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UNIVERSITY OF VAASA

Eetu Kauppila, e122620

The Role of Enterprise Architecture in Strategy Work

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Author: Eetu Kauppila, e122620
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Supervisor: Anni Rajala
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ABSTRACT:

Organisaatioiden toimintaympäristöt muuttuvat jatkuvasti, joka tekee markkinoista arvaamattomia. Organisaatioiden on keskityttävä tehokkuuteen ja tuloksellisuuteen saavuttaakseen strategiset tavoitteensa. Heillä voi olla laadittuna hyvä strategia mutta sen toimeenpano ja konkretia voivat aiheuttaa haasteita. Oikein hyödynnetty kokonaisarkkitehtuuri voi auttaa parantamaan kyvykkyyksiä ja täten vastaamaan toimintaympäristön muutoksiin. Kokonaisarkkitehtuurin avulla organisaatio pystyy arvioimaan, suunnittelemaan ja seuraamaan strategiatyötä konkreettisella tasolla. Tutkimuksen tavoitteena on selvittää mikä on kokonaisarkkitehtuurin rooli strategiatyössä, miten sitä hyödynnetään ja miten sitä voisi hyödyntää.

Tutkimuksen teoreettinen tausta perustuu kokonaisarkkitehtuuria ja strategiaa koskevaan tutkimuskirjallisuuteen. Tutkimuksen teoriaosuudessa käsitellään kokonaisarkkitehtuuria, dynaamisia kyvykkyyksiä, erilaisia kokonaisarkkitehtuurin työkaluja ja viitekehyksiä. Kirjallisuus käsittelee myös strategian näkökulmasta kyvykkyyksiä, strategian toteutumista, prosesseja ja strategiatyökaluja.

Tutkimus on toteutettu laadullisena tutkimuksena sen luonteen vuoksi. Laadullinen tutkimus sopii tutkimusmenetelmäksi, koska sen avulla tutkimuskysymyksiä voidaan lähestyä näkökulmasta, joka käsittelee haastateltavien omia kokemuksia ja käsityksiä. Tutkimuksessa toteutettiin kuusi haastattelua, joissa haastateltavista kolme työskenteli strategian parissa ja kolme olivat kokonaisarkkitehtejä eri organisaatioissa. Aineistonkeruu toteutettiin puolistrukturoiduilla teemahaastatteluilta, joissa haastateltavilta saatiin mahdollisimman kattavasti tietoa tutkimukseen. Tutkimuksessa kerätty haastatteluaineisto on analysoitu laadullisen sisällönanalyysin menetelmällä, koska sen avulla voidaan analysoida vähän jäsenneltyjä dokumentteja systemaattisesti ja objektiivisesti.

Tutkimustulosten mukaan kokonaisarkkitehtuurin rooli strategiatyössä on hyvin vähäinen. Kokonaisarkkitehtuurin hyödyntäminen strategiatyössä vaihtelee yritysten välillä pelkästä IT-osaston toiminnasta strategian mahdollistamiseen, riippuen organisaation omista preferensseistä käyttää kokonaisarkkitehtuuria. Termi kokonaisarkkitehtuuri ja sen abstrakti konsepti eivät ole selkeitä organisaatioissa, joka on osasyynä, että kokonaisvaltainen muutos arkkitehtuurissa vaatii tutkimuksen perusteella isoja muutoksia organisaatioiden kulttuureissa. Tutkimustulosten mukaan kokonaisarkkitehtuuri on liiketoiminnan ja johdon työkalu ja sen kattava lähestymistapa voi auttaa organisaatioita saavuttamaan strategiset tavoitteensa. Kokonaisarkkitehtuurin tulisi olla mukana strategiatyössä alusta alkaen, jotta se voi tarjota kokonaisvaltaisesti kehitysideoita ja arvioida toteutettavuutta.

KEYWORDS: Enterprise Architecture, Strategy, Business Administration, Management, Organizational Development

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Abbreviations

EA	Enterprise Architecture
IT	Information Technology
RBV	Resource-Based view

1 Introduction

Due to the constant changes in markets and business environments, companies are operating in turbulent and unpredictable markets. It is almost impossible to companies to gain a competitive advantage in the markets through high-quality products or efficient processes. Companies need to focus on effectiveness and efficiency to achieve strategic objectives and discover new potential ways to gain competitive advantage. (Wetering, Kurnia, & Kotusev, 2021)

As the markets and environments continues to evolve, organizations are increasingly required to develop dynamic capabilities that enable them to meet the needs of a complex and ever-changing environment. Global technology trends, such as big data, the Internet of Things, and artificial intelligence, are driving massive transformational changes within organizations' business ecosystems, making it crucial for them to be able to change and adapt their organizations' structure, architecture, and people. In this context, Enterprise Architecture has emerged as a critical tool that firms can use to align their strategy work with business processes and state-of-the-art technology investments and deployment. (Wetering, Kurnia, & Kotusev, 2020)

According to Ross et al. (2006), enterprise architecture is in a key role in executing successful business strategies. They argue that some companies are working hard trying to execute their well-crafted strategies in the markets, which should be just the right ones for their businesses, and yet, they still need to gain ground. Enterprise Architecture plays a critical role in modern organizations by providing a view of the organization's business processes and IT systems, and developing a roadmap to enhance those processes and systems. The EA approach aims to create an integrated set of electronic business processes, applications, and technologies that support an organization's strategic goals. (Tamm, Seddon, & Shanks, 2022)

Constructing the solid foundations for organization could help achieve the objectives and execute the strategy with the same amount of work or even less. Utilizing enterprise

architecture in strategy development is essential for making the strategy useful for the business. When applied properly, eventually, the operating model should support the strategy so that the operating model starts to matter more than the strategy itself. (Ross, Weill, & Robertson, 2006) However, justifying investment in EA has been a challenge for many organizations, and until recently, there has been little academic research on how and why enterprise architecture leads to organizational benefits. Although there are many potential benefits from enterprise architecture, the lack of clarity on how organizations can achieve these benefits means that insights into the enterprise architecture benefit realization process remain fragmented and it is not utilized properly. (Tamm, Seddon, & Shanks, 2022)

Enterprise architecture (EA) is a holistic and integrated approach to the design, planning, implementation, and governance of an organization's structure, systems, processes, and information. EA involves the alignment of an organization's goals and strategies with its business and IT architecture to enable optimal performance and competitive advantage. (Kotusev, 2017) Companies may be able to create a winning strategy, but they may need help to make it all work. It is crucial for the upper management of the organization to be informed of the underlying processes and developments within the company. To harmonize everything and gain competitive advantage, organizations and practitioners must understand processes, dependencies, core competencies, systems, etc. (Ross, Weill, & Robertson, 2006)

Enterprise architecture helps organizations understand the holistic and integrated big picture of their business by describing the organization. It helps to understand the strategic direction, processes and practices, information flows, and technology resources. It helps to understand the big picture, which is usually very complex, in a simple way. Enterprise architecture aims to give management more information to make tough decisions. It helps them to see what dependencies they have in the company and what affects which part of the company. (Bernard, 2012) Prior research has examined EA and

strategy, but there is a lack of studies focusing on the interconnectedness of EA and strategy.

Interest in enterprise architecture has increased in recent years, and research on the role of enterprise architecture is becoming more relevant to academics and practitioners. Strategic change could be done just by snapping fingers, it is not strategic change. Strategic changes and decisions are significant risks for companies, and enterprise architecture could reduce the risk if used properly. (Hammarsten, 2016) Business leaders and decision-makers must make smart, knowledge-based decisions about the ever-changing business environment. (Wetering, Kurnia & Kotusev, 2021)

Scholars in the field of enterprise architecture literature have tended to concentrate predominantly on the information technology (IT) viewpoint without fully exploring the strategic dimension. However, a few pioneering authors, such as Ross et al., have undertaken a comprehensive approach to understanding the big picture. The book, *Enterprise Architecture as Strategy: Creating a Foundation for Business Execution* has been recognized in the field for presenting fundamental concepts in an accessible manner.

Even though enterprise architecture itself has been researched, there is still a need to research the role of enterprise architecture in strategy work from various complementary perspectives, methods, and approaches to see how it is utilized and whether it could improve organizations' strategies. As organizations recognize the value of enterprise architecture's role in strategy work, research interest should increase. (Wetering, Kurnia, & Kotusev, 2021)

1.1 Purpose of the Research

This thesis aims to study the role and meaning of enterprise architecture in strategy work in different organizations. This thesis shows how practitioners and literature see

enterprise architecture's benefits and best practices in this context and how it is realized in practice. In addition, this thesis reveals how strategy practitioners experience the role and importance of enterprise architecture from their perspective and whether they see or use its full potential.

The research objective is achieved by answering the following research questions:

1. What is the role of enterprise architecture in strategy work?
2. How and when is the enterprise architecture utilized in the strategy work?

The thesis explains the role of enterprise architecture with precision and clarity such that it can be comprehended easily by the intended audience. Organizations may understand some aspects of enterprise architecture. However, it may still be a very abstract concept for many companies, and it is sometimes seen only as a part of IT and system architecture. The system architecture is a part of the enterprise architecture, but it is a much larger and more complex whole. Research should give a simple but holistic understanding of how different groups see their role and what differences they see, if any.

I should explain the importance of enterprise architecture in a strategy work context. This study gives a good overview of how and when enterprise architecture is used in strategy work. If my findings show that it is often used or has a crucial effect on the work, it should indicate a specific message for this thesis, and vice versa.

This thesis should explain why they could be even more beneficial with their current enterprise architecture. Enterprise architecture in practice is not just giving one "correct answer," but the companies have ways to utilize the enterprise architecture on their behalf. Empirical studies and literature should provide perspective on how different actors see enterprise architecture's role in strategy work.

1.2 Thesis Structure

The study is structured into five main chapters and sub-chapters.

The first chapter introduces who should read this thesis and how I studied this topic. It lightens the background and broader context. In addition, this chapter introduces the research questions, the purpose of this study, and the thesis objectives.

The second and third-chapter review existing enterprise architecture and strategy work literature. The chapter starts with the concept of enterprise architecture by explaining what it is and why it should matter. It should also give an understanding of the most common tools in enterprise architecture so it would be easier to understand concrete action toward strategy work. The last half of this chapter discusses strategy work and some of the possible challenges strategy work may face, which could be solved by enterprise architecture.

The fourth chapter presents a theoretical framework based on literature.

The fifth chapter focuses on the research strategy applied in this thesis. The chapter introduces the research design of this thesis, including the data collection and data analysis process, followed by a discussion of reliability and validity.

The sixth chapter presents the empirical findings of the study. These findings are crafted based on the analyzed and collected data through empirical research.

The seventh chapter summarizes the findings. This section summarizes all in one coherent whole and gives practical implications. Limitations and further research are included in this chapter.

2 Enterprise Architecture

Defining enterprise architecture can be a complex task since the answer may vary depending on which sources one uses. It can be seen as information technology, Information technology management, or data management. These definitions may be the outcome of the fact that the traditional enterprise architecture has located in IT departments, and they have been seen mostly as IT instruments. To impact a higher level, Organizations cannot just consider the enterprise architecture as an IT tool; it is a tool for the whole company. According to Ross et al., enterprise architecture should be used to organize business core processes and IT infrastructure, reflecting the standardization and integration of the operating model. (Ross, Weill, & Robertson, 2006)

Enterprise architecture can be roughly divided into smaller areas of expertise:

- **Technical architecture**, which has a strong IT background. Technical architecture focuses on technological solutions used in the organization. It might similarly list solutions like hardware configurations, programming languages, and other low-level aspects. It may provide standards and guide how solutions will be developed.
- **Application architecture** helps to understand the services produced by information technology systems. It reveals the relationships between different kinds of information in those systems.
- **A data architecture** describes the information flows in the organization. Data architecture aims to define the organization's critical data and ensure it is available to all necessary parties. Data should be well managed to handle appropriately in organizations. Data architecture should describe the central data resources and the relationship between information categories and systems.
- **Business architecture** defines the operational model of the organizations. It describes business services and processes. Business architecture should be able to define which resources do what in the organization and how to utilize the resources in the best possible way. (Keskitalo, 2011)

Enterprise architecture is a complex concept with varying definitions depending on the source. Ross, Weill, and Robertson (2006) view enterprise architecture as a tool for designing critical operating models, processes, and infrastructures essential to ongoing and future business operations. Meanwhile, Keskitalo (2011) describes enterprise architecture as a description of an organization from an information technology and information management perspective. He argues enterprise architecture outlines the organization's activities, structure, and connections between its components. Despite differing perspectives, both agree that enterprise architecture should focus on business process integration and standardization.

The top companies worldwide have utilized enterprise architecture to establish stable and concrete business foundations. By digitalizing their core processes and embedding them into their execution, they have become more efficient and agile than their competitors. Those that master enterprise architecture can separate themselves as top performers in their industry. (Ross, Weill, & Robertson, 2006)

Literature has developed through the years. Preliminary research shows that the literature has been focused on relatively narrow perspectives. It has been considered only as an IT practice, and the common understanding is that it has been used for IT-function only. That said, enterprise architecture has roots there and is vital in that area. However, in the last two decades, companies and practitioners have focused more on the business side and how it affects every part of the company.

Metamodels, tools, and processes have evolved to suit the company's best. The whole field has seen a massive change over the decades, and the entire history could be explained through the frameworks and how those have evolved through the years. The first look shows similarities and differences between now and then, but the fundamental way of thinking has mostly stayed the same. (Kotusev, 2016) This topic needs more

research and analysis, or otherwise, it may become a risk that the conclusions are made too fast, and the results need to be more reliable and serve the purpose long-term.

2.1 Enterprise Architecture and Capabilities

Enterprise Architecture is critical to a company's success as it helps align business and IT strategies, goals, and priorities. The Resource-Based View (RBV) suggests that a company's ability to use its resources, including enterprise architecture, effectively will lead to a competitive advantage. (Wetering, Kurnia, & Kotusev, 2020)

Capabilities are the company's resources that give that company a competitive advantage, like skills or processes, because those give better opportunities than others. (Prahalad & Hamel, 1990) These capabilities should have four things in common; They must be valuable, rare on the field, imperfectly imitable, and there cannot be equivalent substitutes for that resource. (Barney, 1991) Management must create an organization capable of inventing products with irresistible functionality or creating products that customers desire and need but do not know yet. Capability should give significant benefits and not be easy to imitate. The idea behind enforcing the capabilities is to have one unified direction and make decisions based on the capabilities, not necessarily that heavily based on external forces. This heavily leans on a resource-based view of strategy. (Prahalad & Hamel, 1990)

All core capabilities that give the organization a sustainable competitive advantage might only last for a while. Economies or fields of organizations might change so much, or capabilities might become outdated and no longer valuable to the company. That might have the effect of losing a competitive advantage in the field. (Barney, 1991) Organizations must invest the necessary resources for their enterprise architecture to be effective. Effective enterprise architecture deployment practices, which use enterprise architecture methods and principles to use the company's business and IT resources strategically, enhance enterprise architecture-based and dynamic enterprise

architecture capabilities. Enterprise architecture deployment practices have a positive effect on the dynamic enterprise architecture capabilities of an organization. Since enterprise architecture deployment practices use artifacts, such as diagrams and models, to represent the current and future state of the company's business and IT, which can improve communication between business and IT stakeholders and help identify problems and improvement opportunities. (Wetering, Kurnia, & Kotusev, 2020)

Dynamic capabilities are the ability of a company to renew itself in changing environment. (Danneels, 2010) Dynamic capabilities form from how a combination of competencies and resources can be developed, deployed, and protected against other forces. It is precious to have dynamic capabilities. Hence, organizations can always renew their operational model with the changing environment, allowing capabilities to be even more difficult to imitate when the capability is constantly evolving. (Teece, Pisano, & Shuen, 1997) Aligning business and IT is crucial for a company to achieve maximum benefits. Dynamic enterprise architecture capabilities have a positive impact on business-IT alignment. This is because these capabilities allow companies to respond to changes in their internal and external environment by using enterprise architecture to reconfigure their business and IT landscape and improve their ability to adjust to changes, which is crucial for improving business-IT alignment. Having a good alignment between business and IT can bring many benefits to an organization, such as increased market growth, cost control, improved financial performance, higher customer satisfaction, and a better reputation. The impact of dynamic enterprise architecture capabilities on organizational benefits is mediated by business–IT alignment. This means that business–IT alignment is crucial in creating value from enterprise architecture and achieving organizational benefits. (Wetering, Kurnia, & Kotusev, 2020)

Dynamic enterprise architecture capabilities are believed to impact a company's process innovation level positively. These capabilities can reach and influence various areas and are connected to organizational benefits. Process innovation involves using technology and other resources to improve new product development and commercialization.

