Business Development And Cross-Functional Agile Teams

A case study on business development in a large-scale agile software environment

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Abstract

Background: Agile product development teams are often organized as self-managed empowered teams with a certain degree of team autonomy. Another area, *Business Development*, may be vague and loosely defined compared to agile methods for product development. By understanding the tasks and many flavors of business development, this can be used by organizations to better align and coordinate such work with cross-functional teams in large-scale agile software development.

Objective: The objective of this study has been to identify how business development can be included into the work of agile software development, and also formulate a definition of business development that is relevant to such agile software development environments.

Method: A qualitative case study was conducted in an organization where the software- and product development was organized using cross-functional teams, following an in-house agile development model. Data was collected by conducting 13 individual interviews as well as gathering various documentation. The study has used Hackman's authorization matrix as a theoretical framework.

Results: The findings from the case study show that there are a broad specter of tasks that fall into the category of business development. The findings also indicate that due to the lack of a well known definition of business development, the understanding is unclear and ambiguous. Self managed-teams, also called empowered agile teams, may develop a bottom-up culture, that may lead to reduced alignment and coordination between such teams and other external teams. Such challenges are barriers to include business development from the commercial side with the work done in the self-managed product- and tech teams. This study also reveals enablers for how organizations can better include business development with the agile structured product development.

Conclusion: By gaining a better understanding of the identified enablers and barriers, organizations can reduce tension and increase the alignment and coordination between the commercial teams and cross-functional teams in large-scale agile software development. Based on the data collection, this thesis suggests a definition of business development that is relevant to agile software development environments. This definition may help gaining mutual understanding and help this alignment and coordination.

Acknowledgments

Writing this thesis has been a challenging exercise, yet at the same time a great learning process. It's not always easy to combine a full-time work situation with studies, but thanks to a supporting family and cheering work colleagues, it has been a fruitful experience. Thanks to my work colleagues and managers for all support, with a special thanks to my frequent business-traveler fellows (the small group that always lose something during a business trip) - I really appreciate all the amazing professional dinner-conversations as well as great friendship. You know who you are! Finally, I was so lucky to get the best mentor and supervisor from the University. Numerous digital meetings on Teams, 24-hours support on Slack, as well as great conversations and guidance over a cup or two of coffee. So, Associate Professor Viktoria Stray, I hope I've got something right with this work. Thank you!

John O. Olsen
Oslo, August 2022

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Introduction

Product development and *business development* within the field of software engineering come in many flavors and variations. Due to lack of a clear definition, there are many opinions of what business development really is, and how it should be organized (Wig, 2017). Business development often falls into the broader term *business strategy*. Contemporary research show that software development has been characterized by harmful disconnects between important activities such as planning, development and implementation. Therefore, the link between business strategy and software development needs to be addressed and improved (Fitzgerald and Stol, 2017). Some of the work within software engineering relate closely to the technical side, while other parts of the work relate more to the commercial side. To accommodate this diversity, so-called *cross-functional teams* are often used within IT-projects (Moe et al., 2019). This way of organizing teams is often seen as an agile approach, chosen by companies that needs to adapt to complex environments, with a rapid change of focus, and the teams are set up as *self managing teams*. This leads to organizational challenges due to the bottom-up governance approach of the self-managing teams, that is in contrast to traditional, plan-driven software development following a conventional top-down approach (Moe et al., 2021). In such teams, product- and software development are tightly connected, where business models and other business- and market related topics also are often included. Even if there seems to be a broad consensus in the literature that a holistic approach to software development is needed (Bogsnes, 2016, Dingsøyr et al., 2018, Fitzgerald and Stol, 2017, Leffingwell, 2007, Overby, Bharadwaj and Sambamurthy, 2005), at the same time topics related to business development are often found outside the scope of software development as well as outside the cross-functional product development teams. When self-managing agile teams are working towards the same goal, thorough coordination and management effort are required (Petersen and Wohlin, 2010). Coordination of work within software engineering is a well known research area, and researchers have addressed topics related to leadership, coordination, organizational context, design of teams and team processes (Stray, Moe and Hoda, 2018). Challenges within alignment and coordination of this work, and different understandings and divergent conceptual perceptions of both the tech- and and the commercial side, are central topics within the BITA (**B**usiness **IT A**lignment) research field (Jonathan, Rusu and Perjons, 2020).

To further advance knowledge on these topics, this thesis will study the relationship between business development and cross-functional teams in large-scale agile software development.

1.1 Motivation

With a technical background as a software developer, and also with education within software engineering and project management, I have for over two decades had roles that lies in between the commercial side and the tech-side in software developing companies. I have learned that coordination and communication are important factors. I have been part of both successful and less successful projects, where this coordination and communication have fueled the projects either in positive or negative directions. I have experienced challenges, often related to the perceptions and assumptions that the different teams and individuals have had of each other. Over time I have gained interest in how the culture evolves in different parts of the organizations where I have worked. My experience is that the culture evolves related to the communication and coordination between individuals and teams, which again is often related to the methods, tools and synchronization mechanisms. I do find it interesting that challenges between the commercial side and the more tech-related IT-side seem to arise regardless of how the teams are organized. I have seen challenges related to these topics working with traditional organized, plan-driven development structures, but also – and perhaps more surprisingly, working with cross-functional agile teams. I have also noticed that business developers are seldom included in such cross-functional teams, perhaps because the term *business development* and the role of *business developers* may be unclear and unspecified.

My motivation is therefore to study the inclusion of business development into large-scale agile development processes, and also trying to formulate a definition of business development that is relevant to such agile software development environments.

1.2 The research project

When organizing software development teams, it is of course important that those teams work as efficient as possible together with the rest of the organization. In commercial companies the high level focus is to create value by offering products and services to the market. Modern software development teams often follow an agile approach with has an impact on the methods, tools and structures being used. Cross-functional teams, iterative processes for feedback and adjusting are all examples of such structures. At the same time, the commercial side of many companies often includes sales departments, marketing departments and perhaps also departments working with strategy and long term visions. It is important that the coordination and communication between the different business units, all the way from strategy, marketing and sales to software development and operations are implemented as optimal and efficient as possible. As this research project has shown, business development is relevant for all those units of an organization. The research project that has been done through this thesis is a small contribution to the existing research fields of Business IT Alignment, and has been done by conducting a case study within a large-scale software development company with multiple business units including cross-functional development teams.

1.3 Research questions

This thesis aims to explore the overall research problem of balancing and aligning business development and product development in large-scale software development by investigating the following research questions:

1. **RQ1:** *How can business development be defined to be aligned with the product and technical development processes?*
2. **RQ2:** *What are the barriers and enablers for including business development into self-managed autonomous teams?*

1.4 Approach

By following a qualitative research method, a case study has been conducted to collect data related to business development and agile cross-functional teams in a software development company. The cross-functional teams from the case study were organized as self-managing, some will say *autonomous teams*, but also commercial resources working outside these cross-functional teams, have been part of the data collection. Hackman's authority matrix and classifications of teams (Hackman, 1986) has been used as a theoretical framework, helping to organize and structure the findings. This is further explained in Chapter 3.

1.5 Thesis Structure

Chapter 2: Background and related work: This section will provide relevant descriptions of business development, as well as presenting related work from the information system research, especially related to autonomy in agile software teams. The relevant work includes Hackman's authority matrix and classification of teams, and also how this theory is used in related information system research.

Chapter 3: Method: This part presents the chosen qualitative research method, including the research design.

Chapter 4: Results: A presentation of the results from the data collection is given.

Chapter 5: Discussion: The results presented in the last section will be discussed and mapped towards the authority areas from the selected theory. The results are used to answer the two research questions, thus a definition of business development in a context of agile software development is suggested, as well as a presentation of barriers and enablers on how to include business development into *empowered* agile teams. Furthermore,

the presented results' implications for practice are discussed, as well as a short evaluation of the generalizability, reliability and validity of this study.

Chapter 6: Conclusion and future work: The last chapter presents a conclusion to the research questions, and propose possible directions for future research.

Background and related work

Due to the scope of this thesis that addresses the work related to product development and business development, and the relationship between the two, it has been useful to study relevant definitions and theories on these topics. First, the term *business development* is described. Relevant research literature related to alignment and coordination of work is presented, and also a short introduction to autonomy in agile software teams. The understanding of this team autonomy is important due to the possible challenges between such teams and more commercial oriented teams working with business development.

2.1 Business Development

As indicated in the introduction and from my background experience, the term *business development* is often used without a clear definition. This is supported by industry stakeholders, acknowledging that business development are often misinterpreted with *sales* (Cruz e Silva, 2017). Silva suggest a definition were Business Development is placed in the crossing between Strategy, Sales and Marketing. This definition has much in common with other sources as presented below, but it lacks the perspectives from a more technical side of software development. That is why the following sections try to explain how the term Business Development is used both from the software industry, and also from an educational and academical point of view.

2.1.1 Topics related to business development addressed by the industry

SINTEF, one of Europe's largest independent research organizations, has with support from Abelia, the business association of Norwegian knowledge and technology based enterprises, published something they describe as an e-book of ideas (SINTEF, 2018). This e-book does not give any explicit definitions, but it describes management of innovation and business development as *an act of balance between focusing on exiting standard deliveries, compared to what is required when seeking to move the area of knowledge and competence into new areas within the company.* This indicates that both existing deliveries and seeking new areas may be part of business development. The same perspectives are shared by others, such as Telenor and Visma. As being two of the largest IT-companies in Norway; both Telenor and Visma are often attending to industrial conferences sharing their knowledge and activities. Visma, which operates in the area of accounting and financial solutions, describes that *the personal development of their consultants professional expertise is part of their business development*. This includes further developing their

products and solutions using Proof of Concepts (PoC's) related to both technology and also new areas (VISMA, 2021). When it comes to the telecom and network giant Telenor, when describing the their activities from the R&D (Research and Development) department, they explain that *business- and product development is the connecting link* between the R&D area and the product line within the organization (TELENOR, 2009). Here they explain that:

- **Product Development** within each business area consists of
  - developing their core products, as well as
  - incremental development of the existing product portfolio.
- **Business Development**, on the other hand, includes
  - new focus areas,
  - projects with commercial partners, and
  - client projects.

This indicates that Telenor R&D clearly makes a distinction between product development and business development.

A suggested framework for business development is presented by a smaller consultancy company, where it says that *"business development is neither defined nor well enough understood, which often results in all-encompassing and meaningless action plans"* (Wig, 2017). Here, business development is described as the pursuit of six specific activities:

- **Establishing** - Establishing new market positions means developing a new target group segment.
- **Developing** - The development of market positions is closely linked to growth strategies, but goes deeper. Priorities can be linked to an increase in market share, but also to an improvement in customer relations, a change in distribution or a strengthening of the margin in the relevant segment.
- **Retaining** - Retaining a market position means maintaining it with the least possible resource consumption in a situation that is not characterized by threats from competitors or other pressure factors.
- **Protecting** - Measures to protect accumulated market positions are linked to a risk or an identified threat. Typical situations for the protection of market positions are in the event of an attack by a player with new technology / products, or when new competitors enter a market (examples of threats). Another example is the risk of loss of a distribution channel.
- **Attacking** - Attacks can be to go directly up against a competitor with an established market position, or it can be in the form of a counter-attack after a competitor has already put forward a significantly better value proposition towards an important target group that one can not risk losing.

- **Winding down** - Unprofitable market positions tie up management focus, time and resources. Examples can be expensive products and associated support for a particularly demanding customer group, or a market share that is too low for it to make sense to maintain it.

According to this description, business development is to *develop a balanced portfolio of market positions against the various customer segments - which supports the strategy and delivers targeted returns. The core of a company's business development is to change its market positions.*

Another perspective is presented by a business writer for Forbes (Pollack, 2017), who also recognizes the lack of a good definition, and notices that business development is often confused with sales activities. Here business development is defined as the creation of *long-term value* for an organization from *customers*, *markets*, and *relationships.*

- Long-Term Value: It's about creating opportunities for that value to persist over the long-term, to keep the floodgates open so that value can flow indefinitely. Thinking about business development as a means to creating long-term value is the only true way to succeed in consistently growing an organization.
- Customers: They are the people who pay you for your products and services, and without them you won't have any business to develop. But not everyone is a natural customer for your business. Maybe your product does not have the features I'm looking for. Maybe your product is perfect, but I don't even know your company sells it. Or maybe you're not reaching me because you're not knocking on my door.
- Markets: Customers "live" in specific markets. One way to understand markets is by geography. But customers also "live" in markets that are defined by their demographics, lifestyles, and buying mindset. Identifying opportunities to reach new customers by entering into new markets is one important gateway to unlocking long-term value.
- Relationships: Building, managing, and leveraging relationships that are based on trust, respect, and a mutual appreciation of each other's value is fundamental to enabling the flow of value for the long-term. Relationships with partners, customers, employees, the press, etc. are all critical to the success of any business development effort and as such they demand a bold-faced spot in any comprehensive definition of the term.

This same elements *long-term value, customers, markets* and *relationships* are also used by (Akdeniz, 2014), who also argues that relationships are probably the most important component of business development. A relevant definition of business development from academia (BI Norwegian Business School) describes: *Strategic business development and innovation is about exploring and exploiting opportunities. [...] focuses on digital technology that enables you to do both completely new things and things you are already doing in new ways, whether it is about organization, processes, customer experiences or business models* (BI, 2021).

2.1.2 BITA and nearby research areas

To the best of my knowledge, when it comes to information systems research, the term *business development* is not that well defined, nor described in the same degree compared to nearby areas such as BITA (Business IT Alignment), innovation research, and business strategy. This assumption is supported by a master thesis from NTNU that indicates that the closely related area, business model innovation, is often given lower priority than product innovation and product development (Klatran, 2018). The term *"New Business Development"* is used to describe the process of linking the technological and market knowledge together (Burgers, Van Den Bosch and Volberda, 2008). This *technological knowledge* refers to knowledge about products, technologies and processes. Similar, the *market knowledge* refers to knowledge associated with targeting customers, entering markets, distribution channels, marketing approaches and business models. The distinction between the two is important to understand, because the timing of development differs for both types of knowledge. Experimenting with the marked approaches and distribution channels will take place after market introduction, while experimenting with products and technologies can be done before market introduction. This indicated that completion criteria in projects may be different for creating technological versus market knowledge (ibid.)

