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The Role of Project Management Standardization in SMEs

Analyzing the Linkages Between Knowledge Management, Project Management, and Stakeholder Satisfaction

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ABSTRACT:

Small and Medium-Sized Enterprises (SMEs) are the backbone of our economies. Today's trend of taking every business activity as a project explains why more and more companies are working on a project basis. Previous research has shown that humans, as well as companies, desire a structured approach to work, avoiding uncoordinated business process activity. Little is known about how the structuring of processes influences SMEs.

In order to structure an approach or process, a framework consisting of standards and Best Practices must be established. The role of the framework is to give guidance and improve cross-project efficiencies. Thus, this research study investigates the role of Project Management Standardization in SMEs. Here, the linkages between standardization and knowledge management (KM), project management (PM), and stakeholder satisfaction in SMEs are analyzed.

The theoretical framework integrates the vast literature on the four research topics of standardization, knowledge management, project management, and stakeholder satisfaction into a joint context for SMEs. The analytical part of the research is based on a single-case study of a German SME. Insights are gained from data gathered through six semi-structured interviews with different experts throughout the company's hierarchy.

The research highlights the interconnectedness of the four topics and the central role of project management standardization in SMEs. In order to maintain an efficient PM as the company grows, standardization of processes is inevitable. Standardization requires active KM to obtain explicit knowledge. Hence, standardization and KM are key drivers for sustainable business growth. Additionally, standardization accelerates the company's maturation as the company is moving away from informal, unbureaucratic, and exclusively people-oriented management approaches. Centrally stored and accessible explicit knowledge leads to transparent structures that create clear responsibilities and enhance communication in PM. Consequently, process standardization supports a better ‘estimability’ of the work, reducing uncertain requirements, inadequate documentation, hidden business rules, and requirements creep. This increases the satisfaction of all project stakeholders, making work in the company more efficient and creating a transparent organizational culture.

KEYWORDS: Case Study, SME, Process Standardization, Knowledge Management, Project Management, Stakeholder Satisfaction

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Abbreviations

BPM	Business Process Management
IT	Information Technology
KM	Knowledge Management
PM	Project Management
PMO	Project Management Office
PMs	Project Managers
SME	Small and Medium-Sized Enterprise

1 Introduction

The first chapter provides the background of the study, outlines the research gap and resulting research question, and explains the objectives as well as key concepts presented in this thesis. Finally, the thesis' structure is discussed.

1.1 Background of Study

Small and medium-sized enterprises (SMEs) are the backbone of the European economy, as they provide around 56 percent of the value-added to the economy (Clark, 2021). More specifically, in Germany, 82 percent of the country's added value comes from SMEs (Clark, 2021). In the consulting and project management sector, we see that SMEs are present in nearly every industrial sector (Cerruti et al., 2019). Following the Project Management Institute (2017a), one common factor for all project management companies is the project management process's similarity and vitality to the project's success. Nevertheless, project management in SMEs has received little attention in the literature (Pérez-Ezcurdia & Marcelino-Sádeba, 2012).

Since its origins in the 1920s, project management (PM) has been evolving at a rapid pace (Nagyová et al., 2021). Whereas the methodology and technology have changed drastically since then, the project’s triple imperative is still the same. It is the evaluation based on time, project budget, and output quality to assess a project’s success. Many scholars have highlighted the project manager's leadership competence, organizational skills, and experience as critical performance elements of a project and its triple imperative (R. Ahmed & Anantatmula, 2017; Kaewta & Chutima, 2014; Lientz & Rea, 2001; Murphy & Ledwith, 2007). Subsequently, to increase performance, SMEs can either buy the knowledge required by hiring an experienced project manager or develop a guidance structure to educate and assist their project managers accordingly (Zwikael, 2009). This guidance structure is commonly summarized as the project management process and, when established, part of the company's knowledge management. While in the last century, it was only about tracking cost, schedule, and functionality (Charvat, 2003), it nowadays includes the whole project life cycle with all its subprocesses (Project Management

Institute, 2017a). Whereas the subprocesses' importance is widely acknowledged, past studies and the current body of literature focuses on the specific processes and their influence on the project's performance (Kaewta & Chutima, 2014; Project Management Institute, 2017a).

Another success factor in Project Management is the Project Management Office (PMO) (Johnson et al., 2002). Following the Project Management Institute (2017a), the project management office is generally in charge of establishing processes, policies, and procedures. Recent analyses confirmed the trend that more and more companies rely on at least one PMO. Increasing from 61 % (pmsolutions, 2014) to 75 % (pmsolutions, 2016) in two years, SMEs worldwide acknowledge the importance of a PMO. This growth is slightly slower in the German-speaking part of Europe, marking 73 % of all companies have an established PMO (Strasser & Schmidt-Sibeth, 2020). However, 60% of these firms have more than 1000 employees, which means they are not considered SMEs after the European Commission's (2016) definition. The authors acknowledge that and thereby highlight the lack of PMOs in SMEs in the German-speaking part of Europe.

The absence of a PMO leads to further profound consequences. For example, the knowledge management process for project-related knowledge is not conducted by one entity but depends on individual efforts. The term project knowledge management is understood as a thorough procedure for identifying and delivering information to the target audience throughout the project life cycle (Project Management Institute, 2017a). This information contains all the responsibilities of a PMO, like best practices, sharing of resources, and optimal use of tools and techniques. Therefore, inconsistent knowledge management (KM) hinders optimal project efficiency and leads to an imbalance in the project’s triple imperative. Standardization could help establish channels of information and support effective management of the numerous processes through the lifecycle of projects.

SMEs have several unique traits, one being the importance of every employee within the firm (Zetlin, 2015). This effect is further reinforced in the project management set up by the central role of the PM, highlighted by the Project Management Institute (2017a).

Furthermore, Centobelli et al. (2017) stress that start-ups and SMEs usually lack dedicated resources to track and oversee the processes that influence the management of knowledge, esecially regarding knowledge distribution and best practices. This leads to the end that project managers in SMEs lack guidance before the knowledge is documented and distributed. Thus, without active knowledge management they conduct their tasks in an unstandardized manner, with the best knowledge available to them. Additionally, employees' high work density and role ambiguity, meaning one employee fulfills various tasks in different areas of expertise, presumably leads to a lower in-depth focus on the single task (Yen et al., 2021).

1.2 Research Gap

Combining the two pillars of project success from an administrative side, the project management process and the project manager, and placing them in the current SME environment, underscores a research gap in the literature. Especially on the influence of standardization on the company and project outcomes. With this, the author refers to the effect of guidelines and best practices to enable project managers in their tasks and support them in their roles. Kaewta and Chutima (2014) highlight that guidelines in the form of checklists could assist the entire team in following the standard operating procedure, reducing redundant work, rework, and perhaps modification requests from clients. Yet, the influence of standardization in PM on the company level is merely acknowledged in the literature. Therefore, this study analyzes the effect of standardization in project management as part of the firm’s knowledge management on the PM approaches and stakeholder satisfaction.

Källman and Williamson (2002) were the first to introduce the mindset of taking everything as a project. Many publications push this idea further, among others using the Project Management Institute (2017a) definition, stating a project is a short-term undertaking that aims to produce a one-of-a-kind product, service, or outcome. Subsequently, the importance of PM is rising throughout all company sizes and fields. The Project Management Institute is publishing a guide to the project management body of knowledge to address its benefits and potential risks. However, this is not firm-specific, and SMEs need

special incentives to use their scarce resources in a roughly defined but highly individual manner. There is a need to outline the specific benefits and challenges of a standardization effort.

Furthermore, the resulting research gap involves the connection between standardization and the company's benefits from active knowledge management. This goes so far that the limited research on process standardization in SMEs may hinder early Knowledge Management. Figure 1 below shows a possible relationship between standardization and KM in a company. This relationship must be investigated, and influencing factors need to be highlighted.

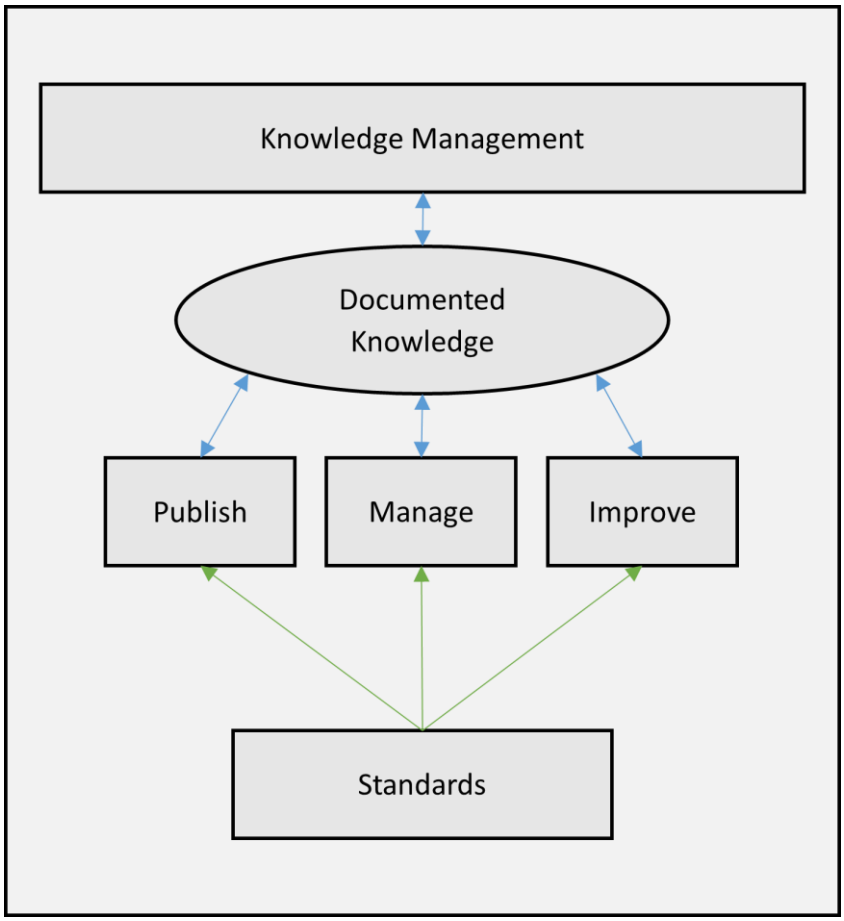

Figure 1 - Link Between Standardization and Knowledge Management

Figure 1 can be read from two sides. Top-down, it becomes clear that KM is the overarching theme, and documented knowledge is the crucial factor. This knowledge must be published, managed, and improved. Bottom-up, a standard must be published,

managed, and improved - thus established as documented knowledge. From this point of view, process standardization belongs to KM and may have a strong influence.

1.3 Research Question

The purpose is to analyze the project-specific outcome before and after the standardization process within an SME. In collaboration with a case company, the researcher intends to develop a standardization process consisting of recommendations and guidelines. Subsequently, the standardization is implemented, and the effects are monitored during the implementation process and evaluated afterward. Hence, the research question is:

What is the role of Project Management Standardization in SMEs?

That standardization affects project management has been evaluated by scholars, and findings show that increased effectiveness after a standardized procedure is expected (Milosevic et al., 2001; Van der Raadt et al., 2010). However, this study argues that the incentives for standardization do not have to be purely based on more efficient process results but can also be influenced by the desire for a more structured PM approach. Based on Tregear (2015), one can assume that it is favorable to have coordinated business approaches as they may be appreciated. Therefore this study further seeks to shed light on the influence of standardization on stakeholder satisfaction. As standardization requires documentation and subsequent distribution of the knowledge (A. Anand et al., 2013; Colquhoun et al., 1996), the influence on the company's knowledge management is an additional point of interest. Especially internal stakeholders such as employees and management are of particular interest for this research objective as they are influenced the most.

To examine these elements in the SME framework, the thesis analyzes the link between standardization and knowledge management, project management, and stakeholder satisfaction.

1.4 Objectives of Study

The research has two primary purposes: the researcher's scientific purpose and the company's analytical purpose. As highlighted by Ernø-Kjølhede (2000), project management research is skewed toward disputes between the researcher's and the client's objectives when conducted without a benefit for the firm. However, both parties agreed upon a general research approach benefiting the research and the company.

The objective of the analysis is based on four main pillars. The influence of standardization in project management on SMEs will be analyzed from the point of view of:

1. Process Standardization
2. Knowledge Management
3. Project Management
4. Stakeholder Satisfaction

Objective 1:

>> Evaluate the influence of project management-specific standardization of processes on the SME. <<

During the course of the study, the company will work with the researcher to develop and implement its project management-specific standardizations and best practices. The newly introduced processes will then be evaluated, and the influence of the standardization will be determined.

Objective 2:

>> Evaluate the results and effectiveness of the knowledge management process for the project management standards implemented <<

After the project management standards are launched, the documented standards and knowledge must be distributed. The KM process of the company must change to standardize the knowledge distribution accordingly. Hence, a restructured knowledge distribution process will be implemented to standardize and actively conduct knowledge management.

Objective 3:

>> Evaluate how standardization affects the company's project management approaches. <<

The study aims to determine how influence is exercised (prohibitions, guidelines, or recommendations) and how it is perceived. Of particular interest are the changes in the working methods of all employees involved in the process. However, a central focus will be on project managers and project teams, as they are directly affected by standardization.

Objective 4:

>> Evaluate and measure the stakeholder's satisfaction and how consistency through standardization is influencing it. <<

Analyzing the stakeholder's satisfaction aims to understand when and how different stakeholders achieve their satisfaction levels. Based on the theoretical analysis, we analyze key aspects and the implications for the business resulting from objective number 3. Building upon this analysis, the objective will be to compare the stakeholders' expectations to the theoretical model based on project standardization.

1.5 Delimitations and Fundamental Assumptions

Delimitations

This research deals only with company-internal process standardization and its effects on the company and its stakeholders. Likewise, as the research focuses on project management in Technology Consulting and IT companies, the processes are different from those in standard projects (i.e., construction projects) (Lientz & Rea, 2001). For this reason, and because of the limited possibility of post-hoc analysis, there is no direct comparison between KPIs such as timeliness, quality, or effectiveness.

A possible KPI analysis and comparison from prior, during, and after the research is only possible when the KPIs have already been measured beforehand or sufficient time prior to the research is given to the case company to establish the measuring of those KPIs.

Those KPIs can only be observed with more time for a pre-process documentation time, which exceeds the scope of this thesis. On the other hand, IT projects have different KPIs than standard projects as their scope and deliverables change throughout the project (Lientz & Rea, 2001). The authors highlight that and substantiate it by the nature of IT projects and its resulting difficult predictability, and accurate estimation of the actual progress, the common KPIs (i.e., Earned Value Management) are not suitable.

Fundamental Assumptions

This thesis is only based on one fundamental assumption: Whereas every project may be different, the processes and management framework, enabling employees to live up to their potential, are somewhat similar. Meaning that the same “project management processes recur repetitively throughout the lifecycle of each project” (Johnson et al., 2002, p. 1).

1.6 Definitions and Key Concepts

Small- and Medium-Sized Enterprises (SMEs)

There are many definitions for an SME, all with different distinguishing thresholds or metrics (Crehan, 2020). Some experts estimate more than 50 definitions worldwide (Pobobsky, 1992). For this study and due to the geopolitical relevance, the European Commission's (2016) definition of SME will be applied, thereby, SMEs are measured by their size (employees, turnover, and balance sheet total) and Resources (Ownership, Partnerships, Linkages). In order to be considered an SME, the firm must have <250 employees and either ≤ EUR 50 million in annual turnover or ≤ EUR 43 million as annual balance sheet total. Under this definition, nine out of ten companies within the European Union are SMEs, and they generate two out of three jobs in the EU (European Commission, 2016).

Project

Many classifications for projects led to a wide range of definitions. This thesis is based on the Oxford dictionary’s definition of “an individual or collaborative enterprise that is

carefully planned to achieve a particular aim" (Oxford Dictionaries, 2022). The definition is more precise when combined with the Project Management Institute's definition. The Project Management Institute (2017a) defines a project as "a temporary endeavor undertaken to create a unique product, service, or result" (p.4). This means that by producing tangible or intangible deliverables (components), the project team fulfills the project's objectives, which can be a specific outcome, a strategic position, archiving a purpose, obtaining a result, creating a product, or performing a service (Project Management Institute, 2017a).

While this definition of a project is universal and can be used generally, there is a significant difference between the types of projects as they are conducted in different industries and environments. Lientz and Rea (2001) highlighted nine major differences between IT and standard projects. Among those, the variance in 'Purpose', as goals of system and technology projects cannot be/are often not as well defined as in engineering or other types of projects. Similar is the project's 'Scope' as system and technology projects tend to creep and expand. This is because ongoing 'Parallel work' as continuous work on the current system creates changing requirements that are not common in sequential standard projects. Another factor is the 'Cumulative impact' of one project on another, meaning the cumulative dependence of the most recent initiative based on the outcomes of several prior and ongoing endeavors. Additionally, 'Complex interfaces' are more prevalent in IT projects as well as 'Technology dependence'. Whereas 'Management expectations' shape the expectations of all projects, in IT projects, they usually learn about the new technologies and change their expectations throughout the project. Alike is the argumentation of 'Understanding the technology' and integrating multiple technologies as it is a vital aspect of any IT initiatives that necessitate a more profound and more extensive grasp of the technology. Finally, 'Technology gaps' between the newest and older technologies impact systems and technology initiatives.

Project Management

In the PMBOK, the Project Management Institute (2017a) defined PM as the application of information, skills, tools, and procedures to project activities in order to achieve

project requirements. PM is performed by implementing and integrating the project management processes that have been defined for the project. Organizations may use PM to execute projects more effectively and efficiently.

Business process standardization

There are many definitions of processes, but for the context of this thesis, the definition from Davenport and Short (1990) provides the best explanation: A business process is defined as a group of logically connected actions conducted to produce a particular business outcome by transforming inputs. Münstermann and Weitzel (2008) elaborate on this definition by distinguishing between a regular business process and an archetype process, a master or prototype-business process. They define that "*process homogenization* denotes the activity of homogenizing a process against an archetype process whilst a *homogenized process* constitutes a process that has been homogenized against an archetype process" (Münstermann & Weitzel, 2008, p. 8). The result can be considered a standard process if it fulfills the following four-dimension criteria: document process (in written form), modularize process (meaningful subdividing a process), isolate specificities (being applicable to many process instances), and ensuring of process excellence (standard becomes "best practice"). Hence, *standardizing a process* entails homogenizing it against a standard process, and *process standardization* implies the procedure of standardizing a process (Münstermann & Weitzel, 2008).

Knowledge Management

Knowledge Management (KM) is an old business practice where knowledge is passed from one person to another or from the business to the employee (Hansen et al., 1999). The authors highlight that since the 1990s, this has become more and more relevant, as computers and digital wikis allow for fast knowledge distribution and availability. The narrative has changed from passing on knowledge to the next generation or co-workers via face-to-face communication to documenting relevant corporate knowledge and ensuring a codified strategy (Hansen et al., 1999). Nowadays, KM involves iterative identification and mapping of strategic knowledge (Ihrig & MacMillan, 2015) to identify and deliver information to the target audience (Project Management Institute, 2017a).

Further Definitions

Additional definitions of key concepts can be found at the beginning of each subchapter of the theoretical background.

1.7 Structure of Study

There are six chapters in this thesis. The first chapter serves as an introduction, providing background for the subject, outlining the research gap and resulting research question, explaining delimitations and fundamental assumptions, clarifying key concepts, and assessing the study's objectives. The second chapter discusses the theoretical background of the study. It explains the four main pillars, process standardization, knowledge management, project management, and stakeholder satisfaction. The third chapter focuses on the research design, including the research methodology. The data collection method, the sample of the study, and the approach to analysis are presented. Moreover, the measurement variables and study specificities are argued and justified. Finally, the data analysis process and the reliability and validity issues of the study are discussed. The fourth chapter forms the empirical section of this thesis and presents the collected data from the qualitative analysis of six semi-structured interviews. The fifth chapter discusses the findings in the light of Project Management in SMEs and the Influence of a Project Manager on a project, as they provide crucial support in interpreting the study's findings. Finally, the sixth chapter addresses key findings of the collected data. Also, suggestions of the practical implications and topics for further research are presented, and the limitations of this study are addressed.

2 Theoretical Background

In accordance with the study's objectives, the theoretical background of this paper will consist of four methodologies.

The first section will analyze process standardization, its origins, development, and context within project management. Given the analysis and the motivations of SMEs to standardize, the reader will understand the core of the research and why the specifications for SMEs are different from those in multinational enterprises.

The second part will analyze knowledge management in SMEs. Elaborating on the structure of knowledge and process documentation in SMEs, the current body of literature on business process management will be analyzed.

The third segment will focus on project management. For this research, this part will be a descriptive summary of the development of project management. As company size matters, the research will be focused on SMEs solely. By combining the first three parts, the reader will understand how the relationship between process standardization, knowledge management, and project management is drawn theoretically.

The final part will bring forward the key concepts of stakeholder satisfaction. As stakeholder satisfaction is a rapidly growing research field drawing from several sciences such as social science and philosophical science, the theoretical approach limits itself to the outcome and already established theories. Resulting in a general understanding of how satisfaction is built and maintained. Based on this understanding, the connection between all three theoretical approaches will be explained, and its importance highlighted.

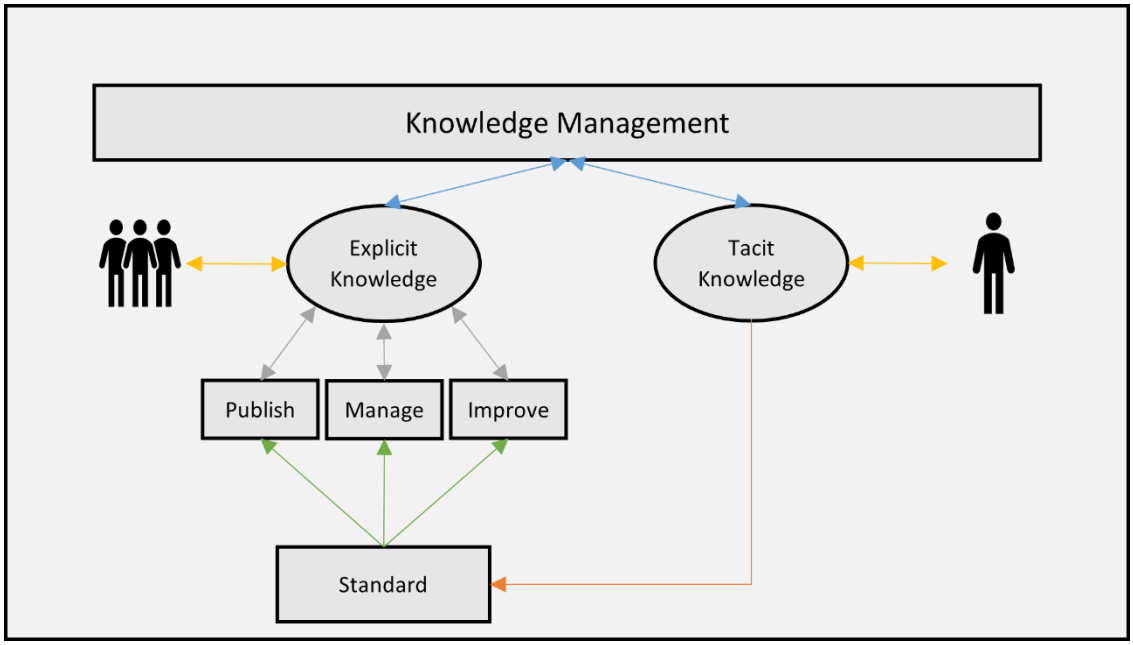

Figure 2 - Conceptual Framework

The analysis is based on a standardization endeavor in project management. However, this can be transferred to any other discipline within a company. As visualized in Chapter 1.2, the study assumes a connection between standardization and KM. The analysis is similar to the process in a company. First, the tacit knowledge initially bound to a person is getting transformed into a standard (orange arrow). Subsequently, this standard is then published, managed, and improved (green arrows). This implies that the knowledge is documented and exists in written form, hence making it explicit knowledge (grey arrows). At this point, the knowledge management circle is complete, as displayed in Figure 2. From a one-to-one relationship with tacit knowledge, many-to-many relationships have been established based on explicit knowledge.

Whether this connection can be implemented in practice in this way should be investigated during the study. Furthermore, the stakeholder satisfaction analysis should examine the possible benefits of the many-to-many relationship.

2.1 Process Standardization in SMEs

2.1.1 Process Standardization

As defined in Chapter 1.5, process standardization involves homogenizing an existing process against the archetype process. Suppose no prototypical process has been defined before, the company must create its standards and best practices by altering an existing process to a newly defined archetype process. Münstermann and Weitzel (2008) theorized that once the company has synthesized an archetype process from the available process variants, the next step is to extend that archetype process into a standard process. They found that many firms worldwide are investing substantial time and resources to standardize their business procedures to expand their business potential and performance.

Before starting the process standardization, the groundwork must be laid within the company. To determine the antecedents of business process standardization, Muenstermann and Eckhardt (2009) performed an exploratory case study. Their main arguments were that top management support, involvement of the affected departments, and the organizational governance/topology are the forebears of business process standardization. The role of top management support is crucial as there are the only ones with a "boundary spanning role" (Liang et al., 2007, p. 63). The resulting integrative skill enables top management to synthesize internal information, bridging the gap between various functional departments within an organization. Furthermore, this enables top management to integrate external knowledge, bridging the gap between different companies. Besides, as top management, they are responsible for the executive order to start the standardization process, and only their continuous support can make a process standardization project successful (Muenstermann & Eckhardt, 2009). The participation of the relevant departments is critical in ensuring that the standard is as user-friendly as feasible and best meets the party's interests that requested it (de Vries et al., 2006). Muenstermann and Eckhardt (2009) complemented the argumentation with their findings as all departments' early engagement ensures a smooth and seamless standardization of operations and applications, especially in complicated portions and for complex

interfaces. Besides, the assistance from executives aids in fostering required adjustments and overcoming roadblocks. The role of organizational governance/topology is the third pillar of process standardization. The more centralized an organization's operations and control, the easier it is to roll out and spread the standardized business process in question, adopt it, and integrate it. Due to the more efficient and well-respected decision-making authority, there is less disruption from business divisions that do not follow standardized agreements (Muenstermann & Eckhardt, 2009).

According to Tregear (2015), process standardization is the creation of standards or best practices that will be utilized for all occurrences of the process within the company. Outlining that "Every organization would like to avoid uncoordinated business process activity with isolated business units constantly re-inventing the wheel" (Tregear, 2015, p. 421), he sheds new light on the benefits and drawbacks of standardization. The drawn standardization dilemma in the research is to find the right balance between regulations and recommendations based on two questions: "How should standards be developed and how should compliance be managed" (Tregear, 2015, p. 422). The opportunity for standardization arises when the same outputs are produced utilizing diverse inputs, different regulations or policies (guides), or multiple IT systems (enablers).

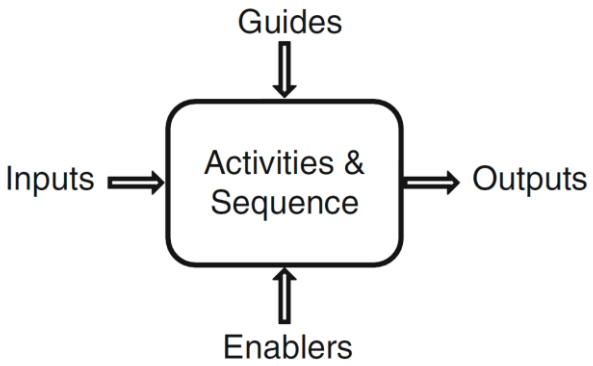

Figure 3 - Simple Process Diagram (Tregear, 2015, p.423)

As shown in Figure 3, the output is affected in three different ways (input, guides, and enablers) that influence the process as a sequence of activities. In the project management setting, those guides are the project management guidelines and best practices.

The enablers are embodied in IT support systems (e.g., project management software) and departments or employees working with the PM (e.g., PMO). The researcher calls it a balancing act to find the right equilibrium between the two questions mentioned above, as there will be tension between a standardized companywide process versus specifically tailored processes. This issue changes depending on the process depths and granulation. Numerous processes appear to be common, or at least comparable, at the highest process abstraction level, but the more granular the subtasks are, the harder it is to standardize a process completely. Therefore, the author argues that their execution will require flexibility (Tregear, 2015).

2.1.2 Motives for Standardization

Anagnostopoulos (2004) established that organizations that freely opt to set norms for themselves usually start standardization as a democratic process. He argues that reduced communication costs and more effective coordination are two advantages of standardization while highlighting that a stable core of knowledge is required for efficient standardization. To obtain a stable core, standardization should be a convention involving different parties of the profession with different experiences and partial images of PM to limit uncertainty. Finally, given the importance of the relationship between strategy and PM, it is worth looking at the so-called "knowledge-based" methods (capabilities, competency, and resource-based), leading right away to today’s knowledge management.

Prior to Anagnostopoulos's (2004) work, Milosevic et al. (2001) confirmed that higher project standardization leads to higher effectiveness. Acknowledging that effectiveness is relative to the evaluated goal, the authors analyzed schedule-driven project effectiveness, cost-driven project effectiveness, and quality-driven project effectiveness as separate variables. Using parametric techniques to examine the relationships, the researchers found statistically significant proof that higher standardization in the project structure, project systems, and project culture leads to higher schedule-driven project effectiveness. Furthermore, higher standardization of project systems may lead to higher cost-driven project effectiveness. Finally, higher standardization of project systems and

project culture may lead to higher quality-driven project effectiveness. Nonetheless, Milosevic et al. (2001) outline that “PM Standardization Can Vary Widely” (p.15) depending on the company and the industry they are operating in. They highlight the value in PM standardization while recognizing the small correlation coefficients, showing that enhancing project performance is based on various foundations. Thus, significant elements (e.g., market positioning) may impact project performance, and subsequently, project effectiveness may not improve solely through standardization.

Carrying on these findings, and offering a conclusive picture of the value of process standardization, Beimborn et al. (2009) analyzed the effects of process standardization on control, time, efficiency, and quality regarding business process performance. Throughout their research, they could confirm various hypotheses. First, they established that process standardization will increase the process performance in terms of efficiency and quality. Second, they proved that process standardization is positively related to process control, which is positively related to process performance in terms of efficiency and quality. Finally, they found that “the links from process standardization and control to time are insignificant” (Beimborn et al., 2009, p. 7). Meaning that process standardization has a significant and positive effect on control (H2), efficiency (H1a), and quality (H1c).

An empirical study on the impact of standardization conducted by Sánchez-Rodríguez et al. (2006) highlighted that, for purchasing, standardization has a significant positive effect on both business performance and purchasing in general. As many factors influence business performance, standardization has an indirect effect but leads to increased quality and performance.

Summarizing the findings from many scholars, Münstermann and Weitzel (2008) outlined five value drivers of process standardization. First, an improved process performance, including a reduced end-to-end time, reduced process costs, improved process quality, and increased performance measurability. Second, an increased readiness to outsource business processes to respond to market changes and trends by increasing the flexibility to change processes throughout the company. Also, when merging with or

acquiring other companies. Third, enhanced ability to react to regulatory changes and enhanced readiness to react to external changes as the firm can easily adjust a standardized process. Fourth, improved technical interchangeability since standardizing processes detaches processes from supporting IT, allowing for standard hard- and software solutions. Finally, improved customer confidence as fewer process-driven mistakes occur due to standardization, improving the overall quality and customer confidence.

Münstermann and Weitzel (2008) tested their theory in a global process standardization case study with a European multinational service firm. After building their case and rolling out a process standardization, they analyze the improvements in process performance. In line with the findings of many other scholars and orientating they are case company towards a more flexible and dynamic production logic, the researchers were able to confirm the following improvements through standardization:

Improvement area	Result
Reduced time	Production processes were faster after standardization, e.g. the processing time of services and the time to market of new services and service packages dramatically decreased.
Reduced costs	Production process standardization allowed production cost reduction of around 20%.
Improved quality	Having standardized processes along formerly differently producing business units, locations and service types improved the overall service package quality. The number of production mistakes could be reduced significantly.
Improved customer satisfaction	Standardization of e.g. pricing processes introduced formerly missing price consistency for comparable service packages. After standardization customers could rely on finding comparable prices for comparable service packages, what was not the case beforehand.

Figure 4 - Four Areas of Improvement Through Standardization (Münstermann & Weitzel, 2008, p.13)

Subsequently, in their study "What drives business process standardization" Muenstermann and Eckhardt (2009) linked global process harmonization and standardization to monetary and temporary determinants, such as lower costs for recruiting and increased efficiency, and overall process quality. In a follow-up, Muenstermann et al. (2009) further investigated the effect of process and data standardization on process time, process cost, and process quality. Already in their first analysis, they found evidence that all relationships have a statistically significant effect. After proving the statistical significance of the

three factors Münstermann et al. (2010) proceeded to elaborate on their research to demonstrate a systematically and empirically significant positive impact of process standardization on process performance. As demonstrated in Figure 5, the variables for process performance (time, cost, and quality) are all significantly influenced by process standardization. Using a corporate recruiting process for their case, the scientists managed to standardize a highly individual process and measure precisely the outcome of the standardization process.

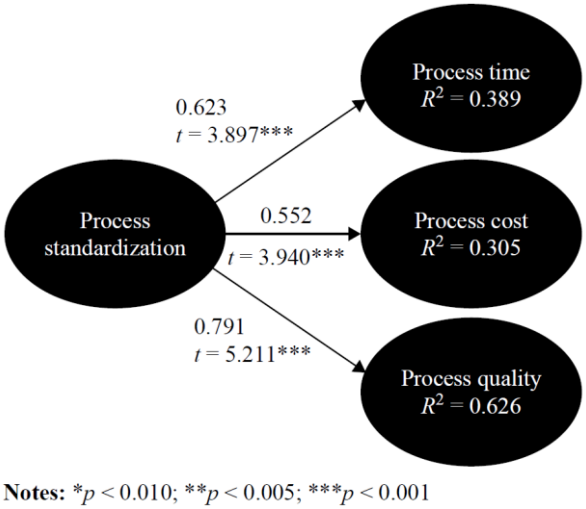

Figure 5 - The Effect of Process Standardization on Process Efficiency (Münstermann et al., 2010, p. 44)

When considering standardization, a company should consider variance costs caused daily when non-standardized tasks are getting done differently. These costs are not always transparent, as they rarely appear as line items in the financial reports, but they do occur in many areas. Tregear (2015) analyzed those costs and listed the following issues: Customer dissatisfaction, inefficiency, ineffectiveness, loss of training effect, incomplete or inconsistent documentation, lack of information, loss of best practices/processes, increased organizational complexity, re-inventing wheels, losing competitive advantage (economies of scale, satisfaction, etc.), increased IT development & support, additional burden on staff. However, variation often has good reasons, such as legal requirements, market imperatives, personal preference, resource constraints, IT-driven variation, or natural drift (accretion of many tiny variations). Hence, sometimes variance in business processes is unavoidable and necessary in practice. Because all of this must be

accomplished in a dynamic environment, the goal is to manage rather than solve the problem, and Tregear (2015) outlines that cost-benefit considerations should be the constraint for local or project-based variation.

In summary, process standardization helps create a consistent interface. Moreover, it enables economies of scale in training, IT development, and operation document control, leading to more transparent performance measurement and better quality assurance (Tregear, 2015). Furthermore, when done correctly, implementing companywide standards is similar to a collaborative information-sharing exercise based on IT-enabled knowledge sharing, human connection, and company culture. Nevertheless, it is advisable to consider the degree of standardization to which common processes should be subjected when defining companywide standards.

Blind and Mangelsdorf (2016) analyze in their "Motives to standardize - Empirical evidence from Germany" that the outcomes of the standardization process are crucial in internalizing externalities. Given the fundamental impact of standardization on growth (Blind & Jungmittag, 2008), Blind and Mangelsdorf (2016) argue that de-facto standards emerge naturally through market processes. In contrast, formal standards arise from interested parties' voluntary open and transparent, consensus-based standardization processes. This can be applied on an inter & intra-company level. Additionally, the authors outline the multidimensional motives to standardize within the company and outside competition. As a result, when considering entry into standardization, firms' knowledge management must evaluate these motives.

Parallel to the research from their peers, Liu et al. (2008) investigated “The impact of software process standardization on software flexibility and project management performance”. However, the researchers did not focus on the control or rigidity of standardization but rather on the positive relationship between software process standardization and software flexibility (H2). The researcher defined software flexibility as the cost and time needed to adjust the software for their study. They tested the relationship between software process standardization and project performance (H1) and the relationship between software flexibility and project performance (H3). Their findings shed new light

on the discussion as they could prove a significant relationship between all tested variables indicating that “software flexibility is a viable mediator between software process standardization and project performance” (Liu et al., 2008, p. 894). Nonetheless, they confirmed their peers’ findings that the coefficient for software process standardization on project performance is small (0.17 at p-value < 0.05) since many factors influence project performance.

In a recent analysis, Nissinboim and Naveh (2018) revisit the claim of processing error reduction. Based on Haynes et al.'s (2009) argumentation that standardization is a reservoir of organizational memory and conveys the greatest available knowledge and prior experience, the researchers establish their framework of the relationship between standardization and error reduction. They could prove that medium standardization rigor and high staff discretion lead to a decrease of about 50% in the error rate due to compliance with the standardization (Nissinboim & Naveh, 2018). What stands out in their research is the effectiveness of standardization in guiding the employees and how the given discretion enables them to adapt the standard to the individual case.

2.2 Knowledge Management in SMEs

A process must be thoroughly understood by project stakeholders and continuously implemented in order to be effective (Johnson et al., 2002). After being carefully crafted and effectively communicated, the process needs to be delicately enforced. The researchers established this as part of the company's knowledge management. Johnson et al. (2002) argue that “managing organizational resistance to change and the natural entropy of project teams” (p.1) is the key to project management changes.

According to the authors, “documenting project management processes is not an end unto itself” (Johnson et al., 2002, p. 6). They define six stages for documenting and analyzing a process to become managed knowledge: process scope and architecture, process chain modeling, process integration, process analysis and optimization, process stakeholder training, and continuous process improvement. In this thesis, the six stages are clustered into:

First, establish knowledge management in the company by defining the scope and architecture of the process documentation. Determining the level of information in the models is one of the most challenging aspects of business process modeling. As a result, establishing the scope and architecture for the process knowledge repository is a reasonable beginning for project management processes modeling.

Second, develop the process documentation, including process chain modeling, integration, analysis, and optimization. The modeled process chain includes all processes involved throughout the project's lifecycle. Naturally, when mapping the process chain and integrating all processes in a more extensive framework, improvements become visible. Those have to be addressed and resolved.

Thirdly, the stage of active business process management is reached. Process stakeholders need to be trained to execute the newly formed process. Furthermore, effective PM includes mechanisms for reviewing the legitimacy and efficiency of all of its processes on a regular basis.

2.2.1 Knowledge Management

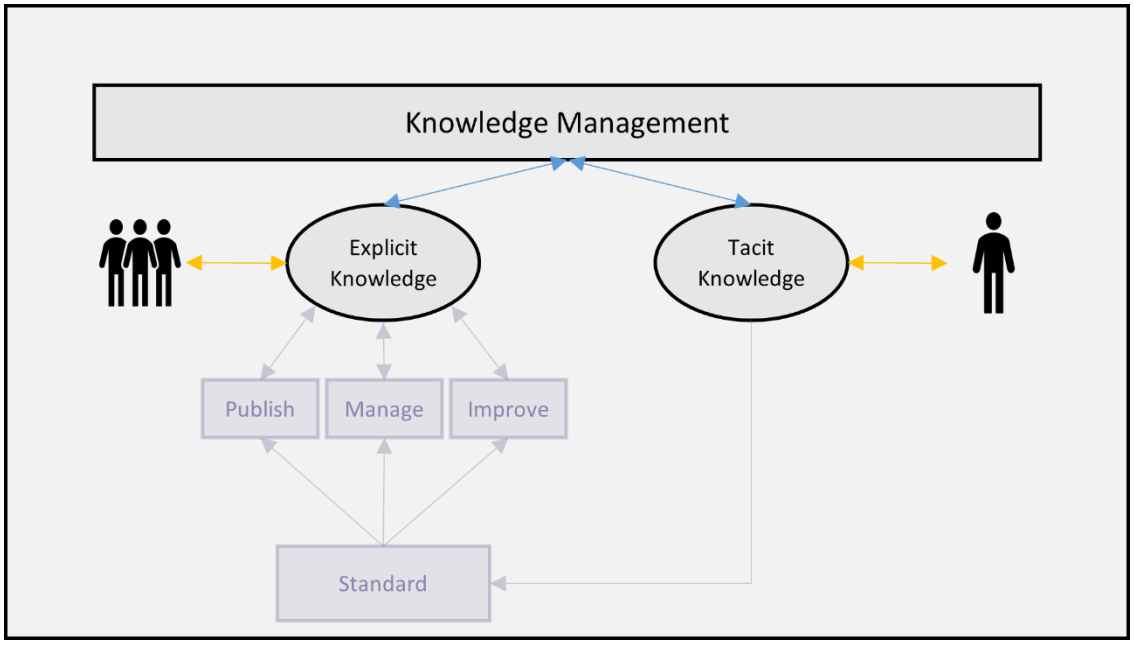

Figure 6 - Knowledge Management Framework

According to a substantial body of research, KM is becoming increasingly vital for the competitiveness of major firms and small and medium businesses (Cerchione et al., 2016). However, researchers outline that a framework of knowledge for SMEs is still missing, especially since existing knowledge in SMEs is usually tacit and bound to the companies' employees (Desouza & Awazu, 2006; Egbu et al., 2005). When looking at the aspects that influence KM in SMEs, the literature defines three main aspects: contingency factors (i.e., industrial, environmental, and firm-specific factors), critical success factors (i.e., human and cultural factors, technical factors, and managerial factors), and barriers (i.e., cultural or financial issues). Cerchione et al. (2016) further note that the literature suggests that KM promotes the overall growth of SMEs by improving performance (especially technical performance). In order to properly conduct KM, a company needs different knowledge management systems. According to the literature review of Cerchione et al. (2016), those systems are knowledge management practices and knowledge management tools. As established earlier, most practices are oriented towards managing tacit knowledge and people-centric practices, as this is where the knowledge lies. Nevertheless, the literature also highlights that informal processes to manage knowledge or formal techniques and methods find their way into SMEs, depending on the firm (Cerchione et al., 2016). Knowledge management tools are highly company-specific and can only be generalized on an abstract level. Generally, wikis as information sharing tools, intranets and websites, and distinctive communication and collaboration tools may all be found in knowledge management systems in businesses.

Desouza and Awazu (2006) analyzed several peculiarities between KM in SMEs and MNEs, recognizing the resource constraints of SMEs and the limitations they face in their KM processes. These constraints force SMEs to compete with the tacit knowledge of their employees. By leveraging this knowledge, the company can grow professionally and physically (Desouza & Awazu, 2006). Hence, every company manages its knowledge; only the degree of explicit and tangible knowledge varies. Based on their analysis, the researchers adopted the current SECI knowledge cycle developed by Nonaka and

colleagues[1]. The original model is based on knowledge transfer via socialization, externalization, combination, and internalization:

> *Socialization helps move knowledge in tacit form between individuals, externalization is the application of tacit insights on an outside entity (for example work), combination represents the act of synthesizing explicit pieces of knowledge, and finally internalization is the process whereby one increases their knowledge by learning from external events. (Desouza & Awazu, 2006, p. 35)*

The scientist observed that socializing is the primary mode of information transfer between owners and employees through formal and informal socializing mechanisms.
They base their argumentation on the proximity between the management and the employees in SMEs. Being in close contact leads to personalized communication, which creates a friendly climate for knowledge sharing. On the one hand, people-centered knowledge management includes all processes of creating, sharing, transferring, and applying knowledge via people-based mechanisms. In various face-to-face meetings, observations, and trainings, knowledge is generated and immediately put into practice. On the other hand, the proximity of the humanistic way and subsequent lack of explicit knowledge repositories might be the most significant barrier for SMEs when professionalizing their KM. Establishing an organizational memory that includes guidelines and best practices in the form of a wiki is the first step to avoiding knowledge loss. Knowledge loss always occurs when an entity of knowledge (employee) leaves the company. Desouza and Awazu (2006) discovered that the bigger the SME, the more deliberate mechanisms were invented to prevent knowledge loss, especially when the expertise does not only lies with the owner or management. Likewise, the bigger the company, the easier it is to use documented knowledge and guidelines to help new co-workers to gain a foothold quickly and enable learning paths throughout the company's hierarchy.

Despite the importance of KM, Durst and Runar Edvardsson (2012) highlighted that smaller companies often do not have the necessary resources to leverage their knowledge base nor manage it successfully fully. Like their peers, they attribute this to the nature of the informal and non-bureaucratic communication, the lack of policies

[1] See: Nonaka, 1991, 1994; Nonaka & Takeuchi, 1995; Nonaka & Toyama, 2003

focusing on KM, and limited time for strategic issues. As a result, most knowledge is held in the heads of the owner and a few key workers rather than being physically stored or shared. While the authors acknowledge that SMEs have KM on an operational level (for systems and instruments), they outline the lack of explicit policies targeting strategic KM. Subsequently, there is higher importance on the management of tacit knowledge. However, "the SME sector is weaker than larger firms on formal and systematic discussion in order to share tacit knowledge, since larger firms are stronger in the implementation of formal KM strategy" (Durst & Runar Edvardsson, 2012, p. 881). As a result, a short-term, unstructured approach to organizational learning emerges.

Nonetheless, a knowledge management process, as profound as possible under the circumstances, is key to any company's survival. Through their research, Durst and Runar Edvardsson (2012) could further analyze the literature on SME approaches to knowledge identification, creation, storage, dissemination, and application. Combining the work of many peers, the scientist established a distinguishment between the five processes of knowledge management. First, during the knowledge identification process, a distinguishment takes place between difficult to replicate or rare information within the company and knowledge that is easily available or repeatable. Second, new knowledge has to be created. SMEs are compelled to use external knowledge generation sources due to their inherent limits, but these constraints also allow them to unlearn and alter old practices, which is a necessary precondition for new knowledge. Third, for the reasons mentioned above, the key to storing and retaining knowledge is often to retain highly skilled individuals in the event of management succession. Fourth, the peers confirmed that knowledge transfer, even though limited in many SMEs, is critical for business operations and competitiveness. Finally, the literature verified that active knowledge utilization enhances customer satisfaction, increases profits and productivity, and may drive innovation. In concluding notes, the authors delineated that "Existing empirical literature provides only fragmented insights into KM in SMEs" (Durst & Runar Edvardsson, 2012, p. 898). Additionally, the limited body of knowledge from western countries and Japan influences and limits the research field's generalizability.

Based on these findings, Hock-Doepgen et al. (2021) took a deep dive into the "Knowledge management capabilities and organizational risk-taking for business model innovation in SMEs". They tried to confirm that capabilities in knowledge management are generally a vital source of innovation, as they define them as underlying organizational activities that facilitate the infrastructure and processes for the use of internal knowledge and the acquisition, transformation, and application of external knowledge sources. Following Hargadon and Fanelli (2002), the authors distinguished between static and dynamic KM. As this work only concerns internal KM capabilities (static KM), this research excludes the dynamic KM (concerning external KM capabilities) at this point. The internal capabilities are essential because they offer a foundation for social interaction, information storage, and knowledge availability across the organization. Smith et al. (2005) state that they are primarily concerned with preserving, duplicating, and utilizing existing information. Static KM is divided into a social perspective, knowledge transfer interactions among employees to convey informal and tacit knowledge (Swap et al., 2001), and a technological perspective - the firm's information system used to preserve, store, and examine knowledge (Lee & Choi, 2003). The social factor is determined by the KM culture, how and what knowledge is valued and shared (Alavi et al., 2005), and the KM structure, how and with whom knowledge is transferred and communicated (J. Anand, 2011). The technological perspective is determined by the systems in place and can only be changed by switching the database systems. At the end of their research, Hock-Doepgen et al. (2021) theorized that internal KM capabilities can accelerate innovation, but only in the absence of external knowledge acquisition. Generally, internal KM capabilities had no statistically significant effect on innovation.

2.2.2 Process Documentation

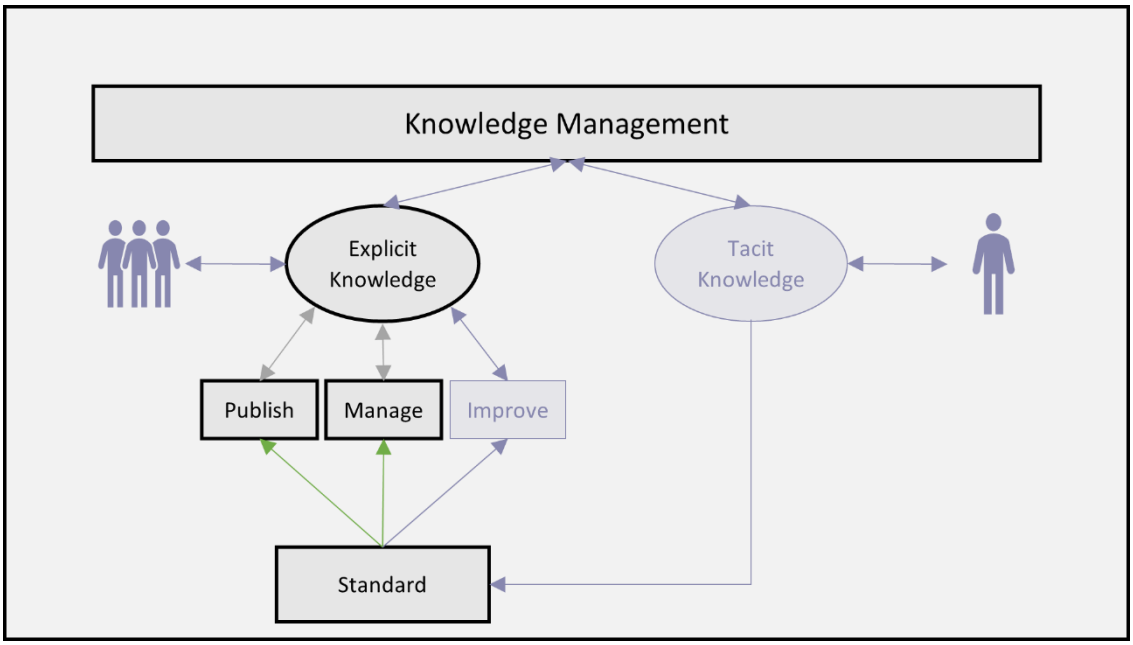

Figure 7 - Process Documentation Framework

Process standardization needs documentation of knowledge to be managed and distributed. As knowledge sharing is identified as the primary facilitator for effective knowledge management (A. Anand et al., 2013), process documentation can be seen as an essential facilitator for process standardization.

The key to process documentation is ease of use and a high level of comprehensibility (Ungan, 2006). Therefore, many businesses combine a knowledge wiki and a graphical depiction of a process to clearly show the relationships between activities, persons, information, and goals in a workflow (Colquhoun et al., 1996). According to Ungan (2006), process records are best recognized for their ability to spot flaws in a specific process. Hence once they are documented, they enable the company to design more efficient processes when needed. When documenting a process, a pressing question is the level of detail and rigor of the created standard. The appropriate level is company-specific and depends on the objective of the documentation. The more detailed a process mapping is, the smaller the possible variation (Symons & Jacobs, 1997). Regardless of the level of detail, Ungan (2006) proposes a seven-step framework for standardization through process documentation. First, the company must identify the process and analyze whether

it is suitable for standardization. It is suitable only if the process has somewhat identical inputs, outputs, and operations in each step (Lillrank & Liukko, 2004). Second, the process master or masters must be identified. These can be existing documents or a person or group who knows how to perform an operation most efficiently. Third, a team must be defined to transform the tacit into explicit knowledge. Ungan (2006) argues that, regardless of the complexity of the task, a group facilitates group synergies and values the sharing of experiences, so instead of a single interview, a team should engage in meaningful dialogue to document the process standard. Fourth, based on this definition and breakdown, the boundaries of the process are determined, and the influences (see 'Guides' and 'Enablers' in Figure 3) are outlined. After breaking down the process into steps, specific knowledge needs to be acquired for each work step. Extracting the detailed knowledge from sources, especially tacit knowledge, can be challenging and is often only possible when the knowledge provider trusts the knowledge seekers. This process, called externalization, usually takes place in the form of communication and close interaction (Nonaka, 1994). A great advantage of this is that the team members and the process master assist each other in articulating their expertise during the exchange of experience, and any interpretation mistakes may be remedied immediately through the use of feedback (Ungan, 2006). Subsequently, in step six, the obtained knowledge must be codified and verified. The objective is to create a model with specific, mutually agreed-upon descriptions. Codifying the knowledge is important because it aims to eliminate or minimize interpretation discrepancies. Following the author, some companies go so far as to provide their dictionary of interpretive guidelines to unify the interpretation of the process documentation. Finally, the documentation must be combined (bring together all guidelines and explanations made for each step) and placed in a standard form or storage.

2.2.3 Business Process Management

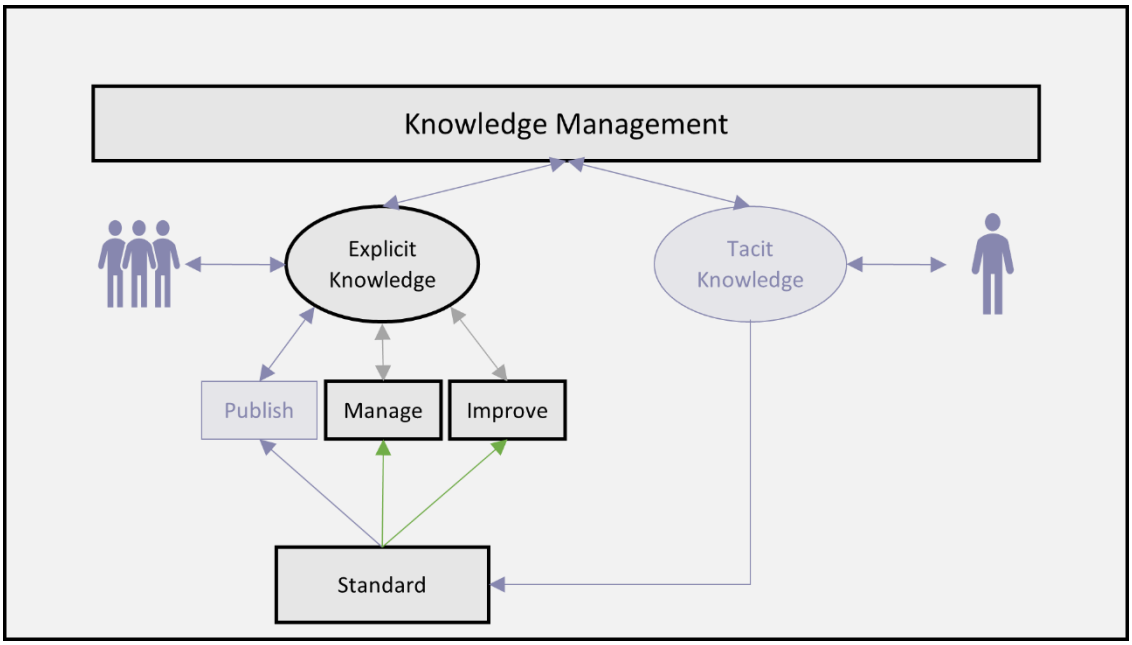

Figure 8 - Business Process Management Framework

Defined by van der Aalst et al. (2003), Business Process Management (BPM) subsumes a collection of approaches, strategies, and software tools enabling the design, enactment, control, and analysis of operational business processes in order to promote an optimized value generation. The topic has received much attention in the literature throughout the last decades. However, it lacks a unified definition, and scholars disagree on the degree of maturity and whether it is an old phenomenon in new splendor or a new discipline. On the one hand, Bauwens and Van Dorpe (2018) argue that it is a young and rapidly expanding professional management discipline, whereas van der Aalst et al. (2016) and vom Brocke et al. (2014) state that it is already a mature discipline with a set of well-established concepts. Froger et al. (2019), on the other hand, claim that BPM is still not a viable approach for the majority of small businesses, citing Harmon and Wolf's (2016) findings that BPM maturity is still low throughout the world. This inconsistency is further displayed in the significant gap between current BPM technology and methodologies and BPM-system usage in the business sector (van der Aalst et al., 2016). According to the authors, better models do not always imply better processes. Hence, research should focus on BPM's initial purpose of improving business processes rather than enhancing process models.

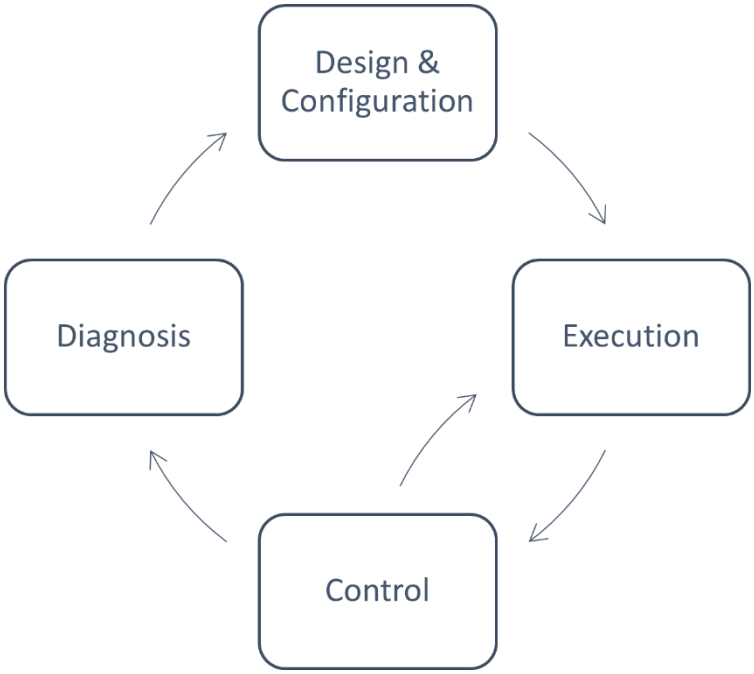

Figure 9 - Business Process Management based on van der Aalst et al. (2007)

The BPM cycle shown in Figure 9 shows the ongoing life cycle of a process. The slightly modified model of van der Aalst et al. (2007) is the basis that every single process in a company should undergo in order to function as efficiently and accurately as possible in a BPM understanding. Initially, the process must be designed and configured. This formalization of the way the operations are conducted in the business is often done with the help of software tools or manually, as described in Chapter 2.2.2 Process Documentation. Subsequently, the execution phase begins in which the processes are conducted as they were designed. During the conduction, the control phase starts, in which data is collected and monitored. This is an ongoing state until an abnormality or a potential efficiency loss is detected, and a detailed diagnosis is necessary. If required, the process weaknesses are deduced and diagnosed to design and configure a better process.

Leymann et al. (2015) distinguish between two central BPM approaches, the graph-based approach and the operator- or calculus-based approach. The graph-based approach is similar to the visual elaboration of a process known from the previous chapter. Optimization in this approach is either through recognizing inefficiencies during the visualization or diagnosis after the process is underway. For the operator- or calculus-based approach, so-called “constructs” that represent control flow mechanisms between

activities like “sequence” or “loop” are generated and optimized through software. As the optimization via operator- or calculus-based tools is highly technical and requires extensive resource investment and preparation, it surpasses the scope of optimization in an SME.

Similar to Froger et al. (2019), other scholars argue that a lack of understanding, resource constraints, and false beliefs of the top management lead to limited adoption of BPM in SMEs (Imanipour et al., 2012; Riley & Brown, 2001; H. Smith & Fingar, 2003). However, according to Harmon (2018), today's businesses do not deploy BPM across the board but instead focus on individual processes and move from one process improvement endeavor to the next. This applies especially to SMEs as they adopt the key benefits and core concepts of BPM first, i.e., the establishment of well-defined processes (Imanipour et al., 2012).

In summary, BPM is critical when optimizing process structures, and it does address not only technical challenges but also specific organizational elements, including strategic direction, corporate culture, and involvement and management of process participants (Johannsen et al., 2010; Kemsley, 2015; Rummler & Ramias, 2010). Depending on the firm’s infrastructure and resources, the complexity of BPM can be adjusted. For SMEs, this primarily implies establishing processes and subsequent monitoring, documenting, and adjusting to the companies’ requirements. Whether these activities are partly or fully software support must be decided individually.

2.3 Project Management in SMEs

People have been involved in organized inventions that have affected lives and cultures from the dawn of civilization (Shenhar & Dvir, 2008). After today’s definition, we would consider these inventions as projects, and all these projects have been coordinated to a certain degree. Whereas these projects were construction endeavors most of the time, today’s project management includes construction, R&D, and service-based projects (IT projects, etc.). Shenhar and Dvir (2008) highlighted that we reached the point where PM has become too complicated to be described by a single theory. Hence, a multitude of

theories and methodologies are proposed by many scholars. However, in this thesis, we will focus on the literature for PM in SMEs, which is much narrower and provide a comprehensive overview.

2.3.1 Project Management

“PM is a hybrid scientific discipline composed both by proper techniques and methods and by loans from related disciplines adapted to its particularities” (Anagnostopoulos, 2004, p. 256). As it loans from others, it also diversifies into different focus areas such as classic project management, agile project management, and rethinking project management. Hence the methodologies and doctrines cover a broad range of diverse approaches, including PMI methodology, IPMA methodology, PRINCE2 methodology, YUPMA methodology, APM methodology, HBS methodology, Agile methodologies, and others (Jovanovic & Beric, 2018). Analyzing all methodologies and concepts is beyond the scope of this thesis, so the research will refer to facts relevant to the topic.

In their work, Svejvig and Andersen (2015) noted the substantial increase in the importance and propagation of projects. Their review of the literature concludes that many new insights have emerged over time, such as moving away from the "project as a tool" approach to the concept of "project as a temporary organization" (Packendorff, 1995) and seeing PM as a holistic discipline for achieving organizational efficiency, effectiveness, and innovation (Jugdev et al., 2001). Conceptualizing classical project management, Svejvig and Andersen (2015) highlighted the executability of tasks, the simplicity of explanations, the temporality of the endeavor, linearity in hierarchical progress, the controllability of as many variables as possible, and instrumentality of tools. On the other hand, rethinking project management is characterized by the learnability of tasks and procedures, multiplicity of teams and tasks, temporality of the endeavor, complexity of responsibilities, uncertainty, and sociability. However, the literature used mainly concerned MNE and big corporations with established project management structures.

Turner et al. (2010) believe that the project management required for SMEs will be considerably different from the traditional forms of project management recommended for

bigger projects. The scientists base their assumption, among other things, on Ghobadian and Gallear's (1997) analysis identifying four key characteristics of SMEs. First, SMEs require rudimentary planning and control mechanisms as well as informal reporting. Second, when it comes to procedures, SMEs have a low level of standardization and make idealistic decisions. Third, SMEs have a low level of specialization and multitasking, but they have a high level of innovativeness in their organization. Finally, because failure has a high cost, individuals favor proven and reliable methods. Those key characteristics go against traditional PM with formal and often bureaucratic processes, specialization and formal decision-making, well-defined roles and stiff structure, and a general focus on the system and less on the people (Ghobadian & Gallear, 1997; Keegan & Turner, 2002; Turner et al., 2010). Thus, Turner et al. (2010) could prove that 83% of the SMEs investigated “needed a simplified version of project management [and] that traditional project management is too bureaucratic for them” (p.749). Furthermore, the degree and formality of PM are closely linked to the firm's size, more specifically, the number of employees (see Chapter 2.3.4).

In a subsequent paper, R. Turner and Ledwith (2018) examined their findings from Europe in the North American Business environment. Confirming that SMEs must embrace project management approaches that are more informal, less bureaucratic, and more people-centered than those utilized by bigger firms on larger projects. Besides, the scientist discovered that PM approaches take on various shapes: Ad hoc tools are used to handle project management's many components. A collection of templates is used to create an integrated set of project management tools. The results are incorporated into a PM methodology. Completing the templates given by the chosen methodology is required, but it also provides further direction on the project management process. A manual containing the methodology and processes is updated regularly. Finally, proprietary software (if required) supplements the SME's project management with custom project templates and methodological ideas. Additionally, R. Turner and Ledwith (2018) established three levels of formality based on the PM approaches:

1. Only relying on *ad hoc tools*
2. *Templates* that are organized around certain project management functions
3. *Methodologies or guidelines* for integrated project management

When asked about benefits, costs, and possible barriers to using PM, the benefits and advantages of adopting structured PM were rated higher than the expenses by all the organizations surveyed. Hence, people believe PM is highly beneficial to their businesses, and they are prepared to invest time and effort into adopting and enhancing their project management procedures to increase performance (Turner & Ledwith, 2018).

Implementing project management in any company is challenging on various levels. Alves et al. (2019) implemented a project management system in a Portuguese SME and documented their findings. They encounter various internal and organizational obstacles throughout the implementation processes. To name a few, the researchers saw strong opposition to change from certain individuals, a lack of commitment from some employees and senior managers, and a general lack of understanding of PM ideas. These factors are all interconnected and typical, as described by Ghobadian and Gallear (1997), and can partly be explained by the existing unstable project priorities, inconsistencies in the definition of responsibilities, and poor internal communication, yet hinder an efficient roll-out of a new methodology even in such a small environment. Alves et al. (2019) also observed an improvement and development of processes and an increasing awareness of PM value. In summary, the authors concluded that the complexity of the adopted Project Management System must be redefined in accordance with the organization's PM maturity. They expanded on Fernandes et al. (2015)'s claim that embedding a project management system in an organization is a complex issue that requires a change management strategy throughout the deployment. As a result, there is a general requirement to show the benefit of initiatives and ensure that all necessary resources are available during the implementation and routinization processes (Alves et al., 2019). This task is usually part of the PMO’s responsibility (see Chapter 2.3.2).

Nagyová et al. (2021) highlighted that PM is not only a project-specific effort but necessitates a distinct approach, which must be aligned with the organization's overall

management strategy. The attempt needs to take the number of employees and the company's size into account, as it affects the overall management of the organization and the implementation of processes. This argumentation aligns with Turner et al.'s (2010) analysis that as it affects the overall management, PM will only be adopted if it is supported by the top management, similar to process standardization (Chapter 2.1).

2.3.2 Project Management Office

A PMO, according to the Project Management Institute (2017a), is “an organizational structure that standardizes the project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques” (p. 48). This means that the PMO is generally in charge of establishing companywide processes, policies, and procedures for PM. Implying that it is the closest organizational instance to the Project Manager and “ultimately responsible for one or more organization-wide projects” (Project Management Institute, 2017a, p. 55). Finally, the PMO occasionally is responsible for quality audits, a cost analysis, and evaluating the project's profitability and cost of quality.

Johnson et al. (2002) highlight that the PMO’s mission “is to establish consistently followed practices for the initiation, planning, execution, control, and closure of projects” (p. 1). Furthermore, effective management of the multiple processes that weave through the lifespan of various projects is critical to a PMO’s success (Johnson et al., 2002). Aubry et al. (2007) add that the PMO is not a stand-alone entity within an organization; it is part of interconnected relationships that connect strategy, initiatives, and structures. This leads to the PMO being the organizational heart of project management, linking the individual projects and project managers, and being the leading unit in project management-related knowledge transfer.

Once committed to developing a project management office, companies cope with several dilemmas, starting by establishing the PMO's boundaries and thereby laying the foundation for its success or failure (Johnson et al., 2002). The authors continue to outline that the PMO quickly needs to learn how to cope with organizational resistance to change and the natural volatility project teams are operating in. Creating an archetype

process or homogenizing an existing process against the archetype process for process standardization is the essential base for the PMO when establishing procedures and training. The scientists argue that the strategies utilized throughout the process development can minimize the organization's resistance to change. Furthermore, the tools and strategies can improve the PMO's implementation efficiency and, as a result, lower the cost of establishing and maintaining its procedures (Johnson et al., 2002). It is also important to note that not all processes within the company are in the area of responsibility of the PMO, only the ones considering PM and its related process and procedures. After establishing the first set of procedures, the PMO should continue to work on continuous process improvement, including a proactive evaluation of the validity and efficiency of all of its processes. This implies having procedures in place, which are followed to enact changes and communicate them accordingly to all relevant stakeholders. Additionally, the PMO should also execute typical system administration responsibilities along with quality assurance and quality control for the process repository (Johnson et al., 2002).

Poveda Bautista et al. (2019) see the responsibilities of a PMO divided into control and follow-up, quality assurance, training, and communication. Furthermore, the scientists suggest an auto-evaluation by the PMO based on the Organization Project Management Maturity Model (OPM3). OPM3 is a four-step development plan established by the Project Management Office, designed to increase maternity for projects, the program, and the portfolio (Miller, 2004). The four steps are to standardize, measure, control, and establish continuous improvement. Based on the four-step evaluation, the PMO can develop a company-specific plan for improvements in PM maturity. According to Poveda Bautista et al. (2019), the company should completely incorporate the PMBOK knowledge domains within its project management methodology for maximum standardization efficiency. This implies that all PMO members, project managers, and relevant leaders receive sophisticated training in PM activities and share the same understanding of PM knowledge.

Additionally, the scientists outline the formation of metrics when measuring the effects of the PMO procedures. Those metrics should be simple and valuable for the whole business, clearly and unambiguously quantifiable and sustained, and with real-time data traceability. Consequently, the PMO must determine how to monitor the standards and metrics once they have been created in the organization. This PMO responsibility is highly company-specific as company size and project complexity define the scope and cadence of the monitoring needed. The researchers emphasize that sufficient resources and expertise must be combined with appropriate authority to control the process so that the PMO can actively engage and manage the procedures. Finally, to ensure continuous improvement, it is necessary to concentrate on the closing processes and project learning. After reviewing the upsides and downsides of a project's management, it is important to strive to implement improvements. The scientists highlight that recognition and lessons learned are the two areas the PMO should focus on after project completion. The term "recognition" refers to determining which efforts and outcomes should generally be assessed. In addition, the project's lessons and new information gained throughout the project should be codified. To that aim, the findings and files are available to any member of the PMO, as well as the project managers. The gained knowledge can be divided into technological knowledge, project techniques and tools, and resulting relationships with clients and other project stakeholders. Once codified and accessible, it is the PMOs responsibility to adjust the quality insurance, train the employees, and communicate the changes via manuals, templates, and other documents (Poveda Bautista et al., 2019).

The significance of the PMO in knowledge transmission was explored by Gomo et al. (2021). The authors emphasize the PMO’s moderating role for transferring technical information and mediating role for project and business knowledge. Based on Müller et al.'s (2013) analysis and Tshuma et al.'s (2018) conceptual framework, the authors argue that PMOs use the broker and steward typologies based on the availability of knowledge transfer infrastructure and processes. The PMO's moderating function ('the steward') includes establishing infrastructure and facilitating knowledge transfer across projects. The PMO's mediation role ('the broker') entails assisting in transferring knowledge across

projects. This includes maintaining and improving information gained from one project before transferring it to the next (Gomo et al., 2021). The scientists conclude that PMO mediation is a distinct role that facilitates the formation of cross-functional teams for collaboration. Furthermore, the authors observed that the corporate culture had a greater influence on knowledge transmission than organizational structure.

Most PMOs are project-driven by their definition, but in agile organizations, the PMO needs to be agile. Therefore, the Project Management Institute (2017b) defines an agile PMO as innovation-orientated and value-driven. Focusing on delivering “the right value, to the right audience, at the right time” (Project Management Institute, 2017b, p. 81) enables the PMO more in its consulting role. It enhances the rather stiff narrative of supporting, controlling, and directive management (Project Management Institute, 2017a) into a highly dynamic setting of numerous competencies beyond PM. For example, executing specialized tasks for projects such as training and providing stakeholders. Facing the spread of agile teams and organizations over the last decades (Rigby et al., 2016), these new tasks are becoming more important for many PMOs, integrating the PMO even further into the organization as it is a multidisciplinary management tool.

2.3.3 Company Size and Resource Availability

By its definition, SMEs are limited in their size and resources. However, especially interesting is the development within the stages of SMEs, meaning the growth from a small to a medium-sized enterprise. Many procedures and process changes are initiated when a critical threshold of employees (and monetary resources) is reached.

Scientists and the general public agree that scaling procedures to the size of the organization, the size of their projects, or the demands of their clients is essential (Payne & Turner, 1999). Perren and Grant (2000) claim that formal management and leadership techniques become more important as a company expands, implying that informal management and leadership approaches are most successful in new companies but must evolve with time. Pagano and Schivardi (2003) link firm size and economic growth, and Blind and Jungmittag (2008) state that the firm's size is a critical determinant of

standardization. This standardization and structured procedures, also known as formal PM, usually occur when the company grows from a small to a medium-sized enterprise (Turner et al., 2010). Scientists discovered strong support for this (Riillo, 2013; Turner et al., 2009, 2010), validating the EU's definition of the distinction between small and medium-sized businesses (European Commission, 2016).

In great detail, J. R. Turner et al. (2009) examined the issue in a quantitative study. Their findings shed new light on the relationship between company size and the project management approach. The scientists discovered that the smaller a firm is, the smaller the project it takes on. Subsequently, as a company grows, it becomes more likely to hire professional project managers and acknowledge PM as a distinct process. The authors also observed that while there is no evidence that smaller businesses are afraid of PM, they still require project management methods adapted to the smaller projects they take on. When the authors looked at the firms' technological affinity, they found that hi-tech organizations are more likely to hire project managers, perceive PM as a distinct process, and apply project management tools and practices. Thus, the sector and technology affinity of the company influences the PM. Finally, when it came to variations in business size, the only significant difference was that micro-companies evaluated project personnel appreciation much lower. This is understandable given that smaller enterprises usually lack specialized project workers. The main variation in significance ratings by size and industry was that medium-sized enterprises considered the process of resource allocation more important than smaller firms (Turner et al., 2009).

In a derived study, R. Turner et al. (2012) further analyzed the tailoring of practices to the size of the company quantitatively. They found a positive relationship between business age and firm size, implying that it takes time for companies to flourish. Furthermore, when companies grow in terms of age, workers, and turnover, projects become longer, proven by the fact that project size is moderately correlated with company size. Regarding the use of PM, the scientist discovered a significant difference in company size, supporting the argument that smaller and younger businesses are less likely to use dedicated project managers (Turner et al., 2009) and use informal PM processes. The authors

go so far as to argue that micro-sized companies undertake “many projects managed by amateurs” (Turner et al., 2012, p. 954) in the early, very critical stage of their existence.

Similar to the findings in Chapter 2.2, Knowledge Management in SMEs, Turner et al. (2010) highlight that small and micro-sized businesses choose project management techniques that are more people-centered and supportive of their feeling of family. Specialists are used far more frequently in medium-sized businesses, implying a people-orientated approach but considerably more formal coordination. This more formal organization style, gained over time and with increasing size, is an essential step in the maturing process of the company. Only with significant time and resources more mature practices can be developed successfully (Brettel et al., 2010; Masurel & Van Montfort, 2006). Moreover, once developed, they require a similar investment to be sustained and up-to-date (Turner & Ledwith, 2018).

In terms of resources and company size, Riillo (2013) verifies that the size of the firm determines the resources available for standardization procedures. Surprisingly, the scientists discovered that when the organization's size shrinks, the viewpoints of the organization and experts tend to converge, necessitating less formal knowledge transfer and standardization. Furthermore, because small businesses have fewer resources to devote to standardization, the costs of full and effective involvement might still be prohibitive for them: the primary constraints for an effective introduction are a lack of financial resources and time (Riillo, 2013).

2.4 Stakeholder Satisfaction

The Project Management Institute (2017a) highlighted that stakeholder satisfaction should be identified and managed as a project’s objective. This is due to the fact that especially the primary stakeholders have a significant influence on the project. Meaning their satisfaction is vital throughout the project (from development to perceived product quality). Nonetheless, it is crucial for the project manager and their team to accurately identify and engage all stakeholders. To satisfy identified stakeholders, the project manager should address stakeholder needs, concerns, and expectations. In accordance with

other scholars, the Project Management Institute (2017a) underlines inclusive and continuous communication with all stakeholders as the key to success. Furthermore, the project manager must fit the project strategy, life cycle, and project management procedures to the project's needs.

2.4.1 Stakeholder Analysis

Analyzing Stakeholders typically refers to techniques or tools to identify and understand the needs and expectations of major interests inside and outside the project environment (L. W. Smith, 2000). As the stakeholder analysis can be time-consuming, the differentiation between primary and secondary stakeholders becomes extra valuable for a project manager to properly allocate attention and focus (Jepsen & Eskerod, 2009).

Eskerod and Jepsen (2013) argue that stakeholder analysis is necessary to communicate adequately, procure resources, and satisfy project stakeholders. Eskerod et al. (2015) elaborate that this stakeholder analysis aids in two goals: (1) to assist project representatives in completing the project by identifying ways to obtain the necessary resources, including avoiding countermeasures, and (2) to assist project representatives in understanding the interests and concerns of project stakeholders. Based on this analysis and understanding, stakeholder satisfaction in PM can be enhanced, and communication can be managed more effectively.

2.4.2 Gap Model of Satisfaction

The gap model is the most used term in marketing literature to describe the current mainstream concept of satisfaction (Strong et al., 2001). Even though the satisfaction gap model was established mainly for marketing to explain consumer happiness, the linkages are likely to apply to other stakeholder groups (Taylor, 1993). According to the authors, to use a gap analysis, a company must first define consumer expectations and then evaluate its performance against those expectations. Dissatisfaction will emerge from a mismatch between expectations and results. This mismatch can take three forms, according to (Strong et al., 2001, p. 220):

1) expectations are not clearly explained and understood (pre-exchange information is absent or misleading);

2) actual performance is inappropriately assessed or disagreed upon (perceptual variances in degree of compliance with pre-exchange expectations and equity norms);

3) accurately assessed performance fails to meet clearly understood expectations (failure to perform).

The authors highlight that only the third dissatisfying situation has to do with performance, whereas the other two concern managerial communication (e.g., honesty, integrity, and empathy) and assessment (e.g., timeliness). When looking at employees, customers, and owners, the three primary stakeholder groups (Waddock & Graves, 1997), scholars found that managers are able to fulfill the performance expectations of all stakeholder groups at the same time (Huse & Eide, 1996; Strong et al., 2001; Waddock & Graves, 1997). Throughout the extensive study of stakeholder satisfaction, Strong et al. (2001) confirmed that by communicating in a timely, honest, and sympathetic manner, managers can satisfy many stakeholder groups at the same time. On the one hand, communication is essential as it can partly compensate for not performing as expected when transmitted clearly and honestly, as it creates a form of 'resilient trust'. On the other hand, poor communication can lead to dissatisfaction even when performed as expected, as the relationship lacks trust and equitable treatment (Strong et al., 2001). The scientists conclude that honest flaws in performance do not have to result in stakeholder dissatisfaction when information is communicated properly.

2.4.3 Stakeholder Satisfaction in Projects

It is critical to satisfy stakeholders in projects since project success criteria include accomplishing the client organization's strategic objectives, contentment of end-users, and satisfaction of other stakeholders (Ika, 2009). In a dual case study approach, Huijgens et al. (2017) analyzed stakeholder satisfaction and observed numerous relations between the satisfaction levels and project conditions. First, they found that the levels of satisfaction with the project's process and the product are highly correlated. Second, project duration has a moderately negative relationship with stakeholder satisfaction. Third,

pleased stakeholders value high quality, whereas unhappy stakeholders believe testing and deployment should be improved. Fourth, many respondents indicated communication as vital, with happy stakeholders citing excellent communication and unsatisfied stakeholders citing poor communication, confirming Strong et al.'s (2001) findings. Uncertain requirements, inadequate documentation, hidden business rules, and requirements creep led to a poor rating in communication and subsequently dissatisfied stakeholders. Furthermore, dissatisfied stakeholders often outlined long duration and schedule overrun highlighting that “Stakeholder Satisfaction is related to interaction and being informed, yet also with conformance to planning and estimation of the delivery date” (Huijgens et al., 2017, p. 16). Without explicitly highlighting it, Huijgens et al. (2017) focused on primary stakeholders, which is typical for IT Projects as secondary stakeholders (e.g., competitors, governments, and the public) are hardly ever directly affected by it.

Most of the stakeholder satisfaction literature focuses on public projects such as infrastructure or reform projects (Güngör & Gözlü, 2017; Li et al., 2013; Oppong et al., 2017; Van Du & Tran, 2021; Yu & Leung, 2018). Li et al. (2013) analyzed stakeholder satisfaction during public participation in major infrastructure and construction projects, highlighting the complexity and uncertainty of the satisfaction measuring procedure, which necessitates approximate reasoning based on human intuition. They argue that active involvement allows for the resolution of conflicts by including project stakeholders, prioritizing their issues, and subsequently maximizing mutual satisfaction. However, the authors highlight that many definitions exist on how and with what measures satisfaction is to be determined. Some scholars suggest using critical satisfaction factors such as viz. time, cost, quality, client orientation, communication skills, and response to complaints (S. M. Ahmed & Kangari, 1995). Others argue that rather than the specific project goals (e.g., time, cost, and quality), management processes (e.g., communication, collaboration, and commitment) determine satisfaction (Leung et al., 2004). Yet others argue that it is not based on reality (e.g., delivery of the project on time, budget, and quality) but on the customer's perception, and therefore satisfaction is a subjective phenomenon (Nkado & Mbachu, 2001).

Comparing project stakeholder satisfaction with PMO activities, Güngör and Gözlü (2017) found that stakeholder satisfaction is improved by PMO's success in procurement management (i.e., the acquisition of required resources for the project). Furthermore, the PMO's project planning and follow-up activities positively influence stakeholder satisfaction. As critical activities of the PMO, these procedures are influenced by many other PMO activities, such as the IT infrastructure and knowledge management. Both activities are part of the PMO endeavors and therefore have, as they are proven to positively affect the PMO's project planning and follow-up activities, an indirect positive effect on stakeholder satisfaction.

3 Research Design

This chapter gives a comprehensive overview of the research method, the case selection, the data collection, and sampling, as well as the data analysis and the limitations, reliability, and validity of the study.

3.1 Research Method and Philosophy

In order to evaluate the outcome of standardization on knowledge management, project management, and stakeholder satisfaction, a single case study will be conducted. This research method is common and widely used in the analysis of SMEs as well as project management. Many scholars used this method successfully before (i.e., Alves et al. (2019), Bauwens and Van Dorpe (2018), Gomo et al. (2021), Muenstermann and Eckhardt (2009), and Schäfermeyer et al. (2010)).

The research technique should be selected based on its relevance in addressing the research topic (Eriksson & Kovalainen, 2016). A case study, according to Yin (2018), is an excellent technique for investigating 'how' or 'why'. Babbie (2013) adds that a case study enables direct observation of phenomena in their native environment, resulting in a more comprehensive and realistic understanding. As the analysis is conducted in a highly technological market where specialized SMEs have a significant market share and compete nationwide, the single case study allows for a deeper understanding and meaningful insights into the SME's core processes.

Conducting a single case study has particular benefits. The main benefits are that it "investigates a contemporary phenomenon (the 'case') in depth and within its real-world context" (Yin, 2017, p. 50). This definition effectively captures the fact that case studies are intended to provide a level of detail and understanding, similar to ethnographer Clifford Geertz's (1973) notion of 'thick description,' that allows for a thorough analysis of the complex and particularistic nature of distinct phenomena, in contrast to more generalizing and straightforward methods (Willis, 2014).

This research is exploratory in nature, meaning it is a valuable tool for asking open questions to gather insights into a topic of interest and deepen knowledge of an issue, problem, or phenomenon (Saunders et al., 2019). Exploratory research has the benefit of being flexible and adjustable, allowing it to evolve as new data and insights become available. Furthermore, the researchers emphasize that exploratory research may begin with a broad focus, but that focus narrows as the study progresses. The authors implicate that this methodology comes through a pluralist view of research. Saunders et al. (2019) explain the pluralist view as the "believe that flexibility in the selection and use of methods is legitimate and that researchers should be tolerant of others' preferred methods even when they differ from their own" (p. 181).

The research is founded on philosophical assumptions that guide data gathering and analysis (Molina-Azorin et al., 2017). An interpretive philosophy leads the research. Overall, the researcher ops for inductive reasoning using semi-structured one-to-one interviews, where qualitative data is collected to examine how standardization in project management affects knowledge management, project management, and stakeholder satisfaction (Saunders et al., 2019).

The sources of data include primary and secondary data. While the case study is based on primary data, all reference points and the theoretical framework are secondary data. A qualitative analysis of knowledge management, project management, and stakeholder satisfaction will be conducted through in-depth interviews with various internal stakeholders.

The researcher's connection to the company is important to highlight in this section. Through his work in the company, the researcher acknowledges that he can gain additional insight, but this double roll bears the risk of being biased. During the standardization process, the researcher was in the expert team of the standardization. Therefore, he was involved throughout the process and was one of the main contributors to the written documentation.

3.2 Case Study Selection

The case company for this research was chosen for its particular situation to begin of the thesis, following a purposive sampling approach (Piekkari & Welch, 2011; Yin, 2017). The case company was selected because of the following criteria:

1. Established SME in Germany
2. Close to the critical mass of employees at which process standardization is most likely to be necessary from a scientific point of view
3. No existing written process standardization
4. No professionalized PMO
5. Top Management Support for the endeavor
6. Willingness to cooperate in the study

The following information can be disclosed to classify the company: The case company was founded in 2009 in Germany. It is a self-financed limited liability company (GmbH) without external shareholders. The business model is based on consulting and operationalization in the field of business intelligence and visualization of data. The annual gross revenue for 2020 was 5.2 million Euros and 6.1 million in 2021. The company operates mainly in Germany and conducts business in Europe and North America.

Regarding point two, at the beginning of the process standardization endeavor, the company size was < 50 but has experienced significant growth through 2021. Throughout the standardization, the number of total employees exceeded 50. Following European Commission's (2016) and R. Turner et al.'s (2010) analysis, this is the critical mass where a company changes from a small company to a medium-sized company. Furthermore, the company's software setup gave the required (software) flexibility for a process standardization (Liu et al., 2008) and subsequent tools for a knowledge wiki. Nevertheless, no company-wide approach to process standardization or knowledge management was established (point 3), and the ongoing PMO activities were limited to a company steering meeting and single-employee efforts (point 4). Fortunate for the study, the top management planned the standardization of PM when the researcher entered the company, and

the author was contracted to work as a working student. Therefore, the Top Management Support (point 5) and willingness to cooperate (point 6) were secured from the beginning, and an in-depth analysis throughout the work in the company was possible.

3.3 Data Collection and Sampling

This thesis is an explorative analysis. Hence, qualitative research in semi-structured interviews is a meaningful method of understanding how the process standardization is perceived and its effects. Saunders et al. (2019) highlight that specific topics and critical questions will be covered in semi-structured interviews, although their utilization may vary from interview to interview. For instance, some questions may be excluded in specific interviews, while others may be included as needed. Yet, data collection via semi-structured interviews is advantageous as it fulfills the four categories established by the literature (Eriksson & Kovalainen, 2016; Saunders et al., 2019). The purpose of the research requires in-depth expert knowledge, and the nature of the data collection questions implies a lengthy analysis with important personal insights, highlighting the importance of establishing personal contact. Furthermore, looking for contrived data resulting from the research implies using interviews to gain access to authentic accounts that would not have been able to be observed (Speer, 2008).

The authors note that how the interviewer asks questions and interacts with the respondents can influence the data obtained, especially when looking at opinions, as this research does. This may raise concerns about cultural disparities between the interviewer and the interviewees. However, all participants in this study are Germans, and all of the interviews were conducted in German, reducing the likelihood of any cultural differences causing complications (Saunders et al., 2019). Because a specific characteristic regarding the interviews had to be checked in advance (i.e., role, employment duration), the respondents were chosen via purposeful sampling. In qualitative research, purposeful sampling refers to locating and selecting information-rich examples (i.e., people) related to the topic of interest (Palinkas et al., 2015).

Due to the geographic dispersion of the participants, all interviews in this study were performed as internet-mediated interviews. By using the MS Teams provided by the company, all interviews could be handled without problems and reliably. The following personnel was selected for the interview series:

- Two Project Managers
- One Representative of the Project Management Office (PMO)
- One HR Manager
- One Core Business Service Member
- One Management Representative

An interview guide was used to collect the primary data. This guide was produced ahead of time, based on the theoretical background, the research question, and objectives. The base catalog of questions was enhanced by more role-specific questions depending on the interviewee’s role in the company. Before the interviews, the interviewees were given a briefing about the thesis's topic and concepts. Moreover, the interview questions were emailed to the interviewees ahead of time, allowing them to familiarize themselves with the questions. This helps respondents in preparing for the interview, gives them insight into the field of the study and the information the interviewer is looking for and may add to the study's reliability and validity (Saunders et al., 2019).

The length of the interviews varied from 45 minutes to 82 minutes. This variation is based on the interviewee’s expertise and personality, as some were more talkative and shared more insights and thoughts. All interviews were recorded with the interviewees' consent, and the tapes were transcribed into text for additional study. Following Saunders et al. (2019), the recording and transcription aid the research to solely focus on questioning and listening during the interview and conduct a more profound analysis later. As anonymity of the participants in the study should be a top priority (Eriksson & Kovalainen, 2016), the names and interview data are kept private, and all people are addressed by a number, as the role description in such a small company could reveal the identity.

3.4 Data Analysis

The research is conducted as mono method qualitative study research, and it pursues a thematic analysis of qualitative data. Verbal data, textual data (written, typed, or printed words), and visual data (still or moving visual images) all contribute to qualitative data (Saunders et al., 2019). The semi-structured expert interviews on which this work is based were recorded and subsequently transcribed. The data was then arranged logically, with the most relevant findings emphasized. Ordering the data already provided specific clusters and revealed patterns. However, due to the different interpretations and reactions of the interviewees to the same questions, it might be challenging to compare the empirical materials obtained through semi-structured interviews (Eriksson & Kovalainen, 2016). Also, bringing meaning to a data set through qualitative data analyses (Anfara et al., 2002) is always somewhat subjective, as "there is no single right way to analyze qualitative data" (Coffey & Atkinson, 1996, p. 2).

As this thesis takes an inductive approach, meaning builds a theory from the facts collected, the acquired data is examined to determine which themes or matters are relevant and should be addressed (Saunders et al., 2019). Furthermore, as thematic analysis has been widely employed in various sectors due to its broad and flexible character (Lester et al., 2020), it seems reasonable to be applied in this thesis. This analysis is a method for analyzing qualitative data that entails the researcher looking for themes or patterns that appear throughout the data and are relevant to the research topic and exploring different interpretations of a phenomenon (Saunders et al., 2019).

The thematic analysis is conducted in seven steps, following Lester et al.'s (2020) explanation. Step one is 'Preparing and organizing the data for analysis', followed by 'Transcribing the data' and 'Becoming familiar with the data'. In Phase 4, the research is 'Memoing the data' for themselves before 'Coding the data' in step 5. In step six, the research is 'Moving from codes to categories and categories to themes' and finally, 'Making the analytic process transparent'. As recommended in the literature (Eriksson & Kovalainen, 2016; Lester et al., 2020; Saunders et al., 2019), the data analysis was facilitated by creating a table to detect case commonalities. The information gathered was then

compared to what was learned from the theoretical background literature. Finally, the findings of these observations were compiled.

3.5 Limitations, Validity, and Reliability

This study examines a phenomenon that occurs daily in companies around the world. However, each company sets its standards and adapts its processes to the company's needs. Thus, while the author is giving depth and new views to the current literature by examining the standardization process in close proximity, the framework of this analysis is based on the findings of peers presented in the theoretical background. As a result, the author does not claim that the issue has not been studied before, and this research, like any academic research, has limitations.

The fact that this is case study research is the most noteworthy limitation. The results of this study cannot be applied to a broader population because the sample size was limited to one case firm. However, the findings may be applied to organizations with comparable characteristics to the example company, such as other SMEs in the IT-Consulting sector seeking a process standardization in PM. On the one hand, giving the research limited generalizability, on the other hand, enabling the research to investigate the detailed depths of the company and to analyze valuable insights from its nucleus.

Possible limitations of a single case study are methodological rigor, researcher subjectivity, and external validity (Saunders et al., 2019). The methodological rigor is mitigated by the extensive theoretical framework of the study and by the comparison with other studies and findings. To avoid subjective research, the researcher will conduct the research independently from the case company and does not receive remuneration for the analysis. Lastly, the limitation of external validity is justified in this context but should be increased by generally accepted reasoning. Nevertheless, the specifically chosen field of research must be considered, and generalizability can only be achieved in the field of IT-Consultancies and SMEs.

Another limitation that has to be addressed is the methodological limitation. Saunders et al. (2019) highlighted that sequential mixed methods research should involve several

phases of data collection and subsequent data analysis. However, due to the limited period of the thesis, this sequential analysis can only be conducted with one phase, which means that the analysis displays a temporary evaluation rather than a longitudinal analysis.

Analyzing the reliability of a research, Saunders et al. (2019) outline four possible threats to the replication and consistency of the study. The four threats are subject or participant error (1), subject or participant bias (2), researcher error (3), and researcher bias (4). Golafshani (2003) adds that total trustworthiness and quality should be used to assure research credibility. Nevertheless, the authors emphasized that the quality and reliability of qualitative research are somewhat irrelevant, as the limitations outlined by Saunders et al. (2019) make the research unique by default. Being dependent on acknowledgments of individual perspectives, it is not guaranteed that another researcher conducting the same study would come to the same results. Eriksson and Kovalainen (2016) acknowledge that and state that findings from semi-structured interviews may not have been meant to be duplicated in the first place since they represent reality at the time they were obtained. Nonetheless, this sort of study assumes that the conditions to be investigated are complex and dynamic, in which case the flexibility of semi-structured interviews is advantageous (Saunders et al., 2019). Therefore, the author of this thesis opts for many quotes and direct insights. This transparency in research allows for an individual assessment of the findings by any person who want to draw from the findings and applying them under their own conditions of use.

4 Findings

This chapter presents the effects of process standardization based on the most important results of the semi-structured interviews. As the interviews were structured according to the theoretical background, the division of the topics and subchapters are similar to the ones in Chapter 2. Due to the interconnectivity of the topics, it was not possible to maintain precisely the same structure in the interviews as in the theoretical background. Minimal deviations may occur due to the interviewees' flow of speech. Nevertheless, clustering according to subject areas was attempted as far as possible.

The findings were produced using information gathered from the interviews, the company's website, as well as the insights, gained while working on the standardization. For anonymity, the functions and names of the company representatives are not displayed, and the interviewee number does not represent the sequential order of the interviews. When giving direct quotations from the interviewees, the author uses acronyms for each respondent listed below to make the findings easier to read.

Interviewee / Representative	**Abbreviation**
Interviewee 1	(1)
Interviewee 2	(2)
Interviewee 3	(3)
Interviewee 4	(4)
Interviewee 5	(5)
Interviewee 6	(6)

Table 1 *- Abbreviation for Each Interviewee*

4.1 The Influence of Process Standardization

This section analyzes the interviewees standing and observed effects of Process Standardization. Most of the interviewees already experienced some process standardization outside the case company. In general, the older the participants, the more experience they had, and the easier it was for them to abstract the questions. The previous field of work also influences the experience. The more industrialized and homogeneous the process flows in the predecessor companies, the more frequently the respondents had experience with standardization. Regardless of the prior experience, all stakeholders see added value in the standardization of processes and knowledge. Central beliefs are:

> *« Standardization leads to more efficient processes in the company, fairness, and more satisfaction. […] In addition, knowledge transfer is facilitated because knowledge is person independent and thus more easily accessible to all. » (1)*

> *« The main benefit I see is better work culture, less time spent, less duplication of work. And of course, when colleagues leave the company, the knowledge is traceable, [...] if you have uniform documentation, so to speak, and have also standardized and defined how it used to be. » (2)*

> *« Standardization is quite helpful in that sense that they result in checklists and certain defined processes that you first run through to set up the project in a similar manner and get all employees on board as efficiently as possible. » (3)*

> *« Standardized processes help achieve reproducibility and a consistently high level of quality. Moreover, the more complex the processes and the greater the number of people involved, the greater the value of standardization. » (5)*

> *« Yes, due to the multitasking of a project manager, documentation can provide a (consistent) structure and better overview. » (6)*

All participants throughout the company's hierarchy see benefits in a general form of standardization. Depending on their position, this has different abstraction levels, and some beliefs are broader than others. However, all participants agree that flexibility within the standards is key to their sustainable success, as they highlight:

> *« We must remain flexible in order to be able to respond to customer requirements. That is why I think the dual approach of 'Best Practices' and strict guidelines is very good. » (3)*

« Strict guidelines make sense if the processes are heterogeneous and people are always completely reinventing everything, or if I have a certain acceptance target that always must be achieved or certain hard requirements. However, strict guidelines are difficult to implement with the high heterogeneity of projects. Certain flexibility should always be possible. » (4)

« We need sufficient freedom for creativity and innovation. » (5)

On the other hand, the participants see limitations to Best-Practice approaches and flexibility when it comes to internal core processes, to ensure respectful communication with each other, or processes that a third party defines:

« The success of the project and the company must be enforced with strict guidelines. This means strict guidelines ensure a smaller mountain of work in the chain reaction. In particular, additional work by downstream departments due to sloppily executed processes can be reduced. » (1)

« There are things that should be generally standardized in the company, such as there is no work order without a ticket. In addition, the sequence of work steps and responsibilities must be clearly defined. » (2)

« Since we do mostly consulting business, we don't have as many guidelines or hard requirements. However, those that do exist must be adhered to and backed up by standards. » (4)

« If the functionality of the processes of the company is limited (for example, liquidity), strict guidelines must be introduced. » (6)

When asked about the benefits respondents hoped standardization would bring to their specific roles, the responses were very similar despite the differences in roles.

« If you enforce and live standardization, meaning everyone follows the process, individual employees are less stressed. On the other hand, if you don't enforce standardization and don't live it, life is much harder for everyone. » (2)

« You save time, and you also save energy. Because if it's standardized, you don't have to think about it anymore, then you just do it, and it goes faster and more efficiently at some point. » (3)

« Highest possible clarity about processes, roles, and responsibilities of the individual persons in the processes. Based on a clear framework of responsibility. Furthermore, expectations are aligned; therefore, intuition and individual interpretations are limited. » (5)

> *« Clear responsibilities. Clear communication interfaces. Simplified communication. And altogether, an increase in efficiency not only in the organization of the projects but also in the projects themselves. » (4)*

As can be seen in the quotes and reinforced by the other interviewees, all see increased coordination of the company's activities when the standardization process is followed correctly. On the other hand, some criticism was voiced that standardization only works if communication is maintained. Hiding behind a standard or changing the way they work according to it without communicating it is not the right approach.

Nevertheless, all participants see a strong connection between business growth, formalization of processes, and coordinated knowledge processing/dissemination. Stating that the company needs standardization and that it is crucial for business growth:

> *« I think that if we don't do that now and don't get a handle on it now, then we can't grow. » (1)*

> *« The bigger a company gets, the more of these processes you have to formalize, standardize, and document and introduce. This creates a certain security in terms of communication, planning, and responsibility. » (4)*

> *« The bigger the company gets, the more important it is to make sure that certain things are reproducible. And that it feels the same to everyone involved so that it can also run efficiently. Standardization is essential for that, I think. » (5)*

In addition, an improvement and development of processes due to standardization could already be determined shortly after the introduction. The departments involved during standardization even often voluntarily changed their way of working to the new practice of working before it was proclaimed as the standard. The main reason can be found in the following quote:

> *« If you think something through, structure it, and document it, you have a clear picture of where there may still be gaps. Because in the process documentation, you deal with the process even more intensively, and you see it from a different angle than when you just execute the process. Moreover, you have the whole process structure to address and close gaps immediately. » (5)*

4.2 Influence on Knowledge Management

To analyze the influence of standardization on knowledge management, the interviewees were asked specific questions about the situation in the company before and after the implementation of the PM standards. Furthermore, their behavior and possible change of it were inquired. Similar to the usefulness of standardization, when asked about added value in the standardization of knowledge, the participants highlighted added value in documenting knowledge. However, the interviewees outlined that most knowledge was tacit and transmitted through personal communication before the standardization. If knowledge was documented, it was in a personal account in a decentralized form.

The first helpful step, taken six months before the standardization, and outlined by several participants, was the change to Confluence[2] as a company's cooperation tool and central wiki. This was the first step toward centralized knowledge management.

> *« There used to be some guidance, but not centrally organized. There was something here, there was something there, but it wasn't centralized. It was a mess. » (6)*

> *« Confluence was an immense help since it is super easy to publicly spread information and make it available to everyone and then just send out the links. So much better than single documents saved in different folders » (1)*

This finding was further reinforced when the interviewees were asked about the change in how they gain knowledge about the process of PM or specific questions related to PM.

> *« Previously, we had to search lengthy in the folder structure. Now we can simply search in Confluence or go to the 'Space' specially set up for this purpose. Thus, we have a more central and clear repository now. » (1)*

> *« After being introduced to the documentation, I now really use it as a wiki, which includes the relevant content. Just search for the topic and find the detailed answer. » (2)*

[2] A collaborative and knowledge-sharing platform for teams (Atlassian, n.d.)

« I apply the processes step by step. The motto is 'Let's do this by the book', read through the relevant part, and look at each individual step to see 'what do we have to do specifically for this project?' I find that very positive. » (5)

« My information gathering has gone back a bit from asking people personally to finding the info in Confluence and reading up on it myself. » (6)

Nevertheless, some employees were somewhat overwhelmed by the amount of information documented and the high level of detail. A more extended and, if necessary, more individual introduction to the role and needs of the employee would have been helpful. As a direct effect, which could not be measured within the scope of this thesis, the documentation and the standards were presented in smaller portions in weekly meetings. In addition, the visual presentation of the content is a decisive advantage if one wants to obtain a better overview. This was particularly evident when asked about the effectiveness of communicating the new standards:

« I think we need to explain more, generate more awareness. In specific, offer regular training in the company and 'live the standards'. » (1)

« I have to say quite honestly that as it is documented is the theory. In the company, it is partially still lived differently. I am in the process of bringing this more into the company and really pushing everyone to adhere to the new standards, but there is still some convincing to be done. » (2)

« There is a difference between capturing, documenting and writing things down. Someone has to read them, let alone follow and implement them. That's our biggest to-do in the coming months. » (3)

« Despite a sound introduction and various follow-ups, waiting for people to read it on their own initiative is probably not effective. We need more people behind this and make it their business to ensure that this is applied in the project. » (5)

« When we talk about strict guidelines, we must not allow deviation and consistently pursue non-compliance. If non-compliance occurs, we must identify the reasons and ensure it does not happen again. » (6)

While logically structured knowledge is one part of the process documentation, the interviewees also believe that simple handling and a high degree of comprehensibility are crucial. However, the interpretation of what simple handling and a high degree of comprehensibility means go in different directions depending on the employee:

« We need to focus more on graphic presentation. That you have a graphic or something to understand easily and don't just have to read. » (1)

« Principally, it is good that it's a very comprehensive description, but it is an ongoing process. I would like to see more tables of contents, more clustering, and even more cross-referencing. » (2)

« I experience a fast handling through logical structuring and good accessibility. But the documentation must be lived more, then all involved understand it easier. » (5)

« Visual presentation is very important, and examples also with screenshots are very helpful. However, only if these are also kept up to date. » (6)

Another crucial part of knowledge management is knowledge distribution. The higher management acknowledges that standardized processes and documentation are particularly effective when people understand them, completely internalize them, and are convinced that the processes are meaningful and important. However, many entities are responsible for implementing the new processes and spreading the knowledge through the company. To better represent the different requirements that respondents place on the various roles, the answers are clustered by the role they address. First, the management's responsibility in implementing the standards and disseminating the knowledge:

« The management must clearly communicate their expectations about the standards and who has to follow them to which content. » (1)

« The standards must be presented and exemplified from the very top, so the knowledge and its importance is clear to everyone » (3)

« With their commercial and strategic view, the management must define hard boundary conditions for the company. Within those, the standards can be established, and within the standards, in turn, the employees can move. » (4)

« The endorsement must be top-down, it must come from management, the standards must be exemplified and actively enforced. » (6)

Then again, the interviewees see the Project Management Office as an essential player in knowledge management:

> *« The PMO must create the basis for the knowledge, document it, explain it to the employees, and store the knowledge centrally in one place in the form of standards. » (1)*

> *« The PMO must provide assistance, explain how the work is supposed to be done and why, and help with corrections if necessary. » (6)*

Nevertheless, the PMO is also crucial for project management standards:

> *« The PMO comes into play to define the project management standards, the processes, the interfaces, and the communication. And the requirements of the Management impact the PMO, as the PMO measures the KPIs and executes the management's requirement to improve, document, or implement them. » (4)*

> *« The PMO is the entity that provides standardized processes, with everything that goes with it. And the PMO is obligated to monitor compliance with those processes and to have a general overview. » (5)*

In the last instance and on the operational level, the project managers and the team leaders come into play. Like the PMO, they have a dual role. They must adhere to the standards themselves, absorb the knowledge, and get their team to act within the standards and thus actively distribute the knowledge throughout the company.

> *« Team leaders must explain the standards and should live them in their team. This means putting the standards into practice and using them in daily tasks to constantly expose team members to the standards. In the individual projects, PMs are responsible for this. » (1)*

> *« Team leads and PMs need to set rules. Explain plain and simple that 'this' is how it is to be done. » (3)*

> *« The project manager is obliged to manage his project by using, besides their own knowledge, the tools (knowledge) and standards provided by the PMO and are obliged to adhere to them. » (5)*

> *« The team leaders and the PMs have to implement the standards on the individual projects and give the knowledge at the operational level the opportunity to unfold its full effectiveness. » (6)*

When analyzing the resistance within the company new efforts may face, the interviewees confirmed that the standardization faces several obstacles from different internal stakeholders. They see the reason partly in things being done too sloppily and people

taking liberties because of the flat hierarchy. In addition, some underestimate what negligent actions will have as a consequence for their co-workers:

> *« The reluctance is often not malicious. We need to create more understanding that it is worth investing a little more now because then you will benefit in the long term and become even more efficient. » (1)*

> *« I don't think it's deliberate, but employees often forget to do all of their tasks. Because it is either too inconvenient or they forget. Active refusal does not exist in this way. But the benefit needs to be clarified more clearly, as some have not quite understood the relevance. » (6)*

However, respondents confirm that if people should vehemently refuse, management must intervene and take action depending on the motivation:

> *« It's the management's job to have conversations and listen to why a person has this resistance and to what extent the problem really conflicts with the standardization. Often, this is how you can resolve the opposition. » (2)*

> *« We, the co-workers and also the management, have to understand the different ways of reasoning and why the employees resist. I believe the best idea should prevail and be documented. So, if constructive feedback results in suggestions for improvement that make sense, then these should also be implemented as the new standard. » (5)*

When asked whether KM improves performance within the organization, there was broad agreement with the general proposition.

> *« Yeah, that's definitely true. It has something to do with the knowledge flow, the communication, that you keep people in the loop, that you just can tag people, and that you have a transparent process and clear assignments. » (1)*

> *« All these knowledge management processes, the freely accessible documentation, the easy handling, and the constant availability of the knowledge create an atmosphere of transparency. That is a very important point in the company. In addition, this form of knowledge management also creates an atmosphere in which employees see themselves as part of the structure and can integrate themselves more easily into the process. » (2)*

> *« The company needs more centralized knowledge management. This new form of KM, as it has now been set up, is the first step in the process of moving away from the confusing information situation toward better performance. » (6)*

A key point that came up repetitively was the evolution from tacit to explicit knowledge in a documented form.

> *« It's much easier. I don't have to ask anyone. I know exactly where to find everything. It's really much more effective. » (2)*

> *« If all this is so freely available and the knowledge can be learned by self-study, then naturally there will be a reduction in the number of people contacted in search of information. » (5)*

4.3 Influence on Project Management

As many departments were involved in the process standardization when giving input, reporting how processes are conducted, and sending subject matter experts to document an archetype process, the endeavor increased the awareness of project management. It generally gave a higher value to PM within the company:

> *« There was a strengthening of awareness within the project teams and the Delivery Team. » (3)*

> *« Through the standardization, I have the feeling that project management has finally become an acknowledged topic within the company. And we still have to create more awareness among people that project management has to be a part of all larger and more complex projects. » (4)*

> *« Many employees are aware of the importance of project management, but there are certainly people who know exactly how important it is but do not give it the priority the topic needs to have for us as a consulting company. » (5)*

> *« We now have the first full-time project managers on board and even hire external project managers since we realized that automatically assigned PMs (especially if they are consultants) often don't know exactly what is actually required of them as project managers. In addition, they often don't have the time to take on all the project manager's responsibilities in an adequate manner. » (6)*

Besides the increased appreciation for project management, the PMO was also fundamentally reformed and provided with new resources. Simultaneously with the publication of the standardization, an employee was hired to work full-time for the PMO, and the first full-time project manager was recruited. Prior to this step, the weekly PMO meeting consisted mainly of senior management working more as a project steering

committee. The work of the PMO in introducing company-wide processes, policies, and procedures for project management were non-existent.

> *« All this happened because of the recognized relevance of the topic and the resulting staffing of the PMO. Before that, it was not possible to take care of it. We lacked the resources, and therefore there was not much interest in documenting anything as daily tasks kept the people too busy. » (6)*

As described, that changed, and nowadays, many employees turn to the PMO with suggestions, further requests, and areas where a structured approach would be desirable:

> *« There are a variety of fields in which the PMO should and can become active. » (3)*

> *« I think at this stage, it is still the case that the PMO will have to choose which area to structure next selectively. There is so much more to do. The PMO also has enough authority to document, implement and establish these processes and procedures and I have the feeling that everyone else is happy when the PMO takes over. » (4)*

> *« It will take months before we have orderly structures so that the PMO can monitor more and publish fewer new features or standards by decree. » (1)*

On the other hand, the PMO is aware that the primary task is to provide the processes and monitor compliance. This results in a responsibility to measure KPIs and to provide information about them to management. There is no disciplinary responsibility on the PMO's side in this supporting function. Since it is usually not the disciplinary authority of the employees, the PMOs focus can be on the measurement, the provision of data, and process effectiveness.

That said, the PMO relies on input from the individual departments. Especially when it moves to work on continuous process improvement, including proactive assessment of validity after the initial processes/procedures have been implemented. Broad support from all departments could be observed. Hence, the work of the PMO is enabled and supported throughout the different roles of the employees. This Feedback and support of individual employees is provided in various forms:

> *« In my role, I have a relatively good overview of the issues and interfaces in the company and can always pick up on the topics and get in touch with the various*

managers. In this way, we can put the right people together and continue to develop. » (1)

« The team leads and PMs have to set up rules to follow the new procedures: 'This is how it has to be done'. And then take a look at the other side, how are the consultants currently dealing, how are the PMs dealing with the situation, and the standardization in their day-to-day work. This can then be reported back to the PMO. » (2)

« If an individual process works with one client, and you might apply it that way to other clients, then, of course, the PMO can be supported to the extent that that information is passed on. Subsequently, PMO evaluates whether you can make it a new standard or adapt a corresponding standard. » (3)

Additionally, the PMO is aware that internal improvement is also important:

« It should be in everyone's interest to continuously improve through training and professionalization. For example, tools can be revised, or certifications can be obtained to professionalize. » (4)

Alongside this function, a large part of the PMO tasks can be attributed to knowledge transfer. In particular, the establishment of the infrastructure, facilitation of knowledge transfer, and the support of cross-project knowledge transfer. The latter has somewhat taken a back seat due to the focus on operational processes during standardization.

« There is evidently a need for structured sharing of lessons learned from one project to another. Theoretically, the Project Managers would all have to sit down together and share the lessons learned. » (3)

« A moderation function is given by process structuring, active moderation of knowledge transfer in the company. But the cross-project knowledge transfer still has potential for improvement. The corresponding structures have yet to be created. » (5)

Particularly in project management, the respondents have been able to identify different forms of maturity of the company. For example, all agree that standardization leads to a natural maturation process of the company.

« It's definitely an increased level of maturity when knowledge is formalized, written down, and doesn't go through a person because that person can be sick, that person can be on vacation, that person can leave the company. » (2)

> *« Repetitive PM processes can be standardized in terms of content. Standardization is good for formal communication, defining responsibilities, and establishing frameworks. Nevertheless, emphasis must be placed on the appropriately trained and experienced project managers and their soft skills. » (4)*

> *« That is the beginning of the journey. So, in addition to project management, we now have, for example, all these IT administrative issues that also need to be standardized in order to get away from the fact that certain things are always the responsibility of one person because that person has the expert knowledge. We need to move toward bureaucratic processes where different people can find their way around without being heavily dependent on individuals. » (5)*

> *« The quality of individual process outputs improved. Due to the clearer structures, there is a certain amount of bureaucracy, and the uniform approach reduces informality. » (6)*

However, there is a restriction on the maturity that can be achieved:

> *« A maturing process can only occur within the defined framework conditions. This means that if standardization takes place, it can possibly lead to a greater structuring of the company within the existing framework conditions, but only under the premise that these framework conditions remain the same. This means that if they change, you have to adapt them again. » (2)*

To elaborate, interviewees were presented with the three-stage model of formality defined by R. Turner and Ledwith (2018) and were asked to assess if there was a development in the firm and where the firm is currently located on the scale.

> *« An initial formal process emerges. It is the beginning of the maturing process, but it is a lengthy maturing process that is structured in some way by project management standardization. » (6)*

> *« Prior to the standardization, we were in the range between 1 and 2, and are now at level 2 with level 3 approaches. We are establishing templates and patterns and are moving more in the direction of becoming even more methodical, i.e., not just doing things on the fly, but more input is needed, and more methodical approaches in particular need to be developed. » (1)*

> *« I would say that certain projects we are doing now would not have been possible without this standardization, this formalization. […] In principle, I can see that work is really being done here to develop methods to drive forward standardization and, of course, to promote the company's maturity. However, we are definitely on level 2. » (2)*

« Definitely a mix depending on the project. The smaller the project, the more flexible we are, up to level 1. We have templates, patterns, and tools that (have to) be used for larger project classes, so we are in level 2 with approaches to level 3. » (4)

« We need homogeneity of tools, but heterogeneity in approaches. In other words, level 2 and flexible level 3 approaches. In some endeavors, we already have this approach, but I think so far we're closer to level 2. » (5)

Regardless of the assessment of the current maturity level, many respondents also expressed doubts about whether the third level is even desirable for SMEs.

« I wouldn't limit it that much, I wouldn't go to level 3. Because that restricts you too much in certain actions that might be beneficial for the client. » (3)

« The methodologies or guidelines for integrated project management as used in large MNEs are not purposeful in SMEs, and the heterogeneity of the projects makes it difficult. Complete standardization and mandating is then also not practical here. » (4)

« I suppose with the business we do (very diverse projects), it's difficult with complete homogeneity in methods. And I think that if every little project has to go through all the processes, then I don't think that would be effective either. But what I think is important is that you use uniform tools in a thoroughly flexible way. » (5)

4.4 Influence on Stakeholder Satisfaction

A multilevel analysis is needed to measure the effect of standardization on employee satisfaction or to learn whether there is increased satisfaction from process standardization. Due to the limited time available for the study, it was necessary to rely on a one-time personal assessment of the employees. The first step was to determine whether and, if so, to what extent the respondents' work is affected by standardization. Given that the case company is a consulting firm working mainly on projects and the imposed standardization is primarily about standardizing project management, most of the interviewees are directly affected and say:

« My work is directly affected, and it makes sense that the standardization affects my work. I engage in each project and ensure that these procedures are followed. » (2)

> *« There is a strong positive influence on my work, as interfaces and communication channels are clear and known. As a result, the amount of work I have to do individually for certain tasks is reduced, and the company works more efficiently. » (4)*

> *« In general, things can be explained more easily, and you can refer more to the places where certain things are described. This is extremely helpful and saves a lot of time. » (5)*

Resulting in a clear process defined from the sales team to the delivery team. Subsequently, the work gets done more smoothly, and automation can be used. Respondents described that this results in having the right colleague in the right place at the right time doing the required task. Thus, individuals do not have to regulate, organize, and clarify as much as before. Implying that the individual worker does not get lost in some kind of micromanagement for each project. This noticeably increases the satisfaction of the individual employees:

> *« I experience increased personal satisfaction because process control creates certain automatisms where less has to organize/regulate afterwards. » (4)*

> *« I'm glad that the company has these standardized processes because you can build on them. Moreover, the standardization and formalization increase my satisfaction and give me confidence in my daily work when I am not sure how to carry out a task. » (2)*

> *« When handing over projects or going from one project phase to another, the standardized process simplifies familiarization with the topic and noticeably increases quality. » (5)*

Another interesting factor in workers' satisfaction is the ‘estimability’ of the work to be obtained. Respondents said that if the output from the previous step is known to the following step or at least communicated in a consistent form, the downstream department can better focus on its actual work because the input can be processed faster and more effectively.

> *« Definitely. Because it doesn't depend on the person for the time being. The task moves from A to B from team to team, and this handover is standardized. And yes, every employee who then has to continue working with the result, so to speak, is grateful if this result corresponds to a standard. » (1)*

« This follow-through of standards from A to Z helps employees concentrate on their work and just do their job. My colleagues are incredibly grateful for the uniform output of a business process. » (2)

« In similar project classes, in any case: If I have standardized input, a functioning process or guidelines, or even best practices behind it, this leads to good, efficient output. This is exactly where we need standardization at the micro-level through templates and automation in the tools. » (4)

« Yes, I have already received positive feedback here, and each 'next person' can also provide valuable feedback for continuous improvement of the processes. » (5)

« If you can predict the output, it's easier to work with it. The standardization helps with consistent outputs and thereby shortens the amount of work for downstream departments (PMO, CBS, and controlling) and thus makes everyone happier. When followed. » (6)

In order to make a final assessment of satisfaction, the interviewees were asked whether they were personally more satisfied with standardized procedures or preferred individual approaches. The answers to these questions provide a clear picture of the mood:

« I am a huge fan of procedures. That's why I have many processes in my area, and a lot of them are standardized and based on templates. » (1)

« I'm a huge fan of having standardized processes and then really using that standard, so to speak » (2)

« When setting up a project, it's very useful to have a standardized process and be able to follow a checklist. » (3)

« Standardized procedures with best practices and the necessary flexibility are excellent » (4)

« In terms of process reproducibility, satisfaction is many times higher with standardized approaches. » (5)

« In my experience at the company, I would say standardized procedures are preferable. » (6)

However, many respondents also see a 'but' in this answer and add:

« Standardization leads to reduced personal contact, and there are still people with social needs behind the processes. So you must never forget the social component. » (1)

« We need flexibility within a certain framework. I see it like a trampoline, i.e., that the system is a bit flexible, and we bounce around on a standard, so to speak. In addition, the adaptation of the processes must not be lost sight of. » (2)

« We have individual clients, with an individual input and also a desired individual output, which means that in the daily work with the customer, you then have to adapt certain processes. » (3)

« The employees must be provided with a structure so that the actual work can be done properly and efficiently, but also so that each individual can find his or her place in this wheelwork. Given the heterogeneous project environment of the company, strict overall regulations are sometimes a hindrance. Above all, we need standards at the sub-process level. » (4)

« The sweet spot in the consulting business lies between standardized processes and individual approaches, which add value to a consultancy that can respond to the customer and his specific requirements. This also applies to project management processes and the delivered project results. » (5)

5 Discussion

This chapter will explore the study's most important findings in relation to the theoretical framework offered in Chapter 2. The discussion is based on the goal of analyzing the role of Project Management Standardization in SMEs and the corresponding four objectives of the study.

5.1 The Implementation of Process Standardization in SMEs and Its Benefits

Objective one of this study is to evaluate the influence of project management standardization on the processes of the SME. To develop and establish the process standardization, the SME assembled a group of internal experts. Without actively knowing, the interviewees confirmed that the standardization process in the company was similar to the one suggested by Münstermann and Weitzel (2008). In the first step, the company-specific project life cycle was determined, and an archetype process from the available process variants was synthesized. All available process variations of subprocesses were considered, and the best one was designated to become the new archetype process. The next step was to extend all the archetype processes into a standard process. Therefore, the process had to be documented and modularized, specifics had to be isolated, and measures had to be taken to ensure process excellence (see Chapter 5.2.2). After this step was taken and the details for all subprocess were documented, the new project management standard was created. Finally, the processes in the existing projects, where up to this point, the same task was conducted individually, were homogenized against the archetype processes to fit the new standard. Thus, this study confirms that the standardization process described in the literature also takes place in the framework of SMEs.

As mentioned in the theoretical background top management support is crucial (Liang et al., 2007; Muenstermann & Eckhardt, 2009), and the participation of the relevant departments is critical (de Vries et al., 2006). Therefore, it was not surprising that the interviews highlighted the top management's importance in the endeavor. In fact, most of the work involved the top management, as they evaluated most of the methods

currently used to find the archetype process. As highlighted in the literature, contributions to the standardization from all departments engaged throughout the project's life cycle allowed the firm to produce a user-friendly and practical standard (de Vries et al., 2006). Confirming Muenstermann and Eckhardt (2009), the early engagement of the different departments helped to smoothen the standardization of operations and applications. Furthermore, the highlighted role of organizational topology was expressed when respondents complained that because of the family nature of the company, some individuals do not take the hierarchy very seriously, consequently not complying with the new standard as desired.

Another point raised is the desire to avoid uncoordinated business process activities where individuals constantly reinvent the wheel. Similar to Tregear's (2015) findings, the contestants prefer standardized and unified approaches over individual and uncoordinated efforts. Thus, the opportunity for standardization arises when the same output is produced in diverse ways. The study additionally found that when the activities and sequence lead to an unwanted variation in outputs, the opportunity for standardization arises. Both cases were present in the company. Hence, SMEs can use project management guidelines and best practices to limit unwanted variation on the one side but also use the existing IT structure to automate the processes. This comes close to the definition of guides (regulations and policies) and enablers (IT support systems) (Tregear, 2015).

Challenged to list their motivation and desired outcome of the standardization process, the high diversity of answers provides a good insight into standardization's usefulness. Summarizing the main findings, one can conclude the central motives for standardization in SMEs. The following findings from the literature were confirmed for the case study:

- More effective coordination (Anagnostopoulos, 2004).
- Higher effectiveness of process work (Milosevic et al., 2001).
- Positive effect on control, efficiency, and quality (Beimborn et al., 2009).
- Positive effect on business performance (Münstermann & Weitzel, 2008; Sánchez-Rodríguez et al., 2006).
- The fundamental impact of standardization on growth (Blind & Jungmittag, 2008).

- Consistent interface and better quality assurance (Tregear, 2015).
- Reduced process time reduces process cost while enhancing process quality (Muenstermann et al., 2009; Münstermann et al., 2010).

Overall, many of the motivations uncovered in previous research were repeated, but some were left out, such as ‘enhanced ability to react to regulatory changes’. This is primarily due to the fact that the motives with which a company strives for standardization always refer to the company environment (industry), the development status of the company, and the economic situation (Münstermann & Weitzel, 2008). The consulting business of the case company is only affected to a limited extent by external influences on regulatory changes. In particular, IT companies should focus on ‘technical interchangeability’ and ‘to outsource business processes’. Keeping in mind that today technology is changing rapidly, outsourcing business processes to gain a competitive cost advantage is crucial. Therefore, SMEs should consider the two factors not only as motivation to standardize further but also as factors influencing how standardization occurs.

Additionally to the motivations and influencing factors listed in the literature, the interviewees highlighted the following key benefits of standardization:

- Increased fairness through transparency.
- Better work culture due to clear communication interfaces and clarity about processes, roles, and responsibilities.
- Reproducibility is given on a broad scale.
- Facilitated knowledge transfer and traceable knowledge. [Chapter 5.2]
- Higher stakeholder satisfaction. [Chapter 5.3]

Considering the additional factors, the variety of reasons for standardization becomes clear. In contrast to the company-specific reasons for not listing all possible benefits of standardization, the additional benefits listed are applicable beyond the company's boundaries. The cogent arguments and detailed explanations provide evidence for this.

More fairness through transparency is derived from the fact that the process structures are now transparent to all stakeholders. Thus, every activity goes through the same process steps, independent of other influencing factors that could result in preferential treatment or omission of sub-processes (e.g., personal contact with stakeholders). In addition, the sense of fairness was demonstrated by the fact that all participants were committed to one thing, and no one could take a special role outside the defined hierarchy.

The enhanced work culture results from many measures taken throughout the standardization process. Similar to the argumentation of transparency, the company benefits from well-known, and openly communicated frameworks on ‘How do we work’. Based on a clear definition of the process sequence, the work from several departments gets aligned. Furthermore, the roles and responsibilities of each employee are clear, allowing employees to focus better on their area of expertise. Finally, clear communication interfaces enable all employees to speak the same language and address discussion points efficiently.

The reproducibility is given on a broad scale, which implies that the same process can be executed by different persons in the same form. This means that different people can manage several projects simultaneously, yet the output of the individual project steps is comparable. This goes with the argumentation: “Consistency increases efficiency” (Ungan, 2006, p. 135). In the case at hand, the interviews confirmed that this enables top management, especially in small companies, to withdraw from the steps in operations that were initially important to them and to focus the management's attention elsewhere, i.e., lower the need to be active in operations and focus more on strategy.

To be effective, a process must be completely understood by project stakeholders and constantly applied, according to the literature (Johnson et al., 2002) and the interviewees. However, the way in which it can be delicately enforced and how to manage organizational resistance remains unanswered in the literature. This research suggests that the reason for this is partly because the issue is very company-specific and partly because the natural entropy of project teams makes it difficult to work and incorporate

champions[3] on a project team bases. Nevertheless, the research results disclose that working with champions is a very effective tool. The champion does not need to be specially trained for this, but they themselves must be convinced of the measure. The campions developed naturally after carefully explaining the benefits and strategic effects to all employees in the case at hand. They adhered to the new standard in their projects and inspired others to do the same. This allows for the argument that, especially in smaller SMEs, the communication strategy of the process standardization is crucial and subsequently champions support and integrate the new standard more effectively than top-down enforcement.

At the same time, the literature and the case company are aware that standardization is only beneficial if there is a certain flexibility and room for maneuver for the stakeholders. The literature argues that execution requires flexibility (Münstermann & Weitzel, 2008; Tregear, 2015), and this study acknowledges and confirms the literature's argument that SMEs 'must remain flexible in responding to customer requirements'. Furthermore, the thesis extends the argument by highlighting that strict guidelines are difficult to implement given the substantial heterogeneity of projects in SMEs. Even though SMEs often seek a niche market, all projects have different specifications and, therefore, cannot be handled in a homogeneous approach. Moreover, the arguments for sufficient freedom for creativity and innovation contradict some colleagues' findings that standardization fosters innovation (Wakke et al., 2012) or accelerates innovation (Hock-Doepgen et al., 2021). In the present case, rigor through standardization is perceived as an impediment to innovation. Though Liu et al. (2008) findings on standardization and software flexibility are confirmed, and the case companies' software flexibility is perceived as a viable mediator between software process standardization and project performance. This finding clearly shows how individual the effects of standardization depend on the industry. The author agrees that the evidence on the influence of standardization on innovation

[3] People who, regardless of their position in the company, stand behind it out of their own free conviction and who make it their mission to ensure that the standard is applied in the project.

is inconsistent (Xie et al., 2016). It becomes clear that innovation is hindered or promoted depending on the company and the company environment.

Confirming the prior paragraph are the limitations to recommendations in the form of Best-Practice approaches and individual flexibility when it comes to internal core processes. Especially smaller companies need a constant cash flow and cannot allow internal core processes such as the billing of clients to be delayed due to flaws in the budget tracking. Herefore, the case company implies strict rules on how the billable working hours must be tracked and subsequently approved. These strict standards led to a certain lack of understanding of some employees, as they had previously been freely entrusted with this task. However, in the case at hand, individual freedom had taken on such proportions that it was getting to the company's substance, and strict measures had to be introduced. As can be seen in this example, the constraints on recommendations vary by company, but the bottom line is that neither rigorous guidelines nor exclusive best practices will lead to success. It takes a healthy balance to grow sustainably.

In the analysis of growth, on the other hand, the findings from the case study are very close to the findings from the literature. Giving standardization a fundamental impact on growth (Blind & Jungmittag, 2008) accurately describes the case study's findings. Without exaggeration, all respondents see standardization as the only vehicle for sustainable growth. Only if the framework of the processes follows a general standard can the benefits listed in this chapter be achieved. It is essential to be aware of the effects of standardization and adapt it precisely to the company's needs.

5.2 Why is Knowledge Management Vital for SMEs?

Objective two of the research is to evaluate the knowledge management process of the SME to standardize knowledge distribution. Like the theoretical background, the discussion of this chapter is divided into the development and evaluation of knowledge management, process documentation, and business process management and its challenges.

5.2.1 The Importance of Knowledge Management

In accordance with the theory, the company acknowledges the vitality of a structured approach to knowledge management. Nevertheless, the research verified that the SME lacks a framework for coordinated knowledge management. However, this was not due to the lack of software, on the contrary, the software was already available before the documentation of the project management knowledge. It was due to the lack of resources to conduct KM actively (Desouza & Awazu, 2006; Egbu et al., 2005). As a result, there was little desire to document. Consequently, the knowledge was tacit and bound to the companies' employees. Additionally, the family feeling in SMEs and the historically manageable size lead to a culture of informal knowledge management processes and people-centric practices. From the three critical influencing factors developed by Cerchione et al. (2016), contingency and critical success factors triggered the knowledge management process. In particular, firm-specific factors such as the growing company size and human/managerial factors such as that key knowledge bearers were leaving the company are relevant for SMEs. Throughout the knowledge management documentation, barriers in the form of financial issues when employees were not complying with the standard became more visible, and the cost for the wiki as an information-sharing tool, but in the case company at least, these were not triggering factors.

Overall, this study reinforces the literature findings that KM improves performance within the organization. Creating a knowledge flow and enhancing the communication lets KM create an atmosphere of transparency. The transparent process and clear assignments, which can be found centrally documented, enable employees to see themselves as part of the bigger picture and lead to an easier integration into the process. Therefore, KM takes a significant role in the identification process of the employee within the company.

A vital development of the initiated knowledge management process was a shift from mainly tacit knowledge and employee-based KM to an explicit and tangible knowledge base. The change is described from “It was a mess” to having a “central and clear repository” used as “a wiki, which includes the relevant content”. On the one side, having a

more centralized and less people-centered approach to knowledge helped the employees work more independently. On the other side, when looking for guidance, they could find logically structured knowledge in various levels of detail at a glance.

The literature sees the SECI-Modell as a knowledge cycle (based on socialization, externalization, combination, and internalization) for knowledge management (Desouza & Awazu, 2006; Nonaka, 1991, 1994; Nonaka & Takeuchi, 1995; Nonaka & Toyama, 2003). However, this research suggests that the knowledge cycle can be extended to its optimal form of combining all four phases through standardization. In a company, there will always be move knowledge in tacit form between individuals (socialization), whether the employees do it knowingly or not, specific insights are usually shared via face-to-face meetings and other people-based mechanisms, and not in front of the whole company. Yet through standardization, when it includes a mechanism to write down project-specific tacit knowledge (e.g., via customer stories or retrospectives), then the socialization of tacit knowledge becomes explicit. The same can be applied to the application of tacit insights on an outside entity (externalization), meaning that when a worker applies a new method, which they have learned outside the company, and it turns out to be impactful, it is usually captured by the captured reflection and thus becomes explicit knowledge. Therefore, this research suggests that through standardization, the company can evolve within the SECI model and integrate the first two stages into an explicit KM process for long-term sustainable KM highlighted.

The SME at hand also had not had the resources to fully dedicate a full-time employee or even a team to leverage their knowledge base or manage it successfully. Therefore, the standardization process was a lengthy endeavor mainly conducted by the CEO and the researcher. When the assistance of the corresponding apartments was needed, the lack of policies focusing on KM became evident, as it often took several appointments to gather the relevant information, and much of the knowledge came from private archives. Therefore, confirming that most knowledge is held in the heads of the owner and a few key workers rather than being physically stored or shared. In order to change this situation and ensure the company's long-term survival, the company has taken a 5-step

approach to knowledge management. Initially, all PM-related knowledge was identified, and revealed gaps were subsequently filled with newly created knowledge. In a third step, already far advanced in the standardization of PM, a central knowledge hub was created to store and retain the knowledge. With the presentation of the standardization, stage 4 was reached, the active transfer of knowledge to all departments involved. At the same time, stage 5 was started, in which the knowledge shall be actively used by all and must also be used depending on the task. The company thus once again confirms the findings of Durst and Runar Edvardsson (2012) and their analysis of KM process factors influencing the SMEs' survival. Giving KM and its related internal capabilities (foundation for social interaction, information storage, and knowledge availability across the organization) an essential basis, integrating a social perspective (Swap et al., 2001) and technological perspective (Lee & Choi, 2003) in the company's backbone. Offering the company a way to leverage the tacit knowledge of their employees and grow professionally and physically (Desouza & Awazu, 2006).

5.2.2 The Link Between Process Documentation and Standardization

The case company experienced a shift from mainly tacit knowledge with employee-based KM to an explicit and tangible knowledge base through standardization. Consequently, it was necessary to develop a detailed process documentation. Therefore, this research claims that standardization is directly linked to documentation. This is supported by the fact that, in the case at hand, the process documentation, including process chain modeling, process integration, process analysis, and optimization (Johnson et al., 2002), is the heart of the new standardization in the SME’s project management.

The research reveals that the procedure leading to the process documentation in SMEs closely follows the seven-step model proposed in the literature (Ungan, 2006) and is deeply intertwined with the standardization process (Chapter 5.1). Initially, SMEs established the framework for the PM-related KM process (i.e., focused on the project life cycle). Process experts (‘masters’) are identified based on the framework, which automatically forms the team to transform the tacit into explicit knowledge. The expert team’s results define the process’s steps and determine its boundaries and possible

influences, confirming the simple process diagram in Figure 3 by Tregear (2015). Finally, the obtained knowledge is codified and integrated into the project management documentation, designated as the central storage location for the new standard.

While the authors of the documentation and literature agree that ease of use and a high level of comprehensibility are crucial to process documentation, the evaluation showed that implementing this is rather difficult. The goal of combining a knowledge wiki and a graphical depiction of a process was objectively achieved but subjectively only perceived to a limited extent. Whereas some employees describe the process documentation as logically structured and accessible, others demand to focus more on graphic presentation and giving the documentation a constant state of an ongoing process. Therefore, the research emphasizes that the process documentation needs to be constantly revised, adapted, and improved.

On the one hand, the results show clearly that process records provide an excellent base to spot flaws in a single process (Ungan, 2006) and address and close gaps immediately, enabling the company to design more efficient processes during the process documentation. On the other hand, the results also confirm that the level of detail and the rigor of the documented standard are two critical components in documentation because the more detailed a process mapping is, the less possible variation there is (Symons & Jacobs, 1997). Whether to allow this variation depends on the process step and the generalizability of the task.

Overall, this links process documentation tightly to process standardization and vice versa. Implying that when SMEs want to restructure and standardize their procedures, they must document them accordingly. However, when creating a process documentation, the result automatically creates some standardization. The resulting standardization does not necessarily need strict guidelines, but it can consist of recommendations and best practices. Depending on the SME, the one process starts the other, but as a result, both measures are linked and trigger the other.

5.2.3 Business Process Management as a Result of Standardization

By its definition, BPM subsumes a collection of approaches enabling operational business processes to promote an optimized value generation (van der Aalst et al., 2003). This thesis argues that with the PM documentation standardizing a whole business processes unit, the SME automatically enters the BPM stage, regardless of to which extent this optimization is performed.

As elaborated in Chapter 2, there are two central BPM approaches, the graph-based approach and the operator- or calculus-based approach (Leymann et al., 2015). In the case of SMEs, which are at the beginning of the BPM process, this research sees the graphical analysis as more advantageous and intuitive. With its complete overview of the process structure and a clear picture of where there are still gaps, the process documentation created with its process diagrams and visualizations provides an excellent starting point for BPM. Confirming Harmon (2018), the case company deploys the BPM not across the board but instead focuses on individual processes, in this case, related to PM adopting the key benefits and core concepts of BPM first (Imanipour et al., 2012).

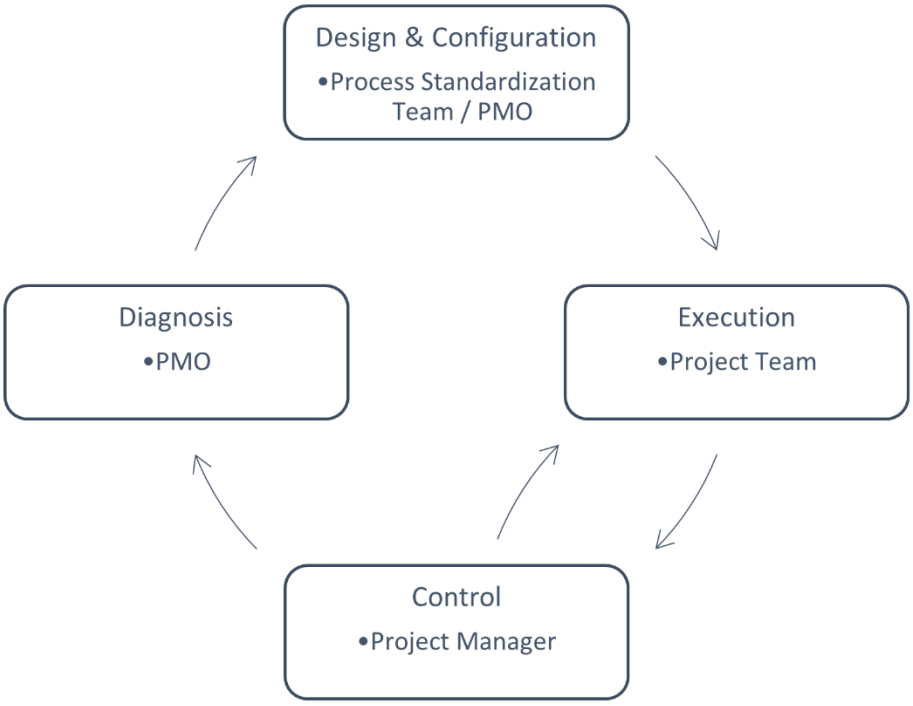

Figure 10 - PM-related Business Process Management and Roles

Depending on the firm’s infrastructure and resources, the complexity of BPM is adjusted. According to the results, SMEs, especially in the preliminary stages of BPM, prefer that the department or team in which the process takes place take over parts of the BPM (see Figure 10). The design and configuration were done by the team entrusted with the standardization during the process standardization. The project teams are required to do the execution independently throughout the company’s projects, and the direct control is in the hands of the respective project manager. The PMO conducts the diagnosis while monitoring the KPIs and guiding the project managers' work. This confirms that BPM results automatically after a business process standardization, as those standards have to be managed and improved (see Figure 8).

In summary, KM is vital for SMEs because it facilitates the transfer and traceability of knowledge through standardization and documentation. Furthermore, standardization triggers an active KM process in the company. This means a central location in the company for knowledge related to PM that is accessible to all employees. In addition, due to standardization, the knowledge transfer process (channels, type of communication, text templates, etc.) is structured in such a way that all participants can work optimally with the distributed knowledge, and the required information is summarized in a message making work “much more effective” (2).

5.3 The Role of Project Management in SMEs

Objective three proclaims an evaluation of the company's project management approaches based on the standardization. Since the standardization is mainly related to project management and all other results are side effects, the influence on PM in the company is noticeable.

5.3.1 The Development of Project Management Through Standardization

Initially, the SME had a low level of standardization and low awareness about the volume of tasks that come with the PM, confirming the argumentation of R. Turner et al. (2010). However, the findings contradict research that SMEs generally have a low degree of specialization (Ghobadian & Gallear, 1997). High-tech companies, such as those in the IT

sector, need a high degree of specialization from the start in order to position themselves with expert knowledge. Nevertheless, the case company lacked formal decision-making, well-defined roles, and a stiff structure of traditional project management described by Keegan and Turner (2002) and Turner et al. (2010). Therefore, the first approach is to standardize a simplified version of PM, increasing the value of PM within the company and adjusting the project management approach according to the firm's needs (Turner & Ledwith, 2018). This research suggests that this simplified standard already increases the PM awareness and value within the company as an acknowledged topic.

As project management approaches can take on various shapes, R. Turner and Ledwith (2018) established three levels of formality based on the PM approaches. This research supports these findings and argues that writing and publishing of standards already lead to a beginning maturity in PM. Because of standardization, the company is moving away from informal, unbureaucratic, and exclusively people-oriented project management approaches as standardization create an urge for a more bureaucratic process. Contestants argue that "it's definitely an increased level of maturity when knowledge is formalized" (2), including a more formal communication with clear responsibilities. Because standardization in PM fosters "appropriately trained and experienced project manager" (4). Whereas all interviewees agree that templates, proprietary software solutions, and tool homogeneity are beneficial, many stakeholders express doubt about fully integrated PM. Here it becomes clear that, on the one hand, the company's maturity is a lengthy process, and on the other hand, employees must understand the potential of the methodology. The decisive factor for a methodology is that it is adapted to the company; in this case, it is already clear that a certain degree of flexibility is necessary to respond to corresponding customer requirements. Nevertheless, the long-term goal should be to integrate a manual with the methodology and procedures, updated regularly, into the company and live by it actively. Although cost benefits are not part of the thesis, it can be concluded from the interviews that the case company is convinced that standardization will bring significant cost benefits in the long term. Already now, "certain projects [...] would not have been possible without this standardization, this formalization", which

means that indirectly, standardization is already yielding monetary results and confirming that people believe project management is highly beneficial to their businesses.

Although project management was not introduced as a new topic but merely standardized, the same difficulties could be experienced in the case company as in the findings from Alves et al. (2019). Throughout the standardization process, SMEs encounter various internal and organizational challenges. Especially the knowledge distribution and general requirement to show the benefit of initiatives need to be addressed. As displayed in Figure 10, the project teams do the 'execution', and the control should be with the project manager, but the effectiveness of entrusting only the team on the operative level must be questioned. The management clearly communicated their expectations and exemplified the standards in their daily routine. Additionally, the PMO stored the knowledge centrally and provided assistance whenever needed or requested. Nonetheless, an efficient roll-out was hindered as the general opinion is that the company has to explain more and generate more awareness. This follows the findings from the literature that the PM strategy must be aligned with the organization's overall strategy and needs the top management and overall management support (Nagyová et al., 2021; Turner et al., 2010). This means all personnel with management functionality need to understand and internalize the standardization as they are obliged to adhere to them, explain the standards, and put them into practice in all individual projects. Finally, they must set the rules "to unfold [the standardizations] full effectiveness" (6).

Consistent with the research of Murphy and Ledwith (2007), this study confirms that identifiable project management processes and full-time project managers are only part of the PM construct. One key is that the owners and managers who were originally heavily involved manage to withdraw from operations through standardization. Yet, the case at hand confirms, whether consciously or unconsciously, that owners/managers continue to have the most significant influence on decisions about projects. This means that if their instruction is understood differently than the standard, the spoken word outweighs the written standard. Therefore, this study argues that in the course of

standardization, it is essential to train the employees and prepare the management to trust their staff and ensure a certain implementation period for the new standard.

Summarizing the development of project management through standardization, one can conclude that PM develops through standardization if the new standards concern project management partly. The strength of this influence and the resulting maturity development depends on the SME and the employee involvement of the employees.

5.3.2 Establishing a Project Management Office in SMEs

According to the definition of the PMO in the literature, standardization would have fallen within its scope (Project Management Institute, 2017a). However, since there were neither fixed PMO structures nor sufficient resources, the PMO could not meet the definition of being in charge of establishing companywide processes, policies, and procedures for PM. Thus, the lack of a professionalized PMO became apparent due to the standardization initiative, and restructuring was unavoidable.

One of the key findings of this research is that even though the standardization triggered a fundamental reformation providing the PMO with new resources and expertise, more time is required to fully reach the definition of establishing “consistently followed practices for the initiation, planning, execution, control, and closure of projects” (Johnson et al., 2002, p. 1). Although the PMO has sufficient resources for ongoing operations, creating standards requires additional resources to match the workload, especially at the beginning. Since these are often lacking in SMEs, the implementation process is prolonged. Hence, a structured PM approach requires a solid PMO and sufficient time. This means at least one resource is dedicated to it full-time.

Adjusting the PMOs' growth in correspondence with the company's size and the number of projects is a crucial step based on the awareness created by the standardization and the recognized relevance. Furthermore, the research proves that the PMO is not a standalone entity but part of interconnected relationships that connect strategy, initiatives, and structures (Aubry et al., 2007). For SMEs, this is highly beneficial, as their flexible

structure allows the PMO to quickly become an integral part of the company, which is being valued for its expertise in PM.

As the organizational heart of project management, the PMO plays a crucial role in PM-related knowledge distribution. There is no disciplinary responsibility on the PMO's side in the case company, but the project management standards must be transmitted through the channels established for knowledge distribution. Confirming the literature, especially in this area, the PMO's boundaries and support from all related management functions lay the foundation for its success (Johnson et al., 2002). Moreover, when the PMO has established its place in the company by releasing the first set of codified and accessible project management standards, it automatically enters the OPM3 model described by the literature (Miller, 2004; Poveda Bautista et al., 2019; Project Management Institute, 2017a). The respondents highlighted that by its definition, the PMO follows the four-step development plan to standardize, measure, control, and establish continuous improvement in the project management area, increasing the maternity for projects and the company. This form of continuous improvement and increasing maternity occurs in various ongoing processes. On the one hand, there is a continuous internal evaluation of the process structure (in the context of BPM). On the other hand, the measured KPIs and targets of the projects provide a clear picture of the current process situation, and finally, the individual departments report to the PMO how particular processes can be optimized.

Findings from the case company provided support for the theory presented by Gomo et al. (2021). The case company confirms the dual role of the PMO as a moderator and mediator in knowledge transmission. This means the PMO facilitates knowledge transfer (moderating function), and the PMO transfers knowledge across projects (mediation role). The latter is more complex, as it takes longer for these processes to kick in. Thus, the effectiveness of this function is purely theoretical until the projects are completed. At the same time, this function is very dependent on the quality of the input from the projects. This means that projects often run very well but do not necessarily require

mediation of knowledge. Yet, the findings confirm that both roles exist and are particularly important for SMEs.

Regarding the Project Management Institute's (2017b) argumentation, the study found that the PMO needs to be as agile as the business. There should be a fixed framework with flexibility within the sub-process in SMEs that are just taking their first steps in standardization. Particularly in consulting companies, the company's individual “sweet spot [...] between standardized processes and individual approaches” is the right balance of agility. However, the stakeholders agree with the literature that these new tasks are becoming more important, integrating the PMO further into the organization as a multidisciplinary management tool (Rigby et al., 2016).

5.4 The Influence of Standardization on Stakeholder Satisfaction

Objective four is to evaluate the stakeholder's satisfaction and whether consistency through standardization is influencing it. For both standardization and satisfaction evaluation, all stakeholders had to be analyzed. Confirming the literature, stakeholder analysis helps identify and understand the needs and expectations of the key stakeholders (L. W. Smith, 2000). The findings suggest that primary stakeholders are particularly relevant for SMEs, and consequently, lengthy secondary stakeholder analysis can be avoided. Like Eskerod and Jepsen (2013), the company confirms that the stakeholder analysis enables adequate communication and procures the right resources (process ‘masters’) to create the standard and thus satisfy all project participants in the long term.

The research found that since it was an internal standardization, all primary stakeholders after Waddock and Graves (1997) were directly or indirectly affected. The direct influence is present for all personnel affected immediately, changing their behavior to comply with the new standards. In contrast, the indirect occurs when the work performed is affected, or the employee's effort serves as input for downstream standardized processes. In both cases, the new procedures influence the mood and satisfaction of employees, owners, and clients. Given that the case company is a consulting firm working mainly on projects and the imposed standardization is primarily about standardizing PM,

most interviewees are directly affected. Clients, who are indirectly affected through reporting or other interaction points with the company, could not be part of the analysis and are therefore not addressed in further detail.

Overall, the research confirms a strong influence on the project work for all stakeholders (project managers and project team members, team leaders, and managers). On the one side, a fundamentally positive influence of standardization on stakