship. In this context, respondents emphasized the relevance of LSAs, noting that customer interaction is inherently embedded in many of these approaches. Owing to this centrality, the case companies appear able to derive experience-based insights accurately. This capability has been described as decisive, largely because it is considered difficult, if not impossible, to obtain insights of comparable accuracy through internal estimations alone. Evidently, LSAs facilitate efficient methods for identifying experienced pain points, competitive solutions, and user groups for whom both these aspects are particularly relevant. These three elements were all repeatedly highlighted as fundamental to value creation, albeit in slightly different ways. One of the respondents summarized it across three categorical levels:

“I usually say there are three levels. What is the problem? How do we solve it? How do we create value and for whom?” - CTO and co-founder at case company EF

In another interview, similar elements were mentioned as highly relevant in the context of value creation, however the centrality of customers was emphasized more elaboratively. Through a set of self-reflective questions, the respondent stressed the importance of involving customers in various value creation processes. As demonstrated in the quote, each question is grounded in individuals and their experiences, reinforcing their relevance in accurately identifying the value that needs to be created:

“... what problem are we actually solving for people? Who are we solving it for? What is our ideal customer profile?” - CEO and co-founder at case company CD

Building on the importance of identifying these elements, the dataset shows that early-stage contact with potential users can spark curiosity and sustain attention, thereby laying a foundation for continuous refinements and evaluations. By maintaining consistent and mutual communication through LSAs while demonstrating visible progress, awareness and credibility among the target users is increased, and bonds can be steadily established. Over time, it appears that these dynamic relationships foster trust, which in turn encourages honest feedback. Hence, customer interaction seemingly decreases the level of ignorance among potential customers:

“If you come into contact with customers at an early stage, they may not be interested in buying, but in many cases they are curious enough to follow the progression... If they see that things are happening from our side over a longer period of time, the awareness and credibility becomes much higher, and the product becomes better adapted to their problems.”
- CEO and co-founder at case company GH

Another perspective on enhanced learnings through customer-centric engagement was identified, where it was clearly stated that customers are decision-makers with regards to value creation. This viewpoint was reinforced with the emphasis that each customer plays a crucial role in shaping the direction of a product or service, particularly in consumer-focused environments. As a result, their engagement not only validates the relevance of a solution, but also ensures that what is being developed truly resonates with themselves and their desires:

“For startups, especially in a consumer focused business, every customer is a decision-maker... without the feedback from them, you never know if you are building a solution that anyone actually wants.” - Product manager at case company IJ

Moreover, it has become evident that gathering feedback through LSAs and customer-centric engagement can be both straightforward and efficient as many of these approaches do not require extensive processes. Several case companies noted that even a small number of initial interactions with potential customers can quickly reveal previously unidentified strengths and weaknesses. It has been argued that these elements can be addressed rapidly while employing LSAs, often within just a few days. The value of brief interactions and swift refinements has

been demonstrated repeatedly across the cases, but was concisely described by one respondent in particular:

“We are very agile... in this way we can adapt rapidly after just one meeting with a customer, we don’t need six months to try out a new idea, we can do it in a few days. All in all, everything goes much faster and that benefits us as a company.”- Chairman and co-founder at case company AB

Overall, the findings suggest that LSAs provide valuable guidance in dissecting the core problem, solution, and customer segments with a high level of detail. Hence, when applied effectively, these methodologies have been described as essential for accurately identifying strong value propositions. Understanding this relationship appears crucial to ensure a representative view of opportunities associated with certain pathways and decisions in relation to value creation. The essentiality of ensuring these deep and precise understandings was greatly reinforced by one of the respondents, who emphasized:

“You really have to dig deep to actually understand what problem you are solving or what value you are actually creating with a specific customer...” - CEO and co-founder at case company GH

Ultimately, the findings suggest that LSAs strongly promote customer-centric engagement, which is arguably crucial for enhanced learnings about markets and their customers. The substantial benefits of LSAs have in this regard been consistently demonstrated across diverse situations and environments in relation to value creation.

4.3.1.2 Rapid Experimentation, Testing, and Iteration

The case evidence suggests that LSAs actively promote rapid experimentation, testing, and iterations, and these attributes have been widely recognized as fundamental to value creation processes. Consistent patterns have emerged across the respondents’ accounts, revealing that value creation is often deliberately structured and guided through various LSAs to emphasize these elements. Although this overarching theme was discussed extensively across all cases, one respondent conveyed the approach with particular clarity:

“We work very iteratively, test our solution and get confirmation from the market. Then we go back to the drawing board and can easily see if we make progress. If we don’t make progress, we test something else.” - CEO and co-founder at case company GH

Another prime example that illustrates the same core elements as foundational to create value was identified. However, in this instance, greater emphasis was placed on the role of hypothesizing. Moreover, the rapidness of iterative cycles and swift feedback loops was comprehensively showcased by one of the respondents:

“We hypothesize... then we build, experiment, test, collect data, and iterate... we feed in what we’ve learned... Three days later, we have an improved version” - CTO and co-founder at case company EF

Experimentation guided by clear hypotheses was discussed as crucial to identify the conditions under which value is ultimately created. Formulating assumptions about the reality was mentioned numerous times as necessary to efficiently test the outcomes of specific ideas, offerings, and relationships. It was argued that iterative value creation processes are increasingly difficult if this step is bypassed, and if not included, it was even argued that iteration can not occur to the same extent. In addition, testing has been emphasized as crucial since hypotheses otherwise are difficult to validate. Hence, the findings suggest that these elements in combination form an interconnected cycle. In this context, several respondents have argued that none of them can be overlooked if meaningful impact on value creation is to be achieved. One of the respondents articulated this cycle very comprehensively, highlighting all elements and their relationships:

“If you never take pauses to evaluate the experiments, prototypes, and hypotheses you have tested, there is no sense in breaking down the process into iterations. In that case, the next step will just be the one previously planned anyways.” - Product Manager at case company IJ

In discussions on these core elements, it was mentioned that there are misconceptions about value creation, more precisely that this dimension requires extensive time and effort. This

belief was questioned and refuted, and in sharp contrast to these misconceptions, it was repeatedly suggested that experimentation, testing, and iteration promote the exact opposite, namely minimal effort to drive significant efficiency. Beyond the consensus, this view was powerfully illustrated by one of the respondents in particular:

“You shouldn’t underestimate what you can do in a short amount of time... that’s something I think many people may have prejudices about, that it takes so much time and that there are such long lead times, but that’s not really the case anymore.” - Chairman and co-founder at case company AB

Building on this view, clearly shared by a number of respondents, it was repeatedly stated that processes built on experimentation, testing, and iterations promote value creation cycles that do not demand lengthy preparations and extensive planning. Instead, it has been suggested that LSAs ensure that value creation processes become fluent, meaning that obtained data and learnings steer decisions on a continuous basis. In that sense, it has been demonstrated that shortcomings in markets, products, and services can become more evident and accurately pinpointed:

“We always go where the data directs us... whatever it may be, you get an understanding very quickly of what needs to change in the product right now to make it good.” - CEO and co-founder at case company AB

In summary, the discussed elements and their importance for value creation constitutes a common thread among all the case companies. It appears that cycles including these attributes enable value creation in a manner that is both seamless and immediate. According to the findings, the risk of initiating prolonged and inefficient development processes that are harmful is therefore more likely mitigated. The experiences and perspectives provided on this matter were comprehensively underscored by one respondent that summarized the broad findings in a good way. Although not explicitly expressed in these exact words by all respondents, it clearly captures the character of responses given:

“I think it’s absolutely crucial to be able to focus on value creation... to iterate quickly and be able to learn from what we see.” - CEO and co-founder at case company CD

4.3.2 LSAs and Value Delivery

In the context of value delivery, it appears that LSAs play a critical role in two distinct areas. First, it has been noted that these approaches are advantageous in terms of identifying and systematically establishing supportive networks that are grounded in engagement and demonstrated interest. The answers given suggest that especially customers can be attracted and retained relatively easily through LSAs, which in turn directs the attention to customer profiles of relevance. Secondly, it has been suggested that LSAs drive initiatives to explore new avenues for value delivery. This capability appears crucial not only when expanding into additional customer segments and markets, but also when strategically pivoting existing markets or customer segments that prove unfavorable or misaligned.

