Going Agile:
Challenges Encountered when Embracing Agile Project Management

Master's Thesis 30 credits
Department of Business Studies
Uppsala University
Spring Semester of 2017
Date of Submission: 2017-05-29

Felix Hofbauer &
Sean Stänkelström

Supervisor: Leon Michael Caesarius
Abstract
Since the millennium shift agile project management has been widely adapted as a way to handle today's ever-changing business environment. Even though the number of organizations making the transition has increased, academic literature within the area still remains scarce. Therefore, the purpose of this thesis is to explore what agile project management challenges are connected to making the transition from traditional project management to agile project management. In order to investigate the purpose, a single case study is conducted at ArlaFoods, who are the midst of a transition from agile project management to traditional project management. Using an ethnographic approach semi-structured interviews, field notes, and observations are carried during a one-month period on-site at ArlaFoods headquarters in Aarhus, Denmark. The findings from this case study indicate that whilst many APM challenges are explicitly connected to the use of APM, some challenges arise as a result of changing methodologies and can be attributed to the transition from traditional project management towards agile project management. Challenges encountered in this study regard, for example; changing roles, change of mindset and culture, shifts in decision-making, self-organization among teams, and co-location. This study has been able to identify a number of challenges that, contrary to previous findings, are not explicitly connected to APM, but instead, arise in conjunction with the transition from traditional to agile project management. Thus, contributing with new knowledge to the existing portfolio of research on agile project management.

Keywords: Agile, Agile project management, project management, Scrum, Transition, Transformation, Challenges.
Acknowledgements

We would like to express our gratitude for the possibility to carry out this Master Thesis with the case company ArlaFoods©. A special thanks to Steffen Juhl Andersen our supervisor at the case company, who has provided us with great insights during our project. We would also like to thank all the members of the D-team and DDD-team for welcoming us and for being helpful during the entire project.

A special thanks is, of course, also given to our supervisor at Uppsala University Leon Michael Caesarius. His guidance, support, and insights have been priceless during the entire project.

Felix Hofbauer & Sean Stänkelström

# Table of Contents

1.1 Introduction .................................................................................................................. 1  
1.2 Problem Statement ........................................................................................................ 2  
1.3 Purpose .......................................................................................................................... 3  
1.4 Research Questions ........................................................................................................ 3  

2 Theory and Literature Review .......................................................................................... 4  
  2.1 What Does TPM Mean to APM Theorists? ................................................................. 4  
  2.1.1 Variations of TPM Within IT .................................................................................. 4  
  2.1.2 What Characteristics Define TPM? ......................................................................... 5  
  2.2 What is APM? ................................................................................................................ 6  
  2.2.2 New Methods New Roles ...................................................................................... 8  
  2.3 APM vs. TPM Characteristics .................................................................................... 9  
  2.4 Why is APM the Alternative? ..................................................................................... 9  
  2.5 Essentials for Embracing APM .................................................................................. 11  
  2.6 Challenges to Expect when Transitioning to APM ..................................................... 13  
  2.7 Analytical Framework ............................................................................................... 17  

3 Method ................................................................................................................................ 18  
  3.1 Methodology ............................................................................................................... 18  
  3.2 Ontology ...................................................................................................................... 19  
  3.3 Data Collection ............................................................................................................. 20  
  3.4 Ethnography ................................................................................................................... 22  
  3.5 About ArlaFoods .......................................................................................................... 22  
  3.6 Why ArlaFoods? .......................................................................................................... 23  
  3.7 Handling of Data ......................................................................................................... 23  
  3.7 Limitations ..................................................................................................................... 24  

4. Findings .............................................................................................................................. 26  
  4.1 Why Arla is Transitioning Towards APM. ................................................................. 26  
  4.2 Organizational Level Challenges ............................................................................... 27  
  4.3 Team Level Challenges ............................................................................................... 31  
  4.4 Individual Level Challenges: ..................................................................................... 35  

5. Analysis .............................................................................................................................. 38  
  5.1 Organizational Level Challenges ............................................................................... 38  
  5.2 Team Level Challenges ............................................................................................... 40  
  5.3 Individual Level Challenges ....................................................................................... 41  

6. Conclusion ........................................................................................................................ 43  
  6.1 Contributions .............................................................................................................. 44  
  6.2 Limitations ................................................................................................................... 45  
  6.3 Further Research ........................................................................................................ 45  

7. Reference List .................................................................................................................. 46  

8. Appendix ......................................................................................................................... 54
1.1 Introduction

As technology advances and becomes a more important part of the business environment, companies have to continuously keep track with technologies to avoid losing their competitive advantage and thus market shares. Business related innovations that can: analyze and handle data, generate insights that help organizations predict and understand customer demand and behavior are examples of advances that are forcing organizations to rethink how they manage their operations. Thus, having a project management model that complies with these advances is becoming increasingly important for organizations (Comella-Dorda, Lohiya, & Speksnijder, 2015). Project management refers to a set of guidelines that explain and define how a specific project is managed (Špundak, 2014). Thus, the term project management can be defined as a set of processes, methods, rules and templates represented by a framework that can be applied during a project's lifecycle.

One project management approach that has been adopted following technology's increasing influence is agile project management (hereafter APM). APM was popularized around the millennium shift and has become a powerful tool for organizations to increase operational swiftness and efficiency whilst also proving to cut costs (Ika, 2009; Shenhar, 2004). Lee and Xia (2010, pg. 90) state the characteristics of APM as; “short, incremental, iterative, time-boxed development cycles, self-organizing teams, active participation of stakeholders, and continuous delivery of working software.” Besides APM there exists a number of project management techniques often termed by advocates of APM as “traditional project management” (hereafter TPM). Using the perspective of APM theorists, project management techniques that are not agile are treated here based on a set of common characteristics that according to Sutherland & Ahmad (2011) identify TPM. Namely that TPM can be recognized as; Hierarchical, Non-iterative, Phased, Sequential, and Plan-driven.

In contrast to the sequential and less flexible characteristics of TPM, the popularity of APM is a response to the calls for increased adaptability and faster decision-making processes within organizations. In software development settings APM is useful since it enables software development teams to integrate the end user and continuously respond to requirement changes (Dingsøyr & Lassenius, 2016), which differs from TPM where requirements are submitted prior to the project launch. APM also enables flexibility in the sense that teams are no longer bound to long project life-cycles and therefore have the ability to react to changing demands (Augustine 2005, Stavru, 2014, Boehm & Turner 2005). Contrasting characteristics of TPM and APM set-up for a number of potential
challenges when IT-departments and organizations alike transition towards APM. In many ways, the different characteristics can be seen as opposites requiring team members and managers to rethink their ways of working (Špundak, 2014).

1.2 Problem Statement

According to Serrador & Pinto (2015) projects are being invested in the trillions. Unfortunately, the rate of failure is significant which means valuable resources and time is lost. However, they find that APM has a positive impact on project success. Therefore, having knowledge and being aware of what challenges may arise when converting to, and applying APM may improve project success rates. What setbacks are groups working within APM having difficulty overcoming? Where are project teams falling short? And what unforeseen challenges can be parried through a higher awareness of common and recurring challenges and pitfalls? Research regarding challenges and success factors has been carried out (Judgev & Müller, 2005; Chow & Cao, 2008; Hoda & Murugesan, 2016; Conforto et al., 2015; Dingsøyr & Lassenius, 2016) but often the findings explicitly address APM. More project groups and organizations are beginning to adapt APM (Conforto et al., 2014). Yet, not much previous research considers that the transition from TPM to APM may have an impact on why the challenges appear. Since APM and TPM are different regarding, for example, decision-making, self-organization, project planning, and project execution, some challenges may in fact be a consequence of the shift in how employees are expected to operate.

Bannink (2013) addresses some challenges of making a transition from waterfall methodologies to scrum methodologies, waterfall is a subgenre of TPM and scrum is a subgenre of APM (details on these in chapter 2). Bannink (ibid.) identifies facilitating the manager role, absence of command and control structure, and empowerment of self-organizing teams as some of the main challenges that arise when making this transition. Chen, Ravichandar & Procter (2013) also conduct research, narrowing their scope to the transition from traditional to agile product development methodologies. Their study finds two broad challenges; developing new management practices that suit the method, and helping business and engineering units adopt the method. Although there exists some research on challenges related to the transition Bannink (2013) and Chen, Ravichander & Proctor (2013) emphasize that further scientific research needs to be conducted on this subject.
The increasing popularity in APM (Lee & Xia, 2010) implies a need for understanding what challenges are explicitly connected to APM and what challenges are the results of old habits dying hard. When moving from TPM to APM the sequential and hierarchical mind-set lives on in employees. Furthermore, various findings (Hoda & Murugesan, 2016; Conforto et al., 2016; Joslin & Müller, 2015; Stettina & Hörz, 2015) show that project experience is a key factor related to overall success rates within APM. Hence, experience leads to an increased understanding for what challenges appear within APM and how to overcome them. Additionally, Stettina & Hörz (2015) find that APM experience alone is not enough to sufficiently implement APM. Challenges lie in silo thinking, resource allocation, and the adaption of APM requires structure, time, and well thought out routines to enforce the cultural shift. Therefore, exploring APM challenges and distinguishing what challenges occur as a result of the transition and what challenges are explicit to APM can help practitioners become more successful in making the transition.

1.3 Purpose

The purpose of this thesis is to investigate if previously identified challenges within APM can be attributed to a transition from TPM to APM or if the challenges, as previous research suggests, are explicitly connected to APM.

By exploring the most frequently mentioned challenges of APM across different levels of an organization – the levels being: organizational, team and individual – this thesis aims to contribute with additional information regarding challenges of APM within software development by distinguishing if any APM challenges may be the consequence of a transition. In doing so, empirical findings from this study will reduce the gap in existing literature discussed by Bannink (2013) and Chen, Ravichander, & Procter (2013).

1.4 Research Questions

In order to serve the purpose of this thesis the following research question is posed:

-- What APM challenges can be connected to the transition from TPM to APM?

Addressing this question may be valuable for:

• Practitioners making or planning to make a transition from TPM to APM
• Theorists conducting research within the area of APM
2 Theory and Literature Review

This chapter aims to give an overview of what is being discussed in academia in regards to the thesis subject. Also making the foundation for the analytical framework at the end of this chapter. The analytical framework will act as the basis and reference point for following sections. Firstly the chapter will elaborate how APM theorists view TPM. Following this, the chapter will explain what APM is and how it can work as an alternative TPM. Finally, a walkthrough of which challenges connected to APM are most frequently mentioned in the academic literature.

2.1. What Does TPM Mean to APM Theorists?

There is no single definition or identifier of TPM. Within TPM there are a number of variations that show up in research and literature reviews. Because of the scope and purpose of this thesis, this section will elaborate what traditional project management within software development means from the APM perspective.

