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# Managing market instability

Analysing Dynamic capabilities in a Medium-sized Construction Company

Master's thesis in Design and Construction Project Management

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Gothenburg, Sweden 2024

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Cover:

The picture on the cover represents dynamic capabilities in the construction sector and was gathered from Chat GPT. Prompt for creating the picture: “Give me a picture of dynamic capabilities in the construction sector”, (*Chat GPT*, n.d.).

Gothenburg, Sweden 2024

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### Abstract

This research examines how a medium-sized construction company in Gothenburg navigates market instability. Employing a qualitative interview study, the research explores Company X's adaptive strategies across various project stages: project selection, tendering process, planning phase, and production. Emphasis is placed on the dynamic capabilities framework to address market challenges and opportunities. The findings underscore the significance of strategic project selection, precise cost calculations, stakeholder collaboration, and early involvement of production staff in maintaining competitiveness. Despite heightened competition and volatile material costs, focusing on public sector projects such as schools and hospitals has proven effective. This study concludes that for construction companies to survive and thrive in unstable markets, they must develop and implement strategies that enhance flexibility and promote continuous improvement. The insights provided can guide similar firms in developing dynamic capabilities and sustain a competitive edge.

Keywords: Dynamic capabilities, Market instability, Construction sector, Competitiveness.



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## Sammanfattning

Denna forskning undersöker hur ett medelstort byggföretag i Göteborg hanterar marknadsinstabilitet. Genom att använda en kvalitativ intervjustudie utforskar studien Företag X och dess anpassning i olika projektfaser: projektval, anbudsprocess, projekteringsfas och produktion. Studien använder teorin om Dynamiska Förmågor för att analysera och hantera marknadsutmaningar och möjligheter. Resultaten presenterar betydelsen av strategiskt projektval, precisa kostnadsberäkningar, samarbete med intressenter och tidigt engagemang av produktionspersonal för att bibehålla konkurrenskraft. Trots ökad konkurrens och volatila materialkostnader har fokus på offentliga projekt som skolor och sjukhus visat sig vara effektivt. Studien drar slutsatsen att för byggföretag att överleva och blomstra på instabila marknader, måste de utveckla och implementera strategier som ökar flexibiliteten och främjar kontinuerlig förbättring. Insikterna i denna forskning erbjuder riktlinjer för liknande företag att utveckla dynamiska förmågor och upprätthålla konkurrensfördelar.

Nyckelord: Dynamiska Förmågor, Marknadsinstabilitet, Byggbranschen, Konkurrenskraft.



## Acknowledgement

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# 1. Introduction

A challenge facing the construction industry, like many other sectors, is the increased interest rates and the high inflation. These factors have led the industry to face a lot of volatile prices of materials and the increased cost of staff. Consequently, this has impacted the profitability of construction companies, all of which must adapt to these changes within the industry (Meisels et al., 2024). Both current and future trends include implementation of changes that will affect how the industry performs its construction practices. This is partly driven by new regulations and market demands that will be crucial to adapt in order to be competitive in the market (Ragan, 2024).

The ability to effectively manage change is important for companies operating on a project-based basis. This necessity stems from the crucial role of change management in maintaining and enhancing a firm's competitiveness and survivability. Efficiently managing change is crucial for these firms, as it can allow swift adaptation and response from external influences. Embracing flexibility and agility in operations is essential for companies to thrive in a constantly shifting business (Ergin & Acar, 2022).

The dynamic conditions within the construction industry can be perceived differently and managed through various ways depending on the perspective. In an article by Löwstedt & Räisänen (2012), the authors examine different kinds of events that have affected the construction industry and how they are perceived. The authors identified two narratives; the first narrative was called the formal narrative; it includes CEO statements and other formal document produced by the top management. The second narrative was called the lived narrative, it includes the middle to higher management's own experience of the events. The results from formal narratives indicate that change is a continuous process, while the lived narratives suggest a discontinuous process of change, reacting to immediate circumstances or decisions influenced by individual actions.

While the lived narrative portraying construction companies as slow to identify and adapt to market demands and changes, a way to identify the ability of a company to handle dynamic market situations is to evaluate the dynamic capability of a company (Teece et al., 1997). Companies' exhibition of dynamic capabilities is closely tied to addressing challenges, recognizing opportunities and threats, and adapting existing resources, which enhances the likelihood of developing and maintaining successful practices over time (Zollo & Winter, 2002). Furthermore, the authors indicates that the presence of dynamic capabilities positively and significantly influences construction firm performance. In a volatile construction business environment, where market demands are continually shifting, firms with dynamic capabilities will outperform those lacking such capabilities.

The introduction has described the importance of handling unstable markets, while also presenting the dynamic capability framework as concept to identify and develop capabilities to stay competitive. Furthermore, the topic will be examined critically to analyse and identify research opportunities in this field. By addressing these issues, the goal is to establish a clear objective for the study and to formulate research questions.

## 1.1 Problem Description

Like many other construction companies in Sweden, the company collaborating in this study – Company X – faces daily challenges related to the market instability. Company X operates as a project-based organization and, with its 65 employees, completes approximately 4 projects and has 8 ongoing projects each year. Each project is valued at around 200 million kr. The company's project-based framework presented a unique opportunity to explore various stages of project operations. As the market is in a decline within the construction industry, the company see that the projects become smaller in size and the competition increases. Even though the market is declining, Company X's clients consist mostly of municipality-owned companies, which, at the moment, have not been recognised as a major victim.

During the end of the 20<sup>th</sup> and the beginning of the 21<sup>st</sup> century, a lot of market crises have impacted the construction sector (Enrique, 2022). During the financial crisis in 1990s there was a historical drop in the construction of single and multi-dwellings in Sweden. According to Segerstedt & Olofsson, (2010) this drop was the effect of deregulation and a decrease of governmental support regarding subsidies, but also high interest rates. There were also bank crises, which effected the demand and increased bankruptcies (Englund, 2015). However, during the energy crisis of the 1970s, different tendencies emerged. The governmental subsidies and interest rates were still beneficial and provided support in some projects. To cope with high prices of energy, more energy saving methods were used, such as thicker insulation and more advanced systems for ventilation and heating. This changed the industry since a new specialist were introduced in project organizations (Segerstedt & Olofsson, 2010).

Another crisis was the financial crisis of 2008 (Enrique, 2022). According to the author, the crisis resulted in many people within the sector having to leave their jobs. Furthermore, the crisis also halted a lot of new developments and transformations within the industry that needed to be adopted. In the article titled "Impact of economic and financial crisis in the construction industry", Nistorescu & Ploscaru (2010) identified significant trends within the European Union. One noteworthy trend during this period was the difficulty in obtaining insurance for loans, which subsequently led to challenges in financing businesses. In some cases, this led to bankruptcy and since the construction sector mostly consist of small enterprises, they were more exposed to overdue payments by clients from both the private- and public sector. The second trend included drawback of investments within the housing sector, caused by the lack of confidence in the market outlook. The third trend included fallback and comeback of civil engineering works. Even if projects decreased, the sector was partially saved in the EU due to the economic recovery plans (Nistorescu & Ploscaru, 2010).

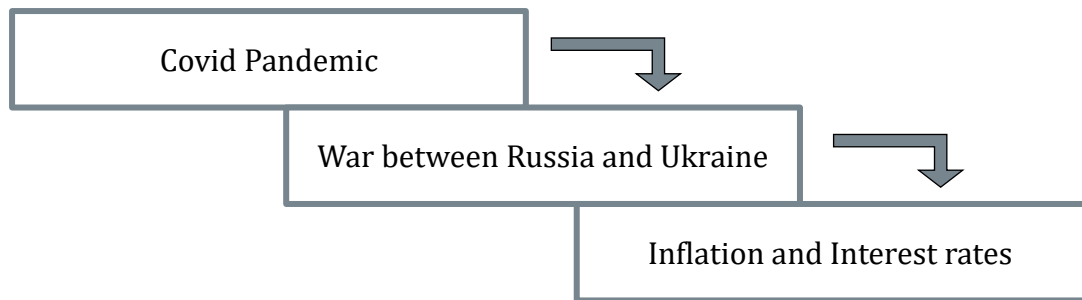


Figure 1. Illustration of crises that form the current unstable market.

The second crisis of the 21st century according to Enrique (2022) was the covid-19 pandemic. The crisis was later enhanced due to the war between Russia and Ukraine. This have led to an increase of transportation- and material costs, which both are extensive cost factors for construction projects and can significantly increase building prices. As of 2022 and 2023, Sweden has seen an increase of interest rates to tackle the high inflation (Sveriges Riksbank, 2023). According to Kester (2022), this have led to a lot of complications for the industry. The author argues that this type of environment will make it harder for construction companies to predict costs and available supply, which will have negative effects on planning and executing construction projects. Considering the crises presented in Figure 1 – the pandemic, the war between Russia and Ukraine, and the economic challenges that have impacted the industry over the past few years – the current market instability has persisted longer than some of the previous crises. All these rather unique challenges have affected the various project stages differently. Even though many of these circumstances have formed the current unstable market, the consequences from the pandemic have started to disappear, leading the market into a normal recession.

Company X is experiencing the current market instability, as mentioned earlier and illustrated in Figure 1, and is adapting to the changing environment. This research addresses an academic gap by identifying the capabilities of construction contractors to manage unstable market conditions. More specifically, the researchers address four specific stages of a construction project: *Selection of Projects, Tendering process, design phase, and production*. The theory of *Dynamic Capacities* provides a framework for analysing a firm's management in rapidly changing environments (Teece et al., 1997). Instead of following a path model or framework that guides and explains how management should be performed, utilizing the dynamic capabilities framework can enable analysis of factors considered as capabilities and competitive advantages in a dynamic environment. This theory is suitable and offers significant opportunities for research into how a company navigates dynamic environments.

## 1.2 Aim and Research Question

Conducted in collaboration with *Company X*, the study aims to explore management practices and strategies within the unstable construction industry, particularly in the context of a medium-sized company's various project stages. The goal is to provide insights into how the unstable market impacts the projects' processes and how construction companies can effectively respond to market challenges to maintain competitiveness. The research applies the theory of dynamic capabilities and seeks a comprehensive understanding of navigating market instability. By examining implemented change initiatives, management strategies, driving forces behind change,

and areas for process improvement, *this research aims to provide insights into how a medium-sized company manages an unstable market*. To achieve the intended outcome, the aim has been broken down into the following research questions:

- How does market instability affect project management in a medium-sized construction company?
- Do project stages interlink differently during market instability? If so, how?
- Which dynamic capabilities are important in times of change?

### 1.3 Demarcations

This research is limited to the company collaborating in the study, Company X. This company operates as a project-based contractor, and the study is similarly limited to this level of operation. The company's project-based framework has further restricted this research to the corresponding project stages. Rather than focusing on a specific management change, the study captures a broader perspective of market changes as observed through the company's project portfolio.

The results of this study focus on the specific market conditions and economic factors unique to the Gothenburg area, which may not be representative of other regions. This geographical limitation ensures a more in-depth and precise analysis but may reduce the generalizability of the findings to other markets or contexts.

Furthermore, some results and literature focus on stable market situations and compare them with unstable ones. A comparative approach helps highlight the differences and similarities in project management strategies under varying market conditions. However, it should be noted that the primary focus remains on understanding how an unstable market influences project processes and management practices.

## 2. Background Literature

This chapter aims to explain the different stages and aspects of a construction project in an unstable market. Even though much of the literature presents data from markets other than the one focused on in this paper, this chapter emphasizes project stages from the perspective of market instability rather than geographical accuracy.

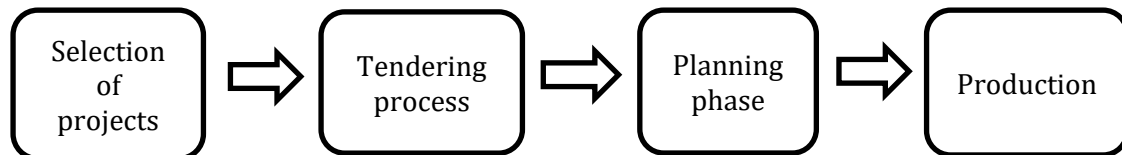


Figure 2. Identified project stages.

Company X identifies four main stages in their project cycle as a contractor, as presented in Figure 2. Each stage can vary in duration and cannot be precisely replicated. Different organizations may label a project stage differently. However, despite variations in defining a project cycle, the methods and outcomes are often similar across equivalent definitions (Respondent 10).