4.3.2.1 Identifying and Systematically Establishing Supportive Networks

By strategically leveraging LSAs, several respondents have clearly demonstrated how they can organically secure an initial base of stakeholders, more precisely a foundation, from which additional participants can be progressively included in various ways. Although these networks are relatively narrow in the beginning, they have been described as sufficient for identifying detailed customer profiles, eventually guiding decisions on whom to engage with or exclude moving forward. One of the respondents highlighted that it can be difficult to identify beneficial customer segments to build a network on without tools for it, mainly since varying degrees of interest can be showcased by a great number of customers:

“... generally it is both difficult and somewhat scary to decide who to optimize the solution for, interest can emerge from so many different directions.” - CEO and co-founder at case company CD

In this context, it has been emphasized as decisive to identify customers that are not solely interested, but committed enough to actively use the product or service. It is apparent that as long as this aspect is understood, the pathway forward becomes clearer and irrelevant

customers can be filtered out, meaning value can be delivered more directly to relevant customer segments:

“The most important thing within an organization is to look at who wants our product? As long as you understand it, you as a business leader or owner can see how you can continue to take steps in the right direction.” - Chairman and co-founder at case company AB

In this context, the necessity of LSAs was discussed extensively with the respondents, and one of them clearly highlighted that these approaches can mitigate risks of targeting customers whose interest may vanish by time. It was stated that, when early networks are built, it can help identify a general interest, which is initially important. However, to successively filter this interest and determine where the commitment is strongest, feedback was suggested as crucial. It was argued that by using LSAs, accurate feedback could be ensured, and customer segments that showcased clear interest could therefore be effortlessly pursued in accordance with these learnings:

“By building our network early on, we quickly gathered feedback and found that people were generally interested, some more than others. We could identify the profiles that valued our solution most, so when we went out to meet people, we already had an idea of which customers to target and pursue.” - Product Manager at case company IJ

The importance of cultivating relationships from the outset was further stressed throughout the interviews, and it appeared important not only to construct networks. In addition, it was argued that the established relationships must be safeguarded and successively expanded to not lose momentum. This view was expressed by one of the respondents in particular:

“I believe having a strong network is crucial... it’s important to build relationships from the beginning, and then protect and expand these relationships.” - CEO and co-founder at case company GH

To ensure that the relationships within the identified network are safeguarded while expanded, the same respondent articulated the necessity of being consistently visible and eager to identify additional opportunities for value delivery. It was noted that LSAs are

advantageous in this context, mainly since these approaches help surface otherwise anonymous and highly relevant stakeholders:

“It’s really about being visible and finding opportunities to deliver something... It’s much about building relationships and finding ways to reach people who are otherwise anonymous.” - CEO and co-founder at case company GH

A majority of the case companies adhered to similar approaches in the context of identifying and systematically establishing supportive networks, but it was clearly stated that market and industry conditions determine to what extent LSAs are actually applicable. The case companies with application and service-based models illustrated stronger tendencies of leveraging LSAs frequently to identify and elaborate their networks with few constraints. In contrast, particularly one of the case companies that develops a product embedded in other products, faced greater constraints in terms of the degree to which LSAs are enhancing. It was made clear that their particular industry upholds relatively clear norms regarding collaboration, resulting in more rigid networks that rely heavily on powerful external partners. It was suggested that this dynamic makes it more challenging to fully utilize LSAs, especially as key partners are less familiar with the iterative and flexible nature of these approaches. One of the respondents explained these conditions in more detail:

“It’s very rare for a startup to sell directly to manufacturers... So, we targeted their suppliers instead, and it turned out they were more accustomed to working with smaller companies and could integrate our algorithms into their own modules... The industry has its own expectations and practices about how this should look.” - CTO and co-founder at case company EF

In summary, evidence across the case companies demonstrates that LSAs play a crucial role in both identifying and continuously elaborating supportive networks for value delivery. However, the effectiveness of LSAs depends on the structure of the industry, the nature of the offering, and the flexibility of potential partners.

4.3.2.2 Expanding the Fields in Which Value Can be Delivered

Building on the previous section, the respondents have suggested that LSAs are impactful in terms of broadening the scope of value delivery. More specifically, it has been demonstrated

that LSAs provide insights into additional fields where existing products or services can be utilized. In this context, it has been discussed that LSAs promote a number of strategies to successfully attract new customer segments, without having initially developed a solution for those particular segments. One of the respondents comprehensively articulated this effect of LSAs, and described that it allowed them to deliver value beyond their original targets:

“What we learned is that the more we tested and explored, the more we realized our solution wasn’t limited to the market we first aimed for. If you remain flexible, suddenly you see opportunities you didn’t even know existed.” - Product Manager at case company IJ

A number of case companies, in particular two of them, have experienced significant shifts in their value delivery focus through the use of LSAs. One striking example is how LSAs helped one of these case companies to recognize that the data originally used in their product, primarily designed for the private sector, was also perceived as valuable for public sector clients. As a consequence of extensive experimentation and feedback, municipalities emerged as desirable customers:

“We worked a lot before to make the best possible solution for the private person or individual. But based on the heavy work we put in, we noticed that we could use the data in new deals, because we already had the product which in turn could be passed on to other customers in our networks. We found out that municipalities needed our technology as much as the individual, so we pursued them without even hesitating, and we felt early on that this market was great for us.” - CEO and co-founder at case company AB

The other case company in question encountered challenges in delivering value within their initial target market, facing limited interest and slow adoption rates. While leveraging LSAs, they decided to pivot, shifting their focus to an entirely different industry where the timing was more favorable while the demand was stronger. The core vision and concept of their solution could remain intact, while the product itself could be adapted to engage a broader and more competitive audience:

“There is a common thread, but it's a hell of a change... the need wasn't that great and there wasn't that much money there. It was much better to pivot and focus on a field where money actually exists.” - CEO and co-founder at case company GH

In addition to these insights, one respondent argued that LSAs make them continuously explore new fields where their services can be useful. More precisely, LSAs have enabled them to dynamically direct their focus towards areas where relevance and demand are highest at any given time. Although their services were not originally designed for certain emerging segments, rapid refinements allowed them to meet additional demands effectively. It was stated that by means of LSAs, the initial solution evolved into a versatile and horizontal toolset, capable of serving diverse industries, thereby significantly increasing the company's total addressable market in which value can be delivered:

“We realized that the problem with unstructured data isn't just significant in our initially intended field, it exists everywhere, in research and businesses trying to understand markets or competitors... Our product is now not based on one AI model, it's a workflow of many tools.” - CEO and co-founder at case company CD