2.1.1 Variations of TPM Within IT.

TPM works under the assumptions that events that affect the project such as planning, execution, and business requirements are predictable, and the activities and tools used are easy to understand (Hass, 2007). This means that TPM presumes certainty, stability, and ease of controlling existing processes. Projects within TPM are linear in the sense that each stage of the project life cycle is executed once. One linear approach is the waterfall approach (Ibid), used for managing projects within IT, where progress is seen as a steadily flowing waterfall through the different phases of the project. Moving from one stage to another in a sequential order means that the project reaches the next phase when the predefined milestones or objectives from the previous phase are complete (Ramesh et al., 2012; Wysocki, 2009). Furthermore, after each phase is complete, documentation about milestones of the work is used to present progress. Since the waterfall approach is linear it becomes rigid and is not necessarily suited for all IT-projects. However, the waterfall approach can be used incrementally, meaning that development phases can be performed more than once (Sheffield & Lemétayer, 2013). Even though the incremental alternative follows a pre-specified plan it can be viewed as flexible compared to the linear approach since it enables developers multiple deliveries, whilst the linear approach limits developers to a single delivery (See Appendix: Figure. 1 and Figure. 2) (Ibid.). Both TPM approaches
follow a pre-established project plan making them rigid. Hence, the advantages of using TPM are that it clearly defines the upcoming steps and what needs to be done to move forward (Hass, 2007). On the contrary, the main disadvantages are that the underlying assumptions mean there is a loss of flexibility and limited ability to go back and correct or update in past phases. This also means the model leaves little room for handling unplanned events, such as changes in user requirements (Ibid.).

2.1.2 What Characteristics Define TPM?

In reality there is no single project management method named TPM. This is a label given by APM proponents to distinguish a group of methodologies that are, based on a shared set of characteristics, not agile. For example Sutherland & Ahmad (2011) characterize TPM as Non-iterative, Phased, Sequential, and Plan-driven. Špundak (2014) assumes the same characteristics but adds hierarchical when defining TPM. Furthermore, APM theorists mean that TPM follows a set of standardized processes by supporting the idea of planning and rigorous reuse to make development an efficient and predictable activity (Boehm, 2002; de Carvalho, Patah, & Bido, 2015; Joslin & Müller, 2015; Wysocki, 2007). In TPM the viewpoint is such that there is a set of problems, and that there is optimal and predictable solutions for every problem (Dyba, 2000; Nerur, Mahapatra, & Mangalaraj, 2005).

According to Špundak (2014) project management methods that do not follow the APM model ensure robustness and applicability to a wide range of projects, from simple and small projects to large and complex ones. The premise of TPM is that projects are simple, predictable, and linear. Furthermore, TPM follows a clearly defined time frame, budget, and scope, also referred to as the Iron Triangle – a model used to visualize the constraints of a project (de Carvalho, Patah, & Bido, 2015)(See Appendix Figure 3). The iron triangle clarifies project constraints and how one constraint cannot be changed without affecting another, thus acting as an aid for planning and execution of plans, minimizing the need for much change (Wysocki, 2007). Hence, TPM aims to achieve efficiency and optimization of initial project plans by completing the project within the boundaries of the Iron Triangle (Wysocki, 2007; Špundak, 2014; Conforto et.al. 2014).

Even though the explicit terms used when describing TPM may vary the gist is the same; according to APM theorists TPM means the non-iterative, phased, sequential, plan-driven, hierarchical, standardized, predictable process of managing a project lifecycle. These are explained in more detail below in Table 1.
<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hierarchical</td>
<td>Decision-making power is held by the project managers, team members are delegated tasks and mainly follow the orders and direction given by the manager. (Špundak, 2014)</td>
</tr>
<tr>
<td>Non-iterative</td>
<td>The processes are not repeated, instead, the focus is straightforward, and when one phase is complete the team continues to the next until the project is complete. Planning is conducted up-front and team does not go back and correct or change aspects. (Sutherland &amp; Ahmad, 2011; Špundak, 2014)</td>
</tr>
<tr>
<td>Phased</td>
<td>The method is defined by distinct phases that are homogeneous and contain practices like requirements, design, implementation, verification and maintenance. (Sutherland &amp; Ahmad, 2011; Špundak, 2014)</td>
</tr>
<tr>
<td>Plan-driven</td>
<td>The project is driven by a detailed plan that describes different activities involved in the different phases. (Sutherland &amp; Ahmad, 2011; Špundak, 2014)</td>
</tr>
<tr>
<td>Predictable</td>
<td>Since the processes are plan-driven and standardized TPM is assumed to be predictable. (Wysocki, 2007; Boehm, 2002)</td>
</tr>
<tr>
<td>Sequential</td>
<td>Each phase follows a strict sequence of events and the next phase starts only when the previous is complete and “perfect”. (Sutherland &amp; Ahmad, 2011; Špundak, 2014)</td>
</tr>
<tr>
<td>Standardized</td>
<td>The aim of TPM is to plan each phase to the extent that tasks become standardized. (Joslin &amp; Müller, 2015)</td>
</tr>
</tbody>
</table>

Table 1. Identified characteristics of TPM.

### 2.2. What is APM?

Various findings (Hoda & Murugesan, 2016; Conforto et al., 2016; Joslin & Müller, 2015; Stettina & Hörz, 2015) show that project experience is a key factor related to overall success rates within APM. Experience leads to an increased understanding for what challenges appear within APM and how to overcome them. Thus, to be able to rightfully consider when a transition towards APM might be appropriate, understand why certain challenges may arise, or what challenges can be expected, one needs to understand what APM is.

APM methodology is built on four basic principles, namely; *The importance of valuing individuals and interactions over processes and tools. A working software is more important than a comprehensive documentation. Collaboration with customers outweighs the importance of contract negotiations. Responding to change is prioritized rather than following a predefined plan* (Fowler & Highsmith 2001, p.2).

Since the creation of APM, the management method has evolved, sub-techniques, and other variations that follow the principles of APM have appeared, for example: *Scrum,*
Kanban, eXtreme Programming (XP) and Continuous Deployment (Denning, 2015). APM has grown in popularity and is considered to be critical for being competitive in the software development industry (Lee & Xia, 2010). For practitioners Scrum is the most popular technique whilst other methods are seeing a decline in usage (Dingsøyr & Lassenius, 2016; Schwaber & Beedle, 2001). Due to the scope of this thesis, only Scrum will be addressed explicitly (See Appendix Figure 4. for scrum visual overview).

Erickson et al. (2005) claim that APM is a means to strip away as much of the heaviness and standardization, commonly associated with TPM within software-development, as possible to promote quick response to changing environments, changes in user requirements, accelerated project deadlines, and the like.

Lee & Xia (2010, pg. 90) state; “agility is at the heart of agile development principles and practices”. Following this statement, Lee & Xia (ibid.) name the characteristics that APM is built upon; “short, iterative, time-boxed development cycles, self-organizing teams, active participation of stakeholders, and continuous delivery of working software.” Following this, a review of APM characteristics is presented below to clarify what ideas APM are built on.

**Iterative**

Dybå & Dingsøyr (2008) describe APM as iterative and incremental, seeking to avoid the standardized approaches related to TPM. Iterations are short and rapid cycles within the project, between two to four weeks and are fixed in time and budget. Each iteration ends with the project team presenting deliveries and progress to stakeholders. Hence, APM is about feedback and change displayed in short iterations, developed to embrace changes rather than reject them (Williams & Cockburn, 2003).

**Self-organizing Teams**

Both Chow & Cao (2008), as well as Highsmith & Fowler (2001), describe self-organizing teams as individuals that manage their own workload, share their tasks based on need and best fit, and participate in team decision-making. According to Augustine et al. (2005) leadership in self-organizing teams is meant to be light-touch and adaptive. The leaders responsibility revolves around setting direction, aligning people, obtaining resources and motivating the team rather than make definitive decisions (Anderson et al. 2003, Chau & Maurer 2004, Takeuchi & Nonaka 2005).
Customer and Stakeholder involvement

According to Misra, Kumar, & Kumar (2009) the idea of agility is to develop software efficiently to satisfy the customers. Therefore a central part in APM is based on integrating and involving customers to the processes. This can be boiled down to three factors; customer satisfaction, customer collaboration and customer commitment (Ibid.). With the APM setup stakeholders are able to actively participate in meetings, planning sessions, reviews, and see what has been delivered after iterations.

Continuous Improvement and Delivery

Continuous delivery within software development builds on the idea to constantly keep the software in a releasable state (Fowler, 2013; Farley & Humble, 2010). However, on a more general level continuous experimentation is the idea of getting an empirical understanding of customer value, which is an approach where potentially valuable features are delivered to customers (Dingsøyr & Lassenius, 2016).

2.2.2 New Methods New Roles

As previously mentioned, self-organizing teams that share tasks and participate in decision-making characterizes APM (Chow & Cao, 2008). Hence, team composition becomes a focal point when managing projects. Teams within Scrum are usually comprised of a scrum master, product owner, and team members (Sutherland & Schwaber, 2013). The Scrum Master acts as the “modern” project manager in the sense that the scrum master’s responsibility is to make sure the project is making progress and the tasks at hand are being dealt with effectively (Denning, 2015). Essentially, the scrum master acts as the facilitator and process coach for the team. Furthermore, the Scrum Master acts as the direct contact with other teams and organizational units, removing impediments created by the organization and obstacles caused by team interdependencies.

Another role within Scrum is Product Owner, who acts as the direct contact with stakeholders and handles tasks related to the business side of the project, tasks such as funding, feedback, and requirements (Ibid.). Mainly representing the interest of stakeholders, the Product Owner handles stakeholder expectations, prioritizing project requirements, the overall product vision, and defining product features (Hoda, Nobel & Marshall, 2010). Product Owners are supposed to understand and explain to stakeholders how progress in their project is generating additional business value for the organization. Whilst doing so, the Product Owner also needs to explain for their team what the
stakeholders believe adds value. Essentially, the Product Owner acts as a bridge between the two sides of the project.

The team is comprised of individuals with cross-functional skills. The cross-functionality is supposed to enable autonomy and are expected to be delivery focused and self-organized (Denning, 2015). (See appendix for scrum team overview)

2.3 APM vs. TPM Characteristics

Below is a summary (Table. 2) of the characteristics that define TPM and APM based on previous literature:

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>APM</th>
<th>TPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardization</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Structure</td>
<td>Non-hierarchical</td>
<td>Hierarchical</td>
</tr>
<tr>
<td>Adaptability</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Documentation</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Predictability</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Planning</td>
<td>Continuous</td>
<td>Predefined</td>
</tr>
<tr>
<td>Process</td>
<td>Iterative</td>
<td>Non-iterative</td>
</tr>
<tr>
<td>Leadership culture</td>
<td>Self-organizing teams</td>
<td>Command-driven teams</td>
</tr>
<tr>
<td>Stakeholder involvement</td>
<td>Continuous</td>
<td>Initially</td>
</tr>
</tbody>
</table>

Table 2.

2.4 Why is APM the Alternative?

Knowing what APM and TPM is, one can start to review why IT-departments and organizations alike are transitioning towards APM. TPM and APM both have their disadvantages and advantages. TPM aims to ensure robustness in techniques and best-practice suggestions that are easily applied to most projects. Whilst this is seen as an advantage of TPM, proponents of APM actually state this is a disadvantage. For example Wysocki (2007) argues that one size does not fit all, what works for some organizations do not necessarily work for all. Further stating that projects, just like business environments, become increasingly complex as the number of tasks and interrelations increase. Since TPM is mainly built on hierarchical and linear relations between tasks (Denning, 2015) it does not enable proper reflection of all complexity and dynamics of today’s projects.