Dynamic enterprise architecture capabilities positively impact a company's level of process innovation. These capabilities allow companies to quickly and efficiently allocate resources and improve their methods of service and production, support organizational learning, and enhance their ability to innovate and contribute to organizational benefits. (Wetering, Kurnia, & Kotusev, 2020) Organizations might find new business opportunities and a dynamic capability by developing their resources. Information about an opportunity would give a competitive advantage, allowing to be a first mover in the field and implement a new strategy before everyone else. (Barney, 1991) Renewal forces organizations to change resources, competencies, and sometimes even products over time. (Danneels, 2010)

2.2 Tools and Concepts

Enterprise architecture is an important tool when crafting a winning strategy for the organization in modern business. It can be seen as a blueprint of the organization's ecosystem. It should document the current state of the organization and its desired future state, including strategic goals, collaborative efforts, business processes, and the whole IT landscape. (Wetering, Kurnia, & Kotusev, 2021)

Enterprise architecture has various frameworks or models. Enterprise architecture frameworks are used to guide and show the path how to design and implement an organization's resources and processes. Frameworks give a common language to the practitioners to understand and improve the organization better than ever. These frameworks should not be followed too strictly since organizations should utilize their best practices and tailor the frame to serve the business.

Even though several architecture frameworks are partially overlapping or concern similar perspectives, different frameworks are designed to address specific needs or concerns. These frameworks are different in how they address different groups' needs within a company and the specific problems they focus on. These frameworks include methods, vocabulary, standards, and tools to help implement and integrate different parts of an

organization's IT systems. Some frameworks may also need to follow specific guidelines based on the industry or government regulations (Urbaczewski & Mrdalj, 2006).

2.2.1 Frameworks

The Open Group Architecture Framework

The Open Group Architecture Framework, TOGAF, is one of the most common frameworks in the field. This framework concerns all necessary parts for robust and meaningful enterprise architecture. It uses everyday language and contains recommended standards and compliance methods, suggested software and tools, and methods that define best practices to give a comprehensive enterprise architecture framework. TOGAF initially focuses on mission-critical business applications that use open systems building blocks. This framework was initially based on the Department of Defense's Technical Architecture Framework. (Urbaczewski & Mrdalj, 2006)

TOGAF is developed and maintained by the Open Group, a vendor and technology-neutral group whose members work within the Architecture Forum. It is a framework that provides methods for designing, improving, implementing, and maintaining enterprise architecture in organizations. Framework contains a set of templates, tools, and best practices for managing the enterprise architecture process. TOGAF is suitable for organizations of all sizes and industries, and it can be applied to technical or business architecture, making it ideal for enterprise architecture as a whole. (The Open Group, 2022)

The Open Group Architecture Framework provides a structure that can be divided into six parts:

1. Introduction: gives a baseline and sets up a base for the framework.

2. Architecture Development Method: known as an ADM, is a step-by-step approach for designing and implementing an enterprise architecture. ADM is a core of TOGAF that binds all the elements together.
3. Architecture Content Framework: templates and models for organizing and communicating enterprise architecture information. It uses three categories of architectural work products in three categories:
 - a. Deliverables, which are work products specified in an agreement, reviewed, and approved by the stakeholders, can be archived and transitioned into an Architecture Repository as a reference.
 - b. Artifacts are work products that describe an aspect of the architecture in the organization. These artifacts can be catalogs, matrices, or diagrams for various purposes, like requirements catalogs or use-case diagrams. All these artifacts are from the content to the repository.
 - c. Building blocks are the components of the organization, which can be combined to create solutions for the organization's needs.
4. Enterprise continuum and tools: a way to organize and view different architectures in a repository. It shows how architectures evolve and become more specific, concrete, and physical when the knowledge improves. The Architecture Continuum and Solutions Continuum are also part of this concept, and it includes tools to help develop new architectures.
5. Reference models: gives a view for the Technical Reference Model, TRM, which includes parts such as core taxonomy, etc.
6. Architecture Capability model: guides establishing necessary organizational structures, processes, roles, responsibilities, and skills to acquire Architecture Capability. It contains best practices for building enterprise architecture practice within an organization.

TOGAF is widely used and accepted in organizations as a standard for enterprise architecture. Even though they target all sized companies, large and most complex

companies are using this framework for its ability to handle complexity. (The Open Group, 2022)

Zachman Framework

Compared to the Zachman Framework, another framework for enterprise architecture is a system that helps to categorize a massive variety of documents and materials into appropriate groups. Zachman Framework is notable for mention in this context since it is not only limited to information technology use but can also be applied to any aspect of a business. In short, this framework consists of six main topics:

- Data
- Function
- Network
- People
- Time
- And motivation

The Framework has six main perspectives, which these main topics can be seen:

- Planner
- Owner
- Designer
- Builder
- Subcontractor
- And enterprise

Combining these twelve points creates a comprehensive web of information that explains how an organization is formed and helps to see how it should operate. It helps

to understand how the organization's points fit together and their relation to help make better decisions for the business. (Zachman, 2003)

Federal Enterprise Architectural Framework

The Federal Enterprise Architectural Framework, better known as FEA, is one of the recent frameworks focused on establishing a solid structure for organizations. FEA was developed by the US government in 2006 to organize the numerous agencies and organizations under its control. It was built upon its predecessor, The Federal Enterprise Architecture Framework (FEAF), which was introduced in 1996.

FEA combines the elements from both previously introduced frameworks, Zachman Framework, and TOGAF, and it has five reference models:

- Business
- Service
- Components
- Technical
- And data

These five reference models and a segment model provide a comprehensive view of how to implement enterprise architecture in the organization. The segment model allows for differentiating multiple organizations and their relationships. FEA was instrumental in restructuring the US government. It gave a powerful tool for other organizations to craft a strong foundation for any company looking to establish a solid organizational structure. (Urbaczewski & Mrdalj, 2006)

The choice of enterprise architecture framework will depend on the organization's specific needs. While the TOGAF may be one of the best solutions for large, complex

organizations, the Zachman Framework may suit better when the organizations need to understand the relationships between the systems, and FEA may be the tool to use when the organization wants to align their IT systems with their mission and goals in specific situations. (Urbaczewski & Mrdalj, 2006) To complete an analysis of different frameworks and their perks will require much deeper research and analysis, which are outside the scope of this thesis.

2.2.2 Metamodels as a Tool

Metamodel can be a process or a template that helps organizations to create and manage their enterprise architecture. It gives a loose frame of which perspectives should be concerned and how those could be seen. Metamodels can vary a lot depending on which metamodel organizations are using, and some frameworks prefer their metamodels. Companies that provide enterprise architecture for the companies could create their own or use existing ones. However, the critical part is that the organization tries to choose the one serving its purposes. (The Open Group, 2022)

Figure 1 presents a simplified example of what a metamodel could look like in practice. This metamodel describes how the organizational enterprise architecture could be formed. For example, organization can start with the customer journey and describe how everything is attached and what is needed to achieve strategic goals. This metamodel presents how all are linked with each other in the organization and if something is changed, where it has an impact, and how it should be fixed or enhanced. It shows how IT architecture is only a tiny part of the whole ecosystem, even though enterprise architecture has been seen only as an IT tool. Metamodels should not be used as they are but as a path and a model to serve organization's purpose.

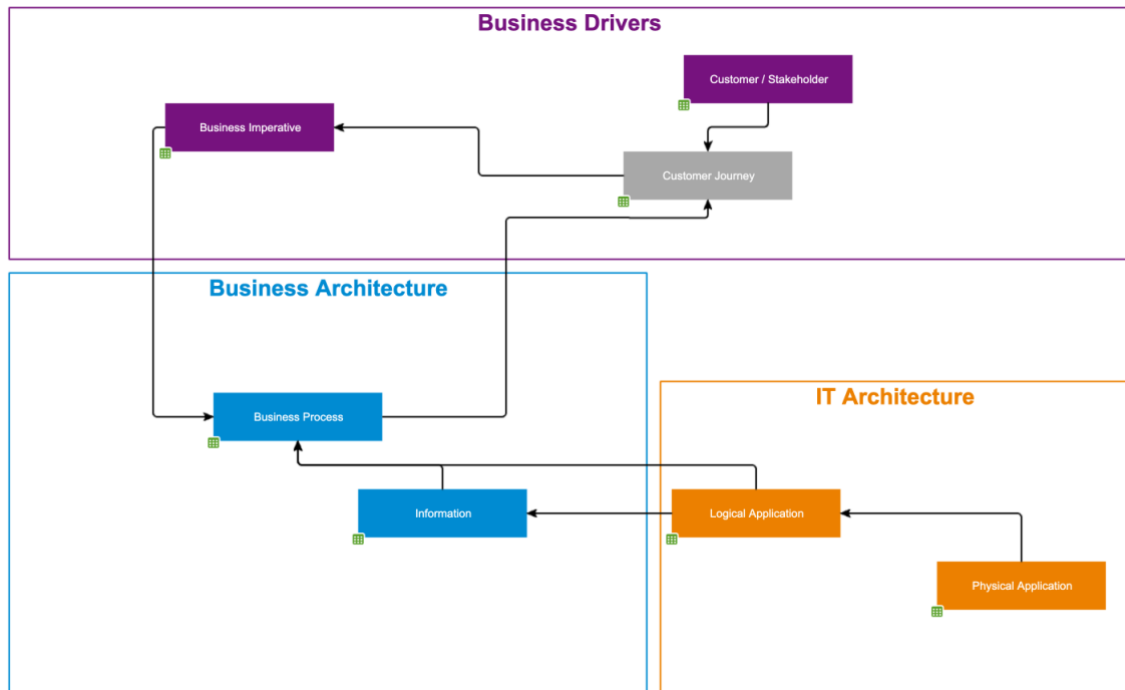


Figure 1

2.2.3 Other Relevant Tools

Other notable tools are various software. Many software in the markets could be used for defining enterprise architecture. One huge advantage gained by using these tools is that they should help describe and show complex matters more straightforwardly and visually. This software helps to describe relations of different organizational elements (figure 2), for example (Mäkinen, 2020).

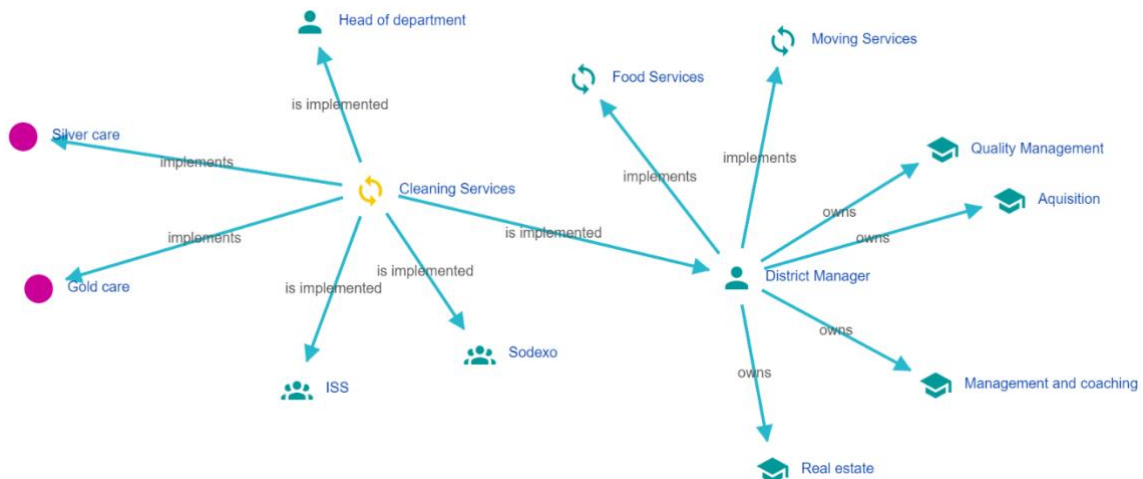


Figure 2

This software offers several benefits that are relevant to all industries. Those features could be the ability to create connection graphs, which show the current state of the systems and their relationships, for example. These graphs allow organizations to understand better their systems and how they relate to one another, which can speed up development. In many cases, the software allows for creating hierarchies of processes or services and makes it easy to visualize detailed implementation solutions and high-level structures. This can be especially helpful for enterprise architecture work, where the system portfolio may have become too large to manage effectively. In these cases, modeling can be used to link needs to processes and capabilities, providing a basis for reform, for example.

Using one tool for all the describing should help to share the information across the organization so everyone would have updated knowledge. It would also help to lose the possible other tools, like PowerPoints, which do not have that good features and are easily just on the practitioner's desktop, and the information is not shared. These tools support the enterprise architecture work but not anything which automatically makes you the expert. (Mäkinen, 2020) Tools and practices give a language for practitioners like ArchiMate so that everyone would understand how the company is defined.

3 Strategy Work

The modern business world is changing faster than ever before. To make it, companies need to pay close attention to their strategies. (Ross, Weill, & Robertson, 2006) The term strategy is often wrongly understood. It has become a general term used to mean whatever somebody wants it to mean. (Hambrick & Fredrickson, 2001) Strategy is not the company's values, a reason to exist, or even the goal of the company. Collis & Rukstad (2008) argued that strategy says, "What our competitive game plan will be."

The definition of Strategy in this thesis context is that strategy answers how the organization will achieve its objectives. (Collis & Rukstad, 2008) It is a set of intentional, integrated, and informed choices which eventually leads to the organization's objectives. (Hambrick & Fredrickson, 2001)

When crafting a strategy, you must first define the goal that you want to achieve. Collis and Rukstad argued, "if you do not know where you are going, every road takes you there." It perfectly describes that you cannot create a good strategy for your company if you do not have a proper goal. There should be a single goal and measurable, time-bound, and specific to be a good one. (Collis & Rukstad, 2008)

The essence of strategy is to choose which activities the company should and should not perform. If they perform the same activities as rivals, how do the companies perform those differently to reach the goal? (Porter M. , What is Strategy, 1996) Strategic management is to make choices and decisions for the future. Those choices might have a risk, or you might not be able to have all the data, which creates uncertainty. After all, it is important to understand the situation, forecast the outcome, and decide based on that. (Nag, Hambrick, & Chen, 2007)

If two companies have the same strategies, they are not good ones. (Collis & Rukstad, 2008) That means that good strategy creates a unique and valuable position involving the company's chosen activities. (Porter, 1996) Unique positioning and a set of activities give your company a sustainable competitive advantage, one of the most critical aspects of a strategy. (Collis & Rukstad, 2008) The strategy can be variety-based or needs-based. (Porter M. , What is Strategy, 1996)

To form a successful strategy, there are lots of aspects that need to take into consideration. These aspects can be elements such as environment, people, or competitors. Often the strategist's job is to understand the environment where it operates and reacts to its movement. This may be challenging, but it will give a good understanding of the company and its market position. In addition, Collins and Rukstad (2008) suggested that strategy consists of three elements: objective, scope, and advantage. When it comes to strategic management, the scope is an integral part of it. Scope gives your business healthy boundaries, which makes you focus on the company's objective and helps to follow the strategy instead of wasting time on things that do not matter or even hurt your strategy. (Collis & Rukstad, 2008) Companies should understand things they know and can handle, things that they know they do not know, and the things they do not know that they do not know. (Schoemaker, 1995)

3.1 How Strategy is Realized

To form a good strategy, it is essential to understand what we want to achieve and what is realistic, and it is a lot easier if the basics of the strategy processes are acknowledged. The planning is a massive part of the process and, eventually, the implementation. The strategy process requires a practical approach as well. Strategy-as-Practice (SAP) is considered a practical approach to strategy-making and other related approaches, such as decision-making or middle-manager strategizing. (Vaara & Whittington, 2012) It would help to make concrete plans and helps your strategy to succeed.