### 2.1 Selection of Projects

One crucial decision for construction companies is whether to bid on a specific project or not. There are numerous factors that influence this decision as it can lead to significant difficulties. For instance, Kester (2022) mentions that a deeper understanding of risk is crucial in an unstable market. Projects are often used to some type of risk management strategy to cope with uncertainty and change. In a report by Olawale & Sun (2010), the authors describe how a good risk management strategy can help to reduce uncertainties for construction projects. The authors also identify the reasons for inadequate time and cost control in a project, explaining why uncertainties contribute significantly to cost overruns and missed deadlines. They concluded that the main reasons originate from four areas, inaccurate time estimation in the beginning of projects, complexity of works, bad performance of contractors, and design changes.

The bid or no bid decisions are often made hastily without considering factors that may have negative repercussions later in the project (Leśniak & Plebankiewicz, 2015). Various studies have investigated these factors in different contexts. For instance, Shash (1993) identified several important factors for contractors in the UK, while Wanous et al., (2000) focused on the market in Syria, and Bageis & Fortune (2009) investigated the market in Saudi Arabia. Additionally, some studies have developed models to assist contractors in making informed decisions on whether to bid or not. These models are based on the factors identified and presented in studies by Wanous et al., (2000) and Leśniak & Plebankiewicz (2015).

When considering engaging in a project bidding process, Shash (1993) highlighted factors such as the need for work, competition levels, project experience, current workload, client identity, contract conditions, past profitability, and tendering process. Building upon this, Chua & Li (2000) added factors like project type, size, technical difficulty, bond capacity, labour availability, management expertise, site familiarity, and subcontractor reliability. Similarly, Bageis & Fortune (2009) emphasize client financial capacity, project cash flow, capital requirements, strategic alignment, previous client experience, contract conditions, and past project experience. These

cumulative insights provide a comprehensive selecting criteria for contractors assessing tender opportunities.

As described earlier, Leśniak & Plebankiewicz (2015) made a study based on the different factors. The authors ranked the different factors based on interviews with over one hundred contractors, resulting in the data presented in Table 1. Their conclusion from the study was that the factors influencing a bid or no-bid decision varied significantly among different contractors. The choice depended on the characteristics of the individual construction company. However, the top three factors among the contractors included, type of work, experience with similar projects and contract conditions (Leśniak & Plebankiewicz, 2015).

Table 1. Factors on bid no bid decisions. (Leśniak & Plebankiewicz, 2015).

Type of factor	Importance index	Factor Rank
Type of work	85,48	1
Past experience with similar projects	85,01	2
Contract conditions	84,07	3
Owner reputation	75,88	4
Value of the work	75,64	5
Need for work	74,47	6
Current involvement in other projects	73,31	7
Size of the project	70,73	8
Profits from similar past projects	69,56	9
Time of project duration	64,17	10
Criteria of bid selection	62,53	11
Location of the project	60,66	12
Time for the preparation of the bid	55,51	13
Possible subcontractors	55,27	14
Necessity for specialized equipment	50,12	15
Degree of complexity of works	46,37	16

While Shash (1993), Chua & Li (2000), and Bageis & Fortune (2009) argue for a systematic model to assess whether to bid or not, they differ in their approaches on the influencing factors. Leśniak & Plebankiewicz (2015) argue that these factors could also be applied in other settings to make more accurate decisions. However, the factors must be based on the characteristics of the individual company. The argument is also supported by an investigation conducted by Wang et al. (2020), regarding whether bid or no-bid decisions might differ in a downturn market. The previously presented factors are divided into different categories by Wang et al. (2020), and based on answers received from interviews with professionals in the construction market (see Table 1). The first category is called expected profitability, the authors argue that contractors are more concerned with the payment terms in the contracts to receive a steady cashflow during construction to reduce lag time of payments.

The other category that Wang et al. (2020) presents is called organizational goals. The author argues for the importance of considering long-term development goals alongside short-term profitability, particularly during challenging economic periods. The study

suggests that while short-term profitability is important, focusing on long-term development goals can contribute to sustainable growth and competitiveness in the industry. Furthermore, it also notes the importance of adapting organizational goals to market changes and individual firm development, indicating the dynamic nature of the construction industry. Regarding resources, the author argues for the advantage of having experienced staff during a downturn market, the company must be able to utilize their resources in an effective way to be competitive. Furthermore, this also affects the company's confidence in searching for new projects to bid on (Wang et al., 2020).

## 2.2 Tendering Process

The tendering strategy sets the guidelines for which projects to bid on and also determines the prices at which contractors bid, according to Jaśkowski & Czarnigowska (2019). However, the bidding price set by contractors should cover both direct and indirect costs and include a risk-adjusted profit. The authors further explain that the price must be low enough to be regarded as the most attractive among competitors placing bids, especially if the bid is evaluated primarily on price. In Sweden, developers issue a document known as a "request for quote" (RFQ) during the procurement phase. This document is essential for contractors as it contains all the necessary information for them to submit a bid. Included within the RFQ are administrative instructions, drawings, descriptions, and bills of quantities. It is imperative that the RFQ encompasses all relevant documentation required for procurement. This encompasses the scope of the project, its requirements, and instructions on how tenders should be submitted and evaluated (Boverket, 2023a).

When applying for the tender according to the law of public procurement (Sveriges Riksdag, 2016), the contractor has to compete against other contractors who want to acquire the project. This is done on equal terms to ensure that the competitiveness of the tendering process remains fair. According to Byggföretagen (2023), there are certain steps that a contractor needs to be aware of to successfully complete the tendering process. The first step usually involves communication; the contractor needs to ask important questions, such as those about contradictory information in the tender or unreasonable demands. Another key aspect is to involve the right people at the right time. The tendering process is a time-consuming task, and according to Hansen et al. (2017), it usually costs around 5 percent to place a bid in public procurements, with only the winner receiving compensation. Furthermore, it is also important to assess the types of requirements that the tender demands. These requirements can be difficult to manage, according to Byggföretagen (2023) and the same requirements must then be imposed on subcontractors, often necessitating predefined guidelines. The requirements also need to be followed-up with the subcontractors and client to ensure that the demands are fulfilled. Lastly, it is also important to learn from earlier experience of tendering through internal reviews.

There are different types of contracts within the construction industry. In Sweden, design-bid-build and design-build are the most frequently used contracts. Even though there are only two types of standard contracts for construction works, the agreements can vary depending on the degree of collaboration, responsibilities and payment method (Boverket, 2023b). For instance, if a Design-bid-build contract is used instead of a Design-build contract, the main difference is the responsibilities regarding different

activities. The responsibility of the design is assigned to the client if a design-bid-build are used.

A contract is also a way of establishing risk between parties, risk sharing involves various approaches to distributing the uncertainties inherent in a project. Depending on payment method the risks are shared, however in contracts with fixed-price, fixed-price with general indexing, and cost-plus contracts the risk is not shared. While fixed priced contracts puts the risk on the entrepreneur, the cost-plus contracts put the risks on the client. One method of sharing risk is through unit price contracts, which set fixed prices for various types of work, yet allow for variable quantities. In this scenario, price risk is shifted to the contractor, while quantity risk remains with the client. Lastly, there are cost-sharing agreements. These agreements establish an agreed-upon price, with clients bearing a share of cost increases and receiving reductions for cost savings, effectively distributing both price and quantity risks between parties. These methodologies, grounded in the understanding that project costs are contingent on input prices and quantities required, offer flexibility and equitable risk distribution, particularly crucial in complex projects with inherent uncertainties (Borg & Lind, 2014).

### 2.3 Planning phase

A common procedure within the planning phase for a contractor is to manage design. The responsibility for design is more significant for the contractor in a design-build contract and is often managed in cooperation with external consultants. The responsibilities between a design manager and a construction manager also change during the life cycle of a project. This has to do with the fact that the completion of the design often occurs before construction starts (Minchin et al., 2014). Several studies have investigated the correlation between the planning phase and the construction stage. This includes the papers “An overview of constructability: A management tool for architects” by Khan (2015) and “Constructability: outlined of past, present and future research” by Kifokeris & Xenidis (2017). Both papers agree that incorporating construction knowledge at an early stage of design can lower costs and reduce the risk of overshooting the time schedule. Furthermore, possessing the right skills, including construction knowledge, improves the constructability of the design (Khan, 2015).

A key factor within the design for the contractors is Building Information Modelling (BIM), which is a resource that can improve the predictability and performance of the construction phase, according to (Ghaffarianhoseini et al., 2017). Another factor that has been investigated within in a report by Eldeep (2022), showed the possibilities of using BIM together with Lean thinking. Lean thinking refers to the mindset of mitigating waste and create value for the stockholder within the project. By using these two methods, the contractor can make better choices when ordering materials to the site, as well as challenge the client's proposed design. This allows the contractor to identify alternative construction methods that could positively impact the project (Eldeep, 2022). It is also important to have a clear strategy for which materials should be used. It is necessary to look into the supplier selection, described by Borna et al. (2009), as the process of finding the right supplier able to provide the right product with the right price, time and quantity. This process often involves many conflicting criteria which need to be assessed, and decisions are often taken based on knowledge that are imprecise and vague.

BIM is a method that can lead to increased collaboration within the different project teams, but also reduced costs, better time management, improved profitability, and better relationship between the contractor and the client (Ghaffarianhoseini et al., 2017). Moreover, for a contractor BIM usually transforms into a visual management system that are being used during production (Tjell & Bosch-Sijtsema, 2015). The system has been proven effective to achieve a cultural change to work with continuous improvements (Bititci et al., 2016). Furthermore, the authors Tjell & Bosch-Sijtsema (2015) also concludes that the increased collaboration happens due to the nature of the system as it creates a mutual understanding of the design.

The design phase also come with certain difficulties, even though the technology helps a lot during this phase as previously explained by Tjell & Bosch-Sijtsema (2015). A common problem within design-bid-build contracts is when the client provides the contractor with drawings, in some cases the drawings does not reflect the building standard and when the designer does not have any resources or economical flexibility to preform design changes requested by the contractor it can have significant problems for the project (Tzortzopoulos & Cooper, 2007). Economical flexibility usually decreases during an unstable market and needs to be handled by the companies that are operating within the market (Grewal & Tansuhaj, 2001).

For a contractor to properly manage the planning phase, the design manager must possess knowledge of the project needs. It includes economic targets of the company as well as the communication and decision making that needs to take place. Another key factor is the understanding of the two processes, design and production as this knowledge will help the contractor to perform the necessary procurement needed for the construction phase. Finally, the manager needs to be able to handle the cost of the design solution but at the same time control that the design meets the contractual requirements (Tzortzopoulos & Cooper, 2007). Minchin et al. (2014) argues that if the design phase is perfectly executed the construction phase would be free of problems. However, this is never the case since there is a lot of difficult decisions and challenges that occurs. Badly managed design can also cause increased construction costs, rework and time delays through the bidding process if the contractor bids on design-bid-build contract (Tzortzopoulos & Cooper, 2007).

## 2.4 Production

The construction market and the companies within it are mostly operating on a local and volatile market, where the building elements for the “product” often contributes to the volatility (Segerstedt & Olofsson, 2010). A common problem in production during an instable market is the fluctuation of prices which can be solved through different methods, according to a study by Weidman et al. (2011). The first method that is pointed out in the article is to analyse prices early on the project, as it can decrease the risk of price fluctuation on materials and other resources. Another method is to use some type of price adjustments clause in the contract to handle prices affected by inflation. Furthermore, stockpiling materials can also be a way of mitigating risks due to volatile prices, which requires available space on site but also financial resources. Lastly, the author mentions that good communication with different stakeholders can mitigate the risks by creating an understanding of why the risks should be shared among the parties and create a situation that works for everyone.

A way of mitigating the risks for a contraction company is to reduce the inhouse workforce, this is one way to mitigate the risks of a volatile market. However, this strategy requires a strong commitment to sub-contractors which can be handled through the company's supply chain. Supplier selection is the foundation of the cooperation between the links in the supply chains and it is an important process to stay competitive in the market (Liu & Zhang, 2011). Kester (2022) mentions that flexibility and to work in stages is a way of mitigating risks in production. A method that allows flexibility and structured stages is lean construction. Lean can mitigate unnecessary delays caused by the market by replanning and creating buffers in the time schedule. Activities can be planned to fit the current situation without causing too much damage (Büchmann-Slorup, 2014).