The BITA research shows that there are often different understandings and different conceptual perceptions of both the tech- and and the commercial side (Jonathan, Rusu and Perjons, 2020). These are relevant topics that underpin the rationale of the research questions in this thesis. Other similar research address the challenges between business strategy and software development. The term *"BizDev"* has been coined by *Fitzgerald and Stol*, arguing that the link between business strategy and software development ought to be continuously assessed and improved, in a similar way as *DevOps* recognizes the continuous work between software development and its operational area (Fitzgerald and Stol, 2017). Building on this work, another study on digital transformation in organizations, shows that a key challenge was the separation of business development and IT development, including the organizing principle that business developers prioritize what the IT developers should deliver without involving the IT developers (Mikalsen et al., 2018). Also, relevant studies show that the organizational context and environment affects the effectiveness of autonomous teams (Stray, Moe and Hoda, 2018). Similarly, agile teams working in a large-scale environment needs to be aligned with other teams and the rest of the organization (Moe et al., 2019). The relationship between the commercial teams working with business development and the product- and tech teams is an example of such context and environment. Therefore it can be relevant to understand if the possible findings in this thesis are supported in those studies.

2.2 Autonomy in agile software teams

Self-management is one of the instrumental and central principles in agile methods. Even though autonomy and self-management are not new, they have become the new guiding stars for organizational changes (Moe et al., 2021), as they aim to increase both employee motivation and job satisfaction (Langfred, 2000). Moe et al. (ibid.) refers to challenges when such teams, driven by autonomy and self-management, must coordinate their work with other similar teams, as well as the potential conflict between team-level autonomy and the need for organizational control in large-scale agile software development. Moe et al. also refers to downsides of selv-managing teams, where research explain that organizations must carefully consider the proper level of autonomy and discretion given to teams, otherwise they will be associated with dysfunctional outcomes (Langfred, 2007). Using Hackmans matrix, Moe et al. (ibid.) studies the enablers and barriers of autonomy and exploring the conflict between team-level autonomy and management control. The conclusion is that *"the freedom of the development teams cannot be limitless due to complex dependencies with the work of other teams and actors. Community-like structures have emerged as alternative control mechanisms also known from the clan control theory. The sweet spot for organizational control and team autonomy is the implementation of bottom-up clan control mechanisms, combined with some degree of formal control".*

When it comes to alignment in a context of autonomy and self-managing teams, many have referred to the the tutorial-introduction by Henrik Kniberg, describing the engineering practices at Spotify using the cartoon in Figure 2.1 below (Kniberg, 2016). This approach is based on theories from Stephen Bungay's *"The Art of Action"* where he used military examples to show that setting broad direction for teams (the *what* and the *why*) still allowed high levels of autonomy (the *how*) and delivered better results (Girvan, 2021). This explains that alignment is not the opposite of autonomy. Instead, one should think of them as two axes that we can move along in either direction.

2.2.1 Hackman's authority matrix

Hackman discusses the relationship between self-management and autonomy where self-managing units (teams) have a certain amount of autonomy (Hackman, 1986, p.92). Hackman's authority matrix, visualized in Figure 2.2, explains that a performing unit is *a group that consists of several individuals working interdependently on a common task.* As the figure shows, manager-led teams have authority only for executing the task. A self-managing team is similar but they are also authorized to monitoring and management of its work processes and progress. The autonomy increase further to the right in the figure. As the autonomy increases, the team is given responsibility for both designing the team and its context, and setting the overall direction. Such teams are defined respectively as self-designing and self-governing teams.

A summary of Hackmans definitions of the different levels of team's responsibility, is

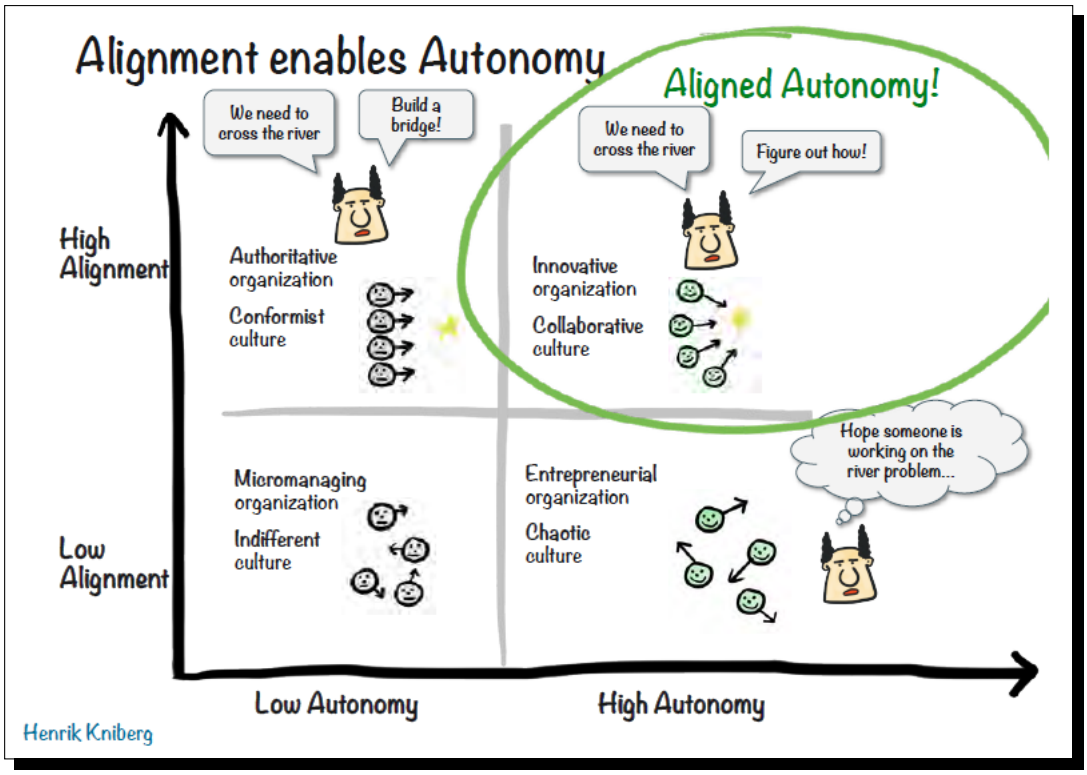

Figure 2.1: Alignment enables autonomy (Kniberg, 2016)

given in Table 2.1 which also includes examples by Moe et al., related to agile software teams (Moe et al., 2021). This shows that *"a team may be authorized to perform functions beyond a general level of their authority or have responsibility for only parts of certain functions"*.

The part of Hackman's theory that is used as a guidance in this thesis, is *the four areas of authority*. Hackman describes that when having a manager-led team, only the lowest authority area (A4 - executing the task) is under the responsibility of the performing team. All other areas are under the responsibility of the management. Likewise, when having a self-governing team, the team itself is authorized to not only executing the task (A4), but also monitoring and managing the processes and progress (A3), designing the team (A2) and even setting the overall direction (A1).

Authority area A1 is about *setting the overall direction*. This is under the responsibility of a self-governing team, but for all other team classifications, this is done by the management.

Authority area A2 is about *designing the performing unit and its organizational context*. Both self-designing teams and self-governing teams are responsible for this.

Authority area A3 is about *monitoring and managing work processes and progress*. This can be done by self-managing teams, self-designing teams and self governing teams, otherwise it is done by the management.

Authority area A4 is about *executing the task*. A manager-lead team will only execute the tasks, all other responsibilities are under the responsibility of the management.

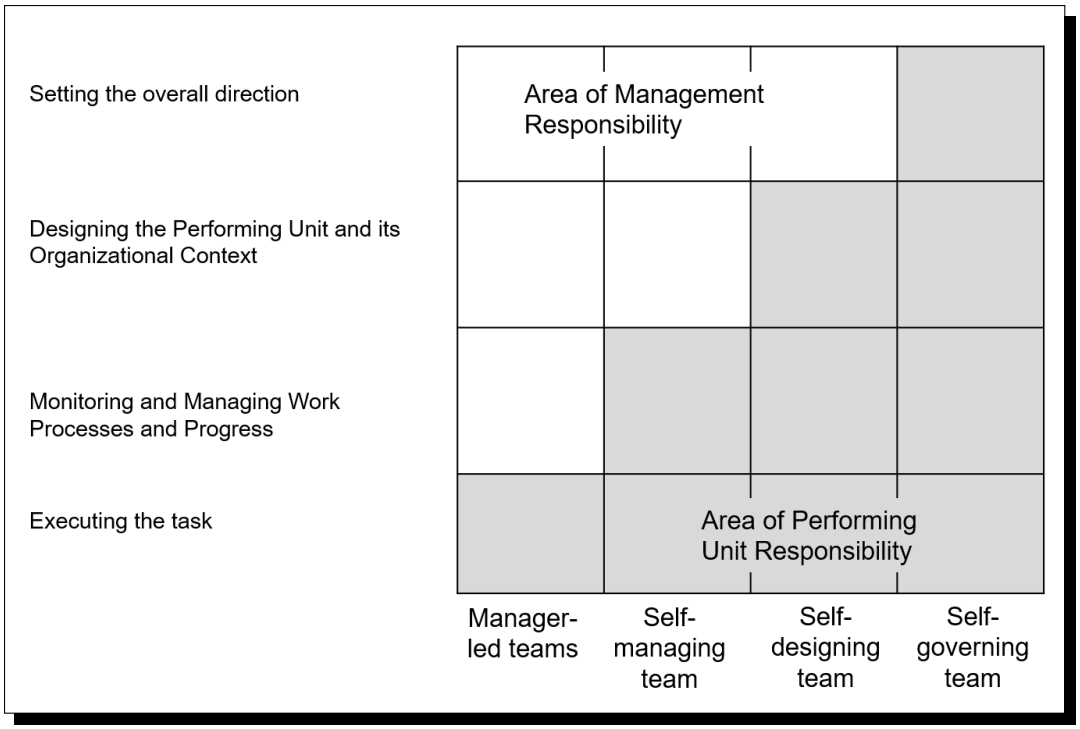

Figure 2.2: Hackman's authority matrix.

Hackman's authority areas relates both to the tasks done by agile structured development teams, and also to the units dealing with business development. As the background and motivation behind the research questions explain, those units dealing with business development are often found outside the development teams. These observations are the main reasons for relating this study to Hackman's authority matrix.

Table 2.1: *Hackman's team classifications related to agile software teams (Moe et al., 2021)*

Type of team	**Level of responsibility** (Hackman 1986)	**Specific examples** (Moe et al., 2021)
Manager-led team	Team members have the authority only for executing the task; managers monitor and manage performance and define the process, structure and team and its context, and set overall directions.	Team external leaders decide who performs which task, how the task shall be solved and the development process the team needs to follow.
Self-managing team	Team members have the responsibility not only for executing the task but also for monitoring and managing their own performance.	The team decodes how to solve the task, e.g. a new feature to be developed, and who should do what. The team monitors the work by seeking data and feedback to learn how well they are accomplishing the development (e.g. speed, quality and customer satisfaction). The team continuously improves the development process. The team can also help others when their own responsibility is being met.
Self-designing team	Team members of self-designing teams have the authority to modify the design of the team itself or aspects of the organizational context in which the team functions. Managers set the direction for such teams but assign to members full authority to do what needs to be done to get the work accomplished.	In addition to the previous functions, the team is able to modify itself to solve the work assigned to the team. The team is also responsible for handling the links with other teams to solve dependencies (e.g. changes in a subsystem, or support from a continuous integration team), and calls for help from others (e.g. UX infrastructure or operations experts).
Self-governing team	Team members decide what is to be done, structure the team and its context, manage their own performance, and carry out the work.	After getting feedback from the market, the team is responsible for deciding when and if to make structural course correction to test a new fundamental hypothesis about the product strategy. Examples of such teams are Lean Startup teams.

Method

The purpose of this chapter will be to assess the methodical approach for this thesis. The first section describes the rationale for choosing a qualitative research method. Then the research design is presented, by explaining the different parts that is included in the design, going from the area of concern as a start to the research contribution as the expected result. The research design includes the framing theory. This thesis use Hackman's authority matrix and the corresponding classifications of teams (Hackman, 1986) as the theoretical framework. This framework will help structuring the results, how the relevant business development tasks can be included in the work of agile teams, by mapping those to the authority areas identified by Hackman. The following sections describes the case context, the data collection and the data analysis. The organization that was target for the case study, anonymized by hereafter calling it *SoftCo*, is described and how it relates to both agile software development models and structure for working with business development.

3.1 A qualitative approach with a case study research

A qualitative research approach is suitable when trying to answer a research question related to *why* or *how* (Yin, 2018, p.42). In such studies one tries to seek explanations that include contextual, social and cultural phenomenons. A qualitative approach has therefore been chosen to be able to perform the necessary research and investigations to be able to answer the research question. The intention has been to gain more understanding related to coordination of work related to business development and product development. It is therefore relevant to look at the appropriate tools and methods for achieving this understanding. A suitable framework for this kind of in-context IS (Information Systems) research is documented by (Braa and Vidgen, 1999). Their framework categorizes the intention of the research in to three areas; *prediction*, *change* or *understanding*. These three categories can be described as ideal-types or arch-types:.

- If *prediction* is the intention, then *reduction* is a suitable method - a positivist approach.
- If *change* is the intention, then *intervention* is an approach.
- If *understanding* is the intention, then *interpretation* is a suitable approach.

In addition, this framework explains how the different research approaches are placed according to these three ideal-types. This is shown in Figure 3.1.