Building on the theme that LSAs can extend the fields in which value is delivered, the findings highlight that LSAs reduce the risk of strategic rigidity, particularly in volatile and rapidly evolving markets. Instead of narrowing the focus down to one field, it has been suggested LSAs make the case companies agile and responsive, positioning them to pursue new customers and markets as competitive opportunities arise. However, an important note in this context was highlighted by one of the respondents in particular. It was argued that any additional opportunities for value delivery must remain aligned with the core business, at least to some extent in order to remain the competitiveness already established. Without this alignment, it was stated that it can become vastly difficult to balance multiple customer segments simultaneously. More in depth, it was suggested that insufficient filtering of opportunities can erode the overall efficiency that LSAs are meant to provide:

“You don’t want to have something set in stone that prevents you from following opportunities when they arise, but at the same time, you need to have some kind of basic direction, you can’t just swing every time the wind blows.” - CTO and co-founder at case company EF

In summary, LSAs have been discussed as decisive to expand the fields in which value can be delivered. It has been made clear that these approaches are useful both in terms of scaling appropriate value delivery mechanisms and in scenarios where insufficient customer segments must be pivoted. Moreover, despite experienced advantages in this context, it has been emphasized that expansions must be aligned with the core business to safeguard competitiveness and reduce confusion.

4.3.3 LSAs and Value Capture

In the context of value capture, two areas stand out where LSAs have a particularly significant impact. First, LSAs have been discussed as instrumental in driving adaptive progress in revenue models. Aligning and refining these models in response to shifting market conditions, evolving customer needs, and technological advancements has been argued as essential to ensure effective monetization strategies. Respondents have mentioned that LSAs ensure that revenue models can be gradually scaled and elaborated at opportune moments, which allows them to adopt best practices as circumstances evolve. Secondly, it has been repeatedly stated that LSAs enhance cost-efficiency through rapidness and efficiency, and that it minimizes the need for substantial upfront investment and variable costs. The findings indicate that costs can be strategically deferred until a clear market demand emerges, which in turn decreases the likelihood of lock-in effects. Considering these effects, it has been suggested that value can be captured more securely under conditions of financial constraints.

4.3.3.1 Gradually Identifying and Elaborating Appropriate Revenue Models

The empirical findings shed light on revenue models as decisive in relation to the value capture dimension of BMI, and it has been suggested that this element strongly correlates with customers willingness to pay for a product or service. Finding the right revenue model has in fact been described as a prerequisite for value capture as it determines to what extent customers are interested and eventually attracted by a product or service. However, one of the

respondents pointed out that this element is relatively difficult, and that it sometimes is overlooked due to self-confidence. More in depth, if not carefully considered, it does not only affects a company's ability to capture value, it also threatens its existence:

“You also have to find a revenue model, and that's not always easy... This is often where startups crash, not because of the technology, but because no one wants to pay for it.” - CTO and co-founder at case company EF

To effectively identify viable revenue models, LSAs have been mentioned as appropriate by the respondents, and different angles have been considered. It has been consistently argued that these approaches enable systematic evaluations of customers' attitudes toward various alternatives and propositions. The findings showcase that attitudes, preferences, and convenience naturally evolve, both with shifting customer profiles and ongoing product advancements. Consequently, it has been stated that it can be detrimental to commit to a single revenue model, and then ignore signals that require adaptations. In this context, several respondents have suggested that LSAs foster flexibility and responsiveness, and that these abilities are needed to identify and establish effective revenue models at any given time. Moreover, it has been recognized that customers are typically relatively reluctant to pay for unproven or incomplete offerings when inappropriate revenue models are applied. Hence, it is evidently important to initially drive traffic to gradually progress toward more competitive alternatives for value capture:

“How can we drive enough traffic so that we eventually are able to make more money?” - Chairman and co-founder at case company AB

It has been argued that customers gain a deeper understanding of key features and benefits through hands-on testing of products and services, which appears facilitated by LSAs. At this early stage, desired revenue models are therefore not always advantageous, especially as high price points can deter potential users. Applying the most lucrative revenue model early on is therefore not a priority according to the respondents. The focus rather lies in engaging customers at a point when little to no revenue is generated. Establishing an initial customer base in these phases has been described as critical, mainly since it paves the way for

customers who ultimately will be willing to pay. One respondent in particular expressed this necessity very comprehensively, stating that attributes of LSAs have helped identify relevant revenue models in phases characterized by uncertainty:

“We are pretty convinced that we need to be able to offer some type of freemium or trial because we have a slightly complex product and these alternatives are necessary so that people can try it out.” - CEO and co-founder at case company CD

At the stage that many of the case companies are at this moment, the priority is therefore not strictly to commercialize ideas as fast as possible. Instead, it is mainly about identifying viable solutions for the future while simultaneously generating modest revenues through appropriate strategies. To succeed with such a balancing act, it has on several occasions been mentioned that LSAs are advantageous, and that a number of these approaches promote initiatives that ensure both feedback and modest revenues. One of the respondents articulated this, clarifying that many revenue models are not yet appropriate, and that the use of LSAs allows them to capture value through pilot tests and experimentative initiatives. This is because feedback is not only valued by the company, but also amongst potential customers and stakeholders:

“We are currently at the stage where our revenue is dependent on pilot tests. We have realized that some actors have a self-interest to extract some sort of information.” - CEO and co-founder at case company GH

At the same time, it has been argued that LSAs play a crucial role in situations where more scalable revenue models are already in place. One respondent described their journey so far in relation to revenue models and showed how LSAs have enabled them to continuously monitor and adapt to changes in the external environment. In this context, adaptability and awareness were described as particularly essential aspects promoted by LSAs. It was mentioned that even when a revenue model has been proven highly effective over time, there is no guarantee of sustained competitiveness as customer preferences can shift rapidly. If not being capable of responding to these changes, it was suggested that it is increasingly difficult to capture value:

“While we had general guidelines to begin with, the monetization strategy has been changed frequently. Our refinements are heavily dependent on trends and new learnings, in other words, what worked, what did not work, and what might work in the future... We see that the preferences of our customers change as we grow, it is actually quite clear since we track their behaviors... we have to respond to these changes to generate revenue, it is as simple as that.”

- Product Manager at case company IJ

In summary, LSAs have been described as appropriate both in terms of identifying viable revenue models, and in the context of ensuring awareness and adaptability, necessary to refine or change revenue models currently employed.