Another disadvantage is that TPM assumes projects are isolated from the environment although change in all or any form is the reality of todays business environments and therefore also the reality of projects (Špundak, 2014). The initial plans
are bound to change at some point due to unpredictability and dynamic changes in the business environment or project (Denning, 2015; Highsmith, 2004; Špundak, 2014; Wysocki, 2007; Conforto et al., 2014). Furthermore, it is rarely possible to make a full and complete project plan at the initial phase of project planning, partly due to difficulties in defining future tasks and goals (Špundak, 2014; Denning, 2015).

Opponents of APM state that, lack of structure and clearly defined plans in APM can be the cause for problems with effectiveness. Špundak (2014) concludes that both methodologies are useful and effective if used right and the choice of method should be based on the surrounding business environment and current mindset or orientation of employees.

In a study carried out by Serrador & Pinto (2015) the authors test the effects of APM in organizations on two dimensions of project success, efficiency and overall stakeholder satisfaction, against organizational goals. Furthermore, the study is carried out on multiple industries in order to identify to what degree APM can be linked to project success, its viability across multiple project environments, and the potential intervening variables that affect this relationship. Results of the study indicate that APM does in fact correlate with overall project success. Not only do the results point out an increased overall success rate for the organizations that apply APM. The results also show that the reported success can be found on both of the dimensions, efficiency and stakeholder success.

The ability to swiftly respond to changing business requirements, technologies, and market conditions are factors that explain the increasing popularity of APM (Augustine, 2005; Stavrou, 2014). Self-organizing teams of APM is one characteristic that enables swiftness and is also found to increase project quality (Chow & Cao, 2008). Self-organizing teams display a higher level of autonomy, which enhances team collaboration compared to TPM (Hoda & Murugesan, 2016). The local control given by self-organization is also proved to facilitate innovation (Lyytinen & Rose, 2006). Furthermore, autonomy enables decision-making to be decentralized and re-directed, empowering the people who face and handle every-day problems (Fowler & Highsmith, 2001; Kelley, 2008; Fowler, 2013; Farley & Humble, 2010). Decentralization increases the speed and effectiveness of problem solving and decision-making (Larman 2004, Tata & Prasad 2004; Lee & Xia, 2005; Farley & Humble, 2010). Additionally, Cockburn (2007) and MacCormack et al. (2001) propose that cross-functional teams increase their effectiveness by complementing each other’s skill-sets when sensing and responding to environmental changes.

The number of user requirements changes increase every year and therefore companies need a deeper customer understanding (Lee & Xia, 2010). The iterative nature
of APM is an enabler for companies to increase their customer value. By using short time-based iterations companies can effectively get early user feedback. Consequently, the integration of customers early on in projects, and the ability to use customer data early on enables organizations to increase customer relationships resulting in higher customer satisfaction (Dingsøyr & Lassenius, 2016; Misra, Kumar & Kumar, 2009). Mann & Maurer (2005, pg. 9) confirm this, stating that customers felt daily meetings kept them up to date with the project and that “planning meetings were helpful and reduced confusion about what should be developed”. Customers felt a higher satisfaction since they were more involved. Additionally, the delivering unit was seen as more engaged since they were actively looking for feedback (Ibid.).

While there are a number of positives connected to increased stakeholder involvement, involving customers and other stakeholders complicates the decision-making process since more individuals can influence the decisions being made. Even though there are elements of increased complexity, the involvement of stakeholders is central when establishing goals and making progress. APM ultimately enables stakeholders to impact what needs to be done and what needs to be prioritized in the next iteration, increasing overall satisfaction (Serrador & Pinto, 2015).

2.5 Essentials for Embracing APM

This section aims to give a brief overview, based on previous findings, of when organizations should be thinking of choosing APM as a method - Pre-requisites, organizational characteristics, enablers, practices etc.

Using APM is beneficial for teams that innovative and have to deal with frequently changing stakeholder requirements (Highsmith, 2004; Conforto et al., 2014; Serrador & Pinto, 2015). Another criterion for deciding if APM is the right choice of method is team size. The recommended number of team members is eight. Following team size, there are two other main criteria for deciding if APM is appropriate, practice and enablers. Practice refers to the management practice within the organization. Conforto et al. (2014) specifically discuss six APM practices, listed below:

- Use of the product vision concept.
- Use of simple communication tools and processes for project planning.
- Use of iterative planning
• Developing activities using self-managed and self-directed teams in the project plan
• Use of self-managed and self-directed teams in the project plan monitoring and updating activities
• Frequently apply project plan monitoring and updating processes

Enablers refer to sub-criteria that influence the outcome of APM. Conforto et al. (2014) list 41 enablers for APM. The enablers are filtered down to the 10 most frequent and influential according to their findings. These are listed below and discussed further in the following chapter (2.5).

• Supplier/partner involvement
• Organizational structure type
• Project team members experience
• Project team size
• Project team dedication
• Customer/stakeholder involvement in project planning
• Multidisciplinary teams
• Project manager experience
• Project team location
• Product development process formalization

(The purpose of this thesis is to explore the challenges connected to a transition from TPM to APM. Therefore, product development process formalization is not discussed since it focuses on product development. Furthermore, suppliers and partners are stakeholders and thus supplier/partner involvement is labeled and treated as stakeholder involvement.)

When changing management methods within organizations management support is essential since management has control of resources, setting goals, and deciding priorities for moving forward. Furthermore, an appropriate organizational culture that is aligned with the new management methods is needed to enable a successful change (Näslund, 2013).
2.6 Challenges to Expect when Transitioning to APM

When discussing what success actually means within APM there exists mixed views (Pinto & Slevin, 1988). Atkinson (1999) and Kerzner (2003) observe that whilst some researchers mean success is defined by the quality of the end product, and successfully handling the so-called triple-constraints of time, scope, and budget goals (i.e. the Iron Triangle). Others mean that success should actually be defined by a wider range of criteria such as the impacts on the given organization rather than success at overcoming a number of constraints (Carvalho et al., 2015; Jugdev & Müller, 2005). Jugdev & Müller (2005), after reviewing existing literature on project success and challenges, find that the traditional notion of success in APM (overcoming constraints) is being exchanged by literature that takes a more holistic approach to measuring success. Meaning that more parameters are being weighed in as factors of success, this entails a wider range of potential challenges since the focus is broader. Thomas et al. (2008) mention that measuring project success is not so straightforward as previous literature may suggest. Instead of strictly looking for success factors, attention should be given to actual challenges that prevent success. For example, Thomas et al. (Ibid.) study a number of projects, some which despite meeting the initial constraints, budget, time, and scope, end up with a client dissatisfied with the results. On the contrary, some projects fail to meet the constraints but the results are found highly useful and satisfying.

While a lot of previous research can prove the benefits of APM, Hoda & Murugesan (2016) find 8 main challenges in APM connected to 4 different levels within the organization: project, team, individual and task level. The project level includes activities involving the self-organizing team, Scrum Master (or project manager), and the Product Owner (or customer representative). Team level activities include involving the self-organizing team and their Scrum Master. Individual level includes activities such as self-assignment of tasks, which involve individual members of the team. The task level includes activities pertaining to technical tasks. Not only do challenges arise on different levels, Hoda & Murugesan (2016) also conclude that challenges on one level are related to and affect challenges on other levels. Moe, Dingsøyr & Dybå (2009) on the other hand, categorize challenges on team and organizational level with the argument that organizational level challenges reflects on team performances. Since the challenges presented in literature comply well with the sectioning made by Hoda & Murugesan (2016) and Moe, Dingsøyr & Dybå (2009) a merged model is adapted and acts as an analytical framework containing: organizational level, team level, and individual level challenges.
Organizational Level Challenges

APM implementation is a known challenge on the organizational level, more specifically organizational constraints act as the overall obstacle for successfully working with APM (Boehm & Turner, 2005). Organizations tend to enter the domain of APM without the right amount of preparation and commitment. These organizations risk being met by organizational constraints connected to changes in development processes, business processes, and people management. Boehm & Turner (Ibid.) highlight that in practice most of the issues come down to perception. Hence, the constraints can be avoided by building an understanding for the fundamental differences between TPM and APM. Also, through careful preparation, work, and patience the organization can improve their likelihood of overcoming the initial challenges (Ibid.).

Shared decision-making is a consequence of APM where decision-making is moved from upper management to the working teams (Denning, 2015). The concept of self-organizing teams gives teams authority to make decisions, disconnecting management from the decisions made on team level. The disconnection can cause difficulties regarding the alignment of strategy in the sense that the team’s best interest might not always be what management sees as the best interest for the overall organizational strategy (Moe, Aurum, & Dybå, 2011; Denning, 2015). Additionally, Moe, Dingsøyrr & Dybå (2009) mention problems with organizational control such as detailed reporting, this was considered an unnecessary mechanism that the team expressed was a way for the management to keep control.

According to Young & Jordan (2008), management support is the most important success factor for project success. Hence, getting support from upper-level management is a challenge that must be overcome. The support factor is important since upper-level management is often responsible for authorizing funding and decisions regarding organizational changes and restructuring (Stettina & Hörz, 2015; Näslund, 2013), as well as communicating the message across the organization. Initiatives quickly cease or fail without support from management, regardless of the initiatives nature (Stettina & Hörz, 2015; Young & Jordan, 2008). Hoda & Murugesan (2008) also discuss senior level sponsorship (i.e. top level management support) as a challenge that needs to be handled to achieve self-organizing teams.

Team Level Challenges

Referring back to one of the four basic principles of APM - The importance of valuing individuals and interactions over processes and tools (Fowler & Highsmith 2001, pg. 2). APM is built on collectivity and self-organizing teams that can collaborate. Hence, creating a
unified vision of the project within the project teams is a challenge when using APM (Fernandes et al., 2015). Another team level challenge that arises when becoming self-organized is resource allocation, when decision-making power is distributed to the team the funding procedure is changed. This requires team-level employees or the product owner to reach out for funding, something otherwise handled by higher-level management (Moe, Aurum, & Dybå, 2011; Denning, 2015).

Moe, Dingsøyr & Dybå (2009) find that lack of individual commitment is a team-level challenge for members in self-organizing teams. In combination to that they also mention confusion around individual leadership as a challenge for achieving self-organizing teams. Similarly, Conforto et al. (2014, pg. 29) mention team dedication and add co-location stating: “the main challenge is regarding the co-location and team dedication.” Within APM it is vital for teams to be co-located, the whole idea of APM is that the members should be able to quickly respond, gather feedback, make changes, and be self-organized. When teams are not co-located they lose many of these aspects; for example, when teams are not co-located and not able to speak face-to-face team agility and self-organization decreases (Conforto et al., 2014). The co-location challenge is also found on the organizational level – being able to offer the right competencies in each team without involving employees from other locations.