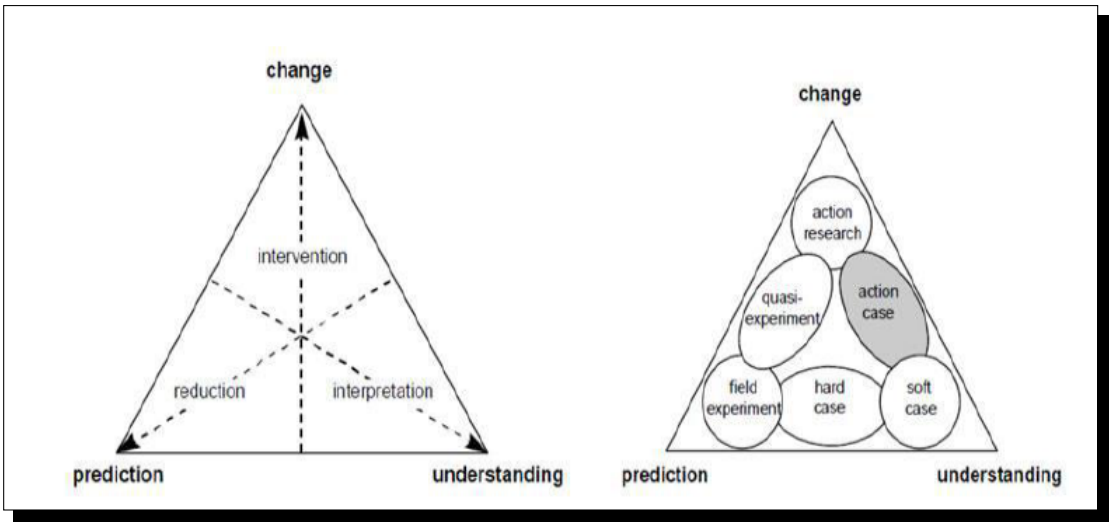

Figure 3.1: Framework categorizing research methods

In the corners of this triangle, it is suggested that prediction can be done by *field experiments*, change can be done by *action research* and understanding can be done using *soft-case studies*. A soft-case study is an interpretive approach, compared to a more positivist approach in a hard-case study. There is a certain dynamic between these, and here you will also find hybrids that can be used based on the degree of reduction, intervention and interpretation used.

Based on the research questions of this study, a qualitative approach with a descriptive and interpretive design has been chosen, and a soft-case study has been decided to gain understanding. The data collection has been done through in-depth interviews and document analysis. Such kind of a case study is explained by (Yin, 2018, p.5) as an in-depth investigation of a real and contemporary phenomenon in a real-life context.

3.2 Research design

To clarify the relationship between the choices of literature, theory, method, problem area and the research contribution, Mathiassen's research design model has been chosen to show these relationships (Mathiassen, 2017). This model, illustrated in figure 3.2, shows a research question (RQ) that is rooted in a problem (P) in the real world, which exists within a problem area (A) described in the research literature. Addressing the research question (RQ) is done via data collection and analysis of empirical data via a method (M), if possible in perspective of a conceptual framework (F). Finally, this will lead to a contribution in the form of answering the problem (CP) as well as to increased insight into the problem area (CA), as well as possibly to a new or extension of a theoretical framework (CF) or extensions within a method (CM). Table 3.1 shows how these topics of the model of *Mathiassen* are related to this thesis.

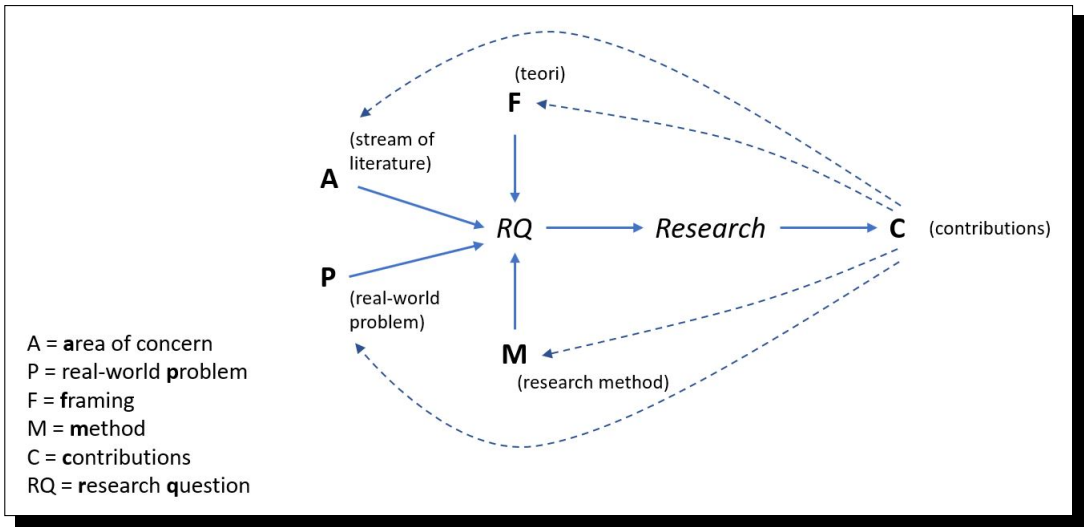

Figure 3.2: Research design visualized by different parts of the research work

Table 3.1: *Mathiassen's model related to this thesis*

Topic	**Addressed in this thesis**
Research question (RQ)	**RQ1:** How can business development be defined to be aligned with the product and technical development processes? **RQ2:** What are the barriers and enablers for including business development into self-managed autonomous teams?
Area of concern (A)	Implementation of agile methods in software development.
Real world problem (P)	How to include the knowledge and resources from business development and teams outside the software development teams into the development models?
Framing (F)	Hackman's authority matrix are used to study how the tasks from business development fits the four authority areas.
Method (M)	To conduct a a case study research in a large-scale software development company, that involves several business units such as sales, marketing, business development in addition to product- and software developers.
Contributions (C)	1) Give input to how SoftCo organizes the work where the areas of business development and agile product/IT-development are crossed. 2) Shed empirical light on business development and coordination of work, in a context of agile product/IT development. 3) Trying to give a definition of business development in a context of agile information systems development.

3.2.1 Area of concern and real-world problem

The area of concern is explained in the introduction and motivation behind this thesis in chapter 1. The real-world problem is specified in the research question, which address how business development can be defined and included in large-scale agile software

development. The definition of large-scale follows how Dikert et al. describes large-scale software development (Dikert, Paasivaara and Lassenius, 2016):

"Software development organizations with 50 or more people or at least six teams. All people do not need to be developers, but must belong to the same software development organization developing a common product or project, and thus have a need to collaborate".

In addition to this, both such software development teams and also commercial teams exists as part of a larger organization. Such an organization will evolve a organizational culture. This thesis rely on the definition by Bang, describing organizational culture as *"the set of shared values, norms and perceptions of reality that develop in an organization when members interact with each other and the surrounding environment"* (Bang, 2015, p.23).

3.2.2 Framing theory and research goal

As described in Section 2, it has been relevant to study related work, reports and studies about how autonomous teams relate and act in relation to other external (business) units in an organization. Management is one such kind of unit that can be seen as an *external stakeholders*, but also units dealing with sales, business development and strategy are similar external units as long as they are not included in the autonomous teams. The empirical investigations has tried to investigate how work related to business development is included in the product development teams, seen both from the perspective of the teams themselves and also from the external stakeholders. As a framework for this investigation, Hackman's authority matrix has been used (Hackman, 1986).

The data collection related to how the business development is executed and conducted, has been structured according to Hackman's authority areas: *1) setting the overall direction, 2) designing the performing unit and its context, 3) monitoring and managing work processes, and 4) executing the task.* Related to the first research question, RQ1, the tasks that follow from business development has been mapped towards those four authority areas. This has been done to ensure that the perspectives and relevant tasks are relevant for the different authorization levels in self managed teams. Related to RQ2, the data collection about to how these tasks are included in the development teams are mapped towards the same four authorization areas, helping to give a structured understanding of both commercial and technical tasks.

3.2.3 Research contribution

As the model of (Mathiassen, 2017) in Figure 3.2 shows, this type of research could lead to contributions in several areas. One of the intentions with this thesis, is that the results can be used as input to how SoftCo organizes the work where the areas of business development and agile product development are crossed. This contribution points back to what is the real-life-problem problem. From an academic, literary and theoretical

point of view, the thesis may help to shed empirical light on business development and coordination of work, in a context of agile product/software development. Via the empirical investigations, the contextual descriptions being described may also increase the value of existing descriptions of similar empirical data. Finally, this thesis aims to give a definition of business development that is relevant in the context of large-scale agile software development.

3.2.4 Ethical considerations

It has been important to be aware of the ethical considerations that may arise throughout the empirical work. This is relevant because the topics being addressed involves methods and processes related to how people work and collaborate. Also, as described by (Kvale and Brinkmann, 2018, p:96), the researchers dilemma is that the researcher wants the interview to be as deep and penetrating as possible, which entails a danger that the interviewees are offended, but the researcher also wants to be as respectful to each interviewee as possible, with the danger of getting an empirical material that only scratches the surface.

It is essential to understand that the independence of the researcher will be affected when being close to the interviewees (Kvale and Brinkmann, 2018, p:108). If the researcher is becoming to native to the interviewees perspectives, it may become difficult to maintain a professional distance and interpret the answers from the researchers perspectives instead of the interviewee's perspectives. To prevent that these challenges would arise, all interviewees was informed what the study is about, as well as ensure that all collected data are treated anonymously and confidentially, and that no findings can lead back to the interviewee or his/her immediate circle.

In addition to this, it has been important to be aware of the *Hawthorne effect* that may occur, saying that the interviewees may be affected in any direction as a consequence of them *knowing* that they are being studied (Jones, 1992).

3.3 Case context

The main unit of inquiry for this thesis, is a case study of a Nordic software company. The case study approach was chosen for this thesis because the main research questions are about *how* the coordination of work between business development and software development is done, *why* the company specific models and methods are implemented the way they are, and *how* this affects different parts of the organization.

3.4 Data collection

The main source for the data collection has been done by conduction in-depth interviews. In addition to this, document analysis has been done by studying the internal web sites of SoftCo, describing the company's *strategic platform*, the as well as descriptions of methods and tools and company philosophy. All this documentation describes the mission and long-term ambitions, values and *"code of conduct of"* the company.

3.4.1 In-depth interviews

As described in Section 3.1, the relevant method in the chosen approach of a case study, is to conduct in-depth interviews. After analyzing the relevant departments and relevant persons to interview, a method for how to conduct the interviews was needed. The interviews was at a high level, designed according to the descriptions of (Yin, 2018, p:118-119) for conducting a case study interview. The line of inquiry was designed using an interview guide, and the questions was verbalized in an, as much as possible, unbiased manner. The questions was also focused more about *how* instead of *why*, as the latter approach could trigger a defensive reaction from the interviewee *(ibid.)*. The interview process was also designed trying to follow the theory of the *qualitative research interview*, as described by (Kvale and Brinkmann, 2018). The aim of this approach is that the results are discovered through the dialogue between the interviewer and the interviewee. 13 such interviews have been conducted.

Table 3.2: *Overview of the interviews*

Interviewee	Role	Company experience	Years of experience	Date	Duration
i(1)	Agile coach	3 years	(15-20)	Winter 2021	62 min
i(2)	Product manager	6 years	(10-15)	Winter 2021	53 min
i(3)	IT Manager	3 years	(20-25)	Winter 2021	61 min
i(4)	Business developer	4 years	(30+)	Winter 2021	57 min
i(5)	Sales manager	4 years	(10-15)	Winter 2021	66 min
i(6)	Business developer	3 years	(20-25)	Winter 2021	57 min
i(7)	Business developer	5 years	(30+)	Winter 2021	54 min
i(8)	IT/Tech Manager	4 years	(10-15)	Winter 2021	55 min
i(9)	Sales Manager	5 years	(10-15)	Winter 2021	55 min
i(10)	Sales Manager	5 years	(10-15)	Winter 2021	63 min
i(11)	Product manager	5 years	(10-15)	Winter 2021	59 min
i(12)	Product manager	5 years	(10-15)	Spring 2022	53 min
i(13)	Product manager	4 years	(15-20)	Spring 2022	70 min

3.5 Data analysis

The interviews were recorded and transcribed. The transcribed interviews were imported to NVivo (https://www.qsrinternational.com/), a software tool for qualitative data analysis. To make a structured approach to the data analysis, the method described by (Miles and Huberman, 1994) called *The Ladder of Analytical Abstraction* has been used. This method reduces raw data by categorizing and sorting the results, as well as looking for patterns. The encoding function in NVivo, was used to help categorizing the different topics that evolved during the interviews. A starting point was a predefined coding scheme based on definitions that each interviewee had of business development and product development and the related working tasks, while yet giving room for letting the coding and grouping into nodes emerge from the data.

This categorization and the search for patterns are also emphasized by (Yin, 2018, p:175), where these meaningful patterns can be represented as tables or diagrams and figures, which in turn are described by (Miles and Huberman, 1994) as *data displays*. This

is a method that helps to display the data collected. Figure 4.5 and Table 4.2 are examples of such data displays.

During the data analysis, as much details as possible was considered and included into the findings. This was to increase the analytical generalizability of this descriptive case study. This will allow analytical comparisons and synthesis with other case studies on similar topics (Yin, 2018).

Results

This chapter describes the results of the data collection, and how these results are grouped and categorized to help giving answers and elucidating topics related to the research questions. Before the results are presented, the first sections describe the set-up of the case to give some contextual descriptions of the relevant organizational structure of SoftCo. As this chapters shows, when seen in an agile context, SoftCo represents a rather large-scale structure, underlined by numbers such as 25 development teams, over 300 employees and consultants, using over 1600 Slack channels for communication.

4.1 The set-up of the case

SoftCo was started as a service from a large Nordic enterprise, and was later spun off as a separate company. SoftCo mainly serves Nordic companies and citizens as their customers, and operates in both the B2B (business to business) segment, as well as in the B2C (business to consumer) segment. The software development is done almost completely in-house, supplied by IT-consultants that supplements the development teams. During the company's lifetime of approximately five years, there has also been mergers and acquisitions, with the consequence that the existing code-base of SoftCo's products may have different origins.

SoftCo follows a relatively flat organization model, where the company's *values and aphorisms* are thoroughly and frequently exposed. The company's culture is explained by a high degree of freedom and flexibility. Those principles are founded in the company's strategic platform.

4.1.1 SoftCo's guiding principles

Confluence is a collaboration wiki-tool used to help teams to collaborate and share knowledge efficiently. This tool is widely used by SoftCo to document and present all kinds of company information that should be shared internally. The amount of information is comprehensive, with 82 different spaces. Each space can be seen as a root directory, with a huge number of sub-pages and substructures. All employees are able to create and edit nearly all pages in almost all spaces in Confluence. There are two central areas that describes the the guiding principles for all development within the company. The first part is called *"SoftCo's way of working"* and is both a collection of documents, principles, tools and methods. This is described in the next subsection. The second and most fundamental part is called *the company's strategic platform*, which is described in a

comprehensive stack of documentation within the space of **corporate governance.** The main content of the strategic platform is listed below:

The mission defines why the company exist and what they are working to deliver every day.

The long-term ambitions are where the company focus the energy to achieve the goals.

The company's promises are what they pledge to customers and users.

The company's aphorisms defines how to connect with each other and the customers.

4.1.2 SoftCo's way of working

Part of the documentation from the strategic platform, describes *"The way we work"*. This documentation describes software development, UX and user involvement, as well as how product- and developments teams should be organized. This documentation is detailed and comprehensive and is illustrated in the page-tree in Figure 4.1.

Figure 4.1: Page tree of documentation "How we work"

The developments teams are created using a team-canvas, describing the goals each team want to achieve as a group, the accessory roles and skills, the values to be the core of the team, the rules and activities that is necessary for the team are defined, the rules and activities for making a decision, and setting the main purpose for the team. The teams were earlier defined as autonomous teams, but has lately been re-defined to *empowering* teams, due to the fact that they are not completely autonomous because they have to follow several sets of principles related to architecture, security, design and code standards. Still, when other employees within the company are referring to those teams, they are still often called autonomous teams.

The products are built using a product-canvas template, defining the target group, what problem to be solved, what kind of value should be delivered and how to measure those values, and finally a solution description is presented. All products will have a product vision and product strategy. It is worth noticing that areas such as sales and marketing are not described here, and the term *business development* is neither not mentioned.

The products are separated into three areas; The B2B (business-to-business) products, the B2C (business-to-consumer) products, and the infrastructure products supporting the B2B and B2C products. Some of these larger groups have a *"group product manager"* as a managing role, with several underlying product managers and product teams. These product teams, are cross-functional, with team members such as developers from the IT-department, in addition to members from the product department such as UX/Design resources and more. The product areas and the belonging 25 cross-functional development teams are shown in Figure 4.2. Other business units, such as Marketing, Sales, Strategy & Finance, Legal, Compliance and more, are not part of the visualization in this figure.

In addition to this structure, there are also several *cross-functional business fora*, lead by the product managers. These teams are even more cross functional, including representatives from sales and marketing, as well as product managers from other areas. These business fora were established to ensure better communication and synchronization across the organization. These fora are not visible in the written documentation as shown in Figure 4.1. Nevertheless, those cross-functional fora are described by several of the interviewees as instrumental to achieve synchronization and coordination across the organization.

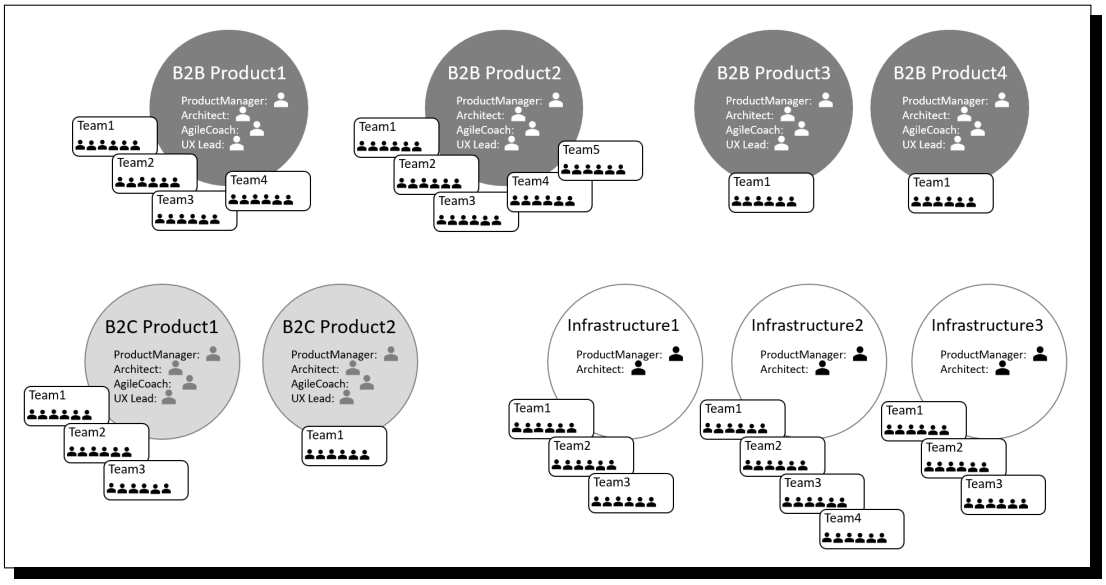

Figure 4.2: The teams and their working areas

4.1.3 Tools being used in SoftCo

E-mail is used to some extent, but is not mentioned as one of the tools *"we use"*. Slack is established as the main communication platform for both direct communication, from daily group communications as well as for internal publications. There are currently over 1600 channels in use, and all the company's approximately 300 employees and consultants are able to create a channel. Open channels are highly recommended. A statistic report for a 30 days period, shows that over 243.000 messages was written in Slack, where 40% in public channels, 40% in direct messages and 20% in private channels. An earlier case study of SoftCo (Olsen, 2020) shows that there was a gap between employees embracing Slack fully and those who preferred e-mail and wasn't completely comfortable using Slack as the main channel. According to the findings of the previous study, some claimed that this illustrated an age-gap where younger employees preferred slack in a higher degree than their older colleagues. Other findings indicated that employees that had been on-boarded during a former merger process with two other companies were not as positive to Slack as the more *native* employees, indicating that there could be some cultural differences. In addition to Slack, there are also other tools being used, as listed in Table 4.1.

Slack	Internal communication including external communication in closed channels with associated business partners and resellers.
Jira	Developers tasks, change request management, ideas, and personas roadmap.
Confluence	Sharing information.
Sharepoint	File sharing and document storage.
Figma	Visual tool for design- and prototyping.
Lookback	Organizing user interviews.
Microsoft Forms	For sign-up for arrangements.
SalesForce	For sales management.

Table 4.1: *The main tools listed in the strategic platform*

4.2 Models for product- and software developments in SoftCo

The product- and software development of SoftCo follows an agile approach, but there are no *large-scale* framework being deployed to support this. Instead, it is up to the different teams to decide what models to adapt, but they all have to follow the same principles in SoftCo's own model: *The Loop* as shown in Figure 4.3. This model can be seen as SoftCo's internal framework for agile development, and this model has adopted ideas, inspiration and routines from several other agile models and methods. Representatives from the product management group explain that the *"Loop"* has been inspired by processes of the book "Inspired: How to Create Tech Products Customers Love" (Cagan, 2017).

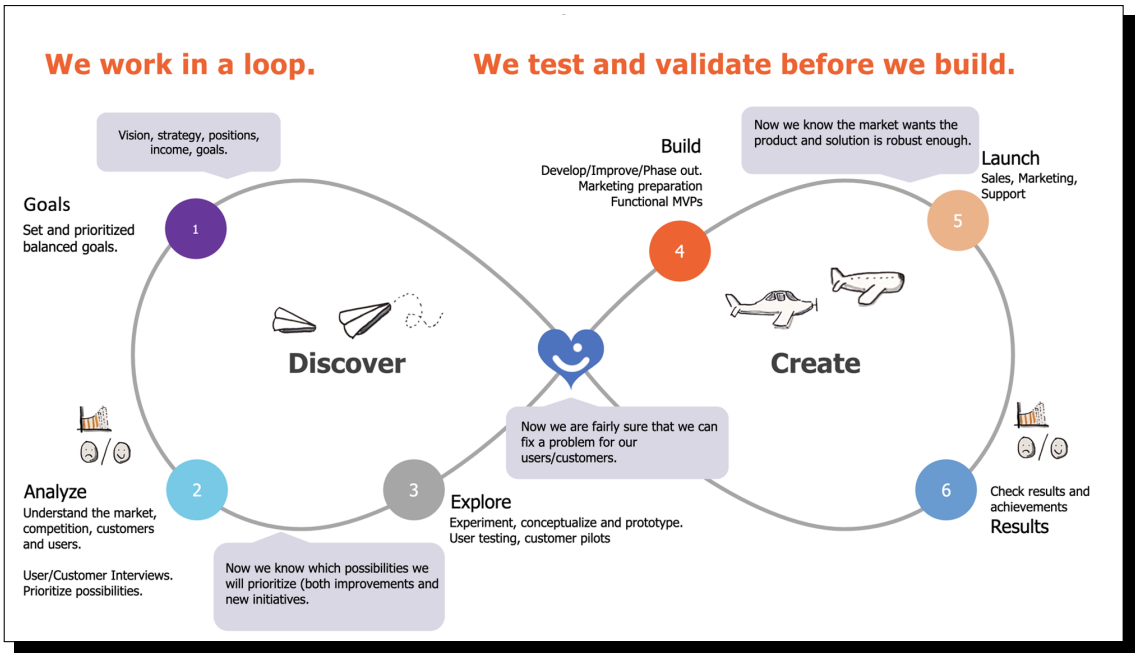

Figure 4.3: SoftCo's model: The *"Loop"* of discovering and creation

Examples of relevant frameworks that are often implemented in organizations are Scaled Agile Framework (Leffingwell, 2018) and Scaled Agile Delivery Model (Leffingwell, 2011). In SoftCo, important principles have been picked from those resources, but also from other frameworks without to fully committing to every single point of a particular framework. Inspiration also comes from the principles of Sooner, Safer, Happier (Smart, 2020) which point to many recommenced patterns (and anti-patterns) to create agile organizations. In addition, inspiration is found from Team Topologies (Skelton and Pais, 2019) which describes how to organize the organization for speed and flow, where teams are organized in different ways depending on complexity and characteristics. In addition to this, one tries to strive for aligned autonomy and not just focus on general autonomy (Yip, 2019). In SoftCo, this is often explained using the illustration in Figure 2.1 by Henrik Kniberg as presented in chapter 2. This emphasizes that one should try to achieve both high autonomy in the development teams as well as having a high degree of alignment across the teams.

4.2.1 The models are not designed for, nor used by everyone

One of the first findings from the interviews was that the models were certainly not being used by all parts of the organization. The product teams are being lead by a product manager, and the teams consist mainly of people from the tech department and from the product department. These resources do follow the principles of the *"Loop"* as the main development model, but each team are allowed to find ways of how to work and what methods and tools to be used. The agile coaches and the IT-managers explained that it is a big challenge to achieve high alignment between the different teams. They explained that there are probably several reasons to this, but one main reason is that each

team have a very high degree of flexibility on how to implement and use the methods and tools. They are also aware of the situation that these agile methods such as working in self driven autonomous teams, following the steps of the *"Loop"* are followed to a smaller degree in other parts of the organization. Both the product management and the IT management recognize this problem, explaining that there are so many principles, methods, guidelines and tools in use by the different teams. Ideally, they say, *"it should have been a dedicated team working with education and marketing of these topics, but we have no dedicated resources for this."* During the period when data collection and interviews were conducted, the product and tech management teams where about to implement a new synchronization mechanism, trying to remedy these synchronization and alignment challenges, called the *"SoftCo Rhythm."* It was also said that this latest addition to the methods was implemented as a measure to avoid implementing large scale framework such as SAFe.

This new rhythm defines that the development sprints of each product teams should follow a certain rhythm, which is *focus periods* of 6 weeks, followed by *flex periods* of 2 weeks. The intention is to focus on the long term goals and tasks in the focus-period, while allowing to be more flexible and include more ad-hoc tasks in the flex-periods. The product management explained that because of the rather strict elements of scrum, the word *"scrum"* may have a less positive perception by some of the self-managed teams. So that is why no specific method, such as Scrum is mandated in any way. As several of the interviewees highlighted, the *demo-part* of Scum was something they missed. As a consequence, the *SoftCo Rhythm* has a very clear demo-day as the end of each focus period. The goal is to let every development team be able to show what they have achieved in the last sprint, as well as letting the rest of the company be the first to see and understand the deliveries. Even if this *rhythm* was at a pilot stage at the time when the interviews were conducted, several of of the interviewees from non-technical business units described this as a positive measure with high expectations across the company.

4.2.2 How the development methods were being used

When the interviewees where asked about the company's development models, nearly all of them had knowledge about, and could explain the basics of, the *"Loop"*. However, further away from the product and tech department, this model became more unclear and was less implemented. This was also the case with the other principles, models and structures of the *"SoftCo's way of working"*, as described in Section 4.1.2.

Understanding the users

The topic mentioned by far the most when asking about the development models, was the importance of understanding the market and users, and how the *"Loop"* caters for collecting real-life insights before starting experimenting and building. Both the product- and tech managers emphasized that they were highly coordinated when it comes to the importance of gaining this market insight. This was one of the key aspects for the

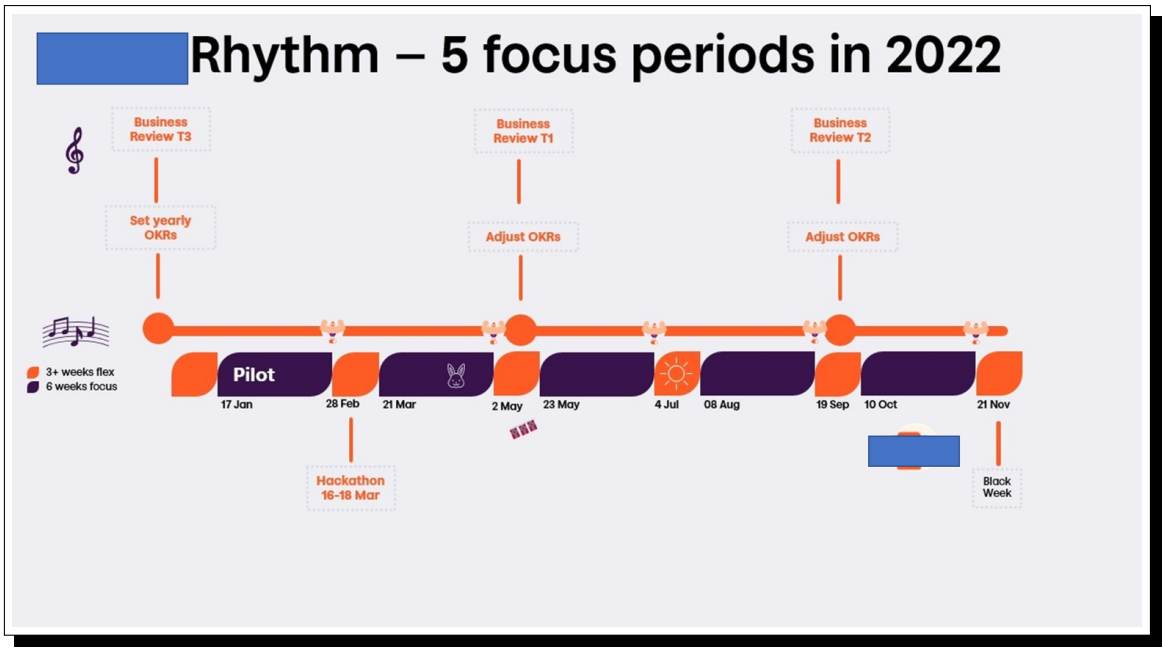

Figure 4.4: The SoftCo Rhythm

product teams, and this was often mentioned as a key-element for the self managed-product teams to collect such insight. On one side, representatives from the product teams explained that they had positive experience by the strong focus getting the right insights, which again lead them to develop the right products that was well received by the market. They also explained that the strong market position of SoftCo was a result of this work – always analyzing thoroughly before starting to build. However, on the other side, there were different perceptions and opinions about how successful this *way of work really* was. Several of the interviewees described that the true value of this work by the product teams was limited, because the insight was often limited to the capacity of the product teams. Those interviewees, mainly from the commercial side, explained that because they (the commercial units) were organized outside the product and development teams, their work-experience and their long achieved market knowledge often were ignored by the product development teams. Two reasons were explained: 1) those business units are *outside* the product- and tech teams, and 2) the product- and tech teams would like to do this insight analysis themselves because of the self-driven and independent attitude. The same topic was mentioned as hindrance that *slows us down* also by one of the product managers, leading one of the product teams:

> *I have 15 years of experience, so I know exactly what the market needs. I don't need the team to do many iterations of market analysis. This only slows us down!*
>
> *— product manager (i11)*

Another challenge by strictly following the methodology was when external stakeholders require a certain change or feature that was required by legislation or other external no-negotiable parties. Several of the interviewees explained that in such cases the

model does not work, because this has nothing to do with getting market insight or evaluating the consumer needs.

Other explained that especially the topic of doing a market analysis and getting insights related to users, peripheral systems or other parts, had a positive consequence - it worked like a synchronization mechanism across the different product development teams. They explained that this analyzing phase often helped to uncover dependencies between systems and other teams.

4.3 Empowering teams

The product teams were initially set up as *autonomous teams*, but was after a while renamed to *"empowering / empowered teams"* - because one realized that according to the principles helping aligning the teams, and sometimes also regulations from the authorities, the teams could not possibly be 100% self managed and fully autonomous. Therefore the teams are labeled *empowering teams*, because they are empowered and authorized to take a lot of decisions themselves. The wording *"empowering teams"* was taken from the book *Empowered: Ordinary People, Extraordinary Products*, the second book in the series from Silicon Valley Product Group (Cagan and Jones, 2020). This theory says that many agile product teams are limited to be *feature teams*. They are cross-functional (a product manager doing mainly project management, a product designer plus some engineers), they assign features and projects to build rather than problems to solve, and as such they are all about output and not about business results. On the other side, *empowered product teams* are also cross-functional, (a product manager, a product designer, and engineers), but in contrast to feature teams, they are assigned *problems to solve*, and are then empowered to come up with solutions that work – measured outcome– and held accountable to results.

The product and tech resources that were interviewed, had all a very clear and aligned explanation to why it was so important for the teams to be *empowered* and highly self-managed: They do certainly not want to be seen as *"code monkeys"*. They want to be part of the problem identification, they want to the the forefront when it comes to *how to solve* the problem. They all made it very clear that the worst thing they could be served, is a requirement specification, or having someone from the management team telling them what to implement.

> *Exactly how the teams want to work is to a high degree up to each team. It is important for me to give them such freedom and flexibility. They are "knowledge workers", really clever individuals that seek good solutions. This is really important to our company culture.*
>
> *— product manager (i12)*

Other reasons for letting the teams be empowered but not completely autonomous,

had more technical causes: The IT managers experienced that several teams would solve almost identical problems without being aware of each other. It was also a problem that if the same problem was solved in different ways by different teams, it was harder to move resources across teams, compared to what had been the case if they had solved the problem in the same way. There was also clear limitations to the fully autonomous structure, related to being compliant to regulations and rules, regulated by financial authorities and other legislation's.

4.3.1 Why the need self-managed, empowered teams

During one of the interviews, it was revealed that the true reason for implementing a framework such as the *"Loop"*, including the strong focus on letting the teams being self-managed and empowered, was probably a small secret to the rest of the organization. It was explained that the reason was simply that in the early days of the company, the company strongly tried to conquer certain market positions. This was often done by the top management team, that was often exposed in the press and media. Sometimes the top management team even made promises in the press about products that should be launched or market positions to be conquered by a specific deadline, such as *"this will be launched before the summer!"*. This approach was not well received by the development teams, and they even gave this a nickname that circulated internally; *"News-driven development"*, because it was first written in the online press what the team was supposed to develop. By implementing the *"Loop"*, and the steps that included *1) set the goals, 2) analyze and understand the problem, 3) explore how to solve, 4) build it, 5) launch it, and 6) evaluate it* - it became more clear to the entire organization that these steps should be done by the product development teams, and not the top management.

It was also a clear strategy from the product management, that to be able to hire the best product- and tech resources, and to be able to act as agile as possible, it was important to let the resources and the development teams work with a high degree of freedom and flexibility. It was highly encouraged from the product management that most decisions should be done by the development teams, and they should be responsible for both identifying what problem to solve in addition to how to solve them. If the problem wasn't solved perfectly the first time, the methods of the *"Loop"* encourages to adjust and re-launch later. Even if this was *okay* according to development model, this was conceived as unclear and not optimal according to other business units, especially from the commercial side, because the deadlines for having a functional product was conceived as unclear. The product management underlined the importance of setting clear company objectives, so the teams will deliver according to those goals. It was explained that for each quarter, all business units of the company are involved in business reviews and setting clear company OKR's (Objectives and Key Results). This is done in a collaborative way, including all teams and individuals to set challenging, ambitious goals with measurable results.

The product and tech resources also explained that the same resistance to require-

ments and *"top-down"* instructions, also applied to other stakeholders that tend to give instructions to the development teams. In addition to the top management, such stakeholders could be sales and marketing department, and the different business development units that lies closer to the strategy and commercial departments than to the product department. These other business units did not mention anything about the background and the strong resistance from the development department, but they did certainly say that it could sometimes be difficult to get access to the development teams and also to give their input to those teams. Those other business, like the commercial sales units, explained that if was often unclear to them what the product- and tech teams were doing and how their prioritization was done.

> *In worst case, those teams think they are autonomous so they will deliver something they believe are important, but in reality there are other understandings from other parts of the organizations of what should be the most important thing to deliver!*
>
> *— business developer (i6)*

4.3.2 Empowered teams require a strong and clear strategy

Representatives from the commercial business units emphasized that when having these *autonomous teams* (many still refer to the empowered teams as autonomous), *it is crucial to have a clear direction and strategy*. It was said that if the strategy is unclear, it will be very difficult and demanding to work in autonomous teams, because the teams will then diverge in all directions and lose speed. On a follow-up question asking regarding the *"unclear direction"*, it was said that this topic has often been shown in the results of the internal company surveys: *"It is a repeated result that the strategy and the direction of the company could be more clear. The results shows that it is often communicated that everything is important, which is the same as saying that nothing is more important than the other" (i10).* When and if this is the case, it will be different expectations on what is the most important topics, and friction between business units will appear. It was said that, instead of dealing with such friction, one could spend the time on solving what is really important. It was also said that this potential challenge is even more catalyzed by the problem that *"the development teams have no deadlines. They can deliver whatever they want to any time, and we [the sales dept.] struggle to give our input to this process." (i9)*

Another concern that was explained by certain business developers outside the product- and tech departments, was that as long as the prioritization is done by the development teams themselves, the result will be limited to do minor adjustments and incremental development. Several interviewees explained they worried that the implementation of the empowering teams had been taken too far. Several explained that they had more than once experienced a negative attitude from the development teams when they tried to give input to prioritization. One even explained that *"Nothing will be done unless it is born inside the empowered development teams - it evolves a bottom-up culture." (i6)* It was added that this approach will lead to extremely good products that can be

adjusted to a *pinnacle level*, but the company will lack the long-term perspectives and the next direction. It was emphasized by several that there is a very limited input feed to the development teams from *externals*, such as other other business units.

4.4 What is business development?

When the interviewees were asked to describe 1) *"How they define business development"* and *2) "How they define product development"*, the answers were clear only for the latter of the two. All had a clear definition of product development, which were closely related to the *"Loop"* - the company's development model. They all responded quite similar that *product development is about building and maintaining software products, by identifying a problem, test how to solve it, build it, launch it and evaluate it.* It was also an unequivocal understanding that the product development was managed by a product manager. On the other side, when it came to business development, all the interviewees had different perceptions, understandings and definitions of what this is and how this is defined. The rest of this section therefore focus on how the interviewees defined and described business development.

4.4.1 Multiple perspectives

Some interviewees had a very clear definition, while others admitted that this was an unclear and less defined area. The fragmented answers, as illustrated in Figure 4.5, show that from one perspective, business development was related to long-term value creation which goes much broader and wider than product development. From another perspective, business development was seen as the same, or almost the same, as product development. The dots in the figure indicate that that there are divergent perspectives on business development, and that a common understanding is defined somewhere between those two extremities far left and far right. A common factor mentioned by the majority of the interviewees, was that business development is about *creating new value* - either through new products, or by taking new marked positions.

Perspective 1: It is about developing new products

One of the interviewees was very clear that business development and product development *"are the same thing, and there should not be anyone else than the product department that should work with such topics" (i2)*. The interviewee continued to say that *"People in other units may call themselves business developers, but that is actually not what they are. They may contribute in many ways to the product and business development processes, but they have no execution power" (i2).* According to this perspective, many resources may give their input, but it is finally the product managers that decide what to do. Other interviewees said that there are many similarities between product- and business development, and the line between the two is often unclear. This means that some product managers are doing a lot of work with the product- and development teams

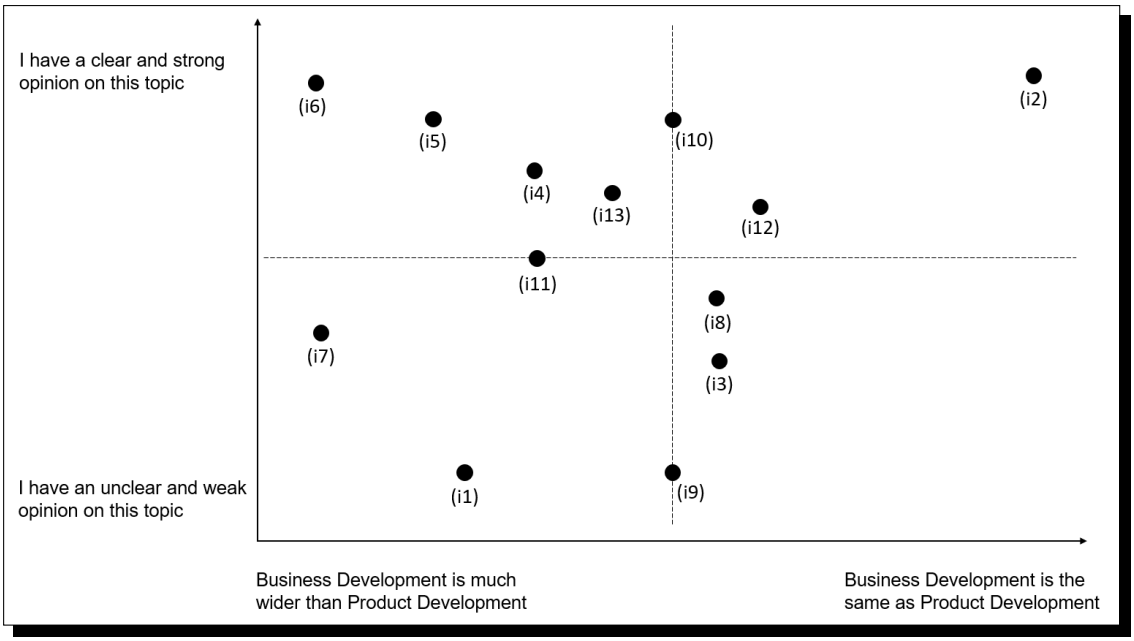

Figure 4.5: The interviewees responses to "What is your definition of Business Development?"

that they describe as business development, in addition to product development. This also implies that there is a fine line between the two. It was also said from the product management that it is really difficult to work with business development if you don't have the experience from programming and implementation. Another challenge that was mentioned, was that the operational side of product management always seems to win over long term development, meaning that doing business development and doing product development at the same time, could be demanding.

Perspective 2: It is about supporting sales and management

One interviewee from the product managers team (i12) explained that, according to his/hers experience, the business development work is much more unclear in Norwegian companies compared to foreign- and international companies. The interviewee explained that for Norwegian companies, business development is often about supporting the sales and management teams with presentations, market insights and analyses, while the focus internationally seems to be more on creating new business with existing products through partnerships or creating new sales channels.