In a report from Blanco et al. (2023), the company believes that the construction industry will have better control over critical activities in design and production by opting for more engineered-to-order solutions, which can be assembled on-site. The author argues that this requires a more vertical strategic collaboration or integration with the suppliers by using more collaborative contracts. Furthermore, this process requires that the more digital tools are used in the beginning of every project, which can allow construction companies to make better decisions early while improving the supply and value chain in projects. The final belief is that this control will reduce friction and make the projects more agile (Blanco et al., 2023).

To deliver increasing customer satisfaction, while decreasing production time and costs during uncertain conditions, agile methods have been proven successful. The characteristics of agile methods consists of a frequent development together with stakeholders as well as lean methods and flexibility (Ribeiro & Fernandes, 2010). The authors further explain how to implement agile methods in a medium sized company. An effective implementation of agile methods requires a clear understanding of agile values for the firm, along with identifying key enablers and barriers. Medium enterprises must assess critical capabilities for sustaining competitive advantages, align agile values with objectives, and foster simpler, more flexible organizational structures. This includes forming small, multidisciplinary project teams comprising skilled, empowered, and motivated individuals, encouraging frequent meetings, promoting knowledge sharing, and implementing continual training schemes. Collaboration with clients from the beginning of the project, enhanced collaboration with suppliers, and establishing trusted relations are vital. Additionally, alliances with value-added partners and combining traditional and lean project scheduling techniques are beneficial. Leveraging information and communication technology for collaborative teamwork, sharing corporate knowledge, and ensuring smooth project documentation flow are essential components for successful agile implementation.

### 3. Theoretical Framework

This chapter delves into the various definitions and perspectives of dynamic capabilities, emphasizing the importance in adapting to changing environments and achieving competitive advantage. The chapter outlines the foundational concept of ordinary capabilities, including sensing, seizing, and transforming capabilities. Additionally, it highlights the critical roles of resources, strategies, and competencies in leveraging these capabilities for sustained business success.

#### 3.1 Dynamic Capabilities

The theory of dynamic capabilities, developed by Teece, Pisano, and Shuen in 1990, has been extensively analysed and evaluated from various perspectives over time (Arend, 2023; Eisenhardt & Martin, 2000; Helfat et al., 2009; Teece, 2018; Winter, 2003; Zollo & Winter, 2002). Given the various perspectives on the term, different definitions have been formulated. Many of the definitions consider dynamic capabilities specifically to the context of a changing environment, while some of the definitions have a more focused perspective on effectiveness and competitive advantage. While many are sceptical to the value and practical applications of dynamic capabilities, some believe that it is a major factor to handle a changing environment and achieving competitive advantage (Adam & Lindahl, 2017; Winter, 2003).

Before delving into an extensive theoretical review of dynamic capabilities, it is deemed important to first examine the foundational concept of ordinary capabilities. Ordinary capabilities discussed by Winter (2003), and Organisational capabilities discussed by George & Kerai (2024), are both mentioned as capabilities as that allows companies to “make a living”. These capabilities are considered to help with performing primary company activities and have a rather short-term focus (George & Kerai, 2024; Winter, 2003). When excluding the perspective of the dynamism, Teece (2018, p. 363) mention that “capabilities determine what the firm is able to do and how effectively it can make changes”. Dynamic capabilities, on the other hand, is originally defined as “the firm’s ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments” (Teece et al., 1997, p. 516). In combination with another well-cited definition by Winter (2003), dynamic capabilities can be seen as an extension of ordinary capabilities where the capabilities are put into the context of rapidly changing environments (Teece et al., 1997; Winter, 2003).

Certain dynamic capabilities have also been identified by Zollo & Winter (2002), in their paper “Deliberate Learning and the Evolution of Dynamic Capabilities”. The authors investigated the concept at a more general level, examining companies operating in various environments. According to the study, the first capability identified is financial capability, with companies strategically investing to secure long-term market positions. Another capability identified by the authors is company reputation, which they argue can provide long-term competitive advantages based on its strength.

##### 3.1.1 Dynamic Capabilities Framework

The theory of dynamic capabilities and its framework emphasizes how firms create and secure wealth during rapid environmental changes. It identifies a firm’s competitive edge as rooted in unique organizational processes and the strategic assembly of assets.

The framework considers how a firm’s historical and strategic choices influence adaptability and success in dynamic markets (Teece et al., 1997). Adaptability and success in dynamic markets greatly depend on the ability to respond rapidly and effectively to threats and opportunities in the market (Teece, 2018).

The foundation of the dynamic capabilities framework consists of a layered hierarchy of capabilities that serves as a nested system of elements and activities. The structure’s basis is formed by what are referred to as ordinary capabilities. These are the essential operational processes that include employee deployment, facilities, and equipment to fulfil the firm’s everyday business activities, striving towards achieving best-practice operational efficiency (Teece, 2018). Progressing from this base layer are the “micro-foundations”, the lower-level dynamic capabilities (Teece, 2007). These are essential dynamic capabilities and includes specialised processes vital for creating external partnerships or innovating new product offerings. The higher-level dynamic capabilities include strategic activities and assessments devised to adapt and realign the company capabilities and resources in response to changes in the external environment (Teece, 2018).

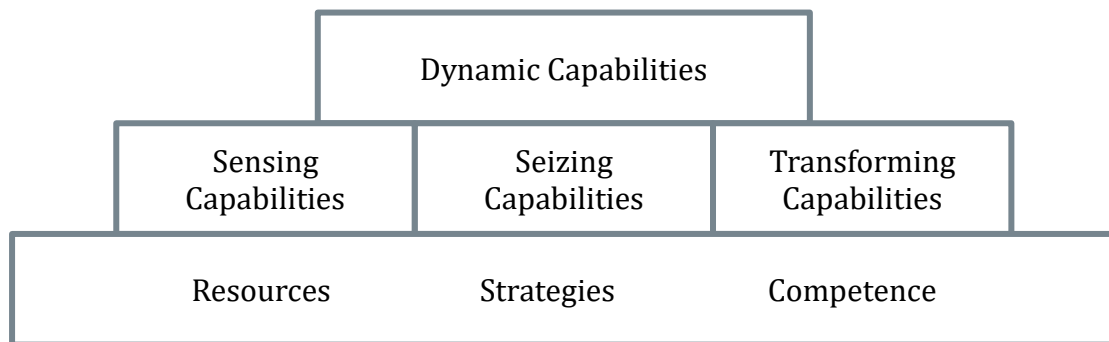


Figure 3. Key factors of the dynamic capabilities framework, (Teece, 2018).

The higher level of dynamic capabilities is clustered into three distinct areas, each considering factors like resources and competitiveness in different ways, as illustrated in Figure 3. These areas are sensing, seizing, and transforming (Teece, 2018). The combination of capabilities, resources, strategies, and competence forms a coordinated system that is crucial for determining a firm’s competitiveness. The synergy between these ensures that the organization’s internal strengths are effectively leveraged in response to the external environment, thereby enhancing the competitive potential (Teece, 2018).

### 3.1.2 Sensing Capabilities

According to Schoemaker et al. (2018), sensing capabilities refer to a company's approach of identifying opportunities, which is especially crucial during an unstable market. A company's proficiency in recognizing both internal and external opportunities and threats rely on its processes, such as scanning the environment, generating insights, and engaging in learning and interpretation processes (Teece, 2007).

The organisation’s sensing capabilities emphasize understanding the environment, focusing on scanning for and learning about external factors. Companies must form perceptions and test hypotheses regarding consumer demands, potential technological

advancements, and other factors that could impact the firm's future. Managers can utilize data from both external and internal sources to identify priorities and opportunities. Furthermore, Sensing capabilities can be crucial when utilizing seizing activities, as it ensures that the firms are responsive to external changes (Teece, 2018).

### 3.1.3 Seizing Capabilities

Seizing capabilities refers to the ability of a system to quickly act upon recognized and significant opportunities and threats. This includes investing in new technologies, developing new products, and reconfiguring the firm's asset structure through strategic decisions (Teece, 2018). Teece (2014) mentions that seizing needs to be interlinked with the strategy and guiding policy in order to create coherent actions.

By mapping value offers and business operations, a company can ensure that it has a clear understanding of both what it offers to its customers and how it operates as a business. To form a change process, it is considered essential to concentrate on activities like fostering loyalty and commitment through communication and effective leadership, cultivating a strong company culture to ensure the organization embraces the change. Once the change process is agreed upon, companies need to facilitate the change. This step may involve activities such as optimizing resource use, managing bottlenecks, and streamlining decision-making processes to prevent errors and inappropriate actions (Teece, 2007).

### 3.1.4 Transforming Capabilities

Transforming capabilities focuses on ensuring that systems remain aligned with each other and with the overall strategy. Transforming capabilities play a crucial role during the implementation of a business model that interferes with or conflicts with an existing model, maintaining a stable foundation that supports flexibility and development. The possession of transforming capabilities is considered crucial during external environment changes and unstable markets (Teece, 2018).

Furthermore, Teece (2007) mentions that transforming capabilities involves certain activities. These include fostering the firm's open innovation processes, developing skills in integration, communication, and coordination, and adapting the firm's strategy to better align with a changing environment. This strategic alignment, known as "cospecialization", showcases the capacity to integrate internal and external skills, thereby creating and enhancing value (Teece, 2007).

### 3.1.5 Resources

A crucial concept within the dynamic capability framework are resources, or more precise, firm-specific assets, characterised by their challenging or often impossible imitation. These include trade secrets, specialised production facilities, and engineering expertise. These assets are notably hard to exchange between firms due to transaction and transfer costs and because of the possible tacit knowledge within these assets (Teece et al., 1997).

The most important resource, according to Teece (2015), is VRIN resources. VRIN stands for "valuable, rare, imperfectly imitable, and non-substitutable". This type of resource is often intangible, which is something that brings value to a company but at

the same time do not take a physical form, it is a part of the company's intellectual property (Egan, 2023). Teece (2015) argues that a company is often not aware of its intangible resources even though it contributes to the company's competitive advantage. Furthermore, a reason for this is that an intangible resource does not appear in the financial statement and is often hard to calculate. However, an intangible asset or intellectual property can be added to the company through investments in learning activities and is often a part of the research and development in a company (Teece, 2015).

It is important to know that an intangible asset cannot generate value alone, it must be combined with other physical and intangible resources to create value for the customer, according to Teece (2015). These assets must also be managed in a way that creates the most value and appropriability. Furthermore, to reach long-term profitability, management must develop and create new tangible and intangible resources. For a resource to maintain VRIN status, a continual renewal is necessary. This necessity for renewal is particularly crucial in rapidly evolving environments like those found in high-tech industries. Nevertheless, the requirement for resource renewal also applies to "low-tech" sectors. The utilization of resources, and consequently the value they produce are unpredictable, meaning that it can be hard to differentiate the capabilities of the firm. However, it is beneficial to differentiate and understand the difference between ordinary and dynamic capabilities in this context (Teece, 2015).

It is argued that the success and sustainability of a business extend beyond merely navigating market shortcomings. It involves both establishing and applying VRIN resources and orchestrating complementary elements to facilitate superior fulfilment of market demands, often in ways challenging for competitors to replicate. This is especially crucial in today's partially globalized economy. A company capable of applying effective strategies and robust dynamic capabilities to intangible assets is more likely to attain long-lasting competitive advantages Teece (2015).

### 3.1.6 Strategies

Strategy, a highly valuable concept for organisations and encompasses various interpretations. In the paper by Athapaththu (2016), several definitions of strategy by different scholars are examined, culminating in the proposal of a new definition: "A strategy is a plan of actions used to formulate goals, objectives, and means of achieving them" (Athapaththu, 2016, p. 127). The author emphasizes the crucial alignment of strategy with processes, resources, and capabilities. Successful strategy development entails deploying a firm's assets to meet market needs, gain advantage over rivals, and capitalize on market and technological opportunities, while also acknowledging any constraints imposed by the firm's historical evolution. In essence, effective managerial orchestration, crucial for enhancing processes and leveraging positions, must be guided by strategy and vice versa. Strategy necessitates consistency, coherence, and a willingness to embrace innovation. Although influenced by the past, strategy shapes the future trajectory, determining product choices, target customers, resource deployment, optimal timing, and competitive positioning strategies.