APM enables increased customer involvement, even though this has been proved to benefit organizations, researchers have also been able to identify challenges related to involving customers. The distance between the project team and their customers is a challenge connected to customer involvement. Another challenge when trying to involve customers is that customers do not understand APM since it is not a generally understood and accepted methodology, causing customers to show skepticism (Hoda, Noble & Marshall, 2010). Lacking customer involvement can lead to consequences such as; pressure to over-commit, problems in gathering and clarifying requirements, problems in prioritizing requirements, problems in securing feedback, loss of productivity, and in extreme cases, business loss (Ibid.). Korkala, Abrahamsson & Kyllönen (2010) also emphasize the importance of customers being on site to deliver clear requirements and constructive feedback to the team. Furthermore, they found that when face-to-face communication is lacking the quality of the end-product declines. Furthermore, the study showed that the quality of the end product decreased in correlation to lower levels of face-to-face communication with customers.
Individual Level Challenges

Self-assignment of tasks can become a challenge for individuals when operating as self-organizing teams in APM. Moe, Aurum, & Dybå (2011) found that team members tended to avoid taking tasks that were seen as less glamorous, such as maintenance and administrative tasks. However, members of self-organizing teams are responsible for voluntarily taking on the tasks needed to complete the objective. Thus, avoiding taking on certain tasks results in worse team performance and progress (Ibid). Opposite to these findings on tasks, Vidgen & Wang (2009) found that team members repeatedly chose the simplest tasks. In both cases the findings show challenges regarding self-assignment of tasks even though in different directions.

Moe, Dingsøyr & Dybå (2009) state that failure to learn the APM methods of working can be seen as a challenge to becoming an autonomous self-organized team. They argue that teams need to change their operating norms and rules to become self-managed. Furthermore, they find that there arises confusion around individual leadership when using APM and trying to become self-organized. The team members do not necessarily understand that they are responsible for their own actions and making sure that tasks get done as expected (Ibid).
2.7 Analytical Framework

Existing literature and research within the subject of APM, and more specifically challenges, gives an overview of what challenges have currently been discovered within this subfield of APM research. Therefore the existing literature can act as the foundation of an analytical framework. The framework is designed to distinguish what challenges are explicitly connected to the APM methods and what challenges can be linked to the transition towards APM. Following the existing theme, the framework is divided into three main categories: Organizational level, Team level, and Individual level. The divide will facilitate and specify where the challenges can be expected to occur. Furthermore, each category is followed by a list of subcategories (seen in the white boxes) to clarify what the authors aim to look for when gathering and analyzing empirical data in the study. The arrows pointing down in the framework illustrate that the challenges can transpire from the organizational to the team and individual level. Whilst the bent arrows indicate the opposite, individual level challenges have the potential to cascade up to the organizational level, ultimately impacting the organization.

Levels of Agile Project Management Challenges

![Figure 5. Analytical Framework](image-url)
3 Method

This section will give information regarding the methodology and how the study is conducted. Initially, this section will introduce the chosen research strategy. Afterwards, an explanation will follow of which methods are used and how they are used to increase the validity and reliability of the thesis results. It will also introduce and give an overview of the chosen case study company ArlaFoods.

3.1 Methodology

To comply with the thesis purpose – explore if APM challenges can be attributed to the transition from TPM to APM – a qualitative case study is conducted at an organization that is in the midst of a transition from TPM to APM. To create a deeper understanding about current challenges and how they might affect individuals, teams, and organizations, a literature review is conducted to ensure that chosen methods are suitable to address the thesis purpose. The challenges that are discovered in the literature review are used to create an analytical framework. The framework acts as the basis for later discussions and conclusions in the thesis. Furthermore, the framework offers a basis for what methods are best suited to collect the data in demand.

According to Yin (2009), a case study is appropriate when the research question “what” is posed and when conducting exploratory studies. Seeing as both of these criteria are fulfilled in this study the method is suitable to achieve what the thesis is set out to accomplish. Since this thesis explores challenges that arise when transitioning to APM the case study strategy helps the author’s grasp contextual conditions. Due to the limited amount of time given to conduct the research, the authors have chosen to focus on a single case study rather than multiple case studies. Focusing on a single case study enables the authors to gain a more in-depth understanding of the phenomenon. Considering the purpose of the thesis, gaining a deeper understanding of one case is preferred compared to multiple case studies where the in-depth understanding is sacrificed for a broader, less in-depth understanding (Saunders et al., 2012).

As it is important for the authors to get a good understanding about the research context, the rationale behind using a single case for this thesis is twofold. Firstly, timing a transition from TPM to APM is rare, both because not all organizations make this transition and also because the specific transition can only be done once. Secondly, the scope and time frame does not allow for a deep investigation of multiple cases and also a
lack of resources complicates the possibility. However, theoretically it is possible to use multiple case studies to replicate the study across several cases (Saunders et al. 2012).

An abductive approach is used, which enables the authors to first develop inductive inferences, whereby deductive ones can be tested iteratively during the process of gathering data. The research context is unknown initially making the abductive approach necessary for conducting the study (Saunders et al. 2012). This study tries to identify what challenges may arise when making a transition from TPM to APM. To be able to identify challenges an explorative approach is used, this allows the research question to be open and enables the thesis to discover circumstances missing in previous research (Saunders et al. 2012). This is in line with the thesis’ purpose, the exploratory approach also matches the choice of methods employed when collecting data: semi-structured interviews and observations.

### 3.2 Ontology

How individuals perceive can be referred to as Ontology. This is a philosophical interpretation of the realities of social interactions and situations or as described by Long et al. (2000), social reality. When dealing with case studies and conducting interviews, observations or other similar methods to gather data within social sciences the researchers can employ either of two distinct standpoints, the subjective or objective. If the researcher takes the standpoint of subjectivism, sometimes called constructionism, they observe that social interactions are determined and influenced by their own personal perspective. With things such as previous knowledge, ethnicity, background, and social standing having an impact on gathered data. Assuming an objective standpoint, reality is independent of any personal influences and interpretations they may lead to (ibid). This study takes the view of subjectivism, realizing that personal experiences and other similar factors do impact interpretations of gathered data. Challenges for certain individuals are not necessarily challenges for all individuals and the scale and interpretation of the challenge also varies depending on the individual in focus. Being aware of the perspective of subjectivism is important to consider since challenges, with reference to the thesis purpose, are subjective and thus have an impact on findings and conclusions.
3.3 Data Collection

A total of nine semi-structured interviews, and observations spanning over one full month (including 14 meetings) act as the basis for data in this study (see Appendix observation overview). Saunders, Lewis, & Thornhill (2007) claim that studies that aim to establish casual relationships between variables such as exploratory studies focusing on attitudes are best addressed using a qualitative research approach. Following a qualitative approach, there are a number of techniques and ways for collecting data. Even though there are slight differences in opinion regarding primary data sources (Saunders, Lewis, & Thornhill, 2007; Creswell, 2013). Observations and variations of interviews are recurrently mentioned as the most credible and popular choices of data collection when conducting qualitative research (Yin, 2014; Saunders, 2009; Creswell, 2013). Therefore this thesis mainly uses semi-structured interviews and observations for collecting primary data.

To ensure that the interviews address the research purpose the analytical framework acts as the basis for the choice of interviewees and observation sessions. Nine interviews are conducted with employees from different levels of the organization. Going back to the analytical framework, the thesis aims to identify challenges on three different levels – Individual, Team, and Organizational. To capture challenges and on what level they occur three representatives from each level of the organization are chosen (see Table 3. for interviewee overview). For example, to capture the organizational level challenges the authors interviewed senior level managers that have direct insights to organizational and management level challenges. To capture team level challenges three representatives managing team level activities, such as Scrum Masters (project managers), were interviewed. On the individual level, three representatives that work on individual tasks within a team were interviewed. It is worth noting that many of the challenges highlighted in the analytical framework are interconnected. This means that individual level challenges may have an affect on the team level and/or the organizational level and vice versa. Therefore, findings from any of the interviewees, regardless of their given level, can be attributed to a level different than their own.

Triangulation is the process of using various data sources to verify and justify the credibility of gathered information (Creswell, 2013; Saunders, Lewis, & Thornhill, 2007). While handling the data in this study triangulation was used to ensure accuracy of findings. Empirical data such as observation field notes and interview transcripts were combined with previous literature/research within the chosen subject. Then they were used to triangulate and verify the credibility of different findings. To further improve validity, field
notes were written with as much detail as possible to ensure that the context and social setting was captured.

One full month was spent in the field at the chosen case company. This enabled the authors to gain a deeper understanding of the surrounding context and the phenomenon being studied. Also, better relations were established with interviewees and observed individuals during the one-month period.

According to Creswell (2013) reliability within qualitative research refers to if the research approach is consistent across different researchers and different projects. To further elaborate Yin (2009) suggests that one way of keeping reliability up is through continuously documenting. During the data collection phase of this study these recommendations are followed, both authors keep journals and take notes during all observations and interviews. This is done to capture as many steps as possible in different procedures. Following this, the data is read and re-read by both authors to ensure they do not contain any obvious mistakes. Furthermore, both authors transcribe all interviews and the written versions are cross-checked with each other to ensure everything that is said is captured and there are no misunderstandings. In cases when the written text is not a match and other mistakes are found the authors correct them if possible. If the authors are not able to interpret certain data they contact the given interviewee to complement the data. If the interviewee is not reachable or unable to offer complementary data the incomplete data is discarded.

<table>
<thead>
<tr>
<th>Organizational Level</th>
<th>Team Level</th>
<th>Individual Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interviewee 4 (Delta)</strong>&lt;br&gt;50 min&lt;br&gt;• Leading agile initiative&lt;br&gt;• Previous APM experience</td>
<td><strong>Interviewee 1 (Alpha)</strong>&lt;br&gt;30 min&lt;br&gt;• Serum-master&lt;br&gt;• No prior APM experience</td>
<td><strong>Interviewee 7 (Gamma)</strong>&lt;br&gt;40 min&lt;br&gt;• Team-member&lt;br&gt;• Brief APM experience</td>
</tr>
<tr>
<td><strong>Interviewee 5 (Epsilon)</strong>&lt;br&gt;45 min&lt;br&gt;• Leading agile initiative&lt;br&gt;• Brief APM experience</td>
<td><strong>Interviewee 2 (Beta)</strong>&lt;br&gt;45 min&lt;br&gt;• Serum-master&lt;br&gt;• No prior APM experience</td>
<td><strong>Interviewee 8 (Sigma)</strong>&lt;br&gt;30 min&lt;br&gt;• Team-member&lt;br&gt;• No prior APM experience</td>
</tr>
<tr>
<td><strong>Interviewee 6 (Foxtrot)</strong>&lt;br&gt;30 min&lt;br&gt;• Overseeing agile initiative&lt;br&gt;• Previous APM experience</td>
<td><strong>Interviewee 3 (Charlie)</strong>&lt;br&gt;30 min&lt;br&gt;• Product Owner&lt;br&gt;• No prior APM experience</td>
<td><strong>Interviewee 9 (Omega)</strong>&lt;br&gt;30 min&lt;br&gt;• Team-member&lt;br&gt;• No prior APM experience</td>
</tr>
</tbody>
</table>

Table 3. Interviewee overview
3.4 Ethnography

When discussing observations Saunders, Lewis, & Thornhill (2007) name two different types, structured observation and participant observation. Participant observation or ethnographic research, as it has been titled more recently (Bryman & Bell, 2015), is essentially designed for qualitative research. Ethnographic research emphasizes understanding and discovering what meanings are attached to people’s actions in different environments. This requires researchers to get access to a group of individuals that are of interest for the given subject. The access is supposed to give insights through observing and informally interacting with participants that can ultimately help answer questions of interest (Ibid).