4.3.3.2 Decreasing Costs Through Efficiency

The ability to operate frugally has been mentioned as crucial by all respondents, largely due to financial constraints frequently encountered. It has been stated that highly innovative companies, such as AI startups, often are overlooked in their early stages as a consequence of substantial risks associated with failure. In light of these conditions, one of the respondents articulated that they routinely face considerable financial obstacles that must be overcome to sustain their operations:

“It has been difficult to raise money for the company... Sometimes I feel that when you run a startup, you must have a hidden skill of being able to conjure money out of nowhere, out of thin air... It doesn't always make us rich, but it means we don't have to give up.” - CEO and co-founder at case company GH”

During another discussion on funding experiences, one of the respondents was explicitly asked whether this aspect is straightforward, complex, or somewhere in between. The brief yet telling answer clearly underscores that funding is far from uncomplicated:

“No... that's one of the difficult elements” - CEO and co-founder at case company CD

The challenges of obtaining funding were frequently echoed, and it was highlighted as especially difficult to secure funding from investors at a stage where no finalized product or service has yet reached a market of substantial volume. A number of explainable reasons were discussed in this context, for instance missing revenues, underdeveloped features, and uncertainty. However, in one of the interviews, it was noted quite interestingly that the reason is simple, namely that investors often fail to fully grasp the essence of highly competitive AI solutions:

“If you look at where the money is, it is often secured through investors, but they haven’t really understood how useful these solutions can be...” - Chairman and co-founder at case company AB

As a consequence of these conditions, minimizing costs by avoiding substantial early investments has been emphasized as critical to ultimately capture value from specific products and services. Time and again, this element has been stated as decisive to balance uncertainty with progression. It has been argued as especially pertinent in scenarios where access to detailed information is limited, but also in relation to processes that are increasingly pressured by competitiveness. One of the respondents expressed this shared view as follows:

“You have very little information, but still need to get a lot of details, and it can’t cost too much” - CTO and co-founder at case company EF

In light of these findings, a recurring theme across the interviews was the pivotal role of LSAs in successfully minimizing costs. In relation to this element, several respondents emphasized that LSAs enable cost reductions through more efficient operations, and that substantial investments in that context can be postponed. As a consequence of this, it has been suggested that LSAs generally ensure that both fixed and variable costs are more manageable. Considering these advantages, it has been argued that the adoption of LSAs can significantly enhance the overall operating conditions for small-scale companies like AI startups:

It's not the same huge investments that were required before... If we were to start this platform years ago, there would have been extreme investments connected to it. Now we can create a product very quickly, see if it works or if it doesn't. If it works, well then there are significant benefits, and if it doesn't work, we are not really affected. In that scenario, we just throw that product away because it took us no time and cost us hardly anything to create.” - Chairman and co-founder at case company AB

As illustrated above, approaches included under the umbrella of LSAs make exploratory and experimental initiatives financially viable, meaning unsuccessful ideas and efforts yield minimal financial consequences. Conversely, when ideas and efforts prove successful, the potential rewards can be significant. Emphatically, this view was reinforced by an additional respondent who extended the significance:

“For us, the ability to test ideas quickly without committing heavy resources has been a game changer. We can explore multiple concepts with minimal risk, and if something doesn't work, the impact on our budget is negligible. On the other hand, when an idea proves successful, we're in a strong position to scale it rapidly and cost-efficiently, which enables us to capture substantial value.” - Product Manager at case company IJ

Moreover, in relation to cost decreasesments, it was suggested that LSAs can mitigate detrimental lock-in effects, which often yield significant financial consequences. According to one of the respondents, incumbents often possess considerable resources, which in isolation can be seen as advantageous. However, it was argued that this capacity for additional investments can become a double-edged sword, meaning incumbents can continue to allocate funds to rescue ideas that ultimately fail. In contrast, it was demonstrated that LSAs regularly constrain such behaviors, mainly since cost-efficiency becomes paramount throughout operational processes:

“Being agile while avoiding lock-in effects is probably the only advantage you have as a startup when you have 50 SEK in your account compared to a large company that has 5 million or 5 billion in its account.” - CEO and co-founder at case company AB

In summary, LSAs have been described as foundational for minimizing costs, primarily because a core principle of many approaches within this umbrella is limited resource commitment. Accordingly, it has been suggested that value can be captured with reduced financial risk and increased agility.

5. Discussion

In the subsequent chapter, the empirical findings are discussed and related to the literature review and its overall scope. Hence, this chapter constitutes the foundation on which the conclusion is later on drawn. Following the structure established already in the empirical findings, six distinct themes are highlighted, all related to the literature on LSAs as well as the value dimension they adhere to, namely value creation, delivery, or capture.

5.1 LSAs as Means For Enhanced Value Creation

5.1.1 Relating Customer-Centric Engagement to Enhance Continuous Learning to The Literature on Value Creation and LSAs

As argued by Felin et al. (2020), value-enhancing opportunities are better assessed while stakeholders are involved in operations, and BMI is therefore reliant on customer engagement and awareness. Reinforced by Teece (2010), this aspect is particularly important in relation to value creation as this element is significantly affected by customer perceptions, in other words, to what degree value is actually experienced. Hence, to efficiently manage value creation, companies must ensure a comprehensive understanding of perceptions. With regards to these fundamentals, Euchner and Ganguly (2014) have demonstrated that customer involvement is necessary. This view is extended by Rintamäki and Saarijärvi (2021), arguing that insights anchored in customers are necessary to effectively ensure competitive offerings for meaningful customer profiles. Hence, the literature so far demonstrates that an advanced understanding of the external environment increases the capability of pinpointing overlooked needs of substantial value, which in turn is necessary to succeed with value creation.

Building on this theoretical scope, there is a clear consensus amongst the case companies that customer involvement is crucial for value creation. Hence the outlined arguments above can arguably be considered as confirmed by the empirical findings. In relation to this, the respondents have expressed that LSAs promote a high degree of customer-centric engagement, which in turn enhances continuous and evidence-based learnings about the contextual environment and its core elements. As a result, it is clear that LSAs facilitate an ability to identify, grasp, and validate customer demands, attitudes, and preferences in a rapid

and more accurate way. Consequently, customer-centric engagement enables the case companies to investigate real problems and viable solutions to a degree often experienced as difficult if LSAs are not utilized.

Moreover, the empirical findings showcase that customer-centric engagement becomes very apparent in many LSAs, which demonstrates distinct alignments with the literature, outlining customer-oriented initiatives as both prominent and naturally embedded in a number of approaches (Chabán & Ruz-Mendoza, 2024; Blank, 2020; Blank & Dorf, 2020; Ries, 2011; Frederiksen & Brem, 2017). Due to this central attribute of LSAs, the case companies have demonstrated that it becomes less complicated to continuously identify foundations on which value can be created on an ongoing basis.

Revising Teece's (2010) once more, the argument that true value is ultimately determined by customers' perceptions is strongly supported by the empirical findings. The case evidence shows that customers are decision-makers, making their role in value creation relatively complex but highly central to ensure satisfaction. In relation to these findings, it has been suggested by a majority of the respondents that LSAs ensure embeddedness of customers in value creation processes from the outset (Ries, 2011; Blank, 2020; Blank & Dorf, 2020), and that it encourages trust, transparency, and interest. In turn, these conditions seemingly facilitate constructive progression through continuous cycles of feedback, where customers are part of actually deciding the outcome of value creation. Ultimately, the empirical findings manifest that value creation, if aligned with LSAs, ensures precision and deeper understandings to an extent not achievable without customer-centric engagement and evidence-based learnings.

5.1.2 Relating Rapid Experimentation, Testing, and Iteration to The Literature on Value Creation and LSAs

As argued by Teece (2010), value creation is dependent on an ability to intelligently manage resources, assets, and capabilities. Building on this argument, scholars have described LSAs as advantageous in relation to BMI, and it has been argued that these approaches can mitigate slowness, inflexibility, and misalignments (Ghezzi & Cavallo, 2020; Tang et al., 2025; Bocken & Snihur, 2020). In the context of AI startups, this has been discussed as particularly

decisive as conditions are often volatile (Tang et al., 2025), meaning adaptiveness and responsiveness is important.