The dynamic capabilities framework emphasizes the critical roles of resources and strategies in an organization. Mastering this framework includes challenges, particularly because it resists straightforward guidelines and simple formulas.

Nevertheless, achieving a profound understanding of the dynamic capability framework can equip individuals with a robust analytical tool. This foundation enables a comprehensive examination of the complex business environment, thereby informing a strengthening decision-making processes (Teece, 2018).

### 3.1.7 Competence

Organizational competences can be described as a firm's unique assets systematically organized into comprehensive networks that include various individuals and teams, enabling the execution of specific activities. These activities are considered to form the organization's routines and processes, including but not limited to enhancing quality, miniaturization, and integrating systems. These competences are generally applicable across a range of product lines and can also be extended beyond the boundaries of the firm to include collaborative partnerships (Teece et al., 1997). Core competencies are identified as essential skills that support a firm's primary business activities. Determining these core competencies requires examination of the products and services offered by the firm and its rivals. The significance of core competencies can be amplified when they are integrated with suitable complementary assets. The uniqueness of a core competence depends on the firm's proficiency and the challenges for competitors to duplicate these competencies (Teece et al., 1997).

In their article on the dynamic capabilities of firms, Teece & Pisano (2003) underscore that businesses comprise diverse and complex assets and competencies, often referred to as resources. According to this perspective, competitive advantage can stem from possessing rare, relevant, and challenging-to-copy assets, particularly specialized knowledge. However, in dynamic business landscapes characterized by global competition and innovation diffusion, sustaining advantage requires more than just owning hard-to-replicate knowledge assets; it demands unique and hard-to-reproduce dynamic capabilities. Successful players in the global market demonstrate timely responsiveness, swift and adaptable product innovation, and adapt coordination and utilization of internal and external competencies. Consequently, competencies and capabilities pose a challenge as they typically necessitate construction rather than acquisition, according to the authors (Teece & Pisano, 2003).

## 3.2 Dynamic capabilities in the Construction Sector

There have been few studies analysing the dynamic capabilities of the construction sector. Choi et al., (2018) applied the theory to a project-based organization within the construction industry, aiming to identify operational strategies that companies within the study possess to handle market instability. Some strategies identified by Choi et al. (2018), include diversification on various levels. Additionally, the authors claim that future project-based organizations will be evaluated based on how well they tap into new markets. The article also suggests that diversification will play a key role in determining a company's success.

In the article "Analysis of Theoretical Viewpoints Explaining the Performance Differentials of Construction Firms," Wahid et al. (2024) suggest that organisations exhibiting dynamic capabilities within the construction industry may experience a positive impact on performance. For instance, their study revealed that embracing

dynamic capabilities enables firms to adapt to a changing environment better and potentially exploit associated opportunities.

In an article by Adam & Lindahl (2017), the authors highlight the difficulty of using the dynamic capability concept because of key concepts in the framework lack clear definitions such as competences and resources. However, in a study by Davies et al., (2016) the authors examined the development and adoption of dynamic capabilities in managing large complex projects, such as the Heathrow Terminal 5 project. They suggest that the dynamic capabilities concept can provide insight into how organizations develop their strategic organizational processes to handle uncertainties inherent in large and complex projects.

## 4. Methodology

This chapter presents the methodology used in this research, describing the methods, processes and techniques employed to gather and analyse data. It begins with a discussion of the research design, emphasizing the qualitative approach. The chapter also details the methods of data collection, which involved conducting semi-structured interviews with key personnel to obtain in-depth insights into the company's processes and strategies.

### 4.1 Initiating the Research

Before any research was conducted, it was determined that the most suitable approach for this study was to collaborate with a company that one of us had previously worked with. Together with one of the managers at the company, an approach to investigate how the company handles the unstable market was planned. After the approach was decided, the theoretical research started. It was determined that the dynamic capabilities framework was well-suited to the approach, enabling us to answer the research questions.

Each of the company's projects covered one or more of the identified stages presented in the background literature, which provided a rich and comprehensive tapestry of data for the research. Some stages in a construction project are more complex than others, while some are relatively simple and short. Each stage has specific characteristics and can be affected by various factors. It was considered that some management changes might have been interlinked and transferred between different stages in the project cycle. Therefore, analyses were crafted thoroughly to reflect realistic management scenarios and challenges faced in actual and continuous projects.

Since the company operates on a project-based framework, it was discussed how to handle projects potential to span years. It seemed impractical to study a single project since the stages are continuous, each stage cannot be performed properly if the earlier stage is not completed. Therefore, the approach was aimed to study different stages from different projects. Even though this seemed practical, each construction project is unique and can never be precisely replicated. Since the dilemma to study different projects' stages as a continuous process, comparison and analyse between different projects was performed with caution. Recognizing the limitations imposed by time, the study is devised into a method to study the company's processes comprehensively.

### 4.2 Research Design

The research is based on a qualitative study with the purpose of receiving nuanced information from the different departments of the company. A qualitative study is a research method that explores people's experiences, behaviours, and interactions through non-numerical data like interviews and observations. It aims to understand deeper meanings and patterns in a specific context. Qualitative studies can have a variety of different approaches, where the methods should be appropriate to the aim of the research (Bryman, 2016).

A qualitative study can have a deductive approach, which we perceived as suitable for this research. Deductive research is a methodical approach that begins with a general theory or hypothesis and narrows down to specific conclusions (Bryman & Bell, 2017).

It starts with a broad theoretical framework, from which hypotheses are developed and tested through structured experiments or observations. By systematically collecting and analysing data, deductive research aims to confirm the applicability of a theory in specific contexts, providing clear, generalizable results.

This research was carried out through a literature study and a predetermined theory. The theory of dynamic capabilities enabled the possibility of analysing how well the external environment was being handled and gave insights on how similar construction companies can adopt strategies to manage the unstable market. Literature in the study was mainly gathered from Google scholar, Chalmers Library and its Database, Scopus, Google and Research Rabbit.

By investigating the company's different project stages, the research highlighted dynamic capabilities at different stages, rather than focusing solely on the company's overall dynamic capabilities. The method of studying the different stages comprehensively gave a clear view of challenges and opportunities connected to a specific phase of the project cycle. By performing an analysis using the theoretical perspectives, critical factors for managing the unstable market were identified.

### 4.3 Interview Study

The study involved interviewing individuals within the company who have been involved in different stages of the project-based framework. Additionally, interviews with top management were conducted to identify and analyse interdependencies between project stages. A semi-structured approach was used for these interviews, providing a robust and multi-faceted view of the company's processes. The semi structured interviews made it possible to gather further knowledge since the interviewee's experience and own reflections were in focus, which also is encouraged by Bryman & Bell (2014). The most advantageous about collecting data through interviews was the flexibility and the possibility of getting a more nuanced answer from the respondent. At the same time, having interviews as a main source of results can be time consuming (Bell, 2006).

Table 2. Table of interviewees.

Interviewee	Role	Project stages
Respondent 1	Site Manager	Production
Respondent 2	Site Manager	Planning phase & Production
Respondent 3	CEO	Selection of Projects
Respondent 4	Construction Engineer	Planning phase
Respondent 5	Calculating Engineer	Tendering process
Respondent 6	Calculating Engineer	Tendering process
Respondent 7	Project Manager	Selection of Projects & Tendering process
Respondent 8	Business Manager	Selection of Projects & Tendering stage
Respondent 9	Site Manager	Planning phase & Production
Respondent 10	Project Manager	Tendering process & Planning phase

The interviewees were chosen based on their experience and competence in the researched area. Several respondents had experience in multiple project stages, which meant that their answers sometimes related to various stages, as presented in Table 2. Because of the comprehensive nature of the responses, it was deemed suitable to keep departments and responsibilities confidential. Moreover, as the organization is relatively small, it seemed appropriate to identify the interviewees by numbers to maintain anonymity.

The interviews were performed at the company office and were recorded with permission of the interviewee. By recording most of the interviews, it was possible to pay full attention to the interview and ask relevant follow up questions (Bell, 2006). The benefit of recording the interviews were that the analysis became more thorough and focused on what the interviewees actually said (Bryman & Bell, 2017). Bryman (2017) mentions that the mind and the human memory is naturally limited to be able to remember an interview such as conducted in this study. The recording therefore made it possible to verify notes and perceptions from the researchers. Although, the most advantageous factor with recording the interviews was the possibility to code and categorise the results afterwards.

#### 4.4 Data Analysis

We continuously divided data into sub-themes and categorised information. Gathering large amounts of data suggests continuous coding and reflections (Creswell, 2008). The study followed Creswell's (2008) suggestion of qualitative research, where the coding and categorisation were extensive processes. A thematic analysis was conducted in a

deductive manner, which is also called a theoretical thematic analysis (Bryman & Bell, 2014). This method guided the study from a top-down perspective using already established theories from previous studies. The data from the interviews were categorized and developed into clearer themes that were interpreted for the case. Final advancements with the data gathering and analysis brought the study to a possibility of achieving findings.

### Coding structure

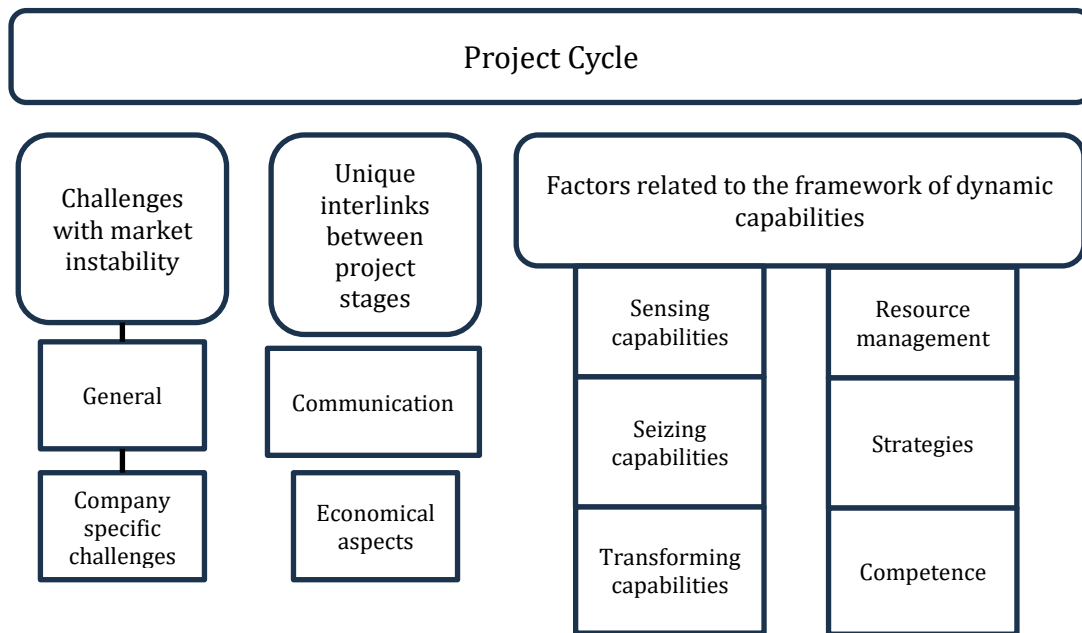


Figure 4. Illustration of coding structure.

The coding presented challenges, best practices, and chosen strategies to manage the unstable market within the construction process. Furthermore, the coding was done in different stages, as presented in Figure 4. The first step was to divide the codes into the different project stages. The second step involved sorting information based on how the company is affected by the unstable market and how the different project stages interlink during an unstable market. The third step consisted of creating themes related to the dynamic capabilities framework. The fourth step included coding of how dynamic capabilities are identified in the different project stages. Lastly, an analysis was performed to demonstrate how a medium-sized construction company can utilize dynamic capabilities to manage market instability.

### 4.5 Ethics

All research activities were conducted in accordance with ethical standards. This included ensuring anonymity for the company’s employees. From an ethical perspective, the researchers felt a responsibility to ensure that the study is based on accurate and reliable references. The researchers in this study will therefore avoid biased or unverified sources and be aware of any preconceived expressions that may affect the interpretation of the study's information. By maintaining strict source criticism, we can contribute to the credibility of academia and avoid spreading incorrect or misleading information.