> *Business developers in Norwegian companies where I have worked, seem to be occupied with creating presentations and conducting analysis to support sales and management.*
>
> *— product manager (i12)*

The quote above was also supported by several of the IT managers (i8) (i3) (i1), and

one of them responded : *"Isn't business development just like project management and doing presentations in PowerPoint?" (i8)*

Perspective 3: It is about creating new business on existing products

Other responses explain that business development is not so much about creating new products, but more about creating new business on existing products. This view was supported from representatives from both the commercial side as well as the product- and technical side. It was said that *"this is more about identifying the marked needs and then use our sales and marketing resources to serve this market with our products and services"*. Some also explained that business development could be to use existing products in a new way, even if the marked is not directly asking for our products. *"If we inform and educate the market about our products and services, they will be used". (i5)*

Perspective 4: It is to conquer new market positions by developing partnerships and relationships

Some responded that business development is to create value through partnerships, and thereby conquer new market positions. This was a variant of perspective 3, because it does not involve new product development, but selling our products to new markets through partnerships. Several of the interviewees, especially from the commercial side, emphasized that building long-term relationships is vital for creating future value, and this is a *core thing* about business development (i4), (i6), (i7), and (i10).

Perspective 5: Business development goes broader in functionality, and future in time

Yet another perspective was that business development goes hand in hand with product development, but at the same time they are different. Business development includes developing products, but it goes wider and broader. One product manager explained that *"Business development is the level above product development, because it also includes a holistic approach, such as finding customers, markets and distribution channels for the product being developed" (i11)*. This perspective was also supported by another product manager, (i13). They both added, among other interviewees, that business development often relates to possibilities future in time. Several said that while product development is done now, meaning implementing, maintaining and operating a product, one also needs to look ahead and into the future, and this is where business development comes in. One senior business developer explained that it was about asking *"How can we develop our product further to meet the future requirements or needs?" (i4)*. This interviewee continued to say that *"The programmers and product managers can dive really deep into today's challenges, while the business developers are "free" from these issues and can focus how to create new positions, new markets with possible new products in the future"* (i4).

Perspective 6: It is about creating new value for the owners of the company

Several interviewees explained that business development is about creating value to the owners of the company. It was explained that *"creating new value"* is of course a

very open an broad area, so business development has to embrace a wide area of tasks. Interviewees supporting this perspective explained furthermore that to be able to create value, you need to create financial income, meaning that you have to create products and services, you have to create a market, and you must create channels to sell those products and services. This supports the other perspectives saying that that product- and business development are two sides of the same coin (perspective 1, 4 and 5), but here the emphasis was on creating value. The interviewees therefore said that pricing structures and business models are vital parts of business development, also saying that those topics does not need to be part of the more technical and functional focus of the product development. In this context it was also explained that because business development is such a wide area, it has to be included in several business parts of the company. One representative from sales said: *"Yes - the product managers should also be business developers, yes - the sales and marketing personnel should be business developers, yes - you have to build and maintain partnership to evolve your business development" (i10).* Another interviewee added that there are many ways to measure such value creation. *"It could be measured in financial income, but other measures are number of customers, the market penetrations and presence, the value of your brand, and of course the company's value on the stock market." (i6)*

4.4.2 The lack of methodologies in business development

Neither the interviewees who call themselves business developers, nor the rest – except one product manager, were able to describe a specific methodology or framework that is used related to this business development. When the interviewees were asked about this topic, they explained that even if no specific model was used, this was related to how they define business development. Some referred to tools and procedures for organizing sales leads, partner structure, business models and more. Others referred to the *"Loop"* (the development model) because either they saw business development as the same as product development, or they argued that the steps were (almost) the same for business development.

This lack of specific model or framework for business development was also mentioned as a negative element by several interviewees from the product- and tech representatives. Several said that while the product- and tech teams had support in well defined methods and models, the business developers just had to follow their gut feeling. This *gut feeling* was also recognized by some of the business developers and the people outside the product and tech department, but they described it in a more positive way. Several of the interviewees explained that they use their experience from customer relationships, partner dialogue and general working experience when practicing business development. Some did even call this *"industrial or professional experience"* and explained that this cannot and should not be limited by manifesting this in a specific model or method (i4) and (i11). Only one product manager (i13), described a methodology used for business development, called the *"Bowling Pin"* strategy. This strategy was used among the sales department and product department for selecting segments to be attacked before moving on to a next similar segment. According to

Geoffrey Moore, the bowling pin strategy is to *"find a niche where the chicken-and-egg problem is more easily overcome and then find ways to hop from that niche to other niches and eventually to the broader market"* (Moore, 2010).

> *We (product and tech) follow the "Loop" and our product development methods, while they (the business teams) just follow their gut feeling.*
>
> *— product manager (i2)*

One of the business developers said that *"unfortunately, our business area is nowadays much less driven by industrial thinking and people with good intuition, and more driven by tools and methods that limit our possibilities. (i4)"* All of the interviewees from the commercial side explained that their professional experience definitely help setting a direction, but this direction was seldom compatible with the product development model. A common used example by the commercial side, was the the urge for the empowered teams to collect and analyze market insight, even if this insight is already known to the people from the commercial side. A sales manager explained that the sales teams were, through their native way of working with extensive customer contact, collecting a huge amount of valuable insights and market knowledge. It was further explained that this was both in close contact and dialogue with the product teams, but the data collection was not systematized in the way as is is done by organized work from the product teams. *"This collaboration between sales and the product side could be tighter woven into our culture, and this is probably something we should start working on." (i10)*

This *"non-methodical"* way of doing business development was also supported by one of the product managers, saying that this goes much deeper than relying on a small survey that shows what a handful of users or customers want. *"This is more about showing leadership and using my voice as a manager to say that 'This is the direction we must go - this is the way', and I know it by my experience!" (i11)* This view was also supported from two more managers from the commercial side, who said that the methods are less important as long as we follow the same principles (i5) and (i10). *"We miss a lot of knowledge if we doesn't pay attention to our commercial experience and their relationships with the market, and we should try to build a culture where such knowledge is also taken into consideration also by the product teams." (i10)*

This friction that may arise between the commercial side and the product- and tech side, was also seed as useful tool actually create some action within the organization. From sales management it was said that they want the sales representatives to be a bit brave and almost arrogant when challenging the product teams using their market- and customer experience. The sales side explained that they knew that this approach could create some tension and friction between the commercial business side and the product side, but this friction might be a useful way to force a decision regarding prioritization of tasks (i5) and (i9). At the same time, it was said from the sales department that *"even though a lot of the insight and market analysis is done by using our experience and long-term relationships and other factors that is hard to put in a rigid structure, we could perhaps use a more*

structured approach when it comes to pricing discussions and how to create and measure value together with our customers and partners." (i10)

> *I believe that this model driven by market analysis and getting insight from users and customers, is more suitable for developing features to a product and less suitable for business development. It becomes too shallow and you remove the important professional expertise that is important for business development.*
>
> *— product manager (i11)*

4.4.3 Centralized vs. de-centralized business development

There were many comments and opinions among the interviewees regarding if business development should be a centralized unit, or if it should be distributed among the different business units across the organization. The view on this topic seemed to be closely related to the definition each interviewee had of business development. Those who defined business development to be the same, or almost the same, as product development, were more negative to organizing business development within a central unit. Likewise, for those to defined business development as something wider than product development, were more skeptical to let this be limited under the responsibility of the product teams. Among others, describing that there is a blurred line between business- and product development, they were able to describe both positive and negative consequences of the centralized versus distributed discussion.

Several of the interviewees described that SoftCo had in the earlier days (in two occasions), tried to organize business development in dedicated teams, but this was according to them not successful (i2), (i8), (i9), (i11) and (i12). Others said that it was successful but extremely demanding (i4), (i6) and (i7), mainly because the gap between the business developers and the product teams was simply too big. At the time when the interviews were conducted, SoftCo did not have a dedicated team working with business development, and the interviewees had different opinions about if SoftCo 1) had any business developers at all, or 2) had business developers in multiple units within the organization, or 3) only had product managers also dealing with business development. Despite this disagreement, almost all of the interviewees were able to describe both advantages and disadvantages for setting up business development as a central dedicated unit, or to keep business development distributed across the organization. The summary of arguments are listed in Table 4.2.

Some of the advantages described from one perspective, was at the same time described as disadvantages from another perspective. One example was the positive arguments for organizing business development inside the product teams. If the product team was created as a new team, for establishing a new product, both the business side, product side and tech side, seemed to agree that business development and product development was to sides of the same coin and they could both be managed inside

Table 4.2: *Centralized versus decentralized business development*

Structure	Advantages	Disadvantages
Centralized	• Free from product operations • 100% dedicated team • Able to create long-term external relations • Able to conduct time-consuming and deep market analyzes • There are room for strategic long-term work in a central unit, but the execution could still be distributed.	• Have no/less execution power • Lacks operational experience • Less *"ownership"* from the product development teams. • Less *"trust"* from product teams due to the unstructured and un-methodological work of the business teams. • The business developers are not included nor recognized by the product teams
Distributed	• Have execution power • Business development is about problem solving, and this done best by the product- and tech teams • All teams can focus on business development and future income	• Short-time tasks outruns long-term tasks • Limited to implement incremental product development • Incremental product development is not the same as long-term value creation • Lacks strategic experience

the product team. On the other side, if a new product was founded outside an existing product team, the resistance was described as much greater for adopting this new service into an already existing portfolio.

One disadvantage frequently mentioned by several interviewees, was that because of the bindings to existing products, all kinds of new development from the product teams seemed to be limited to incremental improvements. The interviewees who had this perspective were convinced that such incremental improvements would always outrun the parts of business development involving long time relationship creations and long term analyses.

4.5 Development methods and implications to company culture

The interviewees were asked *"if and how they believed the development methods and following team structures have any affects to the company culture"*. Several topics were mentioned such as startup culture, the strong urge for the product- and tech-teams to be self managed and

independent, but also consequences that too much independence and flexibility created silos and subcultures.

4.5.1 Startup-culture vs enterprise-culture

Several of the interviewees commented that SoftCo is trying to keep an atmosphere and culture of a startup company, even though it has become an established organization with hundreds of employees. When the company was spun off from the origin enterprise, there was a strong need to create a new identity. This was created by a high degree of flexibility and each employee had a great possibility to create and influence the working tasks and how they should work. This was also mentioned as one of the reasons for the company not to adopt to any *"large scale agile framework"* such as SAFe or others, because this would have been associated with an enterprise culture and not a startup culture.

Most of the descriptions and reactions to this start-up culture was positive, but one of the interviewees had a strong critical voice saying the opposite: *"When you have this start-up culture with great flexibility and less control, people tend to do exactly what they want. If they had invested their own money in the company, as the case is for most other startups, they would feel responsible and work hard to deliver value. This is not the case in our company, and they can spend too much time on trivialities and perfectionism. That may be good for the product, but not for the company results." (i6)* Several of the interviewees also added that *this urge to act as a startup* was a phenomenon located in the product- and tech axis, and was not an issue in the more commercial units (i4), (i6) and (i7).

4.5.2 Outsiders to the product- and tech teams

As mentioned earlier, many outside the empowered product development teams, did find it difficult to give their input, because of the strong urge from the empowered teams to be independent and self-managed. The outsiders explained that these empowered teams had created sub-cultures that the rest of the company were not part of.

> *I believe that we have pushed the envelope for self-managing teams too far. They have an attitude saying that nothing should come from external teams - it is basically a bottom up culture within those teams.*
>
> *— senior business developer (i7)*

Also representatives inside those empowered teams admitted that it could be difficult to be outside the product- and tech teams. On the other side, it was seen as a strength that when problem solving ideas were done inside those teams, they felt a greater responsibility and ownership to the products being created.

From the product- and tech side, several of the interviewees explained that one of the measures taken was to inform the rest of the organization as early as possible, so that

people outside the *core-teams* were informed about what is going on. The word *core-teams* was used by some of the product managers. None of the interviewees from the other departments did use this phrase.

Another measure to reduce the risk of silo thinking and sub-cultures, was done by arranging the larger cross-functional *"business teams fora"*, as explained earlier, within the each product area. Those business fora were acting like a multi stakeholder group, with representatives from marketing, sales, strategy, finance, UX-design in addition to product and tech. All interviewees that mentioned those business fora, used positive words and explained that this was a good way to include and synchronize across the organization. Those business fora were not visible in the organization charts, and most of the interviewees were not aware of how many such business fora there are, nor who the members are.

Several from the commercial side of the organization explained that it seemed like the methods from product- and tech did help creating a strong culture among them, but at the same time this created barriers keeping the commercial side out. It was also said among these that they believed that if the sales and business developers had joined more in using the *"Loop"* or other methods, it could tare down the barriers to the product- and tech teams.

Discussion

The following subsections will discuss the findings seen through the lens of the theoretical framework, which is mainly the Hackman's authority matrix with it's four authority areas. First, the findings are grouped aiming for answering the first research question (RQ1), by trying to coin a definition of business development related to the context of agile development processes. Then, the findings related to barriers and enablers for how to include business development into self-driven autonomous teams (RQ2) are discussed.

5.1 The findings related to the definition of business development (RQ1)

5.1.1 Mapping business development perspectives to Hackman's authority areas

Trying to understand and analyze the perspectives of the interviewees on business development (P1 to P6 presented in Section 4.4.1), the perspectives are grouped according to Hackman's four authority areas, as described in Section 2.2.1. The Hackman's authority matrix is not used to classify different teams, but the authority areas (Area 1 to Area 4) are used as a help to structure the findings related to the tasks involved in business development. According to the different perspectives identified in Chapter 4, some of the work are done by the commercial side, and some of the work are done by the product and tech side. When doing the mapping towards the four authority areas, the commercial side is labeled as *Biz*, while the product and tech side is labeled as *Tech*. Area 1 is the highest authority level, authorizing the performing unit to *do everything*, including setting the overall direction. Area 4 is the lowest authority level, giving the performing unit authorization only to execute the tasks.

When having a perspective of business development matching perspective 1 (P1), the teams lead by the product managers are deciding what to do and how to do it. This can be mapped to all of the four areas, because the teams are doing everything from setting the direction all the way to executing the tasks. This perspective came mainly from the product- and tech side, meaning that the cross-functional product and tech teams did both business development and product development, they decided the direction by deciding what to do, and they were in charge of structuring the team and how to solve the execution of the tasks.