In relation to these conditions and arguments, the empirical evidence highlights the importance of remaining adaptive while continuously learning. It has been suggested that LSAs encourage experimentation, testing, and iteration. More in depth, respondents have outlined that value creation processes within the researched cases are predominantly built on cycles including these elements, and it is proven that these cycles are substantial in understanding core surroundings. In relation to value creation, the case companies have thus demonstrated the importance of these components' to ensure validated learning, which is emphasized as key to guarantee efficient use of resources and capabilities (Ries, 2011; Frederiksen & Brem, 2017).

Through the use of LSAs and their emphasis on experimentation, testing, and iteration, it is apparent that wasteful ideas can be quickly discarded while valuable ideas can be adjusted and enhanced very rapidly in appropriate manners. In this context, hypothesizing has been outlined as foundational since it ties together assumptions with evidence, mitigating risks of establishing slow, inaccurate, and inefficient value creation processes. The vitality of hypothesizing (Blank, 2020; Blank & Dorf, 2020; York & Danes, 2014; Ries, 2011) is thus confirmed in relation to value creation. Hence, it is clear that the discussed attributes, namely experimentation, testing, and iteration in fact are necessary to effectively progress, refine, and improve offerings, which is demonstrated as a key part of BMI (Katsamakos & Pavlov, 2020; Reim et al., 2020; Foss & Saebi, 2017).

Consequently, the necessity of never committing to original ideas without exploring and continuously innovating (Zuzul & Tripsas, 2020), has been underscored by the respondents, where LSAs through the discussed attributes promote significant counter effects to rigidity. Instead, it is evident that LSAs provide hands-on solutions and methodologies to remain agile and explorative. Altogether, it has thus been argued by the case companies that these elements ensure seamless and immediate value creation processes, but only if considered in combination. More precisely, at times when competitive advantages are threatened, learnings from experimentative initiatives, tests, and iterations ensure capabilities to rapidly react and

adapt. Hence, value creation is not only gradually enhanced in terms of quality, but also better aligned with shifts and changes in the competitive environment.

5.2 LSAs as Means For Enhanced Value Delivery

5.2.1 Relating Identifying and Establishing Supportive Networks to The Literature on Value Delivery and LSAs

As argued by Codini et al. (2023), several foundational mechanisms are central to value delivery, and it appears that some of the most crucial components are networks, customer segments, and partnerships. These components have been described as strongly correlated and interdependent, especially in relation to value delivery. Hence, impactful distribution channels often necessitate all these components in combination for value to be delivered effectively (Codini et al., 2023).

The empirical findings support these theoretical arguments and the cruciality of the mentioned components in relation to value delivery. In this regard, it has been showcased that LSAs are advantageous, particularly in terms of identifying and establishing supportive networks, mainly built on customers. The case evidence demonstrates that a number of LSAs in fact promote relationship-building from the outset, as argued by a selection of LSAs pioneers (Ries, 2011; Blank, 2020; Blank & Dorf, 2020). Thus, constructing a foundation from the very beginning seemingly enables strategic tracings of commitment and interest. Despite being described as relatively narrow groups of customers and stakeholders, it has been shown by the respondent that these networks provide extensive feedback from which valuable customer profiles can be identified rapidly. In turn, it appears that this ability to pinpoint customer profiles facilitates informed decisions of whom to include and exclude while progressively establishing partnerships and customer relations, a point strengthened by Blank (2020). Consequently, strategically relevant pathways can become apparent, and it has been suggested that value is therefore more likely delivered to customers that in reality appreciate the provided offerings.

Directing the focus more towards the establishing component of supportive networks, Blank (2020) describes support, communication, and collaboration as decisive elements in the context of continuous relationship-building. In addition, to invite more customers beyond the

identified foundation, Blank (2020) has suggested that continuous updates and refinement must be provided as interest otherwise can decrease. The empirical findings reinforce these arguments in relation to value delivery. It has been shown by the respondents that once relationships are established, they must be safeguarded, strengthened, and expanded to not lose advantageous supportive effects. In this context, the case companies have recurrently suggested that visibility, communication, and feedback are vital components enhanced by LSAs. Overall, it has been demonstrated that these components facilitate customer retention while at the same time additional customers and stakeholders, even anonymous ones, can be more effortlessly identified and pursued.

Although it has been demonstrated that LSAs are advantageous in the context of identifying and establishing supportive networks for value delivery, the findings also illustrate that certain industry and market conditions can hinder impact and applicability. More in detail, the empirical findings suggest that networks can be somewhat predetermined due to industry norms and praxis, and in these scenarios, LSAs are seemingly not as advantageous. Up until now, this is not an aspect commonly discussed in the literature relating LSAs to BMI (Ghezzi, 2019; Ghezzi & Cavallo, 2020; Bocken and Snihur, 2020), especially not in relation to value delivery and AI startups (Tang et al., 2025). It is therefore important to shed light on this finding as a potential addition to current theories even though not being generalizable.

5.2.2 Relating Expanding the Fields in Which Value Can be Delivered to the Literature on Value Delivery and LSAs

As demonstrated in the literature review by Codini et al. (2023), market demands and customer behaviors are often volatile, meaning previously overlooked customer segments can become valuable very abruptly. Hence, an ability to continuously experiment with various customer segments has been described as decisive to successively refine and extend the scope of value delivery (Teece, 2010). As demonstrated by Mahendra (2023), this is particularly interesting in relation to AI since many technologies and solutions in this context are applicable in various fields at the same time. In addition to this discussion, LSAs can encourage expansions of initial customer bases where customers are gradually identified through validations rather than ignored and overlooked (Blank, 2020; Blank & Dorf, 2020).

With background in these core attributes of value delivery and the inherent qualities of LSAs in identifying additional customers, a relationship has been noticed.

The empirical findings show that LSAs through elements of exploration and flexibility help reduce strategic rigidity in relation to value delivery. It is apparent that several of these approaches instead emphasize efforts to pinpoint previously overlooked opportunities and customer segments as feedback is attracted. A number of respondents have suggested that LSAs are advantageous to identify additional areas of usefulness in which already developed offerings through refinements can satisfy emergent customer demands. Hence, the ability to expand the scope of value delivery seemingly aligns with a high degree of experimentation, which is emphasized by LSAs according to Bocken and Snihur (2020).

Moreover, in relation to the importance of engaging directly with customers to evaluate certain features (Ries, 2011, Blank, 2020; Quin et al., 2024; Chabán & Ruz-Mendoza, 2024), the respondents reinforce that constructive criticism ensures measurements on applicability. In turn, it is evident that these measures can guide decisions in relation to value delivery. Building on this, the use of LSAs made one of the case companies identify an additional market in which the same product could be employed while fulfilling another purpose. Hence, two completely different fields could be targeted simultaneously, and value could be delivered to multiple customer segments. In close connection to this finding, another case company relied on similar elements inherent in LSAs to evaluate the competitiveness of their target market and offering. By noticing disadvantageous conditions and a generally low interest among customers, the initial idea could be pivoted, and a more advantageous market with interested customer segments could be pursued based on extensive feedback. In this regard, the importance of Ries's (2011) decision-making strategy referred to as pivot or persevere has been emphasized as necessary in the context of value delivery.

However, an important note in relation to LSAs as enhancing mechanisms when expanding the scope of value delivery is that additions and opportunities must be aligned with the core business to mitigate confusion and imbalance. Hence, while Teece (2010) and Codini et al. (2023) emphasize the importance of experimentation and adaptation in relation to value delivery, the empirical findings suggest that experimentation at all times must be manageable

and aligned with already existing competitive advantages. Therefore, it is clear that a balance between exploration and exploitation, as argued by Løbner and Goduscheit (2022), is necessary in terms of pursuing new fields for value delivery.