To maintain academic integrity, the study stuck to principles such as honesty, fairness, and responsibility. During the study, plagiarism was avoided by not presenting others' ideas as this study's own ideas. Additionally, the authors will accurately cite and refer to other works. During the data collection, there was no falsification or distortion of data. By upholding academic integrity, the study aims to contribute to increased trust and respect within the academic community.

One ethical dilemma is that one of the researchers in this study has been working at Company X and is familiar with many of the company's employees. When interviews were conducted with these people, answers and expressions might have been of private character, which could have affected the interviewees. The finished text was shared with the interviewees to ensure that no harmful information was shared through the report. Furthermore, every participant was asked to give their compliance to allow the research to be published. An agreement was also made if the study would handle information that was confidential for the company. Interview questions were not presented beforehand; however, the interviewees were provided with the aim and purpose of the study.

The study informed the interviewees that their participation was voluntary and that they could withdraw from the study at any time. When an interviewee decided not to answer a question or to withdraw from the interview, no negative consequences occurred. Personal data was and will be treated with respect for the interviewed individual and was not presented in the results. Furthermore, additional sensitive information was avoided as it was not considered relevant to the study. The interviewees were informed of these terms before participating in the study. In conclusion, the participants were fully introduced to the aim and implications of the research. Considerations will be taken if the results of this study are harmful to any participant or if there is an invasion of privacy in any way.

#### 4.6 Use of AI and Digital Tools

Before the study began, the researchers discussed the topic of tools and programs that could be helpful to perform the study. The most desired tool was a tool that could help us translate, correct spelling, and structure sentences. There were countless amounts of tools and programs that could help with this, but since the researchers had previous knowledge about using *Chat GPT*, this tool seemed most suiting. The tool was used through a prompt that helped the researchers to refine a self-written text to increase clarity and grammatical precision. The prompt used was "Is this text correct and well structured?", which gave suggestions of alternative words and adjustment of sentences. The content and sense of the original texts were always the same after the AI utilization but had grammatical corrections.

A tool that was recommended for this study was a tool able to recommend articles and papers related to one another. The digital tool used for this was *Research Rabbit* which have been used frequently during the research. This tool helped the researchers find original data, alternative perspectives, and reliable references. To gather and organise all of the used references, this study used another reference tool called *Zotero*. This tool was used to organise papers, articles, collections, and citations of research materials. The possibility to organize references using collections and tags helped in keeping the research material well-structured and easily retrievable. The program helped maintain

clarity and structure in the research process, ensuring that all references were accurate and organized. The integration of digital tools like Zotero and Research Rabbit has significantly improved research efficiency, particularly in managing references.

#### 4.7 Reflections about the chosen Methodology

This study was conducted using a deductive approach, as mentioned in Chapter 4.2, and it has proven successful in many ways. Firstly, the literature can be analysed and compared with the respondents' answers from the interview study. The literature review has a more general approach, while the respondents often refer to practical examples. Furthermore, employing the deductive research methodology proved advantageous as it allowed the interviews to align with theoretical frameworks, facilitating the adaptability of interview questions as theories evolved. Concurrently, the theoretical framework could evolve in response to insights gained from the interviews.

An improvement to the study could have been to conduct more interviews. More respondents could have broadened the perspective on how to handle the unstable market in the construction industry. The reason why no additional interviews were conducted was partially due to time constraints and the availability of respondents at the company on which this study is based. The authors could also have investigated several companies to obtain a more comprehensive overview of the construction industry's approach to handling the unstable market.

The researchers believe that the respondents have been trustworthy, as many of the interviewee's answers have aligned with the literature or with each other. However, the authors are aware that a qualitative study is perceived as a subjective method, which means that the interviews have the potential of being biased. It could be proven hard to analyse the result based on the answered received from a qualitative interview according to (Bell, 2006).

As mentioned in Chapter 3.2, the dynamic capability framework can be hard to interpret and compare since it lacks a clear definition, mentioned by (Adam & Lindahl, 2017). Regarding the overall literature, the authors have selected literature that is not from Sweden, and the companies in the literature does not always mirror the company collaborating in this study. Therefore, careful considerations were taken when selecting literatures.

## 5. Results

This chapter presents the results and analysis of how Company X manages project stages in an unstable market. It examines the dynamic capabilities – sensing, seizing, and transforming – that the company employs to navigate market volatility. The chapter highlights specific strategies and practises used during different project stages.

### 5.1 Selection of Projects

During the current market instability, the industry is becoming increasingly competitive, according to Respondent 3. As project segments like real estate face difficulties with higher interest rates, many construction companies are becoming more flexible and seeking projects unaffected by the current market conditions. Company X is primarily looking for projects such as schools, stadiums, and hospitals, which are introduced to the market by public clients. These types of projects are not as affected by the unstable market and continue during the market recession.

In addition to Respondent 3, Respondent 8 mentions that the company is still looking for other projects, which they call “complex projects”. According to the company, complex projects are seen as opportunities to challenge employees and help them develop through knowledge and experience. However, according to Respondent 7, such projects are uncommon in today’s market, and when they do become available, the company faces difficulties in winning bids. Given the current market conditions, the focus is on winning all the projects the company bids on. Therefore, the company's project selection focuses on areas where they have previous knowledge and competitive expertise.

The company’s strategy is, explained by Respondent 5, to mainly focus on building schools, which is particularly suitable for the current market situation. The interviewee explained that the instability in the industry has not caused the company to make drastic changes due to its strategy of competing in a relatively stable market segment. Respondent 5 states that successful companies often limit themselves to specific types of projects because a single company cannot excel at producing all types of projects. While maintaining a restricted product portfolio, Respondent 5 mentioned that it is still important to challenge and develop the company by taking on unique kinds of projects.

For the projects we do have experience with, we can better estimate risks and opportunities. I don't mean to say that we don't calculate for projects we label as “complex,” but schools are easier for us to make financially viable, and it's natural that we have more of these projects at the moment. Our bidding accuracy is higher for schools and public buildings (Respondent 7).

The strategy must be clear before selecting a project, according to Respondent 3. The interviewee explained that this clarity allows the company to allocate the appropriate resources with the right competencies to the right project. The strategy for selecting projects also considers variables such as contract type, client reputation, and the available organization during both the tendering and production phases. If these criteria align with the company’s strategy, the company can initiate the tendering process.

Competencies and strategies are obviously important, but the strategy is developed from the competencies we possess. In a project selection strategy, competence is the most important aspect. It's often competencies that determine which projects one takes on. If a certain competence is tied to a project, it can affect which new projects the company considers (Respondent 7).

All three interviewees involved in this project stage identified specific factors they believed contributed to the company's success. One key factor on which the interviewees agreed was their focus on searching for projects in which the company has prior knowledge. The strategy of focusing on schools and public clients to gain experience in this market has made the company competitive in the tendering process. Respondent 8 mentioned that focusing on schools and hospital projects has been a long-standing strategy. Supporting this, Respondent 3 views these project types as less affected by the unstable market. Respondent 7 explains that, unlike other companies, the company has not been forced to change its project selection strategies. The company's strategy is described as stable and suitable for the current market. Respondent 7 concludes that the strategy for selecting projects remains largely the same in both unstable and stable markets, making it appropriate for various market conditions.

We have been quick to adjust ourselves to the market; there are still many competitors who have not adapted to the current market situation. It really comes down to what level one positions oneself at and how much one dares to press prices, which can be extremely difficult to determine what the right level is. (Respondent 7).

Even though the market is unstable, it is important to not just take a project in the belief of not making money, you must always plan with the intention of making money, explains Respondent 3. Furthermore, Respondent 3 suggests bidding on projects with the potential of having more work than the company can handle. This strategy provides flexibility when projects are delayed or paused for various reasons, ensuring a steady flow of work. A way to find more projects during an unstable market, according to Respondent 7, is to broaden the area in which you search for projects. However, when selecting a project outside the usual business area, it is important to prioritize projects that align with the company's strategy.

The biggest difference lies in the outflow of projects; with the stagnation in residential project outflow, it creates higher competition in our type of projects. Many choose to take on projects just to generate revenue, putting profitability aside. However, we do not operate in that manner; we always aim to make money and be profitable on the projects we choose to bid on (Respondent 8).

When operating in an unstable market, it is important to have a long-term perspective. By having goals that reaches far ahead, the company can become more robust as the market becomes stable, says Respondent 8. However, there are some problems that you need to solve in the day-to-day business. One of those problems is explained to be the

fluctuation of prices regarding material and labour. “Sometimes it feels like it is impossible to predict prices”, says Respondent 8. Furthermore, another affective way to minimize your costs as a construction company is to have fewer blue collars in the organization, according to Respondent 3. This saves you a lot of stress by not having to occupy as many employees in the organisation. However, this strategy is explained to require the use of sub-contractors. When the company use sub-contractors in an unstable market, it is important to handle the risks of bankruptcies.

## 5.2 Tendering Process

A key business strategy in Company X involves meticulous attention to the tendering phase, investing more time and effort in tendering compared to competitors, according to Respondent 1. The interviewee also mention that this approach aims to optimize costs and uncover opportunities within projects. A careful tendering process is maintained, with substantial resources allocated to it. This practice is explained to persist even in more stable market conditions.

The tendering process is managed through continuous meetings and thorough cost calculations. Respondent 5 describes the company’s tendering process as robust and solid, with generally high chance of success. The interviewee explains that other companies tend to bid on a large number of projects and succeed in winning a few of them. Instead of bidding on multiple projects, Company X calculate fewer projects with higher accuracy and a higher chance of winning the projects. Employees mainly situated with tendering calculations sees great opportunities with calculating fewer projects more thorough. This strategy involves in depth cost analysis and gives more possibilities to adjust and lower prices, which is of great importance when the competition is higher.

The unstable industry that currently prevails can be compared to the crisis of the 90s according to Respondent 5. The financial crisis of the 90s is perceived as the last time the industry became unstable. Even though if these situations have many similarities, it was explained that the current instability has a lot of unique challenges. Many of the previous crises that have existed have not been as prolonged as this instability has been and likely will continue to be.

In today's market, competition has intensified. A significant portion of the industry, which previously concentrated on constructing residential properties, has shifted its focus to bidding on and competing for projects such as schools and other public buildings. This shift has resulted in fewer projects available to us and an increase in the number of competitors in the bidding process (Respondent 5).

The tough competition in the public sector is explained by Respondent 5 as the result of the market’s recession. Even though the market recession and the high competition, both Respondent 5 and Respondent 6 explain that the strategy in the tendering process is unchanged. Both interviewees explain that tendering strategies during a recession do not differ significantly from those in a boom. However, one aspect that may vary slightly is how the department conduct purchasing assessments. Respondent 5 explained that prices and offers from suppliers and subcontractors are less reliable in

the current market. Unstable times result in uncertain and fluctuating purchase prices, making it crucial to maintain an overall perspective of costs. To achieve this comprehensive view, the company often involve employees from the production phase.

Respondent 8 mentioned that the strategy during an unstable market also includes thorough considerations of operating and overhead costs. Respondent 8 explains that the unstable market has made minimize these costs increasingly important in order to achieve project profits. According to Respondent 8, a crucial step to achieving profit is to meticulously calculate potential purchasing profits and ensure that the company possesses the competence to realize these opportunities. Potential purchasing profits for the company usually include alternative building materials or methods.

Even though it is important to have suiting strategies in the tendering process, Respondent 6 expressed that it is of great importance to possess high competence. One of the most important factors during tendering calculations is to perform solid interpretations. The ability to perform good interpretations usually exist if the company possess high competence. Solid interpretations can be crucial to winning a project bidding.

### 5.3 Planning Phase

It is sometimes more important to search for improvements and alternative building methods during the design phase than during the tendering stage, according to Respondent 8. The respondent elaborates further on the topic and says that “There are often alternative solutions that have not been discovered during the tendering stage, allowing for further improvements that benefit the company’s cost savings and profits” (Respondent 8). However, the design process can be challenging; sometimes the company needs to work closely with architects to ensure that a common understanding of the desired solutions. “It is of great importance to manage communication and collaboration when planning for alternative solutions. Otherwise, there’s a high risk of missing opportunities to save costs, which are vital in an unstable market” (Respondent 8). Both Respondent 8 and Respondent 2 explain that the design process itself does not differ much between an unstable and stable market; however, the major difference lies in the pressure of being profitable, which increase the overall pressure on the projects. It was explained that the heightened awareness of pricing, supply, and demand for materials is also a result of the instability.