Table 5.1: *Mapping perspective P1*

Perspective	Area 1	Area 2	Area 3	Area 4
P1: Developing new products	Tech	Tech	Tech	Tech

Perspective P2 indicates that business development, done by business development or sales resources, is mainly about supporting the management, while the rest of the work was done by the product and tech teams. A mapping towards the authority areas could mean that business development is related to management, while the performing teams are related to A2, A3 and A4. Perspective P3 and P5 may follow the same mapping. P3 is about creating new business on existing products. This was less connected to the development processes, meaning that the product and tech teams are still responsible for A2, A3 and A4. Perspective P5 goes beyond the product development and also relates to future planning, focusing on direction and management processes, while the product and tech teams are doing *"the rest"*. One of the main strength behind this perspective from a commercial side, was that the business developers were free from the challenges related to existing products, enabling them to focus on how to create new positions, new markets with possible new products in the future.

Table 5.2: *Mapping perspectives P2,P3 and P5*

Perspective	Area 1	Area 2	Area 3	Area 4
P2: Supporting sales and management	Biz	Tech	Tech	Tech
P3: Creating new business on existing products	Biz	Tech	Tech	Tech
P5: Broader in functionality and future in time	Biz	Tech	Tech	Tech

Perspective P4 is related to developing partnerships and relationships, often to external parties, to conquer new market positions. This this can be associated to both A1 and A2 from a business development point of view, while the product and tech teams are doing the execution and corresponding monitoring. This also relates to perspective P6, which is about setting a strategic direction, setting price models and working with market presence, value of brand and more.

Table 5.3: *Mapping perspectives P4 and P6*

Perspective	Area 1	Area 2	Area 3	Area 4
P4: Conquer new market positions by developing partnerships and relationships	Biz	Biz	Tech	Tech
P6: Creating new value for the company owners	Biz	Biz	Tech	Tech

A summary of the mappings, placed into Hackman's authority matrix , is illustrated

in Figure 5.1.

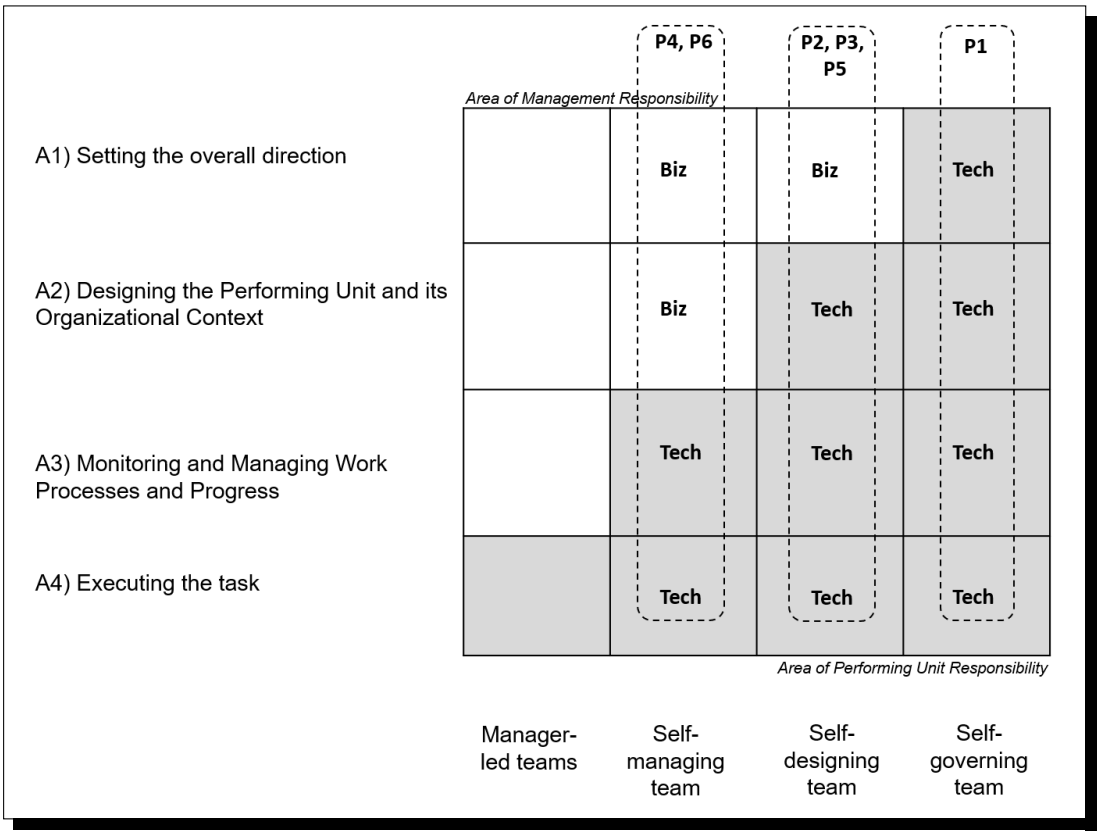

Figure 5.1: Mapping the business development perspectives to the authorization areas

The challenges that seem to arise between the commercial teams on one side, and the product and tech teams on the other side, may be related to the different business development perspectives. This indicate that those challenges may arise when people and groups within the same organization have different perspectives of what business development is, and who should be responsible for this kind of work. The findings indicate that many of the empowered teams (lead by the product and tech side) argued that they were authorized to decide what to do and this would be in conflict with business developers (or management) trying to set a direction. This was not only a frustration from the technical side, both also from the commercial side, describing that a bottom-up culture had evolved, making it difficult from a commercial point of view to give input on setting a direction and deciding what to do. The study indicates that when having multiple perspectives on business development within the same organization, this may cause unwanted tension and friction between different commercial and technical teams. This is why there might be a need for a common definition of business development, helping aligning and understanding what this work is about, and who should be responsible for this kind of work.

5.1.2 Suggested definition of business development in large-scale agile

The mapping above shows that the tasks of business development are carried out at nearly all levels of an organization, and there are different activities related to the four authority areas. By including a grading of the maturity of a product, one could argue that A1 (setting the overall direction) is quite early in life-cycle of a product, while A2 (the design of teams and context) are more related to planning before the actual implementation phase in A4 (executing the task) together with monitoring work progress in A3. When a product goes into winding-down, this could be seen as going back to A1, setting the direction, because this is often a strategic decision that opens up for new product areas. Based on this discussion, one could argue that a definition of business development must include the different stages of a product life-cycle, as well as including the activities connected to the different authority areas.

This leads to the following suggestion for a definition of business development in the context of large-scale agile software development:

> ***Business development*** *— is characterized by activities for creating new value, by creating new marked positions, establishing new distributions lines, creating new products or new product features, or winding down the product portfolio to focus on other marked positions.*
> *Business Development is performed by nearly all parts of an organization, both inside the agile development teams, and also in other units such as in sales-, market- and strategy teams. Multiple stakeholders and different activities are involved according to the periods of a product's life-cycle.*

A narrow product-oriented perspective will focus more on the activities done by the product- and tech resources, circulating around tasks such as exploring, prioritizing, building and launching/maintaining the product portfolio. A broader perspective will in addition focus on commercial resources taking care of tasks such as creating partnerships, doing market analysis and creating business models.

The definition above covers the six different perspectives and tasks associated with business development according to the results. The involvement of technical resources versus commercial resources depends on the relevant tasks, which again depends on the broader or narrower perspective one have of business development. This is illustrated in Figure 5.2. The higher up in the figure, the more tech resources are involved. The lower down in the figure, the more commercial resources are involved. The tasks following the bottom horizontal line, covers the different phases of the development model.

1. Setting the goals, usually done by management and commercial resources.

2. Analyzing the market positions, customers, competitors and distribution lines.
3. Exploring, experimenting and conceptualizing. It might also include prototyping which implies development resources.
4. Building the product, done by the development teams.
5. Launching the product, includes the sales- and marketing resources.
6. Maintaining the product, checking results and achievements, operate according to current *devops*[1] governance.
7. Winding down has the same perspective as setting new goals.

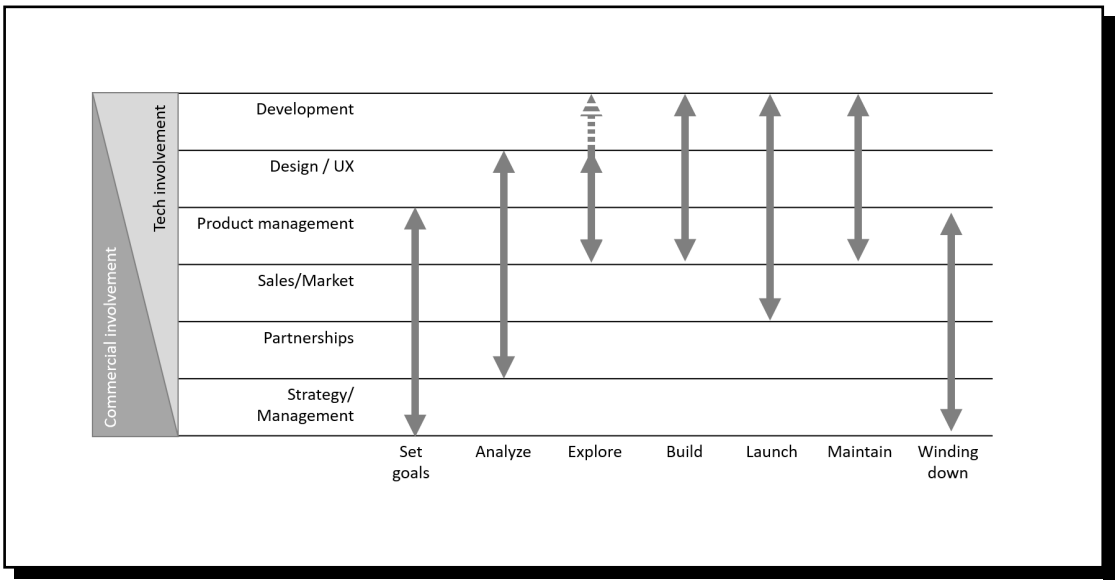

Figure 5.2: Technical versus commercial involvement

5.2 Barriers and enablers for the inclusion of business development into large-scale agile development processes (RQ2)

Many of the findings, as described in Chapter 4, presented topics that would either increase or decrease the cooperation, collaboration and understanding between the commercial side and the product- and tech side. These findings can be seen as either enablers or barriers on how to include business development into the development teams, which in the example of the case study presented in this thesis, were all structured and organized from the product- and tech side.

[1] A typical definition used by the industry can be found at https://www.atlassian.com/devops

5.2.1 Enablers

Cross-functional business fora

The cross-functional business fora, with bi-weekly meetings, helped bridging the gap between the commercial teams and the product- and technical teams. The findings indicate that this seems to prevent silo thinking, and the commercial resources feel included in the work lead by the product managers. These fora also serves as synchronization mechanisms between the product teams, because there are several product areas represented in such business forums. The composition of those fora are open to more people across the units, compared to the product development teams. This can be associated to authority area A2, *designing the teams and context*.

Include the commercial activities into the development model

The findings indicate that the development model is more embraced by the product teams than by the commercial teams. However, when discussing this with the product- and tech teams on one side, and with the commercial teams on the other side, the willingness and possibilities for including commercial activities into the development model seems to be closely related to their definition of *what business development is*, and *who should be responsible* for those tasks. When applying a broad definition of business development, one could argue that several of the tasks typically done by the commercial teams are already included in the model. The challenge seems to be related to the more narrow perspective of business development: When all the work are done almost completely by the product teams, the consequence is that the work from the commercial teams are not included. One measure may be to define the working tasks more clearly, and to specify that several of these tasks related to multiple teams, both from the technical side and from the commercial side. When some of the product managers described the development model, there where occasions when they used the phrase *"core teams"* about the product- teams, which implicitly follows that there must also be teams that are not part of the core. By unifying the development model to include the commercial activities, one could avoid this *core* versus *non-core* labeling. Seeing the inclusion of commercial activities as an enabler for including business development into the agile teams can be related to authority area A2, designing the teams composition.

Educating and marketing of the development models

Even though the development model, the *"Loop"*, was developed and managed primarily from the tech- and product side of the organization, the involved resources such as agile coaches said that they would like to spend more time to educate and inform the whole organization about how to use those models and methods. Several interviewees indicated that this could help reduce the *"us versus them"* phenomenon, and avoiding statements such as *"our model"* versus *"their model"*. This could be associated with authorization area A1, because setting the overall direction could also include directives and governance regarding methodologies to follow, for both commercial- and technical resources. As indicated in the findings, both the commercial teams and the product- and

tech teams, gave characteristic descriptions of each other and of their working practice. As described by Bang, this is not unusual when different subcultures describe each other (Bang, 2015, p.39). Polarization will occur, and the different teams will develop a stereotypical perception of each other. Therefore, educating the entire organization about the development models, including the commercial side and technical side, could therefore be seen as an enabler on how to include business development into the development teams. Similar results has shown that lack of coaching and organizational support acts as a barrier against autonomous teams (Stray, Moe and Hoda, 2018).

A common rhythm as synchronization mechanism

The new company rhythm that had been implemented, as described in Section 4.2.1, was seen as a tool helping synchronizing across the product teams, as well as synchronizing across the whole organization. Especially the demo-part was emphasized as instrumental to include more of the organization to know more about the work done by the product- and tech teams. The goal was clearly to enable more collaboration and involvement across the different business units, and this was seen as positive from all interviews. This relates to authority area A3, managing and monitoring the work.

Empowering teams require a strong and clear strategy

To avoid that the empowering teams run in different direction and a disharmony of what are the most important goals, the findings show that a strong and clear strategy is essential. The findings show that such disharmony can occur between the commercial teams, i.e. working with long term strategic business development, and the product teams working with concrete tasks for the next release. This relates to the authority area A1; setting the overall direction. Having a strong and clear strategy that is known to all teams could be an enabler for bridging the commercial teams with the tech- and product teams. This is supported by other studies, identifying the lack of clear and common goals as a barrier for effective autonomous teams (Stray, Moe and Hoda, 2018).

De-centralized approach to business development

As the findings indicate, a de-centralized approach to business development, means that one should practice and recognize the activities for business development all teams. As listed in Table 4.2, there are both advantages and dis-advantages for the two models of centralized vs. de-centralized structure for business development. The results show that most of the interviewees argued for a distributed, de-centralized model where business development is spread among nearly all teams. This would be an enabler for bridging the gap between the commercial side and the technical side because one can work together aiming for the same goal. According to the findings, there are divided opinions about who is actually executing the tasks related to business development. *This is closely related to the definition of business development, with either a narrow or a wide scope.* According to the findings, this can be seen both as an enabler and as a barrier. There were clear indications that a de-centralized approach will both have execution power as well as help bridging the commercial side and the technical side. On the contrary, this can also be a

barrier, because this de-centralized approach may lack the long term focus and reduce the business development to be focused on incremental product development. This relates to authority area A2, designing teams and context, but also to area A4, executing the tasks. If one have both a clear strategy, and all units understands the importance and definition of business development, there would most likely be less disagreement of what are the most important tasks and who should execute those.

5.2.2 Barriers

A strong bottom-up culture reduces collaboration

As indicated in the findings, the business teams and commercial resources being outside the tech- and product teams, had several concerns that it was hard to give their input to the product teams. This topic seems to fuel the challenge of *us versus them* phenomenon when the commercial teams on one side and the tech- and product teams on the other side describe each other. This is clearly a barrier of including the work from the commercial side into the agile teams. The strong bottom-up culture of the development teams, making it difficult to get through for the business teams, can be seen as relevant to authorization area A1, because those product teams would, in most extreme cases, like to set the overall direction themselves. Even if the commercial teams, such as business developers from commercial business units, are not in any *higher rank* than the technical resources in the development teams, the input from the commercial side are in many occasions treated with the same resistance like as a top-down management approach. This phenomenon may be related to the study from Moe et al. exploring the conflict between team-level autonomy and management control (Moe et al., 2021), concluding that *"the freedom of the development teams cannot be limitless due to complex dependencies with the work of other teams and actors"*, furthermore that *"the sweet spot for organizational control and team autonomy is the implementation of bottom-up clan control mechanisms, combined with some degree of formal control"*. As described by Bang, too much autonomy in teams may lead to isolation, while too much collaboration across teams may lead to self-annihilation (Bang, 2015, p.135). This means that there is a fine line trying to accommodate both the evolving culture of the autonomous teams, and at the same time open up for collaboration and inclusion between the commercial teams and the product- and tech teams. The identified challenges related to the culture, are also relevant to authorization area A2, because this is about how to design the team composition and context.

One could argue that both the commercial teams and the product- and tech teams represent different subcultures of the organization. As described by Bang, it is not unusual that such conflicts may arise between different subcultures of an organization, but also a certain tension and potential conflict between a subculture and the values that describes the desired company culture (Bang, 2015, p.30-39).

Unclear and ambiguous understanding of business development

The same two authorization areas, A1 and A2, applies due to the challenge of having an unclear and ambiguous understanding of business development. One could assume that if the term *"business development"* was defined clearly by the management, it would help both for the understanding in a positive way, which again could be useful when defining the teams and the composition. The results indicates that the lack of such a definition, as well as having this ambiguous understanding of business development, act as barriers. Such barriers make communication and synchronization between the commercial side and the tech- and product side harder.

The lack of methodologies in business development

The lack of methodology for business development, relates directly to authorization areas A3 and A, managing the work processes and executing the task. If the methodology had included the business development activities, one could assume that it would be more clear across the organization what kind of activities these are, which again could lead a better understanding of tasks to be executed. Even though the missing methodologies for business development can be seen as a barrier for inclusion with product development, one should also pay attention to the concerns saying that such methodologies could be a hindrance to business development. Some concerns were related to the fact that product development and business development are two different areas, so one should not strive for having one unified method embracing both areas. Other concerns were related to the perspectives saying that business development is mainly about strategic work and building relationships with partners, thus a method or framework could only be a hindrance that limits the work being done.

Development models only embraced by parts of the organization

Finally, the last identified barrier shows that having a development model only adopted by the parts of the organization, could be related to having an unbalanced team composition, therefore it relates to area A2. This also relates to area A3, because a common methodology will help synchronizing the work - which relates to monitoring and managing work progress. With this point of view, one could argue that if more of the organization, especially the commercial side, had adopted the same development model, this would have positive effects on both synchronization and alignment of work, as well as the inclusion of business development into the agile teams. However, the concerns are the same as the previous barrier (the lack of methodologies), saying that there are possible challenges to have one-size-fits-all methodology, as well as the possible limitations that such methodologies may cause.

5.2.3 Summary of enablers and barriers mapped to the authority areas

The summary of the identified enablers and barriers are listed in Table 5.4. The identified enablers, could according to the findings, possibly help to include the business

Table 5.4: *Enablers and barriers for business development inclusion into the agile processes*

Findings	**Enabler**	**Barrier**
Cross functional *business fora* bridging the product areas (Findings in Sections 4.1.2, 4.5.2)	Area 2	-
Include the commercial activities into the development model (findings in Sections 4.2.1, 4.2.2)	Area 2	-
Internal education and marketing of the development models, for both technical and commercial resources (findings in Section 4.2.1)	Area 1	-
Common synchronization mechanisms such as "The Rhythm" (findings in Sections 4.2.1, 4.2.2)	Area 3	-
Setting a strong and clear strategy to be followed by both commercial- and technical resources (findings in Section 4.3.2)	Area 1	-
A de-centralized approach to business development, should be included in all strategic, commercial and technical teams (findings in Section 4.4.3)	Area 2 and 4	Area 2 and 4
Too strong bottom-up culture reduces the input possibilities from commercial, strategic and management resources (findings in Sections 4.3, 4.3.1, 4.3.2, 4.5.2, 4.5.1)	-	Area 1 and 2
Unclear and ambiguous understanding of business development (findings in Section 4.4.1)	-	Area 1 and 2
The lack of methodologies in business development (findings in Section 4.4.2)	-	Area 4
Development models only embraced by the product- and tech resources (findings in Sections 4.4.2, 4.5.2, 4.2)	-	Area 2 and 3

development processes into the agile teams. The identified barriers could in the same way be obstacles for the same goal. The table also shows that those enablers and barriers, can be associated to the different areas of Hackman's authority matrix.

5.3 Implications for practice

The result of this study may have several implications for practice. Most of all, the results may be applicable to SoftCo as a direct result of the case-study. If the contextual descriptions may relate to other organizations and situations, it might be possible to generalize the results so that they have implications for others as well.

First of all, the study has shown that there is a lack of a good definition of business development. Such a definition needs to be comprehensive enough to cover all relevant areas within an organization, yet at the same time being precise enough to help gaining a common understanding and translate this into tasks. Business development should be understood and implemented across all teams in the organization, and the definition will help respecting and understanding that there are a wide range of tasks involved, some

more technical and others more commercial focused.

Secondly, by having a more formalized understanding of business development, this could perhaps lead to how this work could be included in the methods of product development. The enablers show that the cross-functional fora are one successful measure to ensure alignment and synchronization across the teams. Other enablers show that one should try to include commercial activities into the development model, as well as work on internal education of the chosen development models and frameworks. This could avoid both silo thinking as well as the challenges that appear when only parts of the organization embrace the development models. Having a true cross-functional synchronization mechanism such as *a common rhythm*, can be helpful to align both understanding and prioritization. At the same time there are barriers to avoid. One need to understand that development methods may have implications to the evolving culture, and this is not something one can define up front. The culture evolves as a consequence of how the employees interact with each other, and subcultures may arise accordingly. Isolating business development to only parts of the organization is just as harmful as silo thinking and silo development from the product development teams. If the understanding of business development is poor, the lack of relevant methodologies and the lack of inclusion may fuel this challenge.

5.4 Generalizability, reliability and validity

This thesis has presented a case study where commercial, technical and management resources have been interviewed, trying to identify how the different parts of the organization work with business development and product development. The generalizability of the presented results are probably limited, however – the case context and the findings are described with a certain degree of details, to allow better generalizability to similar contexts for other studies. In this thesis, the definitions of validity and reliability are based on the proposals by (Yin, 2018, p.42). The *internal validity* is relevant for explanatory or causal studies, and is therefore not relevant to this thesis that descriptive and interpretive design.

Construct validity concerns identifying correct operational measures for the concepts being studied. The suggested tactics by Yin (ibid.) is to use multiple sources of evidence and having key informants review a draft case study report. Different interviewees holding different positions in different parts of the organization have been part of the data collection. The collected data have been grouped and represents perspectives from multiple sources. Also, during the data collection period, relevant findings was included and discussed with the following interviewees to verify if the findings were important or not.

External validity concerns the domain to which the results may be generalized, which according to Yin (ibid.) is known as the analytical generalization of a case study. The suggested tactics is to use theory in single-case studies, and to use open "how"

and "why" questions. The data collected in this thesis has been mapped towards Hackman's authority matrix, by 1) structuring the data related to business development work toward the Hackman's four authority areas, and 2) mapping the data about how business development tasks are included in the development teams towards Hackman's authorization areas. In addition to this, the questions were formulated by using "how" and "why", trying to capture rich context descriptions.

Reliability concerns if the results had been the same if the study had been repeated by other researchers. Using a case study protocol, developing a case study database and maintaining a chain of evidence are all recommended tactics by Yin (ibid.). The main threat to reliability for this thesis has probably been the subjective selection of interviewees, which may be colored by the authors initial conceptions of *"Who is important to talk to?"* Can the collected data be seen as representative for the respective teams? Have the interviewees told correctly about the culture? A known challenge is that the interviewees describe what is defined and written in the company values, and that they avoid describing the reality (Bang, 2015, p.172). The interview guide being used, see appendix A, shows the topics being elucidated, trying to capture as rich context as possible. Having even a larger number of interviews could give an even broader view, however the data collection indicates that the topics were relevant to nearly all interviewees, helping to add descriptions from multiple resources.

Conclusion

The motivation behind this thesis has been to study the inclusion of business development into large-scale agile development processes, as well as trying to gain more understanding of what business development is and how this related to product development. A case study was conducted to address the two research questions: *RQ1 - How can business development be defined to be aligned with the product and technical development processes? and RQ2 - What are the barriers and enablers for including business development into self-managed autonomous teams?*

Both the literature study and the case study show that there is a need for a clear definition of business development, and it also shows that the understanding of this topic is ambiguous and more fragmented compared to the more technical side of product development. On one side the commercial teams have their set of working tasks, and on the other side the product- and tech teams, often organized as self-managed teams, have their set of working tasks.

The study reveals that there are both barriers and enablers on how these two sides of an organization can be more aligned, and it shows that cultural differences evolve. The study has used the authority areas from Hackman's authorization matrix as a theoretical framework. This has been a tool to structure how the relevant business development tasks can be included in the work of agile teams, by mapping those to the authority areas identified by Hackman.

This thesis therefore coins a suggestion to a definition that relates to the activities from both the commercial- as well as to the product- and tech side. This definition includes a description of the related tasks that are involved, as well as indicates that business development may be performed by nearly all parts of an organization, both inside the agile development teams, and also in other units such as in sales-, market- and strategy teams. A narrow product-oriented perspective will focus more on the activities done by the product- and tech resources, circulating around tasks such as exploring, building and launching/maintaining the product portfolio. A broader perspective will in addition focus on commercial resources taking care of initial tasks such as defining goals, creating partnerships, doing market analysis and creating business models.

The following enablers on how business development can be included in the structured work of the product development teams have been identified: 1) Adding true cross-functional fora with commercial and technical resources will help bridging the gap between the two areas. This also helps getting a common understanding of the prioritization and focus on the most important topics together. 2) Including the commercial activities into the development model also help getting a common

understanding and avoid silo thinking. This require a common understanding but do require a common definition acting like a foundation. 3) The development methods are only used by parts of the organization, more on the technical side and less on the commercial side. Therefore internal education and marketing of the development methods are encouraged. 4) Using common synchronization mechanisms such as a common rhythm acts as an enabler. 5) Having self-managed empowered teams, to a certain degree of autonomy, requires a strong and clear strategy to be followed by both commercial and technical resources. Finally, 5) having a de-centralized approach to business development, will help engaging all parts of the organization and will enable that all teams include this work.

However, the last enabler also acts as the first barrier, because 1) short term product focus may limit business development to incremental product development with less focus on the strategic and commercial aspects. 2) The self-managing teams create a bottom-up culture, which reduces the possibilities from commercial, strategic and management units to give input to the work being planned and done. 3) The unclear and ambiguous understanding of business development seem to fuel the differences between the commercial side and the technical side, hence the lack of a common definition acts as a barrier. 4) Another barrier is the lack of a clear understanding of methodologies in business development. Finally, 5) by having only parts of the organization to embrace the development model does seem to have certain negative consequences when it comes to mutual understanding.

6.1 Future work

Future work should further explore how other organizations within the software development area do practice business development and how this work is aligned and synchronized with empowered teams similar to the teams described in this study. A deeper and more thorough literature study of how business development is defined within the information system research is recommended, to verify the validity of the results of this single-case study. A multi-case study could also verify if there are other enablers and barriers than the ones identified in this study. This could shed light on how business development can be included in the structured work of product development that follows when adopting well documented agile methods and frameworks from the software development area.

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Interview guide

Introduction

- Thank you for your participation
- Present myself, my role as a researcher and not employee, and the research project
- Inform about the estimated duration, 1 hour.
- Inform about anonymity and that no can lead back to the interviewee.
- Ask for consent to record the conversation.

The background of the employee

- What is your title and position and what team do you belong to in SoftCo?
- For how long have you had this position?
- Can you short explain your precious work experience prior to the current situation?
- What are your main responsibilities?

Business Development

- How would you describe the business development in SoftCo?
- Who in SoftCo work with business development?
- What kind of methods, framework or tools are used within this work?

Product Development

- How would you describe the product development in SoftCo?
- Who in SoftCo work with product development?
- What kind of methods, framework or tools are used within this work?

Methods

- The methods we just talked about, how are they used across the organization?

- Can you explain the different steps of the development model(s)?
- How are the methods managed across the teams?
- Can you explain how the business development work are aligned with the product development work, and vise versa?
- How are the prioritization done in your team?
- How are the prioritization done and managed across the teams?
- What kind of methods or tools are used during this prioritization?

Culture

- How do you think that our development methods affect the culture we have in SoftCo?

Closing

- Is there anything else you would like to add?
- Do you have any questions about this interview?
- Do you have any recommendations to other people you think I should talk to?