Strategies have been seen in figure 3, where intended strategies may eventually become realized. Another option is that the intended strategy will need to be realized, and new variation may emerge and take its place by becoming a realized one. (Mintzberg & Waters, Of Strategies, Deliberate and Emergent, 1985)

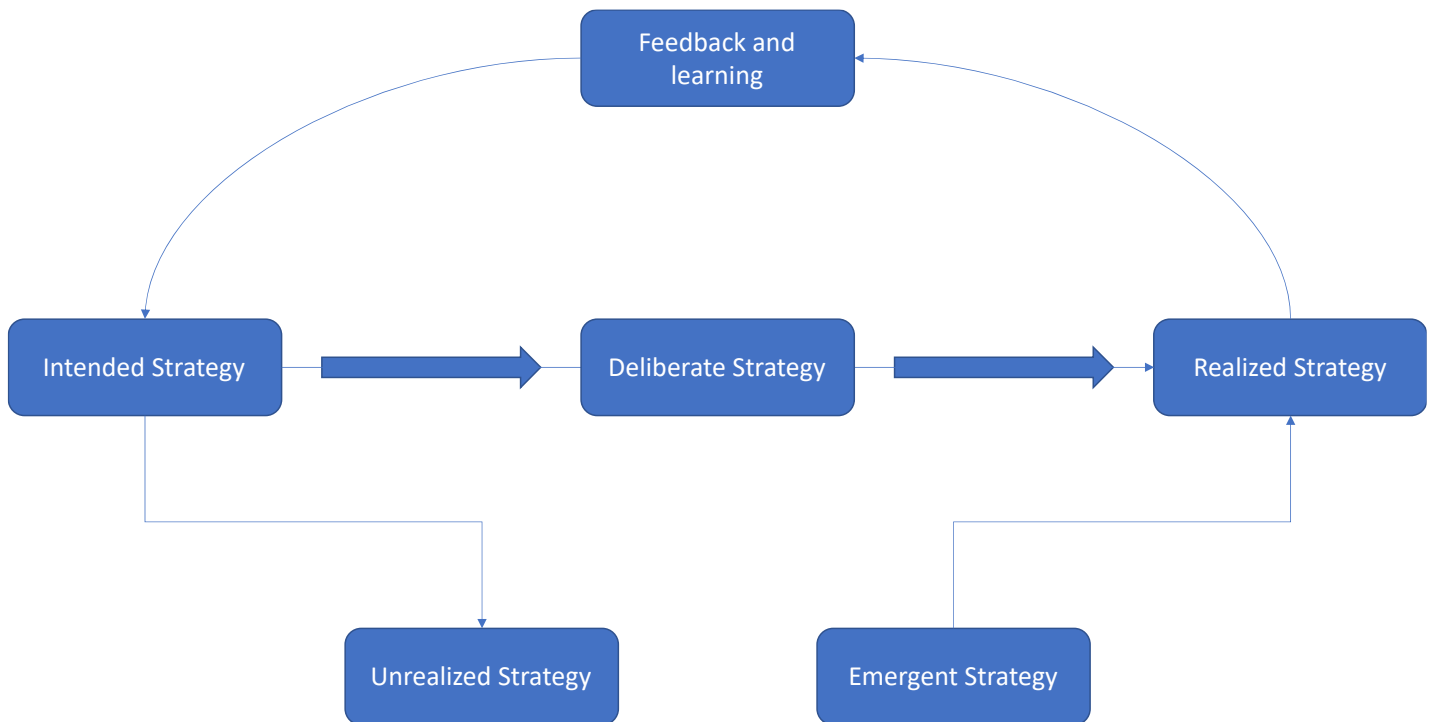


Figure 3

Three conditions must be fulfilled to deliberate a strategy for a realized one perfectly.

- The organization needs to have precise intentions, which need to be concrete, so there is certainty and certainty when starting to take action.
- Because no one can do these actions alone in organizations, there must be familiarity among virtually all the actors.

- These collective actions need to be realized precisely as intended, which means that no external forces have affected them or otherwise; the intentions are not the same as they were initially.

A perfectly emergent strategy requires that there is consistency in action over time and no realized intentions at all for those actions. It is hard to imagine a strategy where the series of actions has yet to have intentions at all, but at the same time, some patterns might get close when the environment forces companies to do that. The fundamental difference between deliberate and emerged strategies is that the former is highly controlled and centralized, which allows a better view of the process and helps with strategic learning in that way. The emergent strategy helps to learn what works and what does not when one action at a time and looks for patterns and consistencies. Emergent strategies are formed when organizations see what is working and what is not, which might change the intended one to be emergent. A necessarily emergent strategy does not mean chaos or that the organization is not working correctly. It could also mean they are open to a new way of working and flexible to reach the best possible outcome. (Mintzberg & Waters, *Of Strategies, Deliberate and Emergent*, 1985) It can be seen as agile strategy formation in today's business world.

Strategies are more than just something where every company can use the same processes or has the same evolution. The strategy has many shapes, but you must look at the broader scope. (Mintzberg & Waters, *Of Strategies, Deliberate and Emergent*, 1985) To create a winning strategy, you cannot just copy old strategies which may have worked with other companies or at a different time. It would be best to analyze the micro- and macroenvironment, which have changed or are different, and try to adjust the strategy to suit your purpose. Companies should benchmark and "copy with pride" some aspects from others, but you should still have some factor that gives you a competitive advantage. Strategic planning is one of the most used management tools in organizations. Wolf and Floyd suggested in 2013 that we do not always understand how and why strategic planning is widely used. In addition, they argued that people could not

say the benefits of planning and how succession planning is executed. (Wolf & Floyd, 2013)

Strategic planning has a huge role in strategy development and how organizations formulate significant problems. It helps to set objectives, analyze alternatives, and choose the strategy. It has also been used as a critical mechanism for integrating and coordinating organizational decision-making. (Wolf & Floyd, 2013) In practice, it can help you to sort out and clear some of the most critical aspects of your company, like value proposition, revenue model, or value system. It may be a life-saving tool since it could help to outline the macro- and microenvironment. It helps predict what might happen shortly and identify possible barriers and pitfalls.

However, to be successful with your strategy does not mean that you need to stick just with the original one for the end of times. Strategy is not something you set and wait with the process running to see after five years that it was completed. One major force that might affect your strategy is the environment where you operate changes continuously but irregularly without any possibility of always predicting its moves. Sometimes even the greatest strategists and planners cannot predict the future and know where the markets will stabilize. (Mintzberg, Patterns in Strategy Formation, 1978) The key factors impacting the company's success can change rapidly. (Vuori & Vuori, 2014)

It is essential to learn to change the direction itself if needed, not just the means of how to execute one. (Mintzberg, Patterns in Strategy Formation, 1978) If you make formal plans and stick with them for too long, you might trap your organization in a loop that would keep creating new formal and strict plans all over again. (Huff & Reger, 2016) If you do not change the strategy on time, it might cause total failure of your company, which would do it for you. After that being said, that should not lead to the conclusion that planning and consistency are irrelevant in strategy. We always need to keep our eyes on the prize and find consistency to keep our focus. (Mintzberg, Patterns in Strategy

Formation, 1978) According to Bingham and Kathleen (2009), heuristics are at the strategy's core. Heuristics would help your organization to follow the strategy because those are rational in unstable markets and helps you to simplify your decision-making in the middle of the chaos. There must be more than one characteristic of strategy. The other would only work with the other one in the long term. You need to plan your strategy, but also you need to be able to re-evaluate your strategy and change it if needed. According to Mintzberg (1978), these two “types” can be combined in three ways in theory (Figure 3).

Whittington argued that there could be identified five approaches in strategic management. Strategies can be approached as a **social** practice that focuses the on how the practitioners of strategy act and interact. In the 1960s, the **planning** approach emerged, focusing on tools and techniques to help managers make decisions the same way the business should. The policy approach analyzes corporate pay-offs to find the optimal strategic direction. The approach in which one’s research has been exploring how organizations recognize the need for strategic change and achieve it could be called the **process** approach. The **practice** approach is quite similar to the “process” approach, but it operates at a managerial level and focuses on how strategists do their job. The practice approach takes the strategy work seriously and focuses on talking directly to practitioners. (Whittington, 1996)

It is also essential to notice social aspects when studying and crafting strategies. In the social world, there is deliberate and emerging quality. Some of the intentions and actions are taken more as granted. However, in many companies, many actions still need to be recognized and, therefore, cannot be considered when forming a strategy. (Vaara & Whittington, 2012) Sometimes managers and executives should pay more attention to the social perspective, which may have eventually led to strategic failure. After investigating what went wrong, the executives still would not believe it, giving too much credit for the numbers and “this is how it should have gone” theories. Mintzberg and Waters (1895) argue that strategy has been seen as more like planning what executives

and managers want to do in the organization than real long-range goals and action plans with actual analytic processes. This aspect is emerging, but the work is not done. In many companies, it is still seen as some big abstract “thing” that is unclear to employees.

The understanding of the long-term benefits and analytics are developed over the years, and those aspects are taken seriously in today’s companies. Involving people in the decision-making can seduce them to commit to the company’s goals and values that they might not have agreed to otherwise. (Vaara & Whittington, 2012) That would also help with the implementation. Everyone in the company must want to be part of the strategy and support its success. Often the strategy implementation is executed poorly or not at all. When the strategy remains just at the idea level, it wastes time for everyone, and the company may be unable to do its business as it should. (Wolf & Floyd, 2013)

After creating and setting the strategy, executives must be able to make sure that everyone in the company knows about it and understands it. (Hambrick & Fredrickson, 2001) (Porter M. , What is Strategy, 1996) It is not easy to develop anything and make the right decisions if executives, managers, and other employees do not understand the strategy and direction the company should go. (Collis & Rukstad, 2008) Management and the other company members must actively implement strategy into action. (Ramos-Rodriguez & Ruiz-Navarro, 2004) To take strategy into action, it is essential that the company has managerial time and talent, and other capabilities to do what needs to be done. (Hambrick & Fredrickson, 2001) It is essential to know the routines of your organization so it would be easier to plan and implicate the strategy for the whole organization and make sure that people are aware and wants to follow it. (Whittington, 1996)

Heuristic approach would advance coordination during strategy implementation, according to Vuori & Vuori (2014). In addition, implementation would get much easier if there were not just high-level executives making the decision and creating the strategy but if the whole organization could participate and do their part. That way, it would be more like “us” and not just “them.” (Eisenhardt, 2016) Strategists must remember that

even if there would be 100 people in the organization with the same goal and strategy, the role of that strategy is not the same for everyone. It is relevant to point out two perspectives in strategy work. It can be inspirational when a strategist gets ideas and sees unique opportunities, but it is much more. It is also essential to consistently make routines for budgeting your resources that serve your strategy and plan it constantly, as it could change for external reasons. Companies would need experts for both perspectives. (Whittington, 1996)

After all, strategic management is on top leadership's responsibility. A leader's job is to teach strategy to the others in the organization. Leaders have the perspective and confidence to decide which target groups to serve and which to say no to. Managers may not have those abilities and should not be the ones to make those decisions. Strategic management demands discipline and continuity to maintain itself. (Porter M. , What is Strategy, 1996)

3.2 Managerial Strategy Process

If I had to have a simple answer to the question, "what is the best way of characterizing the strategic process?" I would not be able to give one even after my studies. Many theories conceptualize strategy as a "plan"; even in common terminology, it is stated as one. (Mintzberg, Patterns in Strategy Formation, 1978) Why is it not easy to answer the questions and say that the best way is to characterize it as rational and planned?

As we know, strategy can be seen as a set of choices for your business's direction. You should have a clear vision of where to aim with your company and what you want to achieve. It requires a plan and a strategy to determine how to get there. Moving the company in the right direction, your choices must be consistent and thought out in advance. It would be best only to make the decisions based on your gut feeling with an assessment of the next step. (Mintzberg, Patterns in Strategy Formation, 1978) It is

critical to consistently make routines for budgeting your resources, for example, so that those will serve your strategy. (Whittington, 1996)

You need to know what is happening in your industry to make intelligent investments and keep your business high. (McGahan, 2004) To form a strategy, you need to understand the variables and try to predict future scenarios so the company can make a competitive strategy for future challenges and opportunities. By identifying the trends and uncertainties, businesses can define different scenarios to help managers make decisions and avoid underestimating their capabilities and tunnel vision. It is essential to make sure that the scenarios remain unbiased to have a proper one and to be able to make necessary decisions based on them. (Schoemaker, 1995) Even though future predictions are hard to craft, and businesses can face surprises, the company must be ready for the change, and they have some reasoned scenarios which would give an excellent overall status of their business environment. The companies should be able to form their strategy, such as they would be able to compete in different scenarios even if that means that everything is going south or that everything is blooming. Scenario planning is a tool that helps managers evaluate possible future changes and what the company should be prepared for. (Schoemaker, 1995)

If the industry is incrementally changing, you should reconsider your business and invest in its core. This feels obvious but can be challenging. Signs of change might need to be understood and lead to false actions. (McGahan, 2004) For example, Nokia tried to bring touchscreen phones onto the market but failed then. It did not have a significant impact at the time, but when apple did the same thing, everyone was forced to do the same when the industry was incrementally changed, and the old way to do things was only possible if you wanted to survive. To truly understand the direction, executives need to consider long-term direction instead of just what is happening now and be able to keep your company on the right course despite the current pressure if possible, field (McGahan, 2004). That is what Apple saw, and they invested in R&D and made it work even when Nokia failed their touch screen launch.

According to McGahan (2004), industries evolve along four distinctive trajectories: radical, progressive, creative, and intermediating. She argued that a company's strategy could not succeed if not aligned with the industry's trajectory. These trajectories set the boundaries for change and how the value can be generated. It is essential to understand the change in the industry so you can manage it and take advantage of it. It helps to evaluate and make justified predictions about which strategies would be successful and

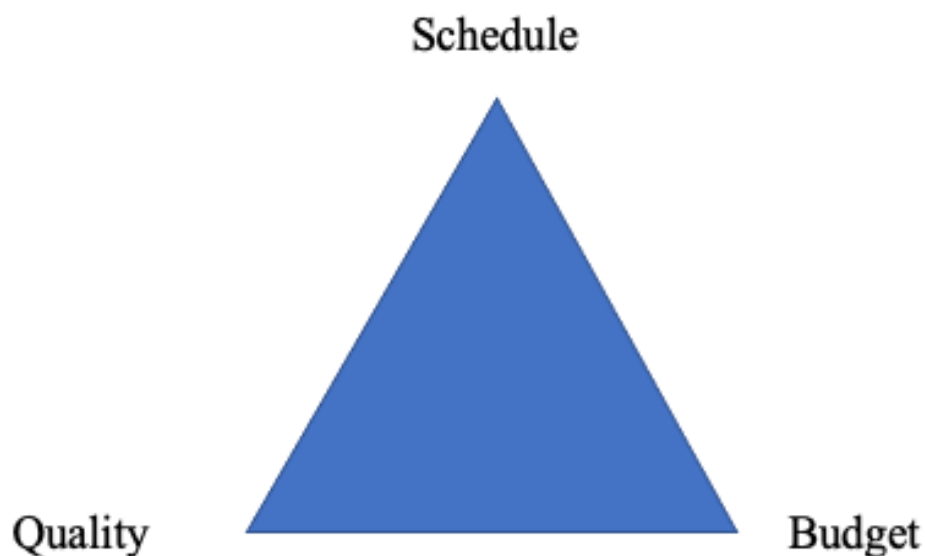


Figure 4

which would fail. The phases of change and when you understand what kind of change trajectory your industry is in, you need to understand which phase the industry is in right now. To understand it, you must also understand the speed it is changing. It is crucial so you would be able to optimize your evolving and manage changes. You can usually have only one of the three aspects – budget, quality, and schedule (figure 4). This means that if you need to make a rapid change to maintain a competitive advantage and keep up

with industry change, you must decide whether you want to invest more resources than you have budgeted at the expense of quality or vice versa.

It is easy to agree with McGahan (2004) that diversifying your business could give you new opportunities. It would also secure your business if done in the right way. Even though managing different industries is more complex, it gives the business better resistance when difficult times hit in the industry since you can balance the loss with another industry and give stability that way.

Companies in the industry are considered to be alike in all economically essential dimensions except their size. Based on this assumption, the companies are considered to have the same scale of power in the markets as their size. According to Porter (1979), large companies earn higher profits because they possess market power rather than because they are more efficient or lucky with their business. This view is very different from the idea presented earlier by Ross, Weill, and Robertson (2006), that top performers have been gaining their positions with efficiency and hard work by establishing a concrete foundation rather than just being big ones in the industry.

3.3 Generic Strategies

Strategy is the critical factor in your company's success. The strategy can often be found from their core when reviewing why companies have had successes and failures. Strategy has defined how these companies have been managed, how they have behaved, and how they have done things differently than others. We must remember that the strategy is one of many things that would affect these since domestic and international events and changes have also had their part. (Porter M. , Towards a Dynamic Theory of Strategy, 1991) In most cases, the outcome would have been way different than it turned out to be if the strategy had been different or it had evolved differently. Even when the environment is changing, the strategy should change with it.