When the pandemic first struck, it was advantageous to make purchases while prices were low. However, as the situation evolved, everything changed dramatically. Although we tried to anticipate the market turnaround, it was very challenging to manage the market. The pandemic has forced us to plan thorough and adapt our strategies. This period has truly underscored the dramatic shifts in market dynamics (Respondent 2).

During the unstable market, Respondent 2 explains that material prices have been hard to predict. This challenge has made it increasingly harder to find alternative construction materials to save costs. But also, the time it takes for material to be delivered forces one to have a clear strategy of purchases, according to Respondent 2. The respondent also discussed the problem with starting the design phase early. The

risk with starting early has to do with the involvement of production staff in the design. When you do not have expertise of production in the design stage, it will cause problem later in production which is a risk in an unstable market.

It's difficult to pinpoint individual aspects affected by the volatile market for design phase since much is interconnected with the bidding phase. During unstable times, one needs to think a bit differently, starting from the bidding phase but also during the planning phase. It's important to focus on alternative construction materials depending on how the market evolves (Respondent 2).

Competence becomes paramount during periods of market instability, a viewpoint shared by Respondent 4 and Respondent 2. Both interviewees emphasize that competence is essential for successfully executing projects, especially in turbulent market conditions. Respondent 4 and Respondent 2 further highlight the necessity of adaptability during the design phase to navigate market fluctuations and achieve profitability. They note that changes in material prices and availability necessitate adjustments during the design process. Respondent 4 underscores the critical importance of addressing these challenges during the design phase, as they directly impact subsequent production stages.

The biggest challenges I experience are finances and scheduling. These constraints transfer across all issues and project stages, this situation needs to be handled through competence and experience in order to solve during the design phase (Respondent 4).

One way to reduce risk in the design phase is through knowledge and previous experience with the structure that you build, says Respondent 2. By having that experience you have an easier time to identify risks but also how to handle them. Another strength that Respondent 4 elaborates on is the company's short pathways of communication, by having an open and helpful organisation in an unstable market will higher competence among the staff. Additionally, both Respondent 4 and Respondent 8 stress the significance of a success-oriented mindset within the company. They underscore the importance of enjoying problem-solving and embracing competition. Respondent 8 emphasizes that complacency is detrimental; instead, individuals should feel motivated when challenges arise, viewing them as opportunities for growth and improvement.

## 5.4 Production

The volatile nature of the industry has presented several challenges during the production phase, as noted by Respondent 9. Respondent 1 highlighted that the instability today originated from the pandemic. The combination of the pandemic and the conflict between Russia and Ukraine has exacerbated supply chain complexities, posing significant challenges in procurement, transportation, and overall logistics, as Respondent 5 pointed out. Consequently, companies in today's market have recognized the imperative need for comprehensive preparedness, given the critical nature of supply issues. Many have undertaken thorough reviews of their supply chains and have

adjusted their processes to allow for slightly more margin in deliveries. Respondent 5 emphasizes the realization of the system's vulnerability, prompting necessary adjustments and improvements to the production process.

During the pandemic, the industry complications primarily affected the production phase of construction projects. The competition wasn't extreme, and prices were rather stable. Although, today's challenges are more related to an ordinary recession with high competition and higher impact on the tendering stage. It feels like the different project phases have taken turns handling the market instability (Respondent 5).

Given the current market instability, there's been a shift in tasks within the company, with many production site employees now focusing on office-based tasks like tendering calculations and project planning. Respondent 9 reports that the majority of employees are versatile enough to contribute to various stages of the project cycle, a trait perceived as a competitive advantage. Respondent 3 further emphasizes this point, stating that employees are expected to handle diverse responsibilities, ranging from practical tasks to administrative duties.

The current market situation has according to Respondent 1, affected the economic margins on projects, which in turn, is affecting the production phase. Heightened price pressures and reduced margins underscore the importance of identifying cost savings and maximizing purchasing profits. Respondent 1 elaborates that effective management of cost savings and procurement gains stems from thorough coordination across various project stages. He emphasizes that efficient execution across all phases is contingent upon robust knowledge transfer. Respondent 1 emphasizes the company's comprehensive understanding of both the opportunities and risks associated with each project.

Given the company's relatively small size, Respondent 1 explains that the company possesses a distinct advantage in its flexibility and ability to adapt swiftly to market changes compared to larger competitors. He elaborates that although the company undertakes large projects, it operates with a lean structure, primarily focused on management rather than maintaining a large in-house staff. This streamlined approach minimizes resource constraints commonly encountered by larger competitors and is regarded as a competitive edge, particularly in navigating unstable market conditions. Respondent 1 underscores the company's resource efficiency, highlighting its ability to thrive with a smaller workforce compared to competitors.

Even if there are many consequences because of the recession, Respondent 1 noted that despite this, there is a silver lining: there are more subcontractors available, and their services are comparatively cheaper than usual. Respondent 1 explained that the company relies heavily on subcontractors and does not have many employees to perform the production phase themselves. This is perceived as a suitable strategy given the increasing difficulty of winning projects and the need to keep employees occupied. However, he also highlights a downside: the reliability of subcontractor prices has decreased. Respondent 1 further explained that this instability in pricing has heightened the risk of subcontractors facing bankruptcy.

## 6. Analysis

Through this analysis chapter, the dynamic capabilities framework is analysed against the result. The goal is to evaluate how well a medium-sized construction company demonstrates dynamic capabilities according to Teece's framework of dynamic capabilities, as presented in the theoretical chapter.

### 6.1 Dynamic Capabilities when Selecting Projects

The dynamic capabilities shown in Table 3 represent the sensing, seizing, and transforming capabilities identified through the analysis of the company's strategies, competencies, and resource management in project selection.

*Table 3. Factors in the Project Selection related to dynamic capabilities.*

Type of capability	Dynamic capabilities when selecting projects
Sensing	Sense project offers on the market and adapt accordingly
Sensing	Sense competitive strengths and seize market opportunities
Seizing	Narrow project focus, focusing on the projects the company has a competitive advantage with
Seizing	Allocate resources and form suitable strategies
Transforming	Vision to expand project portfolio and develop employees

When analysing the company's sensing capabilities in project selection, the company's activities correlate with those mentioned in the literature. The theoretical framework defines sensing changes as monitoring the external environment to identify new risks and opportunities. This was highlighted during the interviews. However, rather than sensing market threats and opportunities at a company level, the company has already established a set strategy by adapting to market conditions, such as fewer projects on the market and increased competition. Instead, the company performs scanning activities to identify opportunities and threats within the existing projects in their specific project portfolio.

The company rather focus on a narrow range of projects during market instability, such as schools and hospitals, than focusing on expanding their project portfolio. These kinds of projects align with the company's prior knowledge and experiences. These types of projects are also perceived as less affected by the fluctuating market, making the project-selection strategy even more viable. This type of capability resembles a seizing capability, by allocating resources according to a set strategy.

Even though the company maintains a clear project focus during an unstable market, it also strives to develop resources and competencies by occasionally taking on projects that do not align with its usual strategy. These are called "complex projects" and extend beyond the company's typical project portfolio to explore new market segments and increase competitiveness. This tendency can be interpreted as a transforming capability since it alters or transforms the company's business strategy to better align with market

conditions. By innovating to become more competitive, these activities resemble transforming capabilities.

## 6.2 Dynamic Capabilities in the Tendering Process

The dynamic capabilities that are shown in Table 4 represents the sensing, seizing, and transforming capabilities found by analysing the company’s strategies, competences, and resource management in the tendering process.

*Table 4. Factors in the Tendering Process related to dynamic capabilities.*

Type of capability	Dynamic capabilities in the tendering process
Sensing	Explore opportunities and optimize costs
Seizing	Improve bidding accuracy through a high level of competence
Seizing	Focus on fewer projects
Transforming	Including staff that usually operates in later stages

During unstable market conditions, the results emphasise the critical nature of controlling operating and overhead costs to maintain profitability. Company X is seizing these opportunities by forming strategic calculations for potential purchasing gains, alternative building materials or methods, which can significantly impact project costs and outcomes. These costs are presented as crucial to consider during an unstable market, where competition is high and economic margins are low.

The interviews revealed that the success of a tendering process has a great influence from scanning offers and prices from subcontractors and suppliers. Furthermore, external scanning is one of the primarily steps in sensing capabilities, outlined in the theoretical framework. Another method for identifying development and improvements lies in comprehensively understanding the tender documentation. The respondents acknowledge the critical importance of accurately interpreting these documents, recognizing that such precision can lead to more informed and effective decision-making processes. This capability relates to the framework of dynamic capabilities, as a company’s sensing capabilities ensure that it is responsive to changes in the market.

The respondents mention that they have not changed or reconfigured their strategies and ways of working in the tendering process despite the unstable market. Although, the theory present that transforming capabilities can include developing integration skills when managing market dynamism. This tendency is evident when the company engages project staff in the tendering process to ensure that the initial strategy is followed throughout the project. This approach helps employees develop new skills and enhances their competence to manage subsequent project stages. Developing employee competence creates opportunities for the company to increase its competitiveness in the market.

### 6.3 Dynamic Capabilities in the Planning Phase

The dynamic capabilities that are shown in Table 5 represent the sensing, seizing, and transforming capabilities found by analysing the company’s strategies, competencies, and resources management in the planning phase.

*Table 5. Factors in the Planning Phase related to dynamic capabilities.*

Type of capability	Dynamic capabilities in the Planning phase
Sensing	Continuous communication with stakeholders
Sensing	Explore more optimised solutions
Seizing	Establish short pathways of communication
Transforming	Reconfigure initial strategies and methods

Several distinct dynamic capabilities were identified during the planning phase due to its nature of handling many changes, as presented in the literature review. The planning phase include sensing and seizing capabilities to find alternative methods and transforming initial strategies, which are crucial for this process. To manage these changes, thorough communication with both external and internal stakeholders are necessary. This can be achieved by establishing short pathways of communication, which is presented as essential for seizing capabilities in the dynamic capability framework. Seizing capabilities includes acting upon an identified opportunity or risk, which Company X shows by identify and implement design alternatives in collaboration and with a continuous dialog with architects and designers.

The respondents were unanimous on the importance of having a high level of competence in order to explore improvements, recognise and mitigate risks, within the planning phase. When potential risks and opportunities are evaluated, it is important to assure that everyone is working in accordance with the strategy. This process includes both sensing and seizing capabilities, as the company must identify external risks and act upon them to ensure that the reconfigured building methods align with the overall strategy.

Even though the company has formed methods and strategies from earlier stages, initial designs often change in planning phase. The ability to handle these changes resemble transforming capabilities mentioned in the dynamic capability framework. Even though the process does not include transforming at a company level, there is continuous reconfiguration of strategies and methods in the design phase to improv constructability.

### 6.4 Dynamic capabilities in the production Phase

The dynamic capabilities that are shown in Table 6 represents the sensing, seizing, and transforming capabilities found by analysing the company’s strategies, competences, and resources management in the production phase.

Table 6. Factors in Production related to dynamic capabilities.

Type of capability	Capabilities in the production phase
Ordinary	Be flexible in the organization
Ordinary	Ensure high competence to handle ad-hoc problems
Ordinary	Perform proper risk management
Seizing	Use of subcontractors

During the interviews, several competitive advantages were mentioned by the respondents. However, there were no clear representation of dynamic capabilities in the production phase that related to the theoretical framework, except the use of subcontractors. This strategy is identified as a seizing capability. Furthermore, the respondents mentioned a lot of competitive advantages related to the earlier stages within a project. This would indicate that most of the dynamic capabilities of a construction company would rather exist in the earlier stages.

Instead of identifying clear dynamic capabilities, we evaluate the resulting production advantages as ordinary capabilities and organizational capabilities, as presented in the theoretical framework. Teece refers to ordinary capabilities as core operational processes that encompass the usage of resources, and the use of tools that are necessary to carry out the company's daily activities, with the aim of achieving optimal operational efficiency. In order to handle the market, the respondents presented the following capabilities: flexibility to adapt to everyday changes; the size of the company, which creates opportunities to allocate resources more efficiently; and a high level of competence, which ensures that risks and other production-related problems can be managed throughout the production process.

Regarding the use of subcontractors, the respondents mentioned that the company has acted upon the risk of having too many resources when fewer projects are available in the market. By doing so, the company has addressed an identified risk posed by market instability, demonstrating a seizing capability according to the dynamic capabilities framework.