5.3 LSAs as Means For Enhanced Value Capture

5.3.1 Relating Gradually Identifying and Elaborating Appropriate Revenue Models to The Literature on Value Capture and LSAs

Returning to the importance of making customers enticed by a certain product or service to capture value (Sjödin et al., 2020), the revenue model has been enlightened as a foundational element (Teece, 2010). Building on this importance, Teece (2010) suggests that there are a number of highly attractive revenue models that can be utilized to capture value. All these points are validated by the empirical findings, however it has been highlighted that unique conditions shape which revenue models that are most appropriate to utilize in certain situations.

Despite the shared importance of revenue models to capture value, the empirical findings demonstrate that this element sometimes is ignored until it is too late. This is because offerings at times are thought of as more valuable than they actually are, which is often a consequence of other factors being overlooked. To employ appropriate revenue models, Teece (2010) argues that the contextual environment must be understood since it is otherwise difficult to reveal trends, preferences, and convenience factors that frequently change. The respondents reinforce this perspective, and in addition, it has been demonstrated that it is harmful to prematurely commit to one specific revenue model. In this context, the case companies have suggested that LSAs enable revenue models to be gradually identified and elaborated through systematic and continuous assessments of customer preferences and market conditions. Hence, LSAs seemingly mitigate the complexity of identifying relevant revenue models (Teece, 2010), at least to some extent.

Given a generally low willingness to pay for unfinalized offerings, it has been stated difficult to employ very lucrative revenue models from the beginning. Instead, the focus is on generating modest revenues while gathering feedback on preferences. In this instance, the case companies have shown that LSAs are important, and it is confirmed that the capability to

identify appropriate alternatives is enhanced by validated learning and early customer engagement (Ries, 2011; Blank, 2020; Blank & Dorf, 2020). When using LSAs, the respondents have identified that freemium models, trials, and pilot tests are particularly suitable to not steer customers away in the beginning. At the same time, these alternatives ensure modest revenues at times where more scalable revenue models are searched for, which appears crucial to eventually scale value capture.

Moreover, the respondents have distinctly demonstrated that initial success of a certain revenue model by no means equals long-term stability. Meaning there is an outspoken necessity for ongoing adaptations, which is particularly evident among the case companies that have progressed more in their ventures. In this context, LSAs have been illuminated as pivotal, essentially since these approaches promote a high degree of flexibility, curiosity, and rapidness. Meaning, at times where swift trends emerge and customers gain a higher level of influence, awareness and preparedness is already ensured as behaviors are consistently traced.

5.3.2 Relating Decreasing Costs Through Efficiency to The Literature on Value Capture and LSAs

Continuing on the essence of value capture, cost structure stands out as one of the fundamental pillars (Codini et al., 2023), and thoughtful strategies to balance costs have therefore been widely recognized as critical in relation to BMI (Teece, 2010). In this light, an increasing body of research emphasizes LSAs as strategically advantageous, mainly since these approaches often promote cost-efficiency (Ries, 2011, Blank, 2020; Blank & Dorf, 2020). More focus has therefore been directed towards the relevance of LSAs in startup landscapes marked by uncertainty and technological rapidness (Tang et al., 2025; Ghezzi & Cavallo, 2020). Bearing these theoretical contributions in mind, the empirical findings support the importance of cost structure in relation to BMI and its value capture dimension.

Considering discussions about significant financial constraints and a high degree of uncertainty, the empirical findings underscore the essentiality of cost-efficiency, particularly within the AI startup landscape. LSAs have in this context been positioned by the respondents as decisive means for both survival and progression, and the cost-minimizing

effect of these approaches has been witnessed as a prerequisite, compensating for the absence of external investments. The respondents have demonstrated that approaches under this umbrella term compel frugal operations until market traction is achieved, which limits consequences of investigating uncertain but potentially competitive ideas and offerings. In this context, low-cost exploration and experimentation evidently ensures that unviable ideas are being pivoted rapidly before substantial investments are committed, which significantly mitigates risks of costly lock-in effects. Hence, the possibility of starting over without concerns of sunk costs (Ries, 2011; Frederiksen & Brem, 2017) is clearly revealed as definitive in relation to value capture. At the same time, the principle of avoiding costly pursuits of unvalidated ideas has been reinforced as highly central in the researched context (Cagan, 2008).

Ultimately, it has been showcased that LSAs emphasize costs to be better aligned with verifiable progress, and that investments into ideas can be strategically and successively scaled in correlation with decreased uncertainty. As a result of LSAs, it has therefore been clearly illustrated that unsuccessful concepts have negligible impacts on already constrained budgets, while successful concepts can be pursued rapidly and cost-efficiently to enhance progressive value capture. Hence, it has been suggested that the upside is significant while the downside is less intimidating. In summary, LSAs are not only impactful in the context of value capture and cost structure, but also critical to have a chance to compete against companies with substantial resources and assets.

6. Conclusion

This conclusion chapter begins by revisiting the research question outlined at the very start of the thesis. It then discusses theoretical and practical implications from the conducted research. Lastly, suggestions for future research are highlighted to promote additional contributions in this field.

6.1 Revisiting the Research Question

As stated in the beginning, the aim of this thesis is to address the current gap in practical contributions that emphasize the relationship between Lean Startups Approaches (LSAs) and Business Model Innovation (BMI) in the context of AI startups. More precisely, the purpose has been to identify enhancing effects of LSAs on BMI, including perspectives of Swedish AI startups. To achieve this purpose, one research question was stated: *How can Lean Startup Approaches enhance Business Model Innovation in Swedish AI startups?* which is here revisited to successfully draw conclusions from the thesis and its findings.

As previously demonstrated, BMI has its foundation in three core value dimensions, namely value creation, delivery, and capture. In relation to these value dimensions, the investigated sample of Swedish AI startups have demonstrated a number of enhancing mechanisms achieved through LSAs, which have been categorized in six distinct themes:

Value Creation

- (1) *Customer-centric engagement to enhance continuous learning*
- (2) *Rapid experimentation, testing, and iteration*

Considering theme (1) and (2), it has been demonstrated that LSAs help Swedish AI startups identify decisive elements in relation to markets and customers, which makes value creation processes more aligned with unique conditions and preferences. More precisely, the case companies have demonstrated that pain points, competitive solutions, and advantageous customer segments become increasingly identifiable and pursuable. Moreover, it is evident

that LSAs enable seamless value creation cycles, which makes Swedish AI startups remain explorative, agile, and reactive in dynamic markets. It has been showcased by the case companies that these cycles ensure that offerings are consistently refined and improved in a rapid manner. Features therefore become more aligned with customer desires before interest disappears.

Value Delivery

(3) Identifying and systematically establishing supportive networks

(4) Expanding the fields in which value can be delivered

Over to theme (3) and (4), it appears that LSAs support Swedish AI startups to pinpoint and invite relevant stakeholders when establishing supportive networks, which in turn ensures tailored and impactful channels for value delivery. The case companies have suggested that irrelevant actors can be filtered out in this way, and the risk of pursuing non-beneficial customers and partners is therefore drastically mitigated. In addition, it is clear that LSAs encourage Swedish AI startups to identify and pursue previously overlooked segments and markets, and the scope of value delivery is therefore more likely widened. It has been demonstrated by the case companies that rigidity in relation to value delivery therefore is reduced, and competitiveness can be ensured in multiple contexts and segments.