Michael Porter's models of generic strategies describe how companies would reach a competitive advantage in the markets of their field. (Campbell-Hunt, 2000) Porter argued that generic strategies could be roughly identified into three main strategies. These strategies are based on competitive advantages. The first one, cost leadership, is having lower costs than your rivals and having a competitive advantage from there. The second one is differentiation, where the idea is to perform the company's activities differently to create more value for the customer. The third one is focused, where you focus on some smaller area and specialize in that. (Porter M. , Towards a Dynamic Theory of Strategy, 1991) There can also be identified fourth one, "**stuck in the middle.**" That means a combination of differentiation and cost leadership, for example. Porter has stated that this would not work or, if it would, be a low-performance strategy. However, Leitner and Guldenberg (2009) argued that more recent studies have shown that these "mixed" strategies can also be valid for companies.

Like Leitner and Guldenberg pointed out, there are or at least have been debates about whether SMEs need a competitive strategy. (Leitner & Guldenberg, 2009) Another matter is that to keep all the costs low in your business by depending on just a few suppliers, you would be totally on their hands, and your business might fall if the suppliers will get bankrupt or so. You need to be fast with your actions and be flexible in today's business to keep your business on track. You can not blindly follow your strategy and hope for the best, or the competitive situation might disappear. (Leitner & Guldenberg, 2009)

Companies should also consider keeping their eye on other aspects than just their competitive advantage. It might change rapidly over time, and your rival might suddenly have lower costs than you if you need to pay attention. (Leitner & Guldenberg, 2009) Even though Porter has created a great framework, it might still not be your choice which would be your competitive advantage. Competitive advantages are highly dependent and shaped by the environment and field. You might only sometimes be able to reach

your preferred competitive advantage even if you wanted. (Foss, 1996)

Changing the company's direction might be difficult if you have not prepared for that. When reviewing your success, it is essential to remember that you get what you are measuring. For these "stuck in the middle" strategies, it is essential to remember to maintain a balance so that you would not be leaning too hard for the other side if you are not sure it is the way you want to move. Moreover, even if you are not positioned as a cost leader, you should monitor your costs to keep your business going. (Leitner & Guldenberg, 2009)

Competitive strategies concern the whole company like the strategies should. It is not just any specific business unit's responsibility but must be considered in all business units. These need to be researched continuously, and the knowledge needs to be improved. Like the strategies, our knowledge and skills to implement the latest information must be agile and accessible. (Fahey & Christensen, 1986)

3.4 Strategy Tools

Porter predicted in 2001 that the winners would be those who viewed the internet as a complement to, not a cannibal of, traditional ways of competing and thought of as a critical technology. There is not a single person who thinks the same way today. Porter argued that companies should move further from the thinking of "internet industries," etcetera, as their industry, and he was right. (Porter M. E., Strategy and the Internet, 2001)

The Internet is a complex tool with pros and cons from a business perspective. Porter argued that the Internet completes traditional businesses and enables technology. (Porter M. E., Strategy and the Internet, 2001) This argument was supported by Kohtamäki, etc. in 2019 when they argued that digitalization is seen more as an enabler and driver of the business model, value creation, and value capture. (Kohtamäki, Parida,

Oghazi, Gebauer, & Baines, 2019). The internet has made the world smaller and markets bigger. In the modern business world, as a consumer, I can buy things from anywhere globally, and as a business owner, I can sell my goods almost anywhere. It would remove barriers in some industries but may also have higher barriers in others. If used correctly, the internet would give your business lots of leverage when choosing suppliers when you can source sub-contractors and evaluate their performance better. It has given much power to consumers as well when they have become more price-sensitive since the internet, when everyone has better access to information. It helps to benchmark competitors since all the actions have become more transparent online.

A value chain is an excellent tool for understanding the influence of information technology on companies. It is the activities through which a product or service is created and delivered to customers. (Porter M. E., *Strategy and the Internet*, 2001) Business technology standards suggest that information and business technology can be defined in three dimensions. (Introduction to Business Technology, 2022)

The first of these three dimensions are capabilities and transformation, which means that companies need proper capabilities to transform their working methods and maintain efficient operations in their industries. The second dimension is the digital frontline, which means everything seen outside the company. For example, it can be a user experience or cyber security. The third dimension is the technology backbone which is considered a traditional information technology aspect, such as ERP, which keeps the engine running. (Introduction to Business Technology, 2022) Together, these would give a better and more comprehensive understanding of this topic and how information technology and the internet could be tools.

Enterprise architecture is a tool for strategic management and planning. Like any other strategic planning, using enterprise architecture in strategy work requires efficient communication from bottom to top and vice versa. The communication needs to flow from management to implementers and back without barriers and understand that

communication is emphasized from bottom to top. It helps identify potential changes and improvements which may benefit the organization without wasting resources or overlapping processes. (Keskitalo, 2011) The IT background of enterprise architecture is beneficial in strategy work in modern business. (Introduction to Business Technology, 2022)

Santos and Eisenhardt argued in 2005 that organizational boundaries are demarcation between the company and its environment. They argue that a broader view of boundaries can lead to a deeper understanding of the companies. Four conceptions have characterized boundaries. The first one is efficiency which has a cost as a fundamental issue; the second is the power which has autonomy; the third one is competence which is real growth; and the last dimension is identity which is a fundamental issue is coherence. (Santos & Eisenhardt, 2005)

To create a winning strategy, it is essential to understand the competition in the industry and react to it. The five forces are the tool for helping to understand what factors are shaping the industry's competition. It would give a good overall picture of what is happening, and which forces are the ones that are affecting the competition. The competitive forces reveal the drivers of industry competition and help to define the industry as attractive to your business. Some forces might be intense and others benign, depending on how it affects the industry and competition. (Porter M. E., The Five Competitive Forces that Shape Strategy, 2008)

3.5 Formal Strategy Work and Processes

The capability approach in the strategy process happens when the company puts its core capabilities at the center of its strategic resources. This means that the companies focus on their core capabilities which are hard to imitate, rather than their products or markets, and their strategic vision determines the scope of the strategy. These companies' approach is more thinking about what capabilities they should have to develop their

business instead of considering which markets they should compete with their capabilities. Long & Vickers-Koch argued that competencies and capabilities represent two dimensions of an emerging corporate strategy paradigm. In contrast, core competence emphasizes technological and production expertise at specific points along the value chain; capabilities are more broadly based, encompassing the entire value chain. (Long & Vickers-Koch, 1995)

Strategy mapping could be a good tool for companies to understand the processes and how the companies create value in today's business. With balance scorecards, companies can evaluate what skills and systems employees need to build desired capabilities. (Kaplan & Norton, 2000) Companies cannot evolve and develop their processes, etcetera, if they do not know their capabilities and what they do not have. In practice, the company should have all those fourth pillars before they can say they have some capability. Without capabilities, companies are not performing efficiently and cannot develop the company correctly. This requires much evaluation and effort from all levels of the company so the capabilities are recognized correctly, and they would see what capabilities are required to achieve the company's goals. They are mapping the strategy process to make it as straightforward and detailed for everyone to execute it most efficiently and correctly, including all the aspects (Kaplan & Norton, 2000). To respond quickly to the changes in the environment, it would be crucial to have Dynamic Capabilities. These dynamic capabilities refer to the renewal of resources so that companies can easily face environmental changes since they can change their resources quickly. (Danneels, 2010)

Blue Ocean Strategy is exciting to approach the strategies. The Blue Ocean strategy approach argues that instead of competing in existing markets, which is called the Red Ocean strategy, the companies may create new, uncontested markets, making the competition irrelevant for that moment. In that way, the company can reduce trade-offs and capture new demand which they have created. (Kim & Mauborgne, 2005)

In conclusion, no general and almighty processes or strategies would fit every company and give absolute truths every time. All the companies are unique organizations with different capabilities in different industries. Even if two companies seem similar and operate in the same industry, people might act differently inside the organization. The brand might be more robust in other companies, affecting the strategy. All the aspects of strategy work need to be evaluated and analyzed from the that specific company's point of view and make justified decisions based on those instead of just recklessly copying some other players' strategy. Two players with the same strategies and competitive advantages lose the advantage, and those need to be developed. In my opinion, the most substantial companies are the ones that are constantly developing their company and strategies to keep up with changes and be able to react fast if the environment changes.

4 Theoretical Framework

Enterprise architecture can be seen as a description of an organization. It is not a matter of information technology; it is the whole organization. It describes information technology but should also describe processes, roles, and responsibilities without forgetting information flows. (Keskitalo, 2011)

Enterprise architecture can be used in strategy to design business processes, models, and infrastructure and align technology with business goals. It focuses on business process integration and standardization and can help establish stable foundations, making the business more efficient and agile. Mastering enterprise architecture can give the organization a competitive advantage and separate it as a top performer in the industry. To form a successful strategy, the company should first define a goal that is measurable, time-bound, and specific, consider the environment, people, and competitors, and have a good understanding of what it knows, what it does not know, and what it does not know it does not know. Enterprise architecture should support the strategy and become a key element in executing the business strategy successfully.

Strategy formation is an essential process in achieving desired outcomes for organizations. The best strategy combines planning, re-evaluation, and changing direction if necessary. Utilizing enterprise architecture in strategy formation can establish stable foundations for a business and make it more efficient and agile. To flawlessly execute a strategy, it must have clear and concrete intentions shared by all actors, be carried out as intended without external interference, and have consistent actions over time. Deliberate strategy is highly controlled and centralized, while emergent strategy emerges from observing what works and what does not, leading to flexible and agile strategy formation. Companies must focus on effectiveness and efficiency in uncertain market conditions to gain a competitive advantage. Properly applied enterprise architecture should support strategy and help it to realize as planned since the organization has a better knowledge when crafting the design. Utilizing

enterprise architecture can help simplify decision-making in unstable markets and improve success in strategy formation.

Company capabilities, such as skills or processes, can give a firm a competitive advantage. These capabilities must be valuable, rare, difficult to imitate, and without substitutes to be effective. Since enterprise architecture describes and defines what power the organization has or should have, enterprise architecture could be a massive asset in capability management. Dynamic capabilities, or a company's ability to adapt to changing environments, are crucial in maintaining a competitive advantage. This is done by combining and deploying existing competencies and resources. Enterprise architecture creates a solid base for the organization, but it also helps to understand how an organization's capabilities to change and adapt to changes. Even though predicting and overseeing every possible outcome is impossible, the enterprise architecture should help notice the weak spots and where you can improve the organization. Renewing an organization's resources can also lead to new business opportunities, giving the organization a first-mover advantage. The Resource-Based View of strategy provides a framework for understanding company capabilities, but it does not meet all empirical criteria, according to Priem and Butler (2001). Many enterprise architecture tools use the RBV point of view, which is notable for every practitioner in the field.

Enterprise architecture should be viewed as a part of strategy work as a whole (figure 5). It should not be considered an IT outsider force affecting strategy work. Enterprise architecture describes the organization's current state, which helps to understand where the organization stands now and applies throughout the strategy journey. It builds a strong foundation for the company to start crafting and executing the strategy to reach objectives. In addition, it supports decision-making from the perspective of understanding what is realistic.

Since the enterprise architecture describes the company's current state and could contribute to the planning by presenting different scenarios on how to make the

company more efficient and what resources, processes, or capabilities are required for change to take strategy into action, the company must have the necessary qualifications to do what needs to be done and understand which needs to be replaced, for example. When you know the organization, its routines, and processes, it is much easier to plan and implement the strategy for the whole organization and start change management. By identifying the organization's capabilities, they can avoid under- and overestimating their capabilities and tunnel vision.

The strategy should be treated as something other than static but needs to be evaluated constantly. Planning and consistency help keep you on track and prepare for the changes that may appear despite your organization's actions. Enterprise architecture helps craft alternative solutions and scenarios that give the organization better ground to act if the environment changes and strategy needs to be adjusted. Integrating the enterprise architecture part of your strategy work makes it easier to develop a consistent strategy and evaluate the situation based on data, not feelings.

Based on the comprehensive analysis and careful decision-making, the enterprise architecture enables much more information than the organization would have without, which helps strategies to realize as intended since they should have been able to have precise intentions on a concrete level, so they have been able to take actions without hesitation or doubts.

Figure 5 illustrates that strategy flow and different aspects of enterprise architecture should be considered together inside the frame of strategy work. Elements of enterprise architecture may have an impact in several steps in the strategy flow, and together, they can create stronger strategies than without each other.

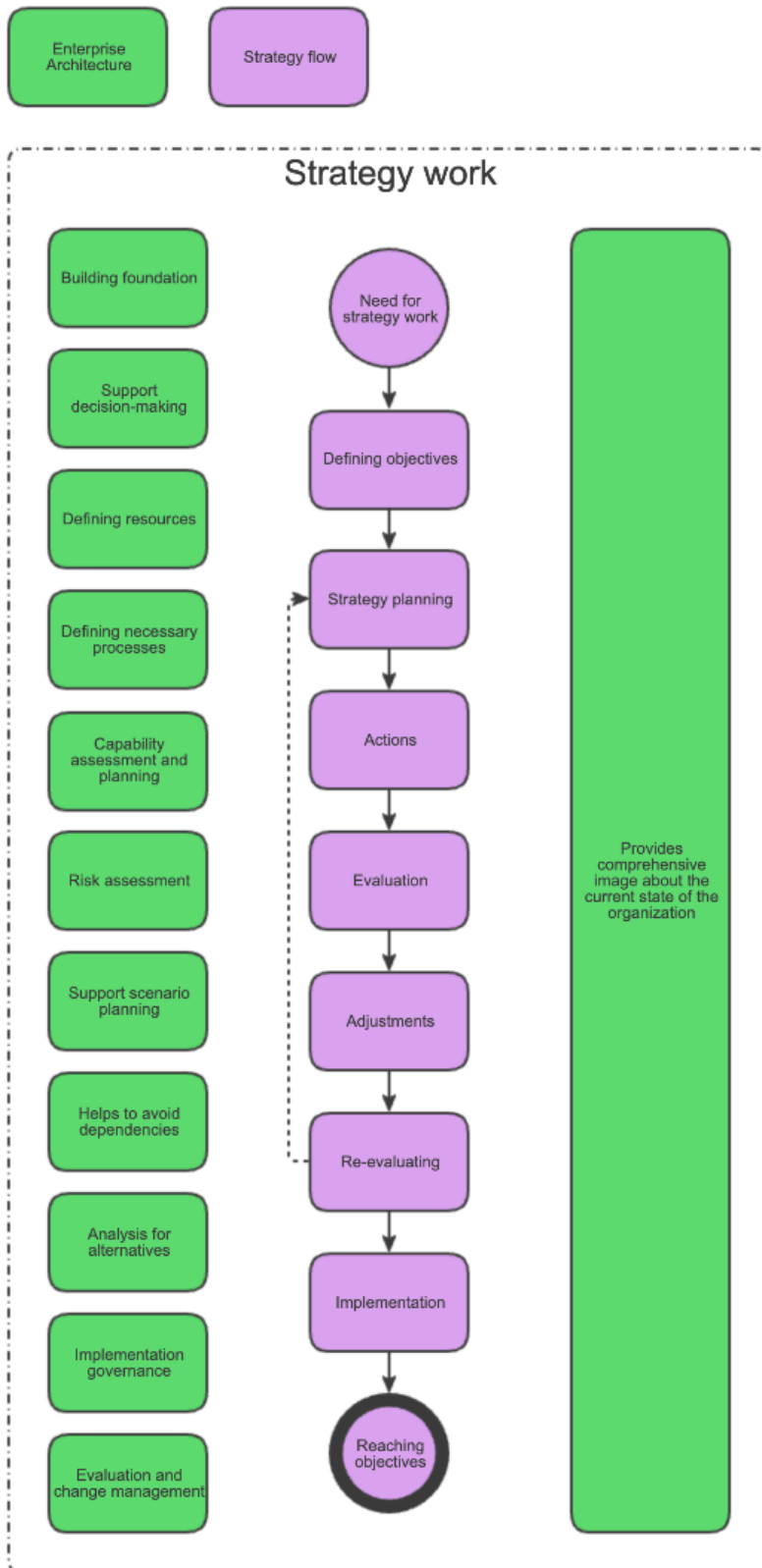


Figure 5

5 Research Methodology

The choices of research methodology are presented in this chapter. First, the research design is presented with justified views. Then, data collection is described, followed by the data analysis method used in this thesis. Last, the chapter discusses the study's validity and reliability. The chapter also presents the interviewees targeted for this study.