## 6.5 Overarching Dynamic capabilities in the Project Cycle

This section examines the overarching dynamic capabilities of Company X, focusing on strategies employed across the project cycle to maintain competitiveness. By leveraging dynamic capabilities, the company navigates market challenges effectively. We explore how these capabilities are integrated into project management to ensure adaptability and sustained success.

### 6.5.1 Strategies During Market Instability

The challenge of navigating procurement strategies through market volatility underscores the necessity of dynamic capabilities. The company's chosen strategy within their project selection assumes a pivotal role in manoeuvring through the complicated landscape of fluctuating costs and material availability. However, the results of this study underscore the crucial role of strategic project management in

sensing and seizing opportunities and risks, aligning with the theoretical discourse on the importance of having a strategy to manage an unstable market.

A strategy suitable for managing market instability was evident in the company's bidding strategies and tendering processes, where numerous difficulties had to be addressed, ranging from increased competition to challenges in finding the right bidding price. Furthermore, factors influencing bid decisions, including project type, past experiences, and contractual terms, mirror the company's strategy in project selection. The theoretical perspective presents the importance of managing the day-to-day operations without losing the vision of the long-term goals. The company's concentrated efforts to trim operational expenses while maximizing procurement yields mirror strategies for navigating cost and risk dynamics in volatile markets.

The dynamic capabilities framework, with its emphasis on sensing, seizing, and transforming, should align with a company's adaptive responses to market instability according to the theoretical framework. Through the company's agility in market adaptation, profit-centric focus, and strategic project curation exemplifies the application of sensing and seizing capabilities. Moreover, their emphasis on developing their staff through their expansion of project portfolio signified an investment in transforming capabilities.

#### 6.5.2 Resource Management During Market Instability

The theoretical framework presents that resources within a company encompass various assets, taking diverse forms. However, results suggests that Company X's primary resource lies within its staff. When respondents were asked to identify the company's resources, they consistently emphasized its personnel.

The concept of VRIN within the dynamic capabilities framework, when applied to the results of the study, offers valuable insights into the organisation's functioning. A notable aspect of the company's operational model is its employees' multifaceted roles within the company, ranging from assisting in bidding processes to involvement in design and production. This integrated approach underscores the company's commitment to organisational evolution, exemplifying a transforming capability mentioned by the theoretical framework. This capability involves fine-tuning internal mechanisms to enhance responsiveness and operational efficiency, crucial for accurately estimating project costs in fluctuating market conditions.

Even though the respondents suggested the staff as the most important resource, other resources were also identified as important for a construction company. The results highlight the importance of reducing costs both in individual projects and across the company, underscoring the critical role of economic resources in an unstable market.

Upon analysing the organisation, it became evident that with only a few people working at the head office, the company is not forced to undertake many projects to cover its overhead costs. The organisational transition towards reallocating employee responsibilities, shifting from on-site production tasks to office-centric functions like tendering computations and project schematics, signifies a strategic realignment of resources. This realignment underscores adaptability and effective utilisation of human capital. Particularly for smaller enterprises, such agility provides a competitive

advantage in swiftly adapting to market changes compared to larger counterparts. This operational approach reflects a practical application of seizing capabilities within the dynamic capabilities framework. It involves strategic manoeuvres aimed at capitalising on emerging opportunities, even in turbulent market conditions.

### 6.5.3 Value of Competence

The company's strategy requires competence for successful execution to maintain competitiveness as mentioned by the respondents. Competence is crucial throughout the whole project cycle to ensure the proper performance of various activities according to the respondents. These activities include selecting suitable projects for the company, navigating the challenges of the tendering process, placing competitive bids, and managing the design and construction phases. Competence, according to the theoretical framework, include the ability to swiftly adapt to market changes, such as those mentioned by respondents, including market instability causing price volatility, difficulties in planning material deliveries, and executing production methods that are selected earlier in the project process. The theoretical framework emphasises the importance of having a high level of competence to be able to perform activities. These activities are considered to form the organization's routines and processes, including but not limited to enhancing quality, miniaturisation, and integrating systems. It can also be extended beyond the boundaries of the firm to include collaborative partnership; it is also essential to perform the company's business activities.

The respondents delve into the pivotal role of competence and experience. The respondents emphasise leveraging accumulated knowledge and past experiences to mitigate project risks. This approach enables the company to take swift actions to cope with uncertainties in an unstable market. This underlines the leveraging of distinctive organisational resources, primarily human capital, to gain competitive advantages. However, the theoretical framework poses another view on competence as it emphasises on owning unique and hard to reproduce dynamic capabilities to swiftly adapt to uncertainties. Such an approach assumes heightened relevance in mitigating the uncertainties caused by a volatile market environment, where conventional strategies may fall short.

## 7. Discussion

The discussion delves into an in-depth discussion and interpretation of the findings presented in the previous chapters. This discussion explores the implications of the results in the context of existing literature, highlighting both the contributors and limitations of managing market instability. By critically examining the data, the discussion provides a nuanced understanding of the research questions and propose directions for future practice.

### 7.1 Challenges with Market Instability

Barriers for a similar construction company in reaching desired goals include a combination of few projects and high market competition. Navigating this situation is essential, as competition is even higher during an unstable market according to the respondents. Wang et al. (2020) suggests that a company must align its operational goals with market instability while also managing day-to-day operations without losing sight of the long-term vision, which can be challenging for small and medium-sized construction companies. This is something the respondents also mentioned as important. To execute this, the company needed to increase communication, especially during the planning and production phases, as these involve more external stakeholders according to the company.

The literature is clear on how the tendering process should be undertaken, especially within a Swedish context. Since the company is operating in a Swedish context and focus a lot on projects tendered by public clients, it's natural to talk about the Swedish law of procurement. The tendering process requires equal terms for all competing companies, implying that a company must have the right competence to interpret the underlying tender documents better than its competitors. The tendering process is described as a heavy one, and this is something all companies need to take into consideration (Byggföretagen, 2023). It appears that the company might be unique in its operations, as the literature review indicates that many companies find the process difficult. As described by Teece & Pisano (2003), in order for a company to possess high competence, it needs to produce competence that is unique and hard to reproduce, which can be questioned based on the literature. However, both the literature and empirical findings emphasize a thorough and detailed approach regarding the tendering process. Therefore, the tendering process cannot be taken lightly and requires a systematic approach to handle market instability.

Understanding the company's strengths and weaknesses before selecting projects can help prevent problems that might occur later in the project cycle. The selection of projects and the tendering stage plays a vital role in handling an unstable market, depending on the path a company wants to pursue. This means that understanding risk is crucial to succeeding with projects. The literature also underscores the significance of assessing the inherent risks in the tender processes. For instance, if the economic compensation is more favourable to the client, it can significantly affect a company's cash flow. This scenario, discussed by Borg & Lind (2014) and supported by the respondents, highlights the challenges associated with fixed-price contracts. In such contracts, delays in project completion, complex construction methods, difficulties in acquiring materials, or issues during production place the burden of risk on the

contractor. Additionally, if price volatility leads to inaccurate forecasts, it can negatively impact project profitability. This scenario exemplifies the complexities of managing economic risks in an unstable market.

Due to market instability, calculating cost estimates becomes more difficult. Apart from high competition, one reason for this difficulty is finding the right prices from subcontractors and suppliers, according to the respondents. The deviation between the expected subcontractor price and the actual subcontractor cost indicates price volatility. Such situations have been explained to cause higher risks of subcontractor bankruptcy. Although risk of bankruptcy is perceived to be rather rare in the general market, the literature explains that it can be a common problem when interest rates increase and demand decreases. Both Englund (2015) and the respondents have shown that this specific task is a challenging endeavour that needs to be taken seriously in order to stay competitive and survive.

The results show that the planning phase itself does not differ much depending on the market conditions. However, the increasing demand on staying profitable puts pressure on executing the design, time planning, and purchases in a manner that strives for increased communication and continues improvements. Furthermore, for the design and planning phase to be regarded as successful, according to Khan (2015), the project needs to be constructable, meaning that the timeframe and design must be executed in a way that will not cause major problems for production. To ensure that the planning phase contribute to constructability, the respondents emphasise the importance of production knowledge to ensure that the methods and work procedures actually are executable. The results indicates that constructability is a common problem which becomes more important to handle during an unstable market. The results present that, ensuring constructability is often reliant on project communication. Since external architects and designers often performs a lot of design, it is perceived important to communicate initial project intentions that the company has. External parties should be involved and should not deviate too much from the initial strategy.

The respondents agreed that the prices of materials and subcontractors, along with delivery issues, are the toughest challenges to overcome in the current unstable market. During the interviews, no clear method was identified to overcome these issues, although it is something that could be considered important for having a clear strategy and staying competitive. Several methods are mentioned by Wiedman et al., (2011) including stockpiling of material, increased collaboration with suppliers, or sourcing of materials from different suppliers and locations. Even though this issue seems to be one of the toughest obstacles to overcome, a construction company must find a way to decrease risks during the execution phase of a project. It is possible that the company has unwritten or untold strategies and actually has a way of managing this. However, this lack of recognition is perceived as a negative factor in managing the market situation. The absence of a clear strategy could be due to the size of the company. Larger companies might have more explicit strategies for managing these challenges, ensuring that the entire organization works in the same direction. Due to the smaller size and shorter communication pathways of Company X, they might not consider clear strategies as important as larger companies do.

## 7.2 Important Dynamic Capabilities in Times of Change

Company X is navigating an unstable market by refining its project selections and tendering strategies, with a strong focus on public sector projects. This focus is based on the belief that these projects are less affected by market instability. Furthermore, Company X has maintained this project portfolio for many years and has developed high-level competence in these types of projects. Teece (1997) describes high competence as the ability to form organizational routines and allocate resources effectively to perform specific activities. Company X has achieved this by having a dedicated organisation for project selection and the tendering process, involving different employees to increase competence and coherence, thereby exemplifying transformative capabilities. However, Teece & Pisano (2003) argue that, to sustain an advantage, a company requires dynamic capabilities that are hard to reproduce and must have the capacity to swiftly adapt its competences to handle market changes. The fact that Company X has been operating in the same way for a long time without significant adaptation to the market implies that it may lack dynamic capabilities necessary to respond to market fluctuations. A company should also adapt when the market is favourable to stay ahead of its rivals and remain competitive (Teece & Pisano, 2003). Nevertheless, increased competence helps the company to sense more opportunities and risks during an unstable market, making it an important asset in times of change.

A project-based organisation will be more successful when exploring new markets to remain competitive, according to Choi et al. (2018). This highlights a deviation of opinion between theoretical aspects and empirical findings. This means that, while the company is focusing on narrowing down its project portfolio, the literature suggests that this strategy could be revised to pursue new types of projects. Furthermore, the company's approach emphasises the importance of selecting projects based on prior knowledge and competitive expertise to enhance bidding accuracy and financial viability. This approach aligns with the factors showed in Table 1. The company knows how to take advantage of the opportunities these types of projects offer due to their previous experience with their project portfolio. This indicates that they possess strong sensing and seizing capabilities, while their transforming capabilities could be improved to penetrate new markets. This approach demonstrates how focusing on projects less affected by economic downturns, such as schools and hospitals, can provide stability. This is considered the most critical dynamic capability in this research, as it dictates whether or not the company can stay competitive in the market.

Regarding the tendering process, competence is crucial since it requires a lot of expertise and construction knowledge (Byggföretagen, 2023). With the problem of higher competition and a decrease in projects, it is essential to win bids to stay competitive. Furthermore, ensuring high competence while focusing on fewer projects could improve efficiency and accuracy during the tender stage. By leveraging existing expertise and market knowledge, the company can better estimate risks and seize new opportunities, increasing the chances of winning bids. This strategic focus, combined with an adaptive and proactive mindset, has helped Company X navigate the challenges posed by market instability.

The importance of exploring improvements and alternative building methods during the planning phase was emphasised by the respondents. These explorations in the design phase reflect the theoretical perspective of the dynamic capability framework,

especially seizing capabilities. Seizing capabilities involve making strategic decisions to effectively manage opportunities in a rapidly changing environment. Furthermore, studies by Ghaffarianhoseini (2017) and Eldeep (2022), indicates that the involvement of technologies like BIM will help to improve the planning phase by increasing collaboration with external stakeholder as well as seeing and handle risks and opportunities during a project. Technologies like BIM were not thoroughly discussed by the respondents during the interviews, which indicates that this could be a method the company can adapt to further develop their competitiveness in the market. Nevertheless, as described earlier, identifying alternative building methods and collaborating closely with architects can help construction companies find cost-saving opportunities. However, success in this phase relies heavily on the competence and adaptability of the staff involved. Company X's emphasis on leveraging its team's expertise and previous project experiences, along with fostering open communication channels, allows for better risk identification and mitigation. This approach ensures that projects are designed efficiently and remain profitable despite fluctuating market conditions.