Using an ethnographic research approach, data is gathered on-site in Denmark over a four-week period. The authors spent five full days per week in the office. The challenges found in this study and the source of data will contribute to the existing knowledge-base regarding challenges within APM and what challenges are connected to the transition from TPM to APM.

While gathering data through observing, the amount of active participation is held to a minimum, the main focus is to solely observe. According to Höst, Regnell & Runeson (2006) this type of observation is preferred when trying to see how people work and act in their natural environment, which is in line with the purpose of the study - exploring challenges. By solely observing, events and participating individuals are affected minimally. Even though participation is held to an absolute minimum during observations all participants are aware of the author’s presence, aim, purpose of participating, and that field notes are written, probably affecting the behavior of individuals and gathered data.

3.5 About ArlaFoods

ArlaFoods is a global farmer-owned dairy provider that operates in over 100 countries internationally with average annual revenues of approximately 10 billion euro. Every year the CEO of ArlaFoods and executive management team together with key stakeholders and employees suggest “7 essential business priorities”, strategic goals that are to be prioritized for future growth and prosperity. In the most recent release of ArlaFoods “7 essentials” digitization came up as a top priority for future success stating: “digitisation is essential to creating the future of dairy and has the power to fundamentally change Arla’s business model”. Indicating that digitization requires fresh management and work methods
such as APM methodologies. As a result, an initiative under the name Arla Going Agile (AGA) is currently working towards realizing the digital agenda starting at ArlaFoods IT-department.

### 3.6 Why ArlaFoods?

The reason for choosing ArlaFoods, and more specifically their IT-department as the thesis’ case study is threefold. First of all, ArlaFoods is currently at an early stage of the transition from TPM to APM – the AGA initiative was launched nine months prior to the authors’ arrival. As Stettina & Hörzt (2015) point out, APM success increases and challenges decrease as more experience is gained. Hence, ArlaFoods is still experiencing challenges that more mature organizations no longer see. This means the case setting matches the thesis purpose and will enable the study to capture challenges related to the transition. Secondly, since ArlaFoods are in the early stages of adapting APM the organization is still largely using TPM methods. Meaning there are good grounds for establishing an understanding for both methodologies and identifying similarities and differences that arise within software development. Finally, Employees are still undergoing training in the form of workshops and coaching from managers and external consultants running the initiative. The setup allows data to be gathered through observations and semi-structured interviews of key stakeholders, leaders of the initiative, and team members affected by the changes.

### 3.7 Handling of Data

A total of nine semi-structured interviews and 14 observations are conducted. This means a large amount of written data needs to be filtered down. To operationalize the interview questions were created based on the analytical framework. The questions were categorized after the three different levels i.e. to gather information about organizational level challenges questions were designed accordingly (See Interview Guide in Appendix). The data includes information that goes beyond the scope of this thesis and therefore the data is categorized to relevant themes. This is done manually by reading field notes and transcripts. While reading, information that is relevant is coded and highlighted. The data is coded to organizational, team and individual level. After the data is coded into the respective level sub-categories of the challenges are highlighted and identified within each
level. Once all interviews are conducted the recordings are transcribed. This way of handling the recordings is supposed to clarify what has been said during an interview. The recordings are re-listened and written down exactly as they are heard ensuring that everything said is captured and the context in which things are said is maintained. Since the interviews are held in English no translation is needed, this is said to improve reliability since the possibility of inaccuracies in translation and misunderstandings is eliminated (Bryman & Bell, 2011).

Ethical considerations are taken into account when handling the gathered data. This means cleaning of the interview transcripts and field notes to guarantee that the identity of interviewees and observed participants is not revealed in the data, when referencing to interviewees the following pseudonyms are used: Alpha, Beta, Charlie, Delta, Epsilon, Foxtrot, Gamma, Omega, and Sigma (see table. 3 for details).

![Data treatment process diagram](image)

### 3.7 Limitations

Besides the abductive approach used in this thesis, there are two other common research approaches, inductive and deductive. They all have specific features and of course strengths and limitations. The advantages of an abductive approach are stated above, whereas the strengths of an inductive are related to the ability to develop a richer theoretical perspective than in the existing literature when used in combination with an emergent and naturalistic research design (Saunders et al. 2012). The inductive approach is also more flexible than the rigid deductive one and creates an opportunity to establish an understanding for the context of research before engaging in a strict theoretical framework. The inductive approach is commonly associated with qualitative data gathering, which also enables multiple methods for collecting data and therefore gives the researcher options to view the phenomenon from different perspectives (ibid.). The strengths in the deductive approach lie in its ability to structure a theory that can be tested at a later stage. Consequently, the approach provides the researcher with a rigorous structure and therefore the ability to have a stable ground to test hypotheses on.
Both these research approaches provide specific advantages, however, their limitations in combination with the ability to reiterate made the authors’ proceed with the abductive approach.

The purpose of this thesis is to identify and explore challenges related to a transition from TPM to APM, thus, an explorative study was deemed appropriate to serve the purpose. However, this way of conducting research is not without its flaws. The most pressing disadvantage of the explorative approach is that the research area might prove to be unfit to study after data is gathered (Saunders et al. 2012). In contrast to the explorative research method there are descriptive and explanatory studies. The objective of descriptive studies is to create a correct picture of certain events, persons or situations (ibid.). It is therefore necessary to have a clear picture of the phenomenon prior to data collection. The way of conducting this type of research can be an extension to an explorative research or a piece of an explanatory. The explanatory way of research on the other hand is when causal relationships between variables are being established (ibid.). As the purpose of this thesis neither is to form a clear picture of what is mentioned above or explain a causal relationship between variables, but rather to explore a phenomenon the explorative research method has been chosen.

In contrast to a qualitative research design there is a quantitative one. They are not strictly mutually exclusive and can therefore be used in a mixed method. The quantitative design however is characterized by the examination of relationships between variables, which are being measured numerically (Saunders et al. 2012). There are limitations to both methods, and there are cases were mixing them to find complemented features can add value. Nevertheless, the research design should be aligned with what the purpose of the thesis is and since this thesis’s purpose is to rather examine the context and underlying attitudes of a certain phenomenon a qualitative research design is more appropriate.

According to Bryman & Bell (2011) one of the main disadvantages with using semi-structured interviews is that they are time-consuming. The aspect of time is important as it may have an impact on both sides of the data gathering, the interviewers and interviewees. The interviewees may have difficulties finding time to sit through an interview. Ultimately, this may have a negative impact on the accuracy of answers and interviewees willingness to give detailed answers since their time is limited. For the same reasons interviewers may also have difficulty getting access to the right amount of interviews. Furthermore, interviewers may have difficulties optimizing the amount of data gathered since a large amount of time needs to be spent transcribing and then analyzing the data.
4. Findings

The following section reviews the results and findings from the observations and interviews that were conducted at ArlaFoods. Findings from the observations and interviews are presented below. To ensure participants anonymity pseudonyms have been used for individuals, teams and meetings. The first chapter (4.1) explains the reason for ArlaFoods making the transition from TPM to APM. Thereafter, the findings are categorized according to the analytical framework: Organizational Level, Team Level, and Individual Level.

4.1 Why Arla is Transitioning Towards APM.

Historically, ArlaFoods is an organization that has been driven by a traditional sequential way of management. Arla recently started to adopt APM, starting off in certain areas of the organization. The main issue they wanted to address was to increase their flexibility and speed up the product to market process.

"The executive management team at Arla came up with themes regarding strategic directions. This agile management mentality fits very well with the digital movement that is currently going on. Therefore there is a large digital agenda at Arla so if you therefore want to have success with the digital movement you have to go agile. So in a way you could say that it is a follow on effect that was on the agenda already last year. But also Arla decided to be more effective and working smarter, and in that way have a greater focus on value creation."

/Delta, Senior level, overseeing agile initiatives

From the interviews it was made clear that practically the entirety of the team members who had worked with APM found it to have a positive effect. As the goals were made more visible the team members that were interviewed displayed an optimistic attitude towards the new way of working. However, the optimistic view mainly derived from team members within the digital teams with more technical team members. It was quite clear that not all of the business people were comfortable with changing mindset and following the guidelines of APM. Nevertheless, speaking about success factors, in regards to the way of working within APM, the interviewees were mostly in agreement. What surfaced was that the new way of working contributed towards factors such as, better transparency and faster delivery of value.
Nevertheless, the path towards an implementation of APM was not entirely clear from the start. Arla knew that they had to adapt APM to meet their goals, but it was not clear for them how it would work to get the whole organization to adapt APM.

“My first experience with agile was when I joined Arla and took part in my first project where we ran agile. This was a couple of years ago and it started out fine for the first four months, but then we started drift back towards how we used to do things. (...) After a while when we once again decided us for going agile we then started to discuss the subject with various consultant companies and stumbled upon a framework called SAFe. The framework helps organizations to scale up agile management. We then ended up partnering up with a consultancy firm, since they had good experience with working agile and ultimately helped us to persuade our management that they should embark on this journey.”

/Epsilon, Senior level, leading agile initiative.

However, it was made clear early on that the transformation was far from spotless. Even though many of the employees were happy about the shift in management they still expressed challenges. Therefore the next section will go more into detail and visualize the most frequent challenges observed and noted during the research. Firstly, the organizational challenges will be presented, followed by team level challenges and lastly individual level challenges.

4.2 Organizational Level Challenges

A Cultural Shift
When transforming an organization towards a new management technique there is not only a practical shift, but also a cultural shift and a movement towards a new mind-set. This part of the transformation showed to be both challenging and time consuming since Arla needed to work on getting basic elements of habit right. As the culture is comprised of minor elements of habit, they had to be corrected before they could say that the culture was changed. A senior manager of Arla highlighted the challenge:

“You can’t just say that tomorrow we have a different culture; it is not how it works. Therefore we changed these little bits and pieces and eventually you look back and see a shift in the overall corporate culture. However, it takes quite a while.”

/Delta, Senior level, overseeing agile initiatives
As the shift does not move at the same pace in the whole organization, some routines lag behind and create hurdles for the APM teams. An example is that presenting progress in APM is done through what they call demos, while with TPM progress is presented using reports. Therefore, some managers in certain divisions want reports from the teams following APM to see what progress they have made. However, this becomes quite problematic for the teams working within APM, since it means that they need to put extra work into the project, which to some extent can be seen as unnecessary. This mostly comes down to external factors from a team perspective. Other divisions are pushing the APM teams to fill out big plans or a large number of documents in order to proceed in some instances. These incidents seem to occur mostly since the old mentality still lives on in some parts of the organization. However, since the whole organization is transitioning towards APM, the APM teams are experiencing that it has been easier to move around these pressures on doing detailed reporting. One of the interviewee’s talks about how detailed reporting is blocking them from working agile in some cases.

“I think it has been the old mentality within Arla that in some ways have been working against us, but as the whole organization is changing towards agile management things are getting easier.”

/ Omega, Team member, external contractor.