5.1 Research Design

A qualitative research method was chosen for this study. This research method was selected since it would be suitable for approaching the research problem and understanding practitioners' experiences and perspectives. The essential characteristic of qualitative research is that it studies people's subjective views and experiences and examines the processes related to interpretation and understanding. (Puusa & Juuti, 2020) In qualitative research, the purpose is to understand the research topic. The basis for the study is to describe real life, in which case the research is aimed to perform by considering possible complex relations of reality. (Hirsijärvi, Remes, & Sajavaara, 2009) Qualitative research should give a comprehensive insight into a specific activity, describe a phenomenon, and give a theoretical interpretation. (Tuomi & Sarajärvi, 2018)

Qualitative research aims to reveal what is happening in real life and not just confirm the theoretical framework. The basis of the study is to review and understand the collected data and not just test the theory or hypothesis. (Hirsijärvi, Remes, & Sajavaara, 2009) That being said, it is possible to use working hypotheses in qualitative research can use hypotheses, which refer to assumptions about the nature of the target phenomenon. Testing these hypotheses occurs during data analysis as the researcher seeks to conclude. Hypotheses are formed from individual case analyses, and they are created based on the data that frequently raises the same themes throughout the study and are tested in later stages. (Puusa & Juuti, 2020) It is typical in qualitative research that humans collect data through interviews, and all the interviews are considered unique. (Hirsijärvi, Remes, & Sajavaara, 2009)

This study aims to discover the role and meaning of enterprise architecture in strategy work in different organizations. This study is meant to explain how the strategy practitioners experience the role and its importance from their perspectives and do they see or utilize the full potential of the enterprise architecture. In addition, the study aims to give an overview of how and when enterprise architecture is used in strategy work in practice. Qualitative research should be the best method for this study since the practitioners' experiences and perspectives can be concerned from a qualitative point of view. Qualitative research focuses on data's subjective character, allowing one to understand more profound and accurate personal interpretations. (Puusa & Juuti, 2020) Qualitative research method gives tools for that since it recommends the methods which reveal the subjects' voice, like interviews, used in this thesis. (Hirsijärvi, Remes, & Sajavaara, 2009)

5.2 Data Collection

Research interviews aim for reliable and valid data collection. Thematic interviews, or half-structured, were chosen for this study since they can be used for studying what people experience, feel, or think. Using research interviews is justified since this method highlights individuals as a study's active subject when the individual can freely discuss things the one is experiencing and thinking. (Hirsijärvi, Remes, & Sajavaara, 2009)

The advantage of the interview method is that people can be selected for the interviews who are known to have experience with the topic field (Puusa & Juuti, 2020). This study was known to have a specific group of people with experience with the topic, which was the reason for choosing the interview method. Choosing the interview method for this study was aimed at having comprehensive answers from the subjects and analyzing these as a whole. (Hirsijärvi, Remes, & Sajavaara, 2009)

The thematic interview is a method where the topic area is typically known, but the specific form or order of questions could change in the interview. (Hirsijärvi, Remes, & Sajavaara, 2009) These interviews are based on specific themes and frames for the theoretical framework of this topic area. This aims for valid results for the study and research question. (Tuomi & Sarajärvi, 2018) Thematic interviews were chosen for this study to enable subjects to concern with the themes relevant to this study but still enable the subject's own experiences. The half-structured nature of the interview's topics was precise and stayed on good topic areas but still enabled subjects' reflection and free thinking. With this method, the interviewer can steer the interview in the right direction (Puusa & Juuti, 2020) and get the subjects to describe the relevant things for his study field (Hirsijärvi, Remes, & Sajavaara, 2009).

The individual interview method was chosen for carrying out the thematic interviews in this study because the topic of the study is related to the subjects' own experiences, which may be more natural to discuss with a researcher in private. This helps to build trust between the subject and researcher, which is essential for the results. (Puusa & Juuti, 2020)

5.3 Research Process

The research process started with studying the literature and previous research on this topic area, then planning and selecting this thesis's topic in 2022. Late in 2022 started writing of theoretical part of this thesis. In the early phase of this process, the researcher deepened his understanding of the topic in real business life by observing. At the same time, the researcher contacted practitioners who have seen multiple organizations' processes to determine if this topic has a demand in the field.

Data was collected by interviewing strategy and enterprise architecture practitioners working in different organizations. The collection was wanted to perform for multiple organizations to gather comprehensive data for the study and not just a one-sided view from a single organization. Before the interviews, the researcher studied how the

interviews were supposed to perform correctly and planned the structure and frame for the questions (appendix 1 & 2).

Interviewees were acquired from the researcher's professional network, including individuals from multiple companies. The frame for these interviewees was that they all have worked with strategy work and enterprise architecture in the last two years to have a good experience for this study. This target group was approached through Microsoft Teams and email, depending on which method was more considerable for the one. The theme and its role were initially described at least partially for the subjects but with caution to avoid affecting the answers beforehand.

Three interviewees were working with strategy and were considered strategy practitioners; three were enterprise architectures, and they had 2-20 years of experience in their field. Four interviewees were interviewed via Microsoft Teams, and two interviews were performed in person. All interviews were performed in spring 2023 and recorded with teams or researchers' phone voice memos; these technical solutions were great for this purpose. The subjects gave their consent for the research and permission to record the interviews, and they participated from locations that suited them.

Table 1 is a summary of the interviews and those characteristics.

Table 1

Interview	Expertise of interviewee	Duration	Transcript (pages)	Present/remote
Int. 1	Strategy	33 min	8	Remote
Int. 2	Strategy	36 min	8	Remote
Int. 3	Strategy	62 min	10	Remote
Int. 4	EA	43 min	9	Present
Int. 5	EA	48 min	9	Remote

Int. 6	EA	35 min	7	Present
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At the beginning of each interview, the practical aspects of the interview, confidentiality and appearing anonymous, were discussed with the interviewee. The interviews generally followed the pre-prepared structure and frame, but in the interviews clarifying questions, additional considerations or clarifications were considered regarding different questions. At the end of the interviews, the subjects were also asked separately if they had anything to add related to the topic.

Interviews were transcribed after the interviews since the recordings gave change for it. All the interviews were transcribed carefully for text format to the computer following the recordings. While interviewing, listening to recordings, and transcribing, was already made notes for an interesting point of view. After transcribing everything, analyzing the materials started following the findings and discussion.

5.4 Data Analysis

The material was analyzed following qualitative content analysis since it enables the possibility to analyze low-structured documents systematically and objectively and aims to describe the phenomenon under study in a condensed and general form. This analysis utilized theory-driven analysis, which means that analysis is driven by both theory and collected data, where theory has a supporting role. Especially in the early phases of analysis are meant to concern mostly with materials. However, a theoretical framework could help support the analysis. (Tuomi & Sarajärvi, 2018) Example of reducing the content is presented in table 2. Material was studied by reading it multiple times to understand it from the perspective of this thesis. While doing so, the notes were made for better understanding, according to Hirsijärvi et al. (2009). After these preparations, it is possible to move on and draw conclusions from the material.

Table 2

Original data	Reduced data
Enterprise architects should be there before the strategy is crafted since they need to be one of the ones who are reviewing should it be changed at all.	Enterprise architecture should be involved to strategy work at the beginning
Enterprise architecture should be taken to strategy work right at the beginning so that the organization would have the knowledge and understanding before setting the strategy.	
I do not have any good experience with EA, would be a driver for business. It is almost every time technical roadmap which affects if some are needed from that perspective.	EA is not a driver for business, but it is considered in IT-department
Our strategy does not consider or note enterprise architecture at all. Strategy is focused on the core business but does not consider anything from the IT perspective. If we consider it from the IT perspective, data has been utilized, but it is very low in our organization.	

5.5 Reliability and Validity

Reliability of research means that the produced results are consistent and dependable. This means the results would be similar if a study were conducted again. Validity means that the research is assessing what it was intended to measure. To acquire better reliability in qualitative research, the researcher must report precisely how the research was conducted. (Hirsijärvi, Remes, & Sajavaara, 2009)

Regarding the reliability of the research, it is essential to present the research process progress and progress in understanding the phenomenon and the basis of the presented interpretations (Puusa & Juuti, 2020). In this study, the research process is presented in detail, and the data collection, the related conditions, and the reasons are presented for conclusions. In the findings, direct quotations are used to justify the interpretations presented by the researcher.

Subjects for the research should know the topic and its phenomenon, have the required experience, or represent the relevant group for the research's purpose field (Puusa & Juuti, 2020). In this case, the target group was relevant to the study and had the necessary experience. It was essential to have various perspectives and data from the interviews.

Trust plays a big part in the interviews. Researchers should aim to build a trustworthy phenomenon to include the interviewee in the discussion field (Puusa & Juuti, 2020). The aim was to achieve open and transparent communication by presenting ethical guidelines to the interviewees, such as how and to what extent their information may be utilized, how the interview recording is made and later destroyed, and by highlighting the goal of maintaining the anonymity of the interviewees. The participants were separately asked for their consent to participate in the study and informed of the possibility of interrupting the interview voluntarily. According to the researcher's assessment, there were no noticeable problems between the researcher and the researcher in the interview, and the interviews were conducted in good spirits.

When evaluating the success of the interviews and the entire study, it is considered to pay attention to interpretation errors and reactivity, for example, how much the researcher influences the responses. The interview's success is also linked to the researcher's experience acting as a researcher. (Puusa & Juuti, 2020) The reliability and validity of this study can be negatively affected by the researcher's inexperience. The impact was attempted to be controlled by the researcher familiarizing themselves with the research topic, conducting the research interviews, analyzing, and carefully documenting the data collection and research throughout the process. Interpretation errors were also attempted to be prevented by using clarifying or confirming questions and verbal clarifications of the topics discussed during the interviews.

6 Findings

This chapter presents the findings from the analysis of the interview data, which are used to answer the research questions. The chapter presents the results related to the role of enterprise architecture in strategy work and the results related to practitioners' experiences. Results should illustrate the benefits and challenges in the field.

6.1 Strategy is a Map to Reach Goals

The interviewees defined strategy as a plan to achieve goals involving monitoring progress and making necessary changes. They emphasized that strategy should focus on the changes required to improve the organization rather than just maintaining what already works well. They noted that strategy should be seen as a map rather than a goal. The strategy could be seen as a set of choices.

Interviewee 1: Strategy is a set of acts and choices to help you reach objectives. The organization has a mission, why they exist, and a vision to describe where they want to be in the future, whether those are qualitative or quantitative objectives. Still, there should always have objectives to reach for in different timelines. There may be a tactical plan, but the organization needs a strategy to achieve its goals.

Interviewee 2: The organization needs to summarize how they are going towards its goals. I see the strategy as something other than a goal but rather as a map of how to get there.

Interviewee 3: Strategy is planning how to reach the goals; with strategy, you can monitor where you are going, and you will be able to change direction rapidly if needed. In addition, I want to say what is not. They want to add everything they do to it. Sometimes executives think it is some document where we will tell the staff what we are doing, but the strategy is different. Strategy is the changes that are made for the organization. The things that are in good shape, and we want to keep those as they are, belong to something other than the strategy. Strategy has what we want to change, which is hard to understand sometimes.

6.1.1 Communication is the Key

Effective communication is crucial for successful implementation of strategy. Interviewees mentioned this matter to be essential in strategy work. They discussed how the culture around sharing strategy documents has changed and that companies now tend to communicate them more openly with stakeholders and other parties. While the strategists highlighted the importance of communication, enterprise architects could provide clear and visualized solution.

Interviewee 1: Strategy can be clearer for organizations. The goals are often clear, but the strategy and how to get there must be clarified. It often needs to be communicated, even if you have a great strategy that could eventually ruin it. (...) Sometimes strategy communication fails because organizations fear telling their strategy; what if our strategy fails? The strategy is communicated when it is realized and may be too late.

Interviewee 2: Another point there is communication. It helps to communicate with those not involved in strategy work. This phenomenon has changed a lot lately. When doing operational models and strategy work, those are used for external communication for stakeholders and other parties. There was a time when strategy document was one of the most secret documents in the company, and companies wanted to keep those from today when those are heavily communicated.

Interviewee 3: We need objectives and direction for where we want to go and what we want to achieve. It also means that we need to know what we don't do and be communicated to the whole organization so that all employees understand the direction. Strategy affects everyone and how individuals need to develop their skills to manage.

Interviewee 5: Also, they might think that it (EA) is just drawing the graphs etc. In reality it is solving things and finding the answers. When you are thinking forward, it is basically lobbying, communicating, sharing information and everything else, where those graphs are just a tool to communicate and visualize.

Different perspectives are valuable in strategy work, and that summarized information is preferred over long, analytical documents. Interviews imply that the core group involved in strategy work already has the necessary information for strategy work.

Interviewee 1: In strategy processes, I have noticed that business managers intuitively have a pretty good view of the company and the market they operate in. The added value from the further investigation is not always necessarily considerable, which comes from, e.g., months of research, if it is known well enough.

Interviewee 2: Usually, when crafting a strategy, some core group is doing it. When reflecting on my experience, necessary information comes inside the group, mostly where everyone looks from their perspective. I prefer information and documents which are summarized. The long and very analytical documents and information are rare and may not be utilized when the information is not easily available. All the data should be in the strategy work group (executives), and not much is needed. Those should be the "chips" in strategy work. Most executives are involved in strategy work, but it is not mandatory. In different organizations, people are utilized otherwise as well, but in the private sector, top management should be the ones who make the decisions.

Interviews revealed that decisions are often made with incomplete information, but having background information and surveys can aid in making better predictions and choices. Background information or surveys can help predict outcomes and make better choices. The company's current state is usually well-known, but it is essential to evaluate it honestly and reflect. According to interviews, further investigation can add value, but it is only sometimes necessary if the company and market are already well understood.

Interviewee 1: Knowledge is never perfect or at a required level in strategy work. Decisions are always made with incomplete knowledge, but if you have lots of background info or surveys cleared, it is easier to predict the outcome and make the right choices. You can have information about megatrends, customer satisfaction, or stakeholder expectations when you can reflect those against your organization's capabilities which are needed. From time to time, the world changes, as we have seen, and black swans are coming, but that situation requires organizational resilience to survive.

The company's current state is usually relatively well known if the information is just gathered. The different question is whether we believe in it and would be honest with ourselves considering the results. The current state is thought to be if such a description is available, depending on the manager's ego, if certain things have been done and they have yet to go as planned. Sometimes they can be accepted, but these can also be made look better than they are.

Further information must always be collected when the company's management changes and new strategies are made. In that case, the burden of history is also not involved in decision-making. Of course, the best companies can see behind these, but not all. The management's cognitive skills also usually bring very different perspectives to work, and their actions affect how open we dare to be.

Interviewee 2: It needs to be clear and straightforward. Organizational goals must be clear: what we are and want to be in the future. It doesn't matter if those goals are carbon neutral company or better customer experience, something other than "more for the owners," which should be the core in private organizations. Strategy answers how those goals are achieved. The strategy should be guidance for what we are doing with our resources and what not, where we are good at. Those are often the first communication lines where the company allocates its resources.

Interviewee 3: We need better tools to scout the whole environment. There is one tool available in markets that may give you good foreseeing about trends etc., so you can make justified decisions. Another perspective is competitor analysis, which our company is not doing at the moment since we are focusing on our work, not others at the moment. In a way, market analysis is missing as well. We know what we are good at and differ from others, but to understand, there is some space for something else we do not know. It differs from having competed in the markets and having a competitive advantage. Being competitive is just that you can perform, but having a competitive advantage means that we have something that others don't.

The interviews suggest that maturity in strategy divided interviewees, and there are challenges in effectively communicating the strategy. One approach is to summarize the core points of the strategy in a way that can be easily understood and displayed in a few minutes. Including a wide range of stakeholders, including external actors, can also be valuable in developing a comprehensive and effective strategy. It is essential to ask good questions from outside the company to evaluate one's capabilities and the execution of the strategy.

Interviewee 1: Maturity is good. We have clear strategic lines. The Achilles heel is perhaps communicating the strategy and bringing out our pillars, how it is done, and what it wants to achieve. We have reached maturity by opening the strategic framework for a bigger audience and bringing in a broader range of stakeholders.

Among other things, external actors were brought into the strategy work, from whom you can get an opinion and input on achieving the goals. The evaluation of own capabilities and strategy execution are especially ones where it is essential to have good questions asked from outside of the company.