Despite many of the challenges that comes with the unstable market, the company identifies a silver lining in the increased availability and reduced costs of subcontractors. Although, this so-called silver lining comes with the added risk of decreased reliability and potential sub-contractor bankruptcy as mentioned by the respondents. This situation illustrates a nuanced understanding of the market's opportunities and risks, a key aspect of strategic management in the dynamic capability framework. By leveraging these market conditions, a construction company in this market could potentially enhance its competitiveness if efficient management of associated risks is handled. However, he respondents also mentions that the company have a dedicated strategy of not having a large in-house staff. This requires the company to rely heavily on sub-contractors to execute the projects, according to Liu & Zhang (2011). The author also mentions that this method can be effective in order to handle volatility in the market. This suggest that having a small in house staff can be effective in preventing economical problems for a company during a unstable market. This is aspect is one of the company's most crucial dynamic capability, since a large use of sub-contractors can give more flexibility and greater possibilities to navigate project offers on the market.

The narrative provided by respondents presents the need to acquire competitive advantages for a construction company, particularly because of the heightened market instability. The pandemic has severely impacted the supply chain which needs to be handled. The respondents' perspective of the vulnerability of the supply chain and following adjustments made by the company demonstrates an application of the transforming capabilities, where strategic changes are essential to maintain operational continuity and mitigate risks associated with supply chain disruptions. The company is adapting to the market by adjusting plans and schedules to improve the system's tolerance, which also correlates with the recommendation mentioned by Borna et al. (2009).

### 7.3 Project Stages that Interlink Differently during an Unstable Market

The unstable market has squeezed economic margins and increased the importance of cost management across project stages. The respondents' focus and coordination in identifying cost savings and maximizing procurement gains through every project stage, reflects sensing capabilities, where understanding and responding to market conditions and internal cost structures are crucial (Teece, 2007). The commitment to maintaining a success-oriented and problem-solving mindset are reflective of an organisation culture that foster innovation and continuous improvement. This aspect is crucial in developing and sustaining the organisational competences needed to handle the competitive and unstable market.

The results highlight the importance and value of involving employees in the early project stages. The tendering phase directly influences the scope of the planning and production stages, creating interdependencies between them. Selecting projects with uncertain financial margins forces the design and production teams to become more flexible and adaptable. Managing dependencies and challenges in the project cycle requires good collaboration and communication. Involving production staff in earlier stages ensures that constructability challenges are either anticipated or prevented, reducing costs that could occur during production. These factors can minimize rework and delays, which are often problematic for construction projects due to tight time frames. The importance of constructability is also emphasized in the literature review by Khan (2015) and Kifokeris & Xenidis (2017). These authors present that having production knowledge in the design phase helps a construction company mitigate misalignments and risks associated with the interdependencies between project stages. A construction company's early employee involvement is perceived as a distinct transforming capability, aimed at increasing competence and staying competitive throughout the project cycle.

Dynamic capabilities demonstrated in a particular stage are not necessarily exclusive to that stage. Due to the interdependencies of project stages, dynamic capabilities are related to the entirety of the organization rather than a single project stage. Even if a dynamic capability is clearly evident in one stage, it is not restricted solely to that stage. These capabilities, such as adaptability, resource reallocation, and strategic decision-making, permeate throughout the organization and influence multiple stages of a project. Recognizing the fluid nature of dynamic capabilities highlights the importance of fostering these skills across the entire organization to ensure holistic and sustained performance.

A project's success and constructability rely on interdependencies, organisational collaboration across stages, continuous risk management and understanding of market conditions, according to the respondents. As the theoretical framework suggests, companies should foster sensing, seizing, and transforming capabilities to align company strategies with the market instability (Teece et al., 1997). This involves continuous feedback and knowledge transfer between the different project stages. By integrating these dynamic capabilities, companies can better navigate the complexities of an unstable market, ensuring that strategic decisions are informed by insights from all phases of a project.

## 7.4 How Changes in the Market can be Managed with Dynamic Capabilities

Mentioned earlier, the project stages are continuous and dependant on each other, which means that even if a dynamic capability has greater importance to a specific project stage, all the capabilities are important for the entirety of a construction company and its projects. The literature argues that the unstable market provides a lot of challenges and in order to see opportunities and risks in an unstable market, Teece (2018) mention that, it is important to acquire sensing capabilities. Through the empirical findings, it is evident that the company primarily focus on sensing and seizing capabilities to handle market instability, rather than transforming capabilities. The respondents mentioned that they have worked in a specific way with profound strategies for a long time. Based on the results, it is suggested that the company should consider enhancing their transforming capabilities to adapt to changing market conditions and further develop the organisation.

The company's strategy of focusing on a select few meticulously chosen projects closely mirrors the literature's emphasis on precision in the bidding process. Since the costs of placing a bid are quite high, it is more effective to place fewer bids to optimize costs and increase the quality of each bid if the process is done properly. A strategic and thorough approach minimizes the inherent risks associated with cost overruns and project mismanagement a recurrent theme in the construction sector during times of crisis, as discussed by Athapaththu (2016).

The company's strategy regarding project management, as previously explained, emphasizes its sensing, sizing, and transforming capabilities in various project stages. Several examples illustrate this approach. For instance, the multifaceted roles that the company adopts can both reduce costs and increase its competitive advantage in the market (Wang et al., 2020). Company X aims to reduce costs by having employees function in multiple roles. This resource management strategy can enhance the evolution of the company's competence and the VRIN status of employees. However, according to Teece & Pisano (2003), the growth of competence requires time and development, which could be challenging when employees are under high pressure and heavy workloads. Multifaceted roles may not lead to increased competence if employees are overburdened. Nevertheless, in a market with fewer projects, this strategy can be successful due to reduced pressure and workload. Higher competence could contribute to better sensing and seizing capabilities, as employees with enhanced skills are more adept at identifying opportunities and threats in the market and have the knowledge to act on them.

Several examples of risks that need to be handled, according to the literature, indicate that risk management and cost control are crucial in a competitive environment, as identified by multiple employees in the interview study (Olawale & Sun, 2010). The authors also mention that a construction company needs to understand uncertainties to succeed with its projects. Comparing this to the respondents' views on the company's strategy for selecting projects, it appears that they handle uncertainties by increasing their knowledge and expertise within a specific project portfolio. This approach also enables the company to perform in-depth cost analysis and make price adjustments with higher accuracy than their competitors.

In a way, the company has developed a culture of lean methods, mentioned by Büchmann-Slorup and Ribeiro & Fernandes (2014; 2010). Even though the respondents never mentioned working in a lean manner or adopting lean thinking in their operations, some tendencies can be identified. For instance, the company's approach to the tendering process, by focusing on only a few bids at a time, is a way of mitigating waste. By allocating resources to a few bids, the accuracy and quality improve, along with financial stability, since the tendering process can be quite expensive (Hansen et al., 2017). These tendencies are also evident throughout the project stages, including optimising communication pathways, improving building methods, and enhancing organizational efficiency through the company's resource allocation.

For a company to manage an unstable market, it should sense and seize market opportunities and risks. As previously mentioned, this can be achieved by forming a strategy that emphasises competence and the development of existing resources or by focusing on cost mitigation through adopting a culture of cost control and improving existing processes, such as building methods or material selection. Several risks have been identified in this study, and it has been proven that an organization also needs to transform its strategies to develop existing resources and competence to better suit the market. However, one strategy might not be effective in both stable and unstable markets.



## 8. Conclusions and Recommendations

This master thesis has revealed the significant impact of market instability on a medium-sized construction company and explored strategies for maintaining competitiveness within such a market through dynamic capabilities. It is noteworthy how challenging it can be to navigate this market and effectively balance strategy, resources, and competencies throughout various project stages in order to both survive and remain competitive.

The findings presented in this research address the research inquiries and draw from the literature review, theoretical frameworks, and empirical data gathered through interviews. The conclusions drawn, in conjunction with the analysis of dynamic capabilities identified at Company X, offer insights for how medium-sized construction companies can adapt to the challenges posed by an unstable market by utilising dynamic capabilities. Moreover, this research highlights the difficulties associated with day-to-day operations in such an environment. Factors such as cost control, fostering a competitive culture, maintaining a problem-solving mentality, and ensuring precision are crucial for navigating instability and sustaining competitiveness in the market.

Due to the unstable market, several challenges have been identified that construction companies are recommended to manage. These challenges vary depending on the project stage in question. This research concludes that the greatest challenge for managing construction projects during market instability is increased competition and fewer available projects. Because of the stability of the public sector, companies that typically tender to private clients have flocked to this market segment, further increasing competition. The market instability has also heightened difficulties in cost prediction, making accurate prognoses challenging. Consequently, the risk of bankruptcy for many sub-contractors has increased, which must be carefully considered and addressed.

This research suggests selection of projects to be the stage that affects the project cycle the most. The project cycle is continuous, and the project selection sets the initial strategy and includes a lot of decisions about methods and intended goals. The stricter economic targets, together with the company's overall strategy, must be followed during the entire project cycle. The design phase and the production phase have a natural and close connection. However, this study has proven that the interdependencies between stages requires increased collaboration, especially during market instability. Stakeholder communication and effective knowledge transfer becomes increasingly important to enhance efficiency and competitive advantages. Ensuring great communication pathways both with external and internal stakeholders during a project can ensure that the company's objectives are aligned, even in the most turbulent times.

Company X's emphasis on involving production staff in the earlier stages, fostering a culture of continuous learning, and encouraging cross-department collaboration has improved project outcomes. Due to interdependencies between the project stages, this creates a more holistic project process. This reflects an important transforming capability due to the implications of increasing employee competence. The research identifies this as the sole distinct transforming capability. Investing in employees that can perform multiple roles and project stages, can mitigate costs through trimming down the organisation. A medium-sized construction company can also use sub-

contractors to become more economically flexible, by not having a large in-house staff during market instability.

By sensing market trends, seizing opportunities through strategic project selection, and transforming organisational practices, a construction company can manage to remain competitive. Key elements of dynamic capabilities, such as flexibility, strategic resource allocation, and a commitment to continuous improvement, have been proven integral to manage market turbulence and maintain a competitive edge. Furthermore, it is recommended to narrow down the focus and create a high level of competence within the project portfolio to enhance the ability to sense new opportunities and risks in the market. Although, this strategy might not be suitable during more stable market situations, where the amount of project offers is higher, and the competition is lower.

In conclusion, this study recommend that medium-sized construction companies must sense what types of projects that are suitable for the prevailing market. After sensing, a company must form a strategy to handle the situation and the suitable types of project portfolio, seize the situation. When performing the seizing stage, a company must adapt their strategy to develop existing competence and resources. Lastly, a company must act on the strategy and transform the company suitable for the market instability.

## 9. Future studies

To advance this research, it would be beneficial to deepen the understanding of the dynamic capability framework in the construction sector. One method could be to extend the interview period by conducting follow-up interviews. This approach would give respondents more time to manage and gather experience of the unstable market, while also providing the research with detailed expertise.

Although our aim was to explore management practices and strategies within the unstable construction industry, a study of a single company cannot be considered representative of the entire field. Therefore, further research is needed to generalize these findings, as this study has only contributed by uncovering the dynamic capabilities in the project stages of one company. It would be interesting to compare the project phases of several construction companies to increase generalizability. Hence, it is important for future research to continue exploring dynamic capabilities within these project stages to uncover more effective ways to handle the unstable market.

Another direction that might deepen the understanding of which dynamic capabilities are crucial for handling market downturns is to explore how construction companies that have undergone or are undergoing a radical shift in their business model manage these changes. This would also put a greater focus on transforming capabilities, which has been underrepresented in this study. This would provide new insights into the types of change processes undertaken to remain competitive in the market. This research suggests that valuable knowledge can be gathered by studying construction companies that focus on apartments and dwellings, rather than focusing on companies that work with public clients.



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