Similarly, there are some challenges connected to the handover part of projects. When an APM team is handing over processes to teams that are not working with APM they need to follow certain routines that are not aligned with APM methodologies. These routines mean a lot of documentation is being sent to managers from different division.

A Shift In Decision Making

The change in mentality also involves shifting the decision making downwards, towards the team members. This stems from the idea that the ones who actually handle the operational tasks should be involved in taking decisions regarding them. Even though it may seem natural, it also means that managers need to change some deeply rooted perceptions of decision-making. As one of the interviewees spoke about:

“I think the learning curve has been pretty steep. Are we there yet? No we’re not! We are not at the end because I still see a lot of emails going to my desk and to our management. Contrary to how it has been, the decisions have to be pushed down to whom is actually doing the job. That is the journey we have to make, but I think that we surely are moving in the right direction.”

/Foxtrott, Senior level, overseeing agile initiative
The statement underlines the change managers see when decentralizing decision-making power compared to running with a centralized decision-making scheme. However, not only the managers have to adapt to the shift. The shift is described as a subtle change since the managers are used to telling people what to do and to follow up on tasks, therefore, the people working underneath the managers are also used to feel less responsible. Thus, this shift creates a different context for employees where they need to have a more proactive approach towards picking tasks.

“I think we have come a long way since you have to push down responsibility to the teams, but I still think that we have a lot of work to do on that front.”

/Delta, Senior level, overseeing agile initiatives

The issues regarding getting managers to grasp the idea of decentralized decision-making was something also revealed while observing the teams. It seems like managers with a lot of experience in sequential management, i.e. TPM are quite confused about letting team members make the decisions. There still exists a hierarchical atmosphere where managers take responsibility and lead their teams through decisions. However, as a means to overcome this challenge change leaders identified support from top management as a way to help them over the hurdles and to the next step in the process.

Top Level Management Support

A vital part of successfully making a transition from one project management method to another is support from top-level management. The support given from top-level management in an organization creates justification for the employees to go on with the new methods. The CIO of Arla has been communicating how key the adaptation of APM is for the company to take their next step in the digital transformation. In addition to that, the CFO is starting to communicate the importance of the company shifting towards APM but on a more conceptual level. Senior members, in contrast to the junior level employees, feel a greater connection toward the executive team and therefore have a positive perspective on the support. From a senior manager’s perspective the sense is that it has been easy to get top level management support. What has been especially promising is how the executives have been able to communicate the need for change without understanding the full complexity of APM. The support has also been growing gradually as the journey has progressed.
On the other hand, there are the ground level team members that do not feel the same connection towards top-level management. This discrepancy is made clear during several of the conducted interviews and in certain observation sessions. However, support can be seen in a number of different forms and one such form is having conviction regarding what APM means for the organization.

*On the support from top level management:*

“I probably don’t have the contact with management to say too much about their support. That would probably be the role of our scrum master to talk about. However as the whole organization has accepted that we are shifting towards agile management it has been easier to convince someone who is working against the agile way of doing things. In that way I can see how top management is driving the agile movement forward.”

/Omega, team member, external contractor

One way of expressing support towards employees is to give them feedback on how they are progressing. As one of the teams studied is a pilot project, they are particularly in need of feedback to feel that they are doing something that is recognized by the organizations top level management. The results show that this feedback gives the team confidence in what they are doing and motivates them going forward.

“I don’t believe that we have got that much feedback from management within IT. On the other side we have gotten feedback from the business side. For example the senior vice president of members relation told us that it was the best IT project that he has experienced. So we get a lot of feedback from around and that motivates us but not directly from the management within IT.”

/Gamma, team member

Evidence indicates that the organization is working with conviction to adapt APM in a successful manner. For example, the executive team made changes in the management structure within the IT-department. The rearrangement is intended lower bureaucracy so that the structure complies better with APM.

“We want to make our organization more agile and more oriented towards execution. If there is a question of who is responsible for the project then we don’t want three people to raise their hand.”

/Foxtrott, Senior level, overseeing agile initiative
Even though this may be true, the whole process is met with numerous challenges and is not an overall smooth transition. Following this, the organizational level challenges move downwards and affect more concentrated levels in the organization, like team level.

4.3 Team Level Challenges.

Resource Allocation

Allocation and handling of resources for projects should be handled on team level according to APM. Therefore, teams are responsible for understanding to what capacity they need resources. This is part of the self-organizing of teams and should therefore be relevant for each team member. The shift in responsibilities regarding resource allocation is something that management level employees consider a challenge. Senior members at Arla highlight this, as one interviewee expresses it:

“Resource allocation, resource allocation, resource allocation all the time.”
/Foxtrott, Senior level, overseeing agile initiative

It was also made apparent that most team members did not really know how they should handle resource allocation. Most of them pointed to higher-level management when asked about resource allocation. However, one interviewee explained how the feeling was that they needed to improve planning ahead to book external resources. At the moment it is hard for team members to book third party vendors such as consultants, on short notice, which is often necessary. Since APM builds on swiftness it is new for the team members that they have to be more flexible when requesting external resources.

“We need to adapt to the agile way and be better at planning when it comes to our third party vendors. For example if I need a resource in the upcoming two-week sprint then I should book that resource in the ongoing sprint. This is new to us and it’s not really working yet.”
/Sigma, team-member

In comparison to TPM, resource allocation differs since the planning in APM is set for shorter time spans whilst planning in TPM can be up to a couple of years. This put an extra strain on the teams who now need to decide before each sprint how their resources should be allocated. Even though this can be challenging it raises the transparency. Therefore, as project planning changes in conjunction with the
transformation towards APM, the employees need to adapt and gain experience before challenges with allocation can be handled. As one of the senior members describes it;

“When planning projects in Prince2 it is quite easy for managers to estimate resources on an early stage. However, if the resources are to scarce or the project is over allocated and it shows after three months it is easier for project managers to hide the problems. The contrast in the agile setup is that after each sprint it becomes clear whether a project is wrongly estimated and can be adjusted. In theory this could contribute to us getting projects made in half a year or a year that previously with the traditional project management method would have taken two to three years. We are however early on in our journey and therefore have to get better at planning resource allocation on a more frequent basis.”

/Delta, Senior level, overseeing agile initiatives

Finding a Unified Vision Amongst Teams

For Arla one part of the decision to adopt APM is to raise the alignment between divisions and teams. An example of this is that cross-team planning sessions are designed for different team leaders, i.e. Scrum Masters, to discuss with each other and mutually decide the next sprint. Besides the planning sessions, the teams are mostly working on their own, without much consultation with other teams. The collaboration is lacking since many team members are working on separate tasks. On this level as well, mostly the Scrum Masters interact with other Scrum Masters to meet and share happenings from their respective teams. For example, if a team member has some tasks that stretch across teams it is primarily the Scrum Master who picks up the task and forwards it to the next team.

“I would say that the connection between teams is missing to some extent. The reason is that the teams are working on separate tasks and team members therefore don’t usually interact with each other across teams. It is only scrum masters who meet and share happenings within the team. I think this might get better once every one becomes more comfortable with agile.”

/Alpha, scrum master

Out of the four teams studied, one team works alone and does not collaborate with any other team. This makes it difficult for them to align their work with the other teams, which in turn creates a silo situation. The view is however that they will start collaborating more in the future. Currently though the situation creates uncertainty and a closed group.
“I don’t think that we are far enough in organizing the bigger framework. At the moment we are one team, and with others starting up that could change. All I know is that we work pretty well in our team and with our stakeholders, but how we would work together with other teams is hard to say.”

/Sigma, team member

Even though teams are closed to some extent, there is still collaboration going on with team members working from different locations.

**Co-location**

One of the main talking points that surfaced when discussing challenges is co-location or lack thereof. As most of the teams have resources working from India they experience the process of having colleagues far away. This means that during meetings there are discussions going on with some of the team members calling in and joining using virtual meeting applications such as Skype. Both observations and interviews showed that this was a reason for frustration for many of the team members. One Scrum Master explained it in the following way:

“It is always a challenge that we have off-shore resources in our team. It makes you feel like you are not really a team with close collaboration. It would be easier if you could see people and not just speak to them online and sometimes over the phone, since it creates a feeling that they are not part of the team. Maybe we could arrange things differently because we have Indian resources that I have never even seen.”

/Alpha, scrum master

In another team Indian resources were let go since the situation of having off-shore team members did not work out. A major problem was that they hindered the momentum of the team and therefore had to wait for the Indian resources to get back to them with certain solutions. Members of that team explain that most of the discussions are happening over the desk and that is impossible to export to an offshore resource. There is however multiple persons working from abroad without causing to much concern. An employee in Ukraine for example, but since he is working on rather independent tasks it still works out. One of the interviewees explains the situation as follows.

“The problem with not being co-located is mostly down to the fact that we had five-minute chats and then they do something that we didn’t see until the next day or so. We who are situated here usually organize so that we can sit together and sparr with each other on an on going basis, which is something that they missed out on.”

/Sigma, team member
All the interviewees agree that collaboration and self-organization works better when the teams are co-located. However, as one interviewee explains, they work in a global organization and will probably always have issues with teams located across different regions of the world.

“We are a global organization we will never end in a position when we will have and be able to join everybody in the same location. Even theoretically if we wanted to I’m quite sure in 5 to 10 years time we will run out of clever people. We want all our teams in Viby but look at the scarce resources we have in IT already and how is that going to be in Europe in 10 years time so I’m thinking well its not going to fly so we might as well prepare for a distributed team set-up. It is a challenge across time zones, but hey it doesn’t work better in prince2 right.”

/Epsilon, Senior level, leading agile initiative.

Customer involvement

The customer involvement factor differs from team to team at Arla. As some teams mainly focus on internal development the so-called customers are internal while others work on projects aimed at external consumers. The teams that work towards internal stakeholders and customers have integrated representatives from the business side of the organization to ensure that they receive feedback on their progress. The teams working with external customers have had a harder time adapting to APM since it requires customer feedback. They made one trip to Sweden to meet with some of their customers to receive feedback. Even though they explain the trip as a success, that’s the only face-to-face contact they have had with customers. One team member described the situation:

“We don’t really receive that much feedback, we would have to talk to people in a higher capacity to get to that point. What we do look at is the engagement times from analytics and other factors and had some test-people who agreed to be part of the process. That is however not the same as being there and talking to people in person and being able to ask the right kind of questions.”

/ Sigma, team member

Besides this trip the teams have discussed specific features with a group called member relations that forward summarized versions of the end users opinions. Even though that feedback gives them indications on how the end users view the product, it is far from as informative as actually meeting with them. Most of the team members were in agreement on the close interaction with customers. They received good feedback after the trip where the end users expressed an appreciation for being kept in-the-loop and able to
affect the product. What the team stated, however, was that the interaction with end users happened on a too sporadic basis.