Interviewee 2: Mostly maturity-wise, I haven't seen any significant success stories. Many times strategy is crafted just because it is needed to be prepared. Hmm, the more I think about this, the more my idea develops. For example, one-pagers of organizations' strategies have increased, which have been used quite a lot, and the operational level has started to link their actions to it. Strategies are pretty high-level and not deep documents since you must summarize your strategy in key points, not on a deep level. For example, with Nokia's new brand, when they focus on cloud services, etc., if you make it too deep and analytic, you lose the communicational perspective, and no-one doesn't want to read your strategy. Core needs to be summarized so everyone can present it in 5 minutes. Not just nice words but to have actual points there.

6.2 Strategy Realization

The interviewees highlighted that strategies could evolve and that short-term goals may take priority over long-term goals in some organizations. They emphasized the importance of setting goals for different timelines and having other activities to support them. In addition, they acknowledged that strategies might only sometimes be realized as intended and that short-term plans may allow for more flexibility and adjustment as needed.

Interviewee 1: Let's say that my experience is that the strategies are evolving during the time. Management may not have the required patience to follow the strategy. It may vary where you are also working. Still, I have seen that short-term goals are going before long-term goals, and quarter-economics are steering what is done in organizations, which affects strategy since it may be put on hold or similar activities. Those may support strategy as well. To achieve strategic goals, it should be set for differently timelines. It would be best to have different activities for different times to help follow the strategy. Modern business is fast-paced, and you can easily see that if you can't keep up with the short-term objectives, you have no chance to reach the long-term objectives either. People often craft just one strategy, but short-term and long-term goals should be easier to execute and monitor if the organization is going in the right direction.

Interviewee 3: Strategy never realized as intended. After all, it is just a plan. Same as when building a house; you may have planned a white kitchen and ended up with the green one since it is nicer. But in the big picture, you need to follow the big picture. To make it happen, you need to have short-term operational plans which could have more room for change.

They also discussed the need for a strategy to be flexible and responsive to changing environments and management while maintaining a clear direction toward the organization's vision. The interviewees noted that detailed plans might quickly become outdated, but a clear strategy and vision help to guide decision-making.

Interviewee 2: I think that strategy changes from time to time, and every 3-5 years, it takes radical turns as well since the new management wants to go with their way, etc. Sometimes the environment changes, or the company struggles when a strategy needs a new direction quickly. If those do not happen, the strategy should have its direction long enough so that it would be beneficial to the company. A strategy is actually a good tool for using if the company needs to change its direction and fast so it would be easier to see what needs to be done. (...) I do not believe that everything a company does can be linked to the strategy since the strategy should be on a high level. EA and strategy should allow agile work and learning while giving guidelines and pointing in the right direction.

Interviewee 3: Interesting question; I think it does not since the environment changes rapidly. You need to go toward the vision, but... I can't recommend doing multi-year strategies where the value is realized at the end of it. Even if you have a strategy for five years, you should realize its value also in the long term. Strategy can't be written in detail since those plans are outdated tomorrow. But you also need to keep the focus on your strategy and say no to everything else. You need to keep an eye on the price even if you do not have detailed instructions. It is easier to follow with a good strategy and clear vision.

6.3 Enterprise Architecture Helps to Achieve Organizational Objectives

All three enterprise architects agree that enterprise architecture involves the management of dependencies within an organization. They also agree that enterprise architecture should show how everything within the organization is linked, either in

terms of data, systems, or processes. Additionally, the interviewees share a common understanding that enterprise architecture is a tool to help the organization achieve its objectives and should be utilized efficiently to have an impact. However, there are also some differences in their definitions, such as the specific aspects of enterprise architecture that they focus on, the analogies they use to explain enterprise architecture, and their importance on objectives in defining enterprise architecture.

Interviewee 4 defines enterprise architecture as the internal environment of an organization and the relations between its parts. It also involves defining enterprise architecture principles and describing the organization's services, capabilities, and processes. Enterprise architecture can be categorized into four types: operational, information, system, and technology architecture.

Interviewee 4: It describes our internal environment and the relations of its parts in architectural perspectives. It defines enterprise architecture principles. EA should describe the organization's services, capabilities, and processes in relation to each other's. In addition, it describes logical data flows in the organization. Part of our enterprise architecture has a change management framework where enterprise architecture simulates the changes in the organization.

EA could be divided into four categories:

- *Operational architecture*
- *Information Architecture*
- *System architecture*
- *Technology architecture*

Interviewee 5 emphasizes the importance of separating objectives and enterprise architecture in definitions. Enterprise architecture is described as managing dependencies and overseeing how everything is linked, from data to systems and processes. It aims to show relations and dependencies for the whole organization and give direction to moving forward.

Interviewee 5: This is a good question, and we have been thinking about this a lot lately. It depends on the perspective; I have a few definitions for this. Hmm, it is important to separate objectives and enterprise architecture in definitions.

Suppose we aim to build organizational agility or reduce the risks when doing high quality with the proper scope and resources. Agility comes from the right choices, increasing your agility since you have made the right choices for that perspective. Enterprise architecture itself is the management of dependencies somehow. You may not have control of these dependencies, but it is more to supervise and oversee them. You should understand how everything is inked, from data to systems and processes. Maybe it culminates to the point where it shows the organization's relations and dependencies. Then it is different when thinking about management dependencies, but it should give you direction to move forward.

Interviewee 6 compares enterprise architecture to a party overseeing every actor in a complex, such as a family and neighbors in a building house. Enterprise architecture ensures that everyone is going in the same direction, not just as individual units but as one.

Interviewee 6: Well, I consider it as a... If you consider it as a building house. The parents could be considered business executives, the children are employees since you need to get them some stuff, the system supplier is a builder since they provide the solution, and the neighbors are competitors. Enterprise architecture in this context is the party overseeing that every actor in this complex is making the right decision and planning the whole before and during. EA is making sure that everyone is going in the same direction and are not just some individual units but as one. That is the basic idea for EA, in my opinion.

Companies practice enterprise architecture because it helps them achieve their strategic goals and align their IT systems and processes with their business objectives. EA provides a framework for understanding and improving the complex relationships between an organization's business processes, information systems, data, and technology infrastructure. EA helps to identify areas of redundancy, inefficiency, and risk and to create a roadmap for future development that is aligned with the company's overall strategy.

They want to align their IT systems and processes with their business objectives, drive change, and create a roadmap for future development. Enterprise architecture provides

a comprehensive view of the organization's current state, identifies areas of improvement and risk, and guides the development of initiatives and projects. Enterprise architecture is a tool that should be used with clear objectives in mind and with the support and understanding of the management.

Interviewee 5: You can always practice EA, but it should be seen as a tool. You will get the best out of it if you have an objective and can drive towards it. Top management should understand to use it as a tool as well. Enterprise architecture should not exist just to have one but to utilize it truly to make it efficient and have an impact. Having an objective really could be used as a tool for management. You can always describe the company's current state, but it may lead nowhere and is pointless in some cases.

Interviewee 6: It is practiced to create a concrete base for future development and that everyone would go in the same direction (strategic goals) EA supporting and guiding initiative, which included many projects. EA was meant to oversee the projects and guide them to do relevant and important work.

Many interviewees see enterprise architecture as a way to describe how different processes are done with technological solutions. They believe it can help managers and executives understand how to reach cost efficiency with different solutions.

Interviewee 1: I see enterprise architecture as more in business technology framework. It is a description of how different things are built. I consider it to be something that describes how various processes are done with technological solutions. Enterprise architecture is done for managers and maybe executives. It could help to understand how to reach cost efficiency with different solutions, including technical solutions, roles, processes, etc.

Interviewee 2: Enterprise architecture describes the organizational structure now and in the future. That is something that is never done, but it is rather evolving. If the result is "done" at some point, it means that the organization has never learned; in my opinion, that is also something that very rarely works as it should.

Interviewee 3: Good enterprise architect should be a valuable asset for executives to give their input for strategy and operational planning. Enterprise architecture is a concrete base for your organization, but rarely is it appropriately utilized to provide that information. Often it is just some IT-related architecture with systems and technological solutions. If I started building a house, I would use architecture as a base, and the same applies to organizations.

There is a lot of overlap between enterprise architecture and strategy, and they are seen as having many similarities. Interviewees suggest that strategic direction should be considered or even drive strategic change when crafting enterprise architecture deliverables. Enterprise architecture describes the organizational structure now and in the future and is viewed as an enabler in the strategy framework. When done correctly, enterprise architecture can show what needs to be done and what kind of change lies ahead. It is considered a concrete base for an organization, and a good enterprise architect should be an asset for executives to give their input for strategy and operational planning. However, it is also acknowledged that enterprise architecture needs to be more understood and utilized.

Interviewee 1: Maybe enterprise architecture could enable some opportunities for business by using modern technologies. Maybe it could be seen as an enabler in the strategy framework.

Interviewee 2: If you look at strategy and enterprise architecture, there are a lot of overlapping and similarities. In strategy work, you should maybe look at enterprise architecture and see what our capabilities are to start the strategy work or how the whole company is running now. Also, those should be considered if the enterprise architecture notices some strategic development initiatives. Strategic direction should be considered when crafting enterprise architecture deliverables. (...) IT and process architecture work in many companies, but EA should be on the level that will give the organization actual guidance and point the right direction. (...) I think the same from the EA than strategy work that it should not be on a too deep level since they will be hard to follow and just a theoretical way of working rather than be more guide for operational work. I see that EA could be following the strategy and planning, maybe not even being part of it.

Interviewee 3: When EA is done properly, it may show you instantly what needs to be done and what kind of change we have ahead. Also, when change is coming, it should be considered through EA. What is the impact on people, processes, services, information, systems, etc.? Enterprise architecture is familiar. I see that as a tool for running a company, which is hard to understand for many people since they may consider it some IT thing.

6.4 Enterprise Architecture is not Heavily Used in Strategy Work

Based on strategy practitioners' interviews, they have slightly different perspectives on its usage and role in organizations. All three interviewees mentioned that enterprise architecture is related to strategic work. They agree that enterprise architecture is a tool for management but that the adoption of enterprise architecture may require a cultural change in organizations. There is some level of consensus that the benefits of enterprise architecture may not be apparent to everyone in the organization.

The most significant difference was that Interviewee 1 believes that enterprise architecture is more useful in operational tasks than as an enabler of strategic change. In contrast, Interviewee 2 believes that enterprise architecture starts with the strategy and guides the enterprise architect's work. Interviewee 2 mentions that some organizations have not discussed enterprise architecture in their strategy meetings, while Interviewee 1 suggests that enterprise architecture is used in strategy work but not heavily. Interviewees 2 and 3 indicate that some organizations view enterprise architecture as a technical tool. Still, interviews imply that it is a tool for business and management, and people may not know how to use it.

Interviewee 1: It is utilized in strategy work but not heavily, maybe not as an enabler but perhaps more in a base work at the operational level and with simple tasks considering the strategic changes.

Interviewee 2: EA is starting from the strategy. So, if the strategy includes a high-level idea or plan for the organization, it will guide the EA for their job. It could be capabilities, processes, environment, etc. In strategy work, there have not been talked about EA or enterprise architectures have not been in those meetings, but

similar ideas have been presented either way. Basically, organizations are doing things, including the EA but maybe in a little bit different way. Also, they might think it is more technical than the tool for top management. Of course, there are exceptions, and some companies have enterprise architects working with top management, with almost 0% considering technical solutions, but those are rare.

Interviewee 3: It is a tool for management, but I'm not sure if people know how to use it. Executives must decide and choose to use it; it can't be forced. IT departments have the architecture almost always, but the more we move to business architecture; it may become more abstract and is not that common anymore. The problem may be that showing the benefits may be difficult. It may be considered a necessary evil for certificates or so. It would need cultural change. Same as process owners, who should actually develop their processes, but often they are not doing that.

Enterprise architects' experiences vary among organizations.

In Interview 4, it is mentioned that EA is not used in the organization's whole strategy and is only a supporting function. However, the organization's IT service managers and others follow their guidance. The EA department follows global architecture frameworks and regulations like GDPR and is involved in IT strategy but not an organizational strategy. The interviewee suggests that there is a need for proactive enterprise architectural guidance, and the organization needs to take action itself.

In Interview 5, the interviewee gives an example of a company where enterprise architecture was used to manage its portfolio. The CIO had EA as their right hand, and all initiatives went through them. However, the interviewee also notes that EA is mostly seen as a technical roadmap and is not considered a driver for business. The interviewee suggests that a roadmap including the whole organization, not just IT, would be good but hard to craft for companies.

In Interview 6, the interviewee mentions that EA has been deployed broadly in organizational transformation. All organizational changes are considered with an EA perspective, and people ask how things fit in the organization before they are in motion.

Based on these interviews, it seems that some organizations use enterprise architecture extensively, while others only see it as a supporting function or a technical roadmap. However, there is a need for proactive enterprise architectural guidance and a more holistic approach to EA that includes the whole organization, not just IT.

Interviewee 4: Organizations do not use EA in the company's whole strategy at all. Maybe in some companies where technology is part of the business, the EA is also in the strategy, but not in this organization since the EA is only a supporting function. Our approach is a bit different in that way.

EA is utilized in our organizations, and IT service managers and others know our enterprise architecture and follow our guidance mostly. We have a compact department which makes it easier to handle this. However, there is still work when sometimes the business makes decisions on systems or similar without our consulting, and those have not always been the best possible choices.

Our strategy does not consider or note enterprise architecture at all. Strategy is focused on the core business but does not consider anything from the IT perspective. If we consider it from the IT perspective, data has been utilized, but it is very low in our organization. Our EA follows the global architecture framework; we follow regulations like GDPR, which affects EA, and we are involved in IT strategy but not the organizational strategy. Still, we are trying to support it if needed. No one is not coming to give you straight answers, but you need to find out for yourself if you should take some action.

Interviewee 5: I have one good example of this. The company was running its portfolio management through enterprise architecture. Their CIO had enterprise architecture as his/her right hand. All initiatives went through them, and they would always impact the whole business, and the business was also steering the EA. Most business has made decisions before enterprise architects have even heard of these choices, and they are needed at some point for the project. Maybe proactive enterprise architectural guidance is missing from most companies; even that theory may say it is important.

I do not have any good experience with EA, would be a driver for business. It is almost every time technical roadmap which affects if some are needed from that perspective. If you consider a strategy for the whole organization, there are a lot of changes that should also be reviewed by EA. If you had an actual roadmap including the whole organization, not just IT, it would be good but hard to craft for companies.

Interviewee 6: Well utilized, EA has been deployed broadly in organizational transformation. All organizational changes are considered from the EA perspective as well when they could review changes and decisions before they are already in motion. People are asking how things are fitting in the organization etc.

Despite that the enterprise architecture could provide roadmaps, guidance, and evaluation for strategists, they are not involved in strategy work systematically, only for reactive.

Interviewee 2 believes that strategy workshops are helpful but should be more iterative and last only a few months. They suggest having "strategy seasons" that last 3-5 years and reviewing the strategy annually. The interviewee also thinks that heavy strategy processes do not work well in companies and that strategy should give direction, not maintain everything. The independence of business functions has increased in companies, which has led to more autonomy in the whole company's strategic direction.

Interviewee 2: As process-wise, most common strategy workshops are suitable, but those would still need much more iterative thinking, and I would not prefer to do strategy work itself for many months either. I like to talk about "strategy seasons," which could be 3-5 years, and review the strategy yearly. How these are utilized in companies may vary a lot, and there is no one way to succeed, but I would say that too-heavy strategy processes are not working in companies. The strategy should give direction, not maintain everything. The independence of business functions has increased in companies like ABB, and they have given autonomy, more or less, where the whole company's strategic direction is highlighted.

Interviewee 3 describes the strategy process as a constant loop that starts with analysis, including environmental analysis, SWOT analysis, and marketing analysis. Then, the process moves to define the mission, vision, strategic choices, and initiatives and measure success. The interviewee stresses that implementation should not be seen as a separate stage at the end but integrated throughout the process. Risk assessment is also an essential part of the analysis phase. The interviewee links the strategy process to operational planning and ensures everyone has agendas beforehand and is monitored regularly.