Value Capture

(5) Gradually identifying and elaborating appropriate revenue models

(6) Decreasing costs through efficiency

Furthermore, theme (5) and (6) indicate that LSAs make Swedish AI startups more aware of relevant revenue models and their appropriateness in certain phases, which allows for refinements and replacements along the way of value capture. Illustrated by the case companies, modest revenues can therefore be guaranteed while trends fluctuate and uncertainty is prominent. Moreover, it is shown that Swedish AI startups by means of LSAs and efficiency can establish low-commitment strategies which minimize costs, risks, and uncertainty associated with value capture. It has been argued by the case companies that

invaluable ideas in that regard yield limited financial consequences while more value can be derived from competitive concepts.

6.2 Theoretical and Practical Implications

As briefly mentioned in the beginning of this chapter, current research in relation to the examined concepts predominantly revolves around theoretical contributions, and there is therefore a gap in practical contributions. Moreover, the focus on AI startups is fairly limited in relation to LSAs and BMI in existing journals, both in isolation and as intertwined concepts. Hence, this thesis is one of the first initiatives that attempts to cover this gap, especially in Sweden considering its emphasis on Swedish AI startups. The findings therefore provide scholars with an interesting perspective that extends the current theoretical scope on LSAs and BMI in relation to AI startups. Moreover, drawing on a collection of experiences, perspectives, and suggestions provided by actual Swedish AI startups, a number of practical insights have been found that can support entrepreneurs to continuously innovate their Business Models (BMs).

Considering a theoretical standpoint, this thesis outlines highly topical concepts and discusses their relevance in relation to one another. Hence, it is argued that academic knowledge concerning LSAs, BMI, and AI startups can be broadened. More precisely, this thesis engages with current theoretical assumptions about these concepts, and offers an integrated and far more practical perspective in contribution to the ongoing academic discourse.

From a practical angle, this thesis provides concrete findings from Swedish AI startups on the usefulness of LSAs in enhancing BMI. More in detail, the findings promote ideas on a number of strategically advantageous initiatives and methodologies that can be pursued to continuously improve operations in various business segments. Consequently, the experiences outlined enable Swedish and international AI startups, as well as startups not yet pursuing AI to critically assess their own Business Models (BMs). Hence, this thesis also encourages entrepreneurs to further evaluate if innovative actions are necessary or not to remain competitive.

6.3 Suggestions For Future Research

Once again, the researched topic is still highly contemporary, and this contribution to the literature therefore only represents an initial step toward understanding how LSAs can enhance BMI in the context of Swedish AI startups. Moreover, considering the relatively small sample of participating respondents in this thesis, the findings cannot be argued generalizable. Hence, the authors suggest that more research on LSAs as enhancing means for BMI is required, specifically in the context of Swedish AI startups. If these concepts are further examined in combination, the authors argue that literary contributions can become increasingly generalizable and insightful, thus more applicable in fostering innovativeness within AI-driven entrepreneurial ecosystems. In addition, the authors suggest future research on the introduced topic beyond national boundaries, mainly since these contributions are necessary to compare and contrast findings through an international perspective. More precisely, it would be insightful to include other Scandinavian countries as there are most likely differences to be pinpointed in this scope.

Furthermore, an elaborated perspective on the researched topic is recommended. The authors have noticed a growing emphasis on Digital Business Model Innovation (DBMI) in the literature. Considering the focus on AI startups, it is therefore suggested that more research is conducted on LSAs as enhancing mechanisms for DBMI in Swedish as well as international AI startups.

References

- Aagaard, A. (2024). *Business Model Innovation: Game Changers and Contemporary Issues*. Springer Nature.
- Baek, C. H., Kim, S. Y., Lim, S.U., & Xiong, J. (2023). Quality evaluation model of artificial intelligence service for startups. *International Journal of Entrepreneurial Behavior & Research*, 29(4), 913-940.
- Bell, E., Bryman, A., & Harley, B. (2019). *Business research methods* (5th Edition). Oxford University Press.
- Bessen, J., Impink, S. M., Reichensperger, L., & Seamans, R. (2022). The role of data for AI startup growth. *Research Policy*, 51(5), 104513.
- Blank, S. (2020). *The Four Steps to the Epiphany: Successful Strategies for Products that Win*. John Wiley & Sons.
- Blank, S., & Dorf, B. (2020). *The startup owner's manual: The step-by-step guide for building a great company*. John Wiley & Sons.
- Bocken, N., & Snihur, Y. (2020). Lean Startup and the business model: Experimenting for novelty and impact. *Long Range Planning*, 53(4), 101953.
- Brix, J., & Jakobsen, H. S. (2015). Business model prototyping: exploring pre-commercialisation opportunities in practice. *International Journal of Innovation and Learning*, 17(1), 98-110.
- Bryman, A., & Bell, E. (2011). *Business research methods* (3rd Edition). Oxford University Press
- Cagan, M. (2008). *Inspired: How to Create Products Customers Love* (1st Edition). SVPG Press.
- Chabán, O., & Ruz-Mendoza, M. A. (2024). The Relevance of Mapping the Customer Journey: Every Touchpoint Can Be a Moment of Truth. *Journal of Marketing Management*, 12, 1-8.
- Chesbrough, H., Lettl, C., & Ritter, T. (2018). Value creation and value capture in open innovation. *Journal of Product Innovation Management*, 35(6), 930-938.
- Codini, A. P., Abbate, T., & Petruzzelli, A. M. (2023). Business Model Innovation and exaptation: A new way of innovating in SMEs. *Technovation*, 119, 102548

- Dave, P. Y. (2020). The history of lean manufacturing by the view of Toyota-Ford. *International Journal of Scientific & Engineering Research*, 11(8), 1598-1602.
- Euchner, J., & Ganguly, A. (2014). Business model innovation in practice: A systematic approach to business model innovation can help capture value and reduce risks. *Research Technology Management*, 57(6), 33-39.
- Felin, T., Gambardella, A., Stern, S., & Zenger, T. (2020). Lean startup and the business model: Experimentation revisited. *Long Range Planning*, 53(4), 101889
- Foss, N. J., & Saebi, T. (2017). Fifteen years of research on business model innovation: How far have we come, and where should we go?. *Journal of Management*, 43(1), 200-227.
- Frederiksen, D. L., & Brem, A. (2017). How do entrepreneurs think they create value? A scientific reflection of Eric Ries' Lean Startup approach. *International Entrepreneurship and Management Journal*, 13, 169-189.
- Fujimoto, T. (2012). The evolution of production systems: Exploring the sources of Toyota's competitiveness. *Annals of Business Administrative Science*, 11, 25-44
- Ghezzi, A. (2019). Digital startups and the adoption and implementation of Lean Startup Approaches: Effectuation, bricolage and opportunity creation in practice. *Technological Forecasting and Social Change*, 146, 945-960.
- Ghezzi, A., & Cavallo, A. (2020). Agile business model innovation in digital entrepreneurship: Lean startup approaches. *Journal of Business Research*, 110, 519-537.
- Haenlein, M., & Kaplan, A. (2019). A brief history of artificial intelligence: On the past, present, and future of artificial intelligence. *California Management Review*, 61(4), 5-14.
- Hron, M., & Obwegeser, N. (2022). Why and how is Scrum being adapted in practice: A systematic review. *Journal of Systems and Software*, 183, 111110.
- Iñigo, E. A., Albareda, L., & Ritala, P. (2017). Business model innovation for sustainability: Exploring evolutionary and radical approaches through dynamic capabilities. *Industry and Innovation*, 24(5), 515-542.
- Jorzik, P., Klein, S. P., Kanbach, D. K., & Kraus, S. (2024). AI-driven business model innovation: A systematic review and research agenda. *Journal of Business Research*, 182, 114764.