4.4 Individual Level Challenges:

**Self Assignments of Tasks**

When creating self-organized teams the goal is to reach teams that are autonomous. That means team members have to commit to tasks individually without being told what to do. When team members fail to proactively take on tasks more pressure is put on the Scrum Masters to delegate, which is not part of their job description. APM is still new to many team members and the Scrum Masters still feel that they have to prioritize and delegate certain tasks for team members since some tasks have a higher business value. Even though they encourage the team members to take on responsibility there is still a lot to do before the teams are fully automated. One scrum master discusses this particular problem:

“In the way that we are encouraging team members to take responsibility and pick their tasks by themselves our team is decent at taking ownership, but we need to get better. Then there are the Indian resources that sometimes don’t pick up tasks after they are done. They are waiting for someone to tell them what to do. That has probably a lot to do with culture I think. (...) The biggest challenge with this new methodology is that I don’t like to tell people ten times what they are supposed to do when they are expected to be responsible.”

/Alpha, scrum master

Besides the problematic aspects of team members not taking enough ownership, there are some issues with cross-functional teams and the diverse set of tasks set out for each individual team member. Some team members have specific skills that make them more suited to take on certain tasks, however, with APM the team is supposed to finish a set amount of tasks during each sprint regardless of team members different skill sets.

On whether it was an easy match with the different skills of the team members:

“To some extent yes but then again there was some initial overlapping that we needed to take care of. Since we are a small team we need to jointly ensure that we are fully committed to the tasks set out for each sprint. For instance, one alternative could be that I would be allocated to multiple teams and could just cover the user experience tasks in the different teams. But that would mean that we need more
dedicated people with specific skills, but at the moment we are basically handling everything. With that said, we are still figuring out how we should group everybody”.

/Gamma, team member

With the problems of cross functional teams, where team members needs to take on tasks not necessarily related to their area of expertise, there also comes challenges with the planning of tasks. Business minded team members, for example, are not able to take on tasks that require high technical skills. A Product Owner of one team was struggling with these issues and explains the challenges as follows:

“I feel that we already have some challenges because when you come from the business side it is really hard to fully comprehend the tasks from the development side. The tasks easily becomes too technical for me since I am from the business side and don’t have the expertise to get the full understanding. As I am new to this agile setup it is also difficult for me to estimate the given tasks, and in combination with that they mostly are technical makes it even harder. Therefore my role is quite limited, since I can’t really contribute to the estimation of tasks.”

/Charlie, product owner

The fact that this interviewee had problems learning the methods of APM is cause for another challenging area.

The Process of Learning APM

Transforming to a completely new way of managing projects does not happen overnight. There are some methodological aspects that have to be learnt by the individual team members for the projects to move smoothly. To some extent they are still struggling with getting all the pieces to run smoothly as one interviewee describes it.

“At the moment we are working agile with the ways of working agile, which I am still trying to figure out if it is a good idea. I think that we could have done things faster if we didn’t have to do all the agile procedures. I definitely think that if we get this up and running it could be beneficial but right now we are struggling with whit the question whether it is a good idea or not. It is all very exciting but lets see if it sticks.”

/Sigma, team member

While they are still trying to get over the initial learning phase another team member agrees with the aforementioned, and adds that the learning phase was challenging. Not
only were some teams put together with team members from different departments, they also had to learn new ways of working.

“There was a long period of frustration initially. It took us a lot of time to adapt to the agile setup, especially since we were a new team where we did not really know each other. Therefore it was a long learning curve, not only to learn the agile ways but also to align the team. They call it the maturity level, and at the moment we are pretty mature, but at the start it was frustrating. This is also not just a fact for our team, I have talked to other teams and they experienced the same learning curve as well.”

/Gamma, team member

Besides the initial team there are some members who joined some time after they started their transition towards APM. These employees also have to get into the whole APM setup and learn all the procedures to be able to effectively contribute to the processes. The on-boarding and coaching for new team members is therefore an important part to get all members to feel comfortable with APM. However, this is not always done to full extent according to one interviewee.

“When I started I never really got a proper introduction to the agile way of working. I got a pamphlet and very basic training the first two days and that was about it. I could really have wished for a more suitable introduction, mostly because it was all-new to me, all the terms and meetings and so on, it was a real struggle.”

/Charlie, product owner

Moving Forward
The research conducted has brought up many challenges connected APM and some connected to TPM. Organizations are leaving TPM behind and moving towards APM because of the technological advances seen in today’s business environment. The high-paced, ever-changing environment calls for new means of project management that are in line with existing demands. These demands require all levels of an organization considering the transition to expect a number of challenges. Challenges partly due to the use of APM and partly due to the transition from one methodology and mind-set to another. Moving forward, empirical findings are analyzed. To isolate what challenges are connected to the transition the analytical framework with previously discovered challenges is used. Knowing what challenges are connected to APM one can start to analyze challenges that have been discovered in the thesis case study that might be attributable to the transition from traditional project management to APM.
5. Analysis

This section intends to analyze results and findings lifted in the previous chapters and attempts to analyze the findings in connection to the analytical framework. The discussion will be split into 3 main topics, Organizational Level, Team Level, and Individual Level challenges.

5.1 Organizational Level Challenges

Cultural Shift

Just as Näslund (2013) says, one key success factor when changing management methods is organizational culture. The research conducted confirms this belief but also highlights that the challenge lies not within APM as a method. Instead, this challenge is something to be expected when transitioning from one project management method to another. Culture is particularly important in the case of moving from traditional to APM since the methodologies are each other’s opposites (Spundak, 2014). The opposing nature of the methods makes the cultural shift even more challenging than in the case of transitioning to similar methods.

Boehm & Turner (2008) describe how organizational constraints can hinder the process of implementing APM. The same can be said about Arla and how they explain that the cultural shift takes time. However, what Boehm & Turner (ibid.) discuss is linked to the implementation of APM rather than the transition from TPM to APM. Since the transformation from one project management approach towards another creates new roles and routines the challenges related to the cultural shift may be considered an effect of the transformation per se. Hence, the cultural shift is connected to the practical characteristics of the different methods, the shift from sequential and hierarchical towards iterative and non-hierarchical means that the employees have to change perspective.

Detailed reporting for example, Moe, Dingsøyr & Dybå (2009) discuss detailed reporting as a challenge within APM. Yet compared to the research conducted by Moe, Dingsøyr & Dybå (ibid.) results from this study indicate that challenges regarding reporting routines stems from lag in the shift towards APM.

Top-level Management Support

Näslund (2013) describes how the support from top management is a key enabler when transforming towards APM. However, Young & Jordan (2008) mention that lack of management support can also become a challenge that organizations need to overcome to
reach success when making the transition towards APM. What is shown in the research is not necessarily a lack of top-level management support but rather an organizational structure that fails to create a connection between ground level employees and top-level management. Stettina & Hörz (2015), Young & Jordan (2008), and Hoda & Murugesan (2008) all mention that support is a key component of reaching a successful implementation of APM. The support factor is important since upper-level management is often responsible for authorizing funding and decisions regarding organizational changes and restructuring (Stettina & Hörz, 2015; Näslund, 2013), as well as communicating the message across the organization. The rearrangements being made in the management structures and how the C-level executives are communicating the importance of APM are signs of their awareness and commitment to make the transformation. Therefore, the challenges related to top level management support may not be directly linked to the transformation but rather to organizational structures which Conforto et al. (2010) name as a key enabler for being able to successfully transition towards APM.

The Shift in Decision-Making

Removing decision-making power from managers is a known consequence of APM methods. The concept has been widely explored and this characteristic of APM is known to cause challenges (Moe, Aurum, & Dybå, 2011; Denning, 2015). While exploring this subcategory of the analytical framework findings reveal that much of the challenge lies in managers needing to change their perception of management. The challenge, as much as it lies in the use of APM, lies in managers falling back into old habits. This shift also raises questions on the individual level. Whereas managers have to refrain from giving directions and making decisions, individual employees that are used to feeling less responsible have to start making their own decisions and proactively take on tasks. Explicit APM challenges of self-organizing teams arise once the teams and individuals start making their own decisions (and the initial transition challenge is overcome). This challenge has more to do with achieving an alignment between all levels of the organization. As in, when individuals start making decisions the organization needs to create a situation where the individuals and teams make decisions in the organization's best interest (Moe, Aurum, & Dybå, 2011; Denning, 2015).
5.2 Team Level Challenges

Co-location

In APM short iterations call for intervals of collaboration, changing of plans, and quick decision-making (Highsmith & Fowler, 2004; Chow & Cao, 2008; Dybå & Dingsøyr, 2008; Williams & Cockburn, 2003). In contrast, life cycles in TPM are designed to be completed in one unique cycle where each stage is executed only once (Ramesh et al., 2012; Sutherland & Ahmad, 2011; Špundak, 2014; Hass, 2007). This suggests that the co-location of teams is not as important in TPM. However, even though findings from this study and previous studies claim being co-located is more important within APM, the challenge of co-location seems to span outside the area of project management.

In line with Conforto et al. (2014) co-location is a challenge that can be found on the organizational level, this study confirms that challenges with co-location exist on the organizational level. Co-location seems to be a universal challenge for international organizations, regardless of the project management method. Just as the case findings suggest, no matter how much an international organization wants to create co-located teams it just is not possible when working on a global scale. There are not enough local resources to fuel fully co-located teams.

Resource Allocation

When implementing APM resource allocation can be seen as a challenge since it differs quite a lot from the waterfall approach. In accordance with how Moe, Aurum & Dybå (2011) and Denning (2015) describe the challenges connected to the shift in responsibility, findings in this study confirm that resource allocation creates challenging episodes. One such point is how the management, as one senior employee expressed it, sees resource allocation as the number one challenge with implementing APM whereas team level employees did not know that much about resource allocation. What Moe, Aurum & Dybå (2011) and Denning (2015) point out that the teams should reach out for resources compared to TPM where it is handled by higher-level management. This indicates that the challenges that surface can be connected to the shift in decision-making and may also explain why employees feel that there is still much to do when planning ahead to get resources. Thus, findings regarding resource allocation challenges indicate that there might exist a connection between the shifts of decision-making that occurred in combination with the transition.
**Finding a Unified Vision Amongst Teams**

A self-organizing team setting that can make decisions and progress without strict directions from management is essential in APM. Thus, creating a unified vision among teams becomes a challenge for teams trying to become self-organized which previous findings and findings from this study can confirm. The challenge, according to Fernandes et al. (2015), can be explicitly connected to APM. Findings from this study however, indicate that this is also one challenge that is connected to the transition from TPM to APM. The cross team planning sessions held by the case organization are limited to the “team leaders” which contradicts one of the principles of APM: That individuals should be proactively, on their own, interacting with co-workers to reach a common goal (Fowler & Highsmith, 2001). Seeing as some silo structures still remain from before the transition, the ability to create a unified vision is inhibited by old structures that still exist since the transition. Although cross-team collaboration and creating of a unified vision is limited, the situation is anticipated to improve once the teams are more comfortable with the methods of APM. The transition forces teams to rethink their ways of working but once the individuals and teams have become acquainted with the new methods they will presumably feel more comfortable leaving their individual teams and start interacting on a cross-team level.

**Customer Involvement**

Misra, Kumar & Kumar (2009) describes customer involvement as a central function that APM enhances, furthermore they argue that APM is an enabler for frequent interaction with customers. However, as the findings show the interaction is somewhat lacking. Nevertheless, the observed challenges are not necessarily due to the fact that they are making a transition towards APM. Instead, the challenge is a structural issue concerning the geographical distances, which makes it hard for the teams to get access to end-users. This is aligned with challenges Hoda, Noble & Marshall (2010) mention. The APM methodology seems to help the team to get a better connection with some end users even though it might be on a less frequent basis.