Interviewee 3: The strategy process is constant. I use it as a loop to describe it. When I speak about strategy process, I mean the process when a strategy needs to be crafted or updated from the old one. It should always start with the analysis, including environmental analysis, swot, marketing analysis, etc., to understand where we are. Then we move to the mission, vision, strategic choices, and maybe values that usually stay the same. You also need to define strategic initiatives and describe how to project these and how you will measure your success. I don't want to discuss implementation as a stage at the end, but I consider it more to be started when strategy work begins, and it goes along with the whole process. It creates some loop when I link these to operational or management planning so that it would be integrated everywhere. I ensure those are monitored regularly and planned so everyone has agendas beforehand. Risk assessment is very important for the analysis phase; it must be considered.

Both interviews emphasize the importance of a strategic process that includes analysis, planning, and implementation. They both suggest a cyclical approach to strategy, constantly evaluating and refining the process. Both interviews also mention the importance of risk assessment and monitoring progress regularly. Additionally, they both suggest that strategy should provide direction rather than micromanage all aspects of a company. That implementation should be integrated into the entire process rather than seen as a separate stage at the end.

Based on the empirical study, enterprise architecture is utilized mainly in IT departments. Even with some exceptions, we can see that the enterprise architecture especially concerns IT solutions from a technical perspective and does not comprehensively impact strategy. Most advanced companies could utilize it, but others work in different silos, and the benefits are not bought on the business side (Figure 6).

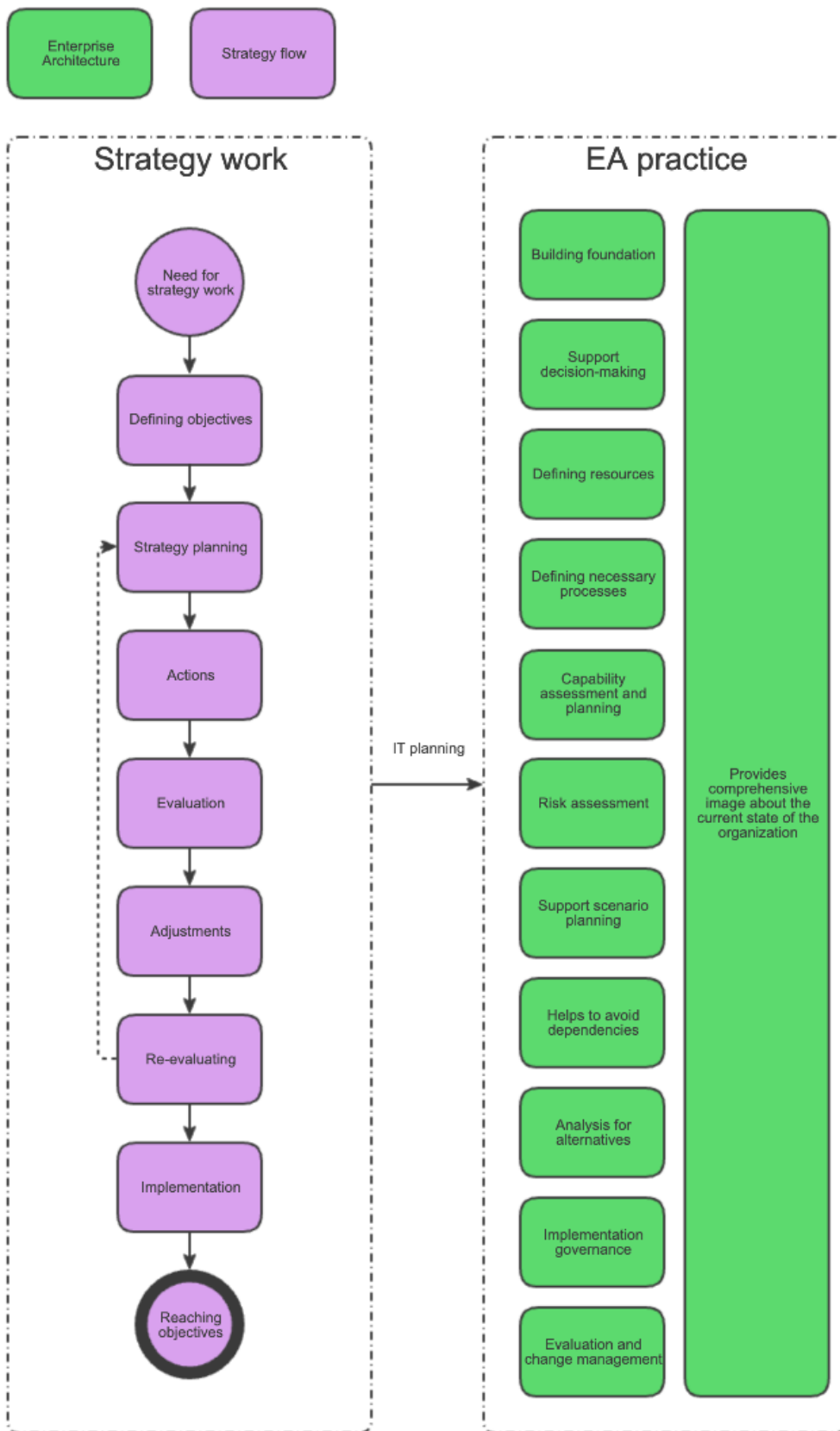


Figure 6

6.5 Enterprise Architecture Should be Integrated into the Strategy Work

The interviews suggest that enterprise architecture should be integrated into the strategy work from the beginning to understand the organization's capabilities and react to environmental changes. Enterprise architecture can provide a reality check to assess if the strategy is achievable and create materials for decision-making. An enterprise architect should be involved in the strategy work, which is possible with good relationships with executives, to provide development ideas and fulfill pre-conditions to achieve the organization's mission and vision.

Interviewee 1: Enterprise architecture should be taken to strategy work right at the beginning so that the organization would have the knowledge and understanding before setting the strategy. EA is used for reviewing the strategy occasionally and often needs to react to different changes. Modern business has enabled broader markets, and maybe EA could be helpful for that use to recognize environmental changes.

I believe that EA brings the reality check for the strategy work since it could answer whether the strategy is doable in our current capabilities. Maybe that would be the best place to put EA in strategy work.

Interviewee 3: You should be able to describe strategic changes and assess the risks and investments. Enterprise architecture is a tool that should create materials for executives to support decision-making.

If a company has a great enterprise architect with good relationships with executives, maybe then, but it is rare. I see that enterprise architects should be involved in strategy work since they should have something to give there when they already have landscape and development ideas. Sometimes we have a nice mission and vision, but the organization does not have pre-conditions, which are sometimes forgotten. Enterprise architecture could describe how those pre-conditions could be fulfilled.

Enterprise architect's interviews suggest that EA can play a valuable role in strategy work, particularly in risk assessments, considering the impact on the whole organization and reviewing decisions before they are made. However, the degree of enterprise architecture involvement in strategy work appears to depend on the organization's

culture, leadership, and the perceived value of enterprise architecture. Interviewees experienced differently how their knowledge could be utilized.

Interviewee 4 notes that enterprise architecture is only utilized at an operational level to enable other needs and assist in decision-making. They suggest that risk assessments could be an area where EA should be involved in strategy work and would have an impact.

Interviewees 5 and 6 argue that EA should be involved in strategy work from the beginning, so they can review it and determine if changes need to be made. They also suggest that EA can help educate decision-makers on the importance of enterprise architecture and how it can contribute to better outcomes and help prepare for potential consequences.

Interviewee 4: I'm unsure if it is clear in our field of business. If we ended up productizing some data or so, then our input for strategy work would be priceless, but that's it. Otherwise, our input would be only on an operational level where we just enable others' needs and help them to realize them. Maybe risk assessments could be where EA should be considered in strategy work.

Interviewee 5: Correct me if I'm wrong, but Ross' book argues that the EA is getting fed by the company's top management. This would be the ultimate situation when you have been backed up by top management. At that point, you will be considering the organization as a whole. It helps to discuss choices before those are made.

For example, company X decided to outsource their whole finance department. Executives make these types of discussions and choices. For this topic, enterprise architecture would have been a lot of input. EA could have assessed the choice by how it should be prepared, what this means to everyone in the company, and what it may bring along in the process. When this comes suddenly and already decided, it often causes the rush, and the rush leads to the wrong choices, and decisions and things are ignored because of it.

It was "funny" that when finance was outsourced, payroll administration went with it. The contract said that those payroll data should be delivered correctly. It would be easier to just deliver raw data to the external partner, but we needed to create huge systems to get the data right. When I noticed that the data was wrong in some cases etc., it made it much worse. All in all, if these had been considered

before, it would have been much easier. Would EA have made it better in reality, maybe? Enterprise architects were involved, but maybe not in the early stages, which may have changed the direction.

Interviewee 6: I would have something to give for strategy work. I would like to get them to realize what we are doing and why we are doing it. Not just shoot my own ideas but help them realize that this is so simple that if you put effort into something, the outcome would be better, just as same as in personal life. This is the question where you can make your own part just as much as you can, but you may not still succeed since it is such a personal matter of how people buy these things and understands everything. It needs to be truly understood to make a real difference.

Enterprise architects should be there before the strategy is crafted since they need to be one of the ones who are reviewing should it be changed at all.

6.6 Challenges of Enterprise Architecture

According to the interviews, the term enterprise architecture needs to be clarified since it is seen as misleading. It does not have any simple definition, and even among practitioners, the explanation may vary.

Interviewee 1: Enterprise architecture is familiar to me, but I have noticed that it gets a new meaning whenever I talk about it with someone. Or at least those definitions vary a lot every time. The problem with enterprise architecture for executives is that there is no definition. The term is very confusing for managers and executives, and even enterprise architectures do not have one clear vision of what it is. That makes it really hard for strategists to buy the idea.

Interviewee 2: The term “enterprise architect” is a tricky one. If we are starting to form a strategic level structure for the company, exceptionally rarely someone understands that they are talking about enterprise architecture. Companies may talk about it and that it needs to be done by the top management. Basically, the theory has been bought at the idea level, but in real life, I have not seen any actions for it. It is not that those elements or areas are not covered at all, but the term is not used at all.

Interviewee 5: We might need to eliminate the phenomenon that “architecture is just some architect things.” First, the term enterprise architecture is quite poor, although I do not have a better one. Maybe it is informative in that perspective since the analogy from the construction field also works for this.

Benefits and value might be hard to understand in business. Since the concept needs to be clarified, the enterprise architecture may seem too abstract for strategy practitioners to buy. However, it would be beneficial to discover new opportunities to utilize it.

Interviewee 1: It is hard to understand what it is sometimes. Is it a process or tool, or what value does EA bring to the strategy work?

Interviewee 2: If you ask top management do you have a strategy, they will answer “yes” If you ask do you have an operating I model, they will answer “yes,” Do you have a mission, vision, objectives, and all that, the answer is “yes.” When you ask whether you have enterprise architecture, they may answer, “No, it is not relevant for me,” even though all the previous are linked to it, and they have probably been forced to think and plan those similar to EA. The term EA may be leading in the wrong direction for that reason. It may be seen as an IT tool, but the real reason might be that it is not part of top management’s terminology, which is why it is hard to understand.

Interviewee 5: But the name is something that is causing executives to think that it is not for us; it is some technical stuff. Also, they might think that it is just drawing the graphs, etc. In reality, it is solving things and finding the answers. When you are thinking forward, it is basically lobbying, communicating, sharing information, and everything else, where those graphs are just a tool to communicate and visualize. It would be useful if you could change how people think about this. Architects are causing this partially by themselves if they are just drawing pictures and so on, but in that phase, the whole architectural work in the company are not doing what they are supposed to do. They should be doing the work in the planning phase already so that everyone has a clear view of what we are doing. (...) Non-technical aspects should be part of the EA. Many companies are considering business, and IT separated from each other. But if you are practicing business architecture, for example, which is part of enterprise architecture, there may be no technical solutions at all. It could be service planning, operational planning, etc. How can we use our data, and do we use it as much as we want to? EA could also be utilized for recruiting or other; how are you acquiring the employees? How are you using your employees? Are there overlapping processes and etcetera? If you

do not have the will to see the opportunities for EA, then it will always stay in a smaller role.

Interviewee 6: The business and IT should be done 50-50. It should be done for the whole organization so that everyone would understand the company's status. CxO roles especially should invest in these. It has been done either for IT or business but not for both companies. Companies find it hard to understand that. EA is needed for business and IT since they are considering it only from their perspective. They do not understand why this topic is important for the whole company.

Interviews present that the enterprise architecture is a tool that needs to be used proactively by IT, business, and practitioners themselves and exploit the possibilities.

Interviewee 4: All in all, mostly we need to be proactive and seek what is changing in organizations and how it is affecting us. We do not give input in the planning or similar, but all those are given to us, and we must react. We listen to strategy, but we just follow that.

Interviewee 5: Companies should be more proactive with enterprise architecture. IT or business should approach EA and ask them to solve their concerns or problems related to their field and not just use them after they have spent hours solving them alone. And not just in the phase when they realize they need some systems, but first place thinking do they need those solutions at all.

7 Conclusion

This chapter presents conclusions and discusses the key findings of the research with theory. The chapter also assesses the study's limitations, discusses its significance, and presents further research proposals.

7.1 Enterprise Architecture in a Marginal Role in Strategy Work

The top companies worldwide have utilized enterprise architecture to establish stable and concrete business foundations (Ross, Weill, & Robertson, 2006). Enterprise architecture is a management tool that can significantly impact an organization's strategic work. It could help organizations to understand the value chains and improve businesses (Porter M. E., *Strategy and the Internet*, 2001). However, there has yet to be a consensus on its usage and role in organizations. Based on interviews with strategy practitioners, some view enterprise architecture as more useful for operational tasks. In contrast, others suggest it should start with the strategy and guide the enterprise architect's work even if it is not utilized currently. Those that master enterprise architecture can separate themselves as top performers in their industry (Ross, Weill, & Robertson, 2006).

Enterprise architecture is an important tool when crafting a winning strategy for the organization in modern business (Wetering, Kurnia, & Kotusev, 2021). Despite the potential benefits of enterprise architecture, its adoption may require a cultural change within organizations. The empirical study suggest that the benefits of enterprise architecture may only be apparent to some in the organization, and some view it only as a technical tool which is problematic since the organization would not be able to utilize its full potential. However, organizations that use enterprise architecture extensively consider it a business driver and apply it to manage portfolios, support organizational transformation, and guide initiatives, which is supported by Wetering et al. (2021).

The empirical study suggests that enterprise architecture can support strategic work, but its usage may vary between organizations. Some view enterprise architecture as a supporting function or a technical roadmap, while others deploy it broadly in organizational transformation. Enterprise architecture can significantly impact an organization's strategic work, but its impact depends on how it is adopted and applied within the organization. While some organizations view enterprise architecture as a supporting function or a technical roadmap, rare organizations use it extensively as a tool for business and management. Those rare organizations might find new business opportunities and a dynamic capability by developing their resources (Barney, 1991).

The use of the term enterprise architecture was discussed in several interviews. Many interviewees stated that there are better terms than the term for the work since it gives mixed messages depending on who is listening. Some said that even though the word is problematic, they need a better one since it provides a good narrative about building a foundation for the organization. It was referred several times to the construction field of business. Many interviewees see that the enterprise architecture's home is in the IT department. Still, there was also a suggestion that it may be with the business to release its full potential and eliminate its reputation to be only for IT. Since the complex concept is hard to understand for practitioner, it is for experts as well since Ross et al (2006) and Keskitalo (2011) also have different approaches for the topic even that they both agree that enterprise architecture should focus on business process integration and standardization.

7.2 Enterprise Architecture Would Improve Strategy Work

A more proactive and holistic approach to enterprise architecture could help organizations better understand how to apply it to strategic work and how to use it to support decision-making. This view is supported by Ross, Weill, and Robertson (2006), who argue that a comprehensive approach to enterprise architecture could help

organizations better understand strategy work and needed changes and support decision-making.

Competitive strategies concern the whole company like the strategies should. It is not just any specific business unit's responsibility but must be considered in all business units. (Fahey & Christensen). Same rules apply for enterprise architecture since those two should be integrated. Empirical study reveals that enterprise architecture is a tool for business and management and not just a technical tool. Adopting enterprise architecture requires a cultural change within organizations, and it is essential to recognize that its benefits may take time to become apparent to everyone. Enterprise architecture can also help educate decision-makers on its importance and how it can contribute to better outcomes and prepare for potential consequences. Ross et al. (2006), argue when discussing about IT architecture; "The focus needs to be higher – on *enterprise architecture*".