- Kakouris, A., Sfakianaki, E., & Tsioufis, M. (2022). Lean thinking in lean times for education. *Annals of Operations Research*, 316(1), 657-697.
- Katsamakas, E., & Pavlov, O. (2020). AI and business model innovation: Leverage the AI feedback loop. *Journal of Business Models*, 8(2), 22-30.
- Knapp, J., Zeratsky, J., & Kowitz, B. (2016). *Sprint: How to solve big problems and test new ideas in just five days*. Simon and Schuster.
- Lee, B., Kim, B., & Ivan, U. V. (2023). Enhancing the competitiveness of AI technology-based startups in the digital era. *Administrative Sciences*, 14(1), 1-15.
- Lee, J., Suh, T., Roy, D., & Baucus, M. S. (2019). Emerging technology and business model innovation: The case of artificial intelligence. *Journal of Open Innovation*, 5(3), 1-13.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications.
- Løbner, K., & Goduscheit, R. C. (2022). A configurational approach to capabilities of business model innovation: Insights from a project-based firm. *Creativity and Innovation Management*, 31(4), 722-739.
- Mahendra, A. (2023) *AI Startup Strategy: A Blueprint to Building Successful Artificial Intelligence Products from Inception to Exit*. Apress
- Olek, K. (2023). Startups and Lean Startup approach in building innovative companies creating unique market values - theoretical considerations. *Procedia Computer Science*, 225, 3745-3753.
- Osterwalder, A., & Pigneur, Y. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. John Wiley & Sons.
- Quin, F., Weyns, D., Galster, M., & Silva, C. C. (2024). A/B testing: A systematic literature review. *Journal of Systems and Software*, 211, 112011.
- Reim, W., Åström, J., & Erikson, O. (2020). Implementation of artificial intelligence (AI): A roadmap for business model innovation. *AI (Basel)*, 1(2), 180-191.
- Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses* (1st Edition). Crown Business.
- Rintamäki, T., & Saarijärvi, H. (2021). An integrative framework for managing customer value propositions. *Journal of Business Research*, 134, 754-764.

Sheikh, H., Prins, C., & Schrijvers, E. (2023). *Mission AI: The New System Technology* (1st Edition). Springer Nature.

Sjödin, D., Parida, V., & Kohtamäki, M. (2023). Artificial intelligence enabling circular business model innovation in digital servitization: Conceptualizing dynamic capabilities, AI capabilities, business models and effects. *Technological Forecasting & Social Change*, *197*, 122903.

Sjödin, D., Parida, V., Kohtamäki, M., & Wincent, J. (2020). An agile co-creation process for digital servitization: A micro-service innovation approach. *Journal of Business Research*, *112*, 478-491.

Soltanifar, M., Hughes, M., & Göcke, L. (2021). *Digital Entrepreneurship: Impact on Business and Society* (1st Edition). Springer Nature.

Stone, K. B. (2012). Four decades of lean: a systematic literature review. *International Journal of Lean Six Sigma*, *3*(2), 112-132.

Tang, X., Du, S., & Deng, W. (2025). Business innovation in digital startups: A case study of an AI startup. *International Review of Economics and Finance*, *98*, 103898.

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, *28*(13), 1319–1350.

Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, *43*(2), 172-194.

Trischler, M. F. G., & Li-Ying, J. (2023). Digital business model innovation: toward construct clarity and future research directions. *Review of Managerial Science*, *17*(1), 3-32.

Veit, D., Clemons, E., Benlian, A., Buxmann, P., Hess, T., Kundisch, D., Leimeister, J. M., Loos, P., & Spann, M. (2014). Business models: An information systems research agenda. *Business & Information Systems Engineering*, *6*(1), 45-53.

Vomberg, A., Schauerte, N., Krakowski, S., Bogusz, C. I., Gijnsberg, M. J., & Bleier, A. (2023). The cold-start problem in nascent AI strategy: Kickstarting data network effects. *Journal of Business Research*, *168*, 114236

Wangsa, K., Chugh, R., Karim, S., & Sandu, R. (2022). A comparative study between design thinking, agile, and design sprint methodologies. *International Journal of Agile Systems and Management*, *15*(2), 225-242.

Weber, M., Beutter, M., Weking, J., Böhm, M., & Krcmar, H. (2022). AI startup business models: Key characteristics and directions for entrepreneurship research. *Business & Information Systems Engineering*, 64(1), 91-109.

Womack, J. P., & Jones, D. T. (1997). Lean thinking - banish waste and create wealth in your corporation. *Journal of the Operational Research Society*, 48(11), 1144-1150.

Yin, R. K., & Nilsson, B. (2007). *Fallstudier: design och genomförande*. Liber

York, J. L., & Danes, J. E. (2014). Customer development, innovation, and decision-making biases in the lean startup. *Journal of Small Business Strategy*, 24(2), 21-39.

Zuzul, T., & Tripsas, M. (2020). Start-up inertia versus flexibility: The role of founder identity in a nascent industry. *Administrative Science Quarterly*, 65(2), 395-433.

Appendix

Appendix 1: Interview Guide

Introduction - Opening Questions:

- 1. Could you tell us a little bit about yourself and your role in the firm?*
- 2. What inspired the founding of your startup and what problem are you solving?*
- 3. Can you briefly describe your startup and its use of AI, how is the technology applied?*

Questions Stage One - How to Cope with Business Model Innovation:

- 4. To what extent (how often) do you refine/change your business model(s) or aspects of it, and how important is it for you in terms of reaching competitiveness?*
- 5. What is most important in your eyes to successfully progress and continuously improve (creating, delivering, and capturing value), what aspects promote such initiatives and what obstructs them?*
- 6. Could you highlight any approaches and key capabilities that are especially important to you in terms of working closely with AI in an entrepreneurial environment?*
- 7. What are the key differences between a company like yours using AI as a core resource and larger more traditional firms (from a strategic and operational point of view)?*

Questions Stage Two - Adding LSAs Into the Discussion:

- 8. How familiar are you with Lean Startup Approaches as a concept?*
- 9. Are there any particular LSAs that you have used that are important in relation to your business and its processes?*

10. Considering the LSAs mentioned, is customer feedback / customer engagement an important aspect when refining / changing key aspects of your business model, and are there other aspects that are equally / more important?

11. In what context of your business would you say LSAs are most frequently employed and why is that the case?

Questions Stage Three - Detailed Focus on Value Creation, Delivery, and Capture in Relation to LSAs:

12. Have LSAs helped you better understand the value dimensions of your business model (value creation, value delivery, and value capture)?

13. To what extent do you believe LSAs can / have facilitated value creation?

14. To what extent do you believe LSAs can / have facilitated value delivery?

15. To what extent do you believe LSAs can / have facilitated value capture?

16. Overall, considering what we have talked about in terms of the value dimensions of your business model, are there any significant changes since the beginning of your company journey that stand out?

17. Do you believe these dimensions will continuously change, and if so, how do you proceed to uncover additional value and reduce waste?