**5.3 Individual Level Challenges**

**Self-assignment of Tasks**

Team leaders from the teams feel that the area of task assignment is still far from the desired level. In line with Moe, Aurum, & Dybå (2011) and Vidgen & Wang (2009) poor
self-assignment is a real challenge for team in APM. Even more so, according to the thesis findings, during the transition phase. Team leaders feel that they need to delegate tasks and that this is even more evident for team members that are not co-located. Since the case study organization is in the early phases of adapting APM they also have issues with grouping everybody. Teams are not distributed correctly in regards to competencies, causing self-assignment challenges when working on technical tasks for instance. Not all members of the teams are able to take on all tasks, some can only be handled by technically savvy individuals and other tasks can be taken by any one. This can leave non-technical team members in a situation where they do not have enough to do even though not all tasks have been complete. The technical team members begin by taking on tasks that are simple, often non-technical, confirming Vidgen & Wang (2009). Unfortunately leaving a situation where they end up doing most of the work. The issues regarding self-assignment is partly attributed to the transformation, mainly regarding the distribution of teams and the team leaders needing to delegate tasks. Whilst the issues regarding cultural difference of off-shore team members has not changed in conjunction with transition.

Failure to Learn

Moe, Dingsoyr & Dybå (2009) describes there can be obstacles when the APM ways are not fully learned by individual team members. The findings also shows indications of similar issues where team members either shows a disconnect towards some of the APM routines or that they aren’t getting the right amount of teaching early on of their employment. The frustration that this led to can be linked to that some parts of the APM methodology are completely new to some members of the organization but also that many of them are used to a certain way of working. Once again this show how the shift in culture can create challenges on multiple levels. Therefore the inability to learn can be seen as a follow on effect of the organization transformation whereas some tasks are hard to grasp and thus leading to frustration amongst team members.
6. Conclusion

The purpose of this thesis has been to, using the perspective of APM theorists, explore what challenges may arise when making a transition from TPM to APM. In accordance to the purpose, the study has focused on trying to identify what challenges are explicitly connected to the transition to APM and what challenges can be attributed to APM. This is done by attempting to answer the question: *What APM challenges can be connected to the transition from TPM to APM?* The theoretical framework is divided into three main categories of challenges, organizational, team, and individual level challenges.

On the organizational level the review shows that the most common challenges are organizational constraints, shared decision-making disconnects between teams and management, detailed reporting and top-level management support. On this level organizational constraints can be connected to the transition, mainly through the cultural shift that takes place when moving from TPM to APM. Furthermore, the organization is still feeling the affect of old structures such as detailed reporting that inhibit and cause challenges for the teams working according to the APM methods. Even though the review of literature highlights that top-level management support is a common challenge within APM, this study is not able to draw any conclusions regarding support from top-level management being a challenge explicitly connected to APM or the transition from TPM to APM. The findings show how the case company is aware of the importance of top-level management support, and are making rearrangements in management structures and communicating the transition accordingly. Regarding shared decision-making the identified challenges are widespread and stretch beyond the organizational level down to the individual level. The decision making challenge is partly connected to the transition since managers and individuals have to change the way they make and take decisions. On the other hand challenges connected to the methodology per se are also identified, such as getting individuals and teams to make decisions in the organizations best interest.

On the team level this study shows that the most common challenges are; creating a unified vision, resource allocation, lack of individual commitment, co-location and team dedication and finally lack of customer involvement. On this level the challenges related to co-location cannot explicitly be related to the transition, instead the findings show that this is a challenge that occurs when operating on a global scale. On the other hand, resource allocation challenges can be connected to the transition due to the shift in decision-making. Furthermore, this study has not been able to identify that the teams are working towards a unified vision. The challenge is partly due to that they are currently in a transitional phase and hope to align the vision when they have gained more experience. Therefore,
this challenge is related to the transition towards APM. Customer involvement, in this case, does not seem to be a challenge connected to the transition.

Finally, the literature of this study shows that the most common challenges on the individual level regard: self-assignment of tasks and failure to learn. Due to the new methodology, challenges associated with self-assignments of tasks can be related to the transition. For example, teams are not distributed correctly causing difficulties with the completion of tasks on an individual level. Since the organization recently started using APM failure to learn can be seen as a follow-on effect of the organization not having a comprehensive on-boarding scheme for APM. Thus, the challenge is tied to the transition.

### 6.1 Contributions

Seeing as this thesis takes on the perspective of APM theorists the study tries to fill an existing gap regarding what challenges may arise when making the transition from TPM to APM. The findings of this study contribute to the area of project management in the sense that it provides further understanding about challenges within APM. The increased knowledge of what challenges to be aware when making a transition from TPM to APM contributes to the existing pool of knowledge since the empirical findings have been gathered from a real-world case study that provides a previously unused source of insights. Project experience and increased APM understanding lowers the risk of project failure, thus, the contribution of knowledge made in this study can potentially save practitioners resources, time, and the risk of project failure. Furthermore, these insights can facilitate a transition from TPM to APM. Contributions can be found in the area between TPM and APM, the empirical findings in this study suggest that not all APM challenges are exclusively connected to the APM methodology. Instead, some of these challenges can be attributed to the shift and changes that take place when making a transition from TPM to APM. For example, moving decision-making power from the managers to the teams requires both parties to re-think their responsibilities. Thus, the challenge is a result of the transition.

Until now the majority of APM research has been conducted focusing on what challenges are explicitly connected to APM. Furthermore, this study lists and offers confirmation around some of the already existing challenges and also through the use of a categorized framework the study contributes with a reference point for future research within the area. Ultimately, the research shows that not all challenges are connected to APM. Instead, many are actually the result of transitioning from one project management methodology to another.
6.2 Limitations

There is currently a shift in project management methodologies taking place, where an increased number of organizations, within different industries, are transitioning towards APM. However, the current pool of studies mainly focuses on organizations and challenges within the field of software development. This study is also limited to the area of software development and therefore aspects related to other industries are missing. The implication of limiting the research to a specific area, or industry, inhibits it to be generalized on a wider scale. Additionally, even though this study is based on a single case some challenges could benefit from a more in-depth examination. For example, findings indicate that the cultural shift has an impact on a number of challenges within the organization. Thus, a more in-depth exploration of the impact of the cultural shift could benefit the research conducted. However, due to the scope and time of this study it was not achievable to explore each and every challenge on a deeper level. Moreover, the findings were collected during a specific phase in the transition from TPM to APM limiting the conclusions drawn to that specific timeframe. Seeing as the transformation spans for longer than the amount of time used to conduct this study a limitation is that the full range of the transformation could not be explored.

6.3 Further Research

Until recently, the benefits of APM have mainly been recognized by organizations working closely to software development. However, there is proof to suggest that APM can add value even outside of software development and thus an increasing number of organizations are adopting and applying APM beyond the scope of IT. However, the researched on APM and its challenges is still scarce outside the field of software development. Therefore, it becomes increasingly interesting to study how APM works outside of software development and what challenges are being met beyond IT. For example, production- and finance departments have adapted APM, and it could therefore be worth exploring what challenges such areas are facing. Thus, making it an interesting area for further research. As this study covers a number of challenges, without going to deep on their implications, an area of further research could be to examine what, for example, the shift in culture has for impact on a larger scale in organizations. Finally, findings in this study are limited to a set time frame future research on a full transformation, from start to finish, could find additional insights for both academic and practical interest.
7. Reference List


Highsmith, J 2004, Agile Project Management, Pearson Education Inc. Boston


Journal of Quality and Service Sciences, 5(1), 86-100.


Sutherland J. and Ahmad N., presented at Agile 2011, Salt Lake City. How a Traditional Project Manager Transforms to Scrum: PMBOK vs. Scrum,


**Electronic references**


8. Appendix

Figure 1. Linear Waterfall project life cycle.
Figure 2. Incremental Waterfall project life cycle.

Figure 3. The Iron Triangle.
Figure 4. Scrum Team Overview

Observations List

<table>
<thead>
<tr>
<th>Event</th>
<th>Team(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers Application</td>
<td>X-Team</td>
</tr>
<tr>
<td>Internal meeting</td>
<td>X-team</td>
</tr>
<tr>
<td>Office Observations</td>
<td>X-team, I-team, T-team, Y-team</td>
</tr>
<tr>
<td>Internal meeting</td>
<td>Y-team</td>
</tr>
<tr>
<td>Demo-meeting</td>
<td>Z-team</td>
</tr>
<tr>
<td>Sprint planning</td>
<td>X-team</td>
</tr>
<tr>
<td>Scrum of scrums</td>
<td>Scrum Masters I-team, T-team Y-team</td>
</tr>
<tr>
<td>Scrum Community</td>
<td>Scrum Masters all teams</td>
</tr>
<tr>
<td>Agile Demo/Review</td>
<td>I-team</td>
</tr>
<tr>
<td>Agile Demo/Review</td>
<td>T-team</td>
</tr>
<tr>
<td>Sprint Retrospective</td>
<td>I-team</td>
</tr>
<tr>
<td>Sprint Retrospective</td>
<td>T-team</td>
</tr>
<tr>
<td>Sprint Planning</td>
<td>I-team</td>
</tr>
<tr>
<td>Group Planning</td>
<td>I-team, T-team, Y-team</td>
</tr>
</tbody>
</table>
# Interview Guide

<table>
<thead>
<tr>
<th>Area</th>
<th>Question</th>
</tr>
</thead>
</table>
| **Background**   | - How long have you worked for ArlaFoods (AF)?  
                   - What is your position at AF?  
                   - What is your official role within your team (if participant in a team)?  
                   - Do you have any unofficial role?  
                   - Have you worked with APM prior to the work at AF?  
                   - How did you end up at the position that you are currently at?                                                                 |
| **Organizational level** | - Who initiated the idea to adopt APM in the organisation?  
                               - Has anything back-fired so far in the initiative?  
                               - How have the response been towards the introduction of APM?  
                               - How has it been to work with the demos used in APM in comparison to the reporting used in TPM?  
                               - What has the strategy been for moving forward in this initiative?  
                               - Are you receiving feedback from top-management on progress?  
                               - Are they active in the change that is currently in motion?  
                               - Can you tell us anything about the change of decision-making, i.e., switching the decision making towards the teams?  
                               - How has the response been from the teams that have been given more decision making power? |
| **Team level**   | - How do you see the dynamic of the team working in an APM environment?  
                               - How did you feel the team’s attitude was towards APM?  
                               - Do you or have you ever worked with end users (or customers)?  
                               - Are you involved in requiring resources, and if so how has your experience of it been?  
                               - Has the resource allocation been affected?  
                               - What is your feeling working in a self-organising team?  
                               - How did you feel the team’s attitude was towards APM?  
                               - What is your feeling working in a self-organising team? |
| **Individual level** | - How was your attitude towards working with APM?  
                                - What information did you get about APM in the beginning?  
                                - What was your first thought when the team started talking about working with APM?  
                                - What information did you get about APM in the beginning?  
                                - How has it been to get into the new way of working? |