Enterprise Architecture should be a part of the strategy work from the very beginning. It should be included for the strategy process straight from the evaluation should we need to act regarding our strategy. This view is supported by the different enterprise architecture frameworks since they are providing different cycles including vision and planning phases but also Ross et al. (2006) who emphasize the importance of incorporating enterprise architecture into the strategic planning process, as it enables organizations to align their business objectives with their technology capabilities and identify opportunities for innovation and improvement. The empirical study agrees that enterprise architecture should be integrated from the beginning of the process, with the involvement of an enterprise architect to provide development ideas and to assess if the strategy is achievable. In some organizations, enterprise architecture is primarily utilized at an operational level to enable other needs and assist in decision-making. Still, it mainly concerns technical solutions, or at least the emphasis on IT. However, it is recognized that risk assessments could be an area where enterprise architecture should be involved in strategy work and would have an impact. Empirical study support Porter (1996) when

he argued that the essence of strategy is to choose which activities the company should and should not perform. Those choices might include risks why it is important to understand the situation, forecast the outcome, and decide based on the comprehensive data. (Nag, Hambrick, & Chen, 2007) The empirical study had the strong implication that enterprise architecture should be involved from the beginning of strategy work to review the strategy and determine if changes are necessary in the first place.

A proactive approach to enterprise architecture could also help organizations better anticipate future challenges and opportunities and align their resources to take advantage of them with advanced dynamic capabilities. (Teece, Pisano, & Shuen, 1997). It is easier to change the organization's direction when you have prepared for that change (Leitner & Guldenberg, 2009)

Effective communication is crucial for successful implementation according to the empirical study. Interviewees mentioned this matter to be essential in strategy work. Enterprise architecture helps to understand the big picture, which is usually very complex, in a simple way. Interviewee 5 highlighted that the enterprise architecture could provide simple and avisualized solution to communicate strategy. This is supported by Keskitalo (2011) when he argued that the communication needs to flow from management to implementers and back without barriers and understand that communication is emphasized from bottom to top. It helps identify potential changes and improvements which may benefit the organization without wasting resources or overlapping processes and help to achieve strategic objectives. Enterprise architecture uses artifacts, such as diagrams and models, to represent the current and future state of the organization, which can improve communication for stakeholders (Wetering, Kurnia, & Kotusev, 2020).

7.3 Practical Implications

Research reveals that to successfully adopt enterprise architecture to be part of the strategy work, it should be recognized and adopted by the organization's top management. Enterprise architecture must be recognized as a tool for business and management alongside IT and even move it from IT to locate in business. It should be used to organize business core processes and IT infrastructure reflecting the standardization and integration of the operating model (Ross, Weill, & Robertson, 2006). Enterprise architecture requires a change in culture and value perception. It cannot be highlighted enough that companies need to recognize that despite the name, enterprise architecture includes business architecture which could be crucial when trying to find a competitive advantage or strategic change.

Research shows that the theoretical framework (figure 1) is relevant for companies; strategy needs to be considered in strategy works as a part of the process, which cannot be taken out of it. Organizations should utilize enterprise architecture to gain knowledge about the entire organization so there would be at least one function to view it comprehensively.

Enterprise architecture helps organizations to execute transformations effectively by assessing, planning, and considering what needs to be prepared for the change. It helps to develop dynamic capabilities so that organizations could renew itself if the environment is changing rapidly and organization needs to react (Danneels, 20120). Companies cannot evolve and develop their processes, etcetera, if they do not know their capabilities and what they do not have. It requires much evaluation and effort from all levels of the organization that the capabilities are recognized, and that organization would see what capabilities are required to achieve the company's goals (Kaplan & Norton, 2000) Enterprise architecture helps to oversee and guide projects and initiatives to reach strategic goals in the short- and long-term (figure 7).



Figure 7

7.4 Limitations

There are limitations to the study. The first limitation relates to the relationship between the scope of the thesis and the interpretation of an ambiguous phenomenon. A thesis cannot describe the phenomenon as comprehensively as the researcher would like. It was, therefore, necessary to confine this study to a specific framework to ensure that the conditions for a pro thesis were adequately met. This study serves as a thought-provoking synthesis of the phenomenon of the business world and provides a starting point for future research.

Although an effort was made to select interviewees with as diverse a profile as possible, the interviewees and their number constitute their limitations. Interviewees interpret issues based on experience and their own opinions.

At its full scale, the overall architecture is such an ambiguous phenomenon that understanding it would require considerably more research and source material to achieve a more comprehensive understanding of the subject. Therefore, the study's conclusions cannot be generalized and need to be supported by numerous further studies on different aspects of the phenomenon. In addition, the business environment chosen for the study is set in a Finnish context, which is different from that of other continents and individual countries.

The importance and role of overall architecture in strategy work are challenging to define, which limits this study. The interviewees were deliberately placed in a situation where they had to reflect on the phenomenon holistically, considering their business environment. This is a strength of the study, as it has sought and succeeded in generating new information on an important phenomenon.

7.5 Suggestions for Further Research

This research opens up numerous ways for a new study in the schools of thought that link total architecture and strategic business management. For example, the ultimate relevance of business architecture to strategic business operations should be further explored, as previous studies have mainly focused on examining overall architecture, primarily from an IT perspective. This study opens up the field of research on the relationship between overall architecture and business strategy work. It highlights perceptions and attitudes about the importance of the opportunities these create.

The expectations of the business side linked to the importance of architecture in strategy work are insignificant, while the overall architects feel that their contribution would be significant. As the cultural change in organizations enables the implementation of the overall architecture holistically, it would be interesting to explore its business relevance from different perspectives.

The role of architecture in different contexts could be explored, and a comparative study could be conducted to see whether a particular business context or specific market forces influence the level of criticality of architecture in business strategy. The business context could focus on different industries or environments where the competitive rules of the game have undergone major upheavals or where significant disruptions are expected for the industry in the near future. Managing enterprise architecture in organizations could be an exciting line of research.

References

- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 99-120.
- Bernard, S. A. (2012). *An Introduction to Enterprise Architecture: Third Edition* (Third Edition p.). Bloomington: AuthorHouse.
- Campbell-Hunt, C. (2000). What have we learned about generic competitive strategy? A meta-analysis. *Strategic Management Journal*, 127-154.
- Collis, D.;& Rukstad, M. (2008). Can You Say What Your Strategy Is? *Harvard Business Review*, 82-90.
- Danneels, E. (2010). Trying to become a different type of company: Dynamic capability at Smith Corona. *Strategic Management Journal*, 1-31.
- Denos, M. (14. May 2022). *Industry Trends Enterprise Architects Can't Ignore in 2022*. Noudettu osoitteesta EA Voices: <https://eavoices.com/2022/02/18/industry-trends-enterprise-architects-cant-ignore-in-2022/>
- Eisenhardt, K. (2016). *Kathleen Eisenhardt: Effective People Think Simply*. Stanford: Stanford Graduate School of Business.
- Fahey, L.;& Christensen, K. (1986). Evaluating the Research on Strategy Content. *Yearly Review of Management of the Journal of Management*, 167-183.
- Foss, N. J. (1996). Research in Strategy, Economics, and Michael Porter. *Journal of Management Studies*, 1-24.
- Freeman, M. (1. February 2022). *8 enterprise architecture trends to watch in 2022*. Noudettu osoitteesta Red Hat: <https://www.redhat.com/architect/2022-trends-enterprise-architects>
- Hambrick, D.;& Fredrickson, J. (2001). Are You Sure You Have a Strategy? *Academy of Management Executiv*, 48-59.
- Hammarsten, H. (9. 12 2016). *Kokonaisarkkitehtuuri on kehittämisen työkalu*. Noudettu osoitteesta Aalto Pro: <https://www.aalto.fi/aalto-leaders-insight/2016/kokonaisarkkitehtuuri-on-kehittamisen-tyokalu>
- Hirsjärvi, S.;Remes, P.;& Sajavaara, P. (2009). Tutki ja kirjoita. Helsinki: Tammi.

- Huff, A.;& Reger, R. (2016). A Review of Strategic Process Research. *Journal of Management*, 211-236.
- Introduction to Business Technology*. (26. February 2022). Noudettu osoitteesta Business Technology Standard:
<https://www.managebt.org/book/introduction/introduction-to-business-technology/>
- Kaplan, R. S.;& Norton, D. P. (2000). Having Trouble with Your Strategy? Then Map It. *Harvard Business Review*, 167-176.
- Keskitalo, E.-P. (2011). Enterprise architecture – the foundation for a strategy. *The National Library of Finland Bulletin*, 1-2.
- Kim, C. W.;& Mauborgne, R. (2005). Blue Ocean Strategy: From Theory to Practice. *California Management Review*, 105-121.
- Kohtamäki, M.;Parida, V.;Oghazi, P.;Gebauer, H.;& Baines, T. (2019). Digital servitization business models in ecosystems: A theory of the firm. *Journal of Business Research*, 380-392.
- Kotusev, S. (2016). The History of Enterprise Architecture: An Evidence-Based Review. *Journal of Enterprise Architecture*, 29-37.
- Kotusev, S. (2017). Enterprise architecture: what did we study? *International journal of cooperative information systems: IJCIS*, 26(4).
- Leitner, K.-H.;& Guldenberg, S. (2009). Generic strategies and firm performance in SMEs: a longitudinal study of Austrian SMEs. *Small Bus Econ*, 169-189.
- Long, C.;& Vickers-Koch, M. (1995). Using Core Capabilities to Create Competitive Advantage. *Organizational Dynamics*, 7-22.
- McGahan, A. M. (2004). How Industries Change. *Harvard Business Review*, 86-94.
- Mintzberg, H. (1978). Patterns in Strategy Formation. *Management Science*, 934-948.
- Mintzberg, H.;& Waters, J. A. (1985). Of Strategies, Deliberate and Emergent. *Strategic Management Journal*, 257-272.
- Mäkinen, E. (23. September 2020). *ARC software is best suited for looking ahead*. Noudettu osoitteesta Arter: <https://www.arter.fi/en/arc-software-is-best-suited-for-looking-ahead/>

- Nag, R.; Hambrick, D.; & Chen, M.-J. (2007). What is Strategic Management, Really? Inductive Derivation of a Consensus Definition of the Field. *Strategic Management Journal*, 935-955.
- Porter, M. (1991). Towards a Dynamic Theory of Strategy. *Strategic Management Journal*, 95-117.
- Porter, M. (1996). What is Strategy? *Harvard Business Review*, 61-78.
- Porter, M. E. (1979). The Structure Within Industries and Companies' Performance. *Review of Economics & Statistics*, 214-227.
- Porter, M. E. (2001). Strategy and the Internet. *Harvard Business Review*, 62-78.
- Porter, M. E. (2008). The Five Competitive Forces that Shape Strategy. *Harvard Business Review*, 78-93.
- Prahalad, C.; & Hamel, G. (1990). The Core Competence of the Corporation. *Harvard Business Review*, 79-91.
- Puusa, A.; & Juuti, P. (2020). *Laadullisen tutkimuksen näkökulmat ja menetelmät*. Helsinki: Gaudeamus.
- Ramos-Rodriguez, A.-R.; & Ruiz-Navarro, J. (2004). Changes in the intellectual structure of strategic management research: a bibliometric study of the Strategic Management Journal, 1980–2000. *Strategic Management Journal*, 981-1004.
- Ross, J. W.; Weill, P.; & Robertson, D. C. (2006). *Enterprise architecture as strategy: Creating a foundation for business execution* (First eBook Edition p.). Boston: Harvard Business School Publishing.
- Ross, J. W.; Weill, P.; & Robertson, D. C. (2006). *Enterprise architecture as strategy: Creating a foundation for business execution*. Boston: Harvard Business School Publishing.
- Santos, F. M.; & Eisenhardt, K. M. (2005). Organizational Boundaries and Theories of Organization. *Organization Science*, 491–508.
- Schoemaker, P. J. (1995). Scenario Planning: A Tool for Strategic Thinking. *Sloan Management Review*, 25-40.

- Tamm, T., Seddon, P. B., & Shanks, G. (2022). How enterprise architecture leads to organisational benefits. *International journal of information management*, 67, 102554. <https://doi.org/10.1016/j.ijinfomgt.2022.102554>
- Teece, D. J.; Pisano, G.; & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 509-533.
- Terra Firma. (20. May 2022). *Top 10 Enterprise Architecture Frameworks*. Noudettu osoitteesta Terra Firma - Architecture: <https://terrafirma.com.au/architecture/top-10-enterprise-architecture-frameworks/>
- The Open Group. (21. May 2022). *Core concepts*. Noudettu osoitteesta The Open Group: <https://pubs.opengroup.org/architecture/togaf91-doc/arch/index.html>
- Tuomi, J.; & Sarajärvi, A. (2018). *Laadullinen tutkimus ja sisällönanalyysi*. Helsinki: Tammi.
- Urbaczewski, L.; & Mrdalj, S. (2006). A Comparison of Enterprise Architecture Frameworks. *Issues in Information Systems*, 18-23.
- Vaara, E.; & Whittington, R. (2012). Strategy-as-Practice: Taking Social Practices Seriously. *The Academy of Management Annals*, 285-336.
- Vuori, N.; & Vuori, T. (2014). Comment on "Heuristics in the strategy context" by Bingham and Eisenhardt (2011). *Strategic Management Journal*, 1689-1697.
- Wetering, R. v.; Kurnia, S.; & Kotusev, S. (2020). The Effect of Enterprise Architecture Deployment Practices on Organizational Benefits: A Dynamic Capability Perspective. *Sustainability*, 1-21.
- Wetering, R.; Kurnia, S.; & Kotusev, S. (2021). The Role of Enterprise Architecture for Digital Transformations. *Sustainability*, 1-4.
- Whittington, R. (1996). Strategy as Practice. *Long Range Planning*, 731-735.
- Wolf, C.; & Floyd, S. W. (2013). Strategic Planning Research: Toward a Theory-Driven Agenda. *Journal of Management*, 1754-1788.
- Zachman, J. (2003). *The Zachman Framework For Enterprise Architecture: Primer for Enterprise Engineering and Manufacturing*. Book Excerpt for OMG BRWG RFI.

Appendices

Appendix 1. Interview structure – EA practitioners

Interviewee:

Title:

Company/Organization:

Date/Duration:

Present/Remote:

1. How do you see enterprise architecture, and what is it?
2. Why does your company practice enterprise architecture?
 - a. Does it have any objectives?
3. How do you see the enterprise architecture, who is it for, and why?
4. How would you describe the maturity of enterprise architecture in your organization?
 - a. Why do you think that maturity is what it is currently?
 - b. How long have you been practicing it?
5. How is it utilized in your organization?
 - a. Depending on the answer, why is it not? Why do you not know?
6. Who are the practitioners in your organization?
 - a. Strategy perspective
 - b. Enterprise architecture perspective
 - c. Do they discuss?
7. Is the information available for all necessary parties?
 - a. Who do you think are those necessary parties?
8. Are you involved in strategy work?
 - a. IT-level
 - b. Company level
9. Would you have something to give if you were involved?
 - a. Involving already: how?

b. Not involving: How would you think you can contribute?

10. Do you have any thoughts on which point and how enterprise architecture should be utilized in strategy work, or should it be at all?

11. Any additional comments on the topic?

Appendix 2. Interview structure – Strategy practitioners

Interviewee:

Title:

Company/Organization:

Date/Duration:

Present/Remote:

1. Why does your company craft a strategy, and what do you think it is?
 - a. Does it have any objectives?
2. Do you think you have all the necessary information for strategy work?
 - a. How do you acquire the necessary information?
 - b. If not, what needs to be added?
3. Could you describe how your organization's strategy formation goes at a high level?
4. How would you describe the maturity of strategy work in your organization?
 - a. Why do you think that maturity is what it is currently?
 - b. How long have you been working with it?
5. Do you feel that your strategy is realized as intended usually?
 - a. If not, how has the merger turned out?
 - b. Do you think those could have been avoided, and how? If necessary
6. Are you familiar with enterprise architecture?
 - a. If yes: How do you see the enterprise architecture, who is it for, and why?
Would it be helpful for strategy work?
 - b. If not: Do you think that it would be helpful for strategy work?
7. How is it utilized in your organization and strategy work?
 - a. Depending on the answer, why is it not? Why do you not know?
 - b. At what point in strategy work is EA utilized?
8. Who are the practitioners in your organization?
 - a. Strategy perspective
 - b. Enterprise architecture perspective

c. Do they discuss?

9. Do you have any thoughts on which point and how enterprise architecture should be utilized in strategy work, or should it be at all?

10. Any additional comments on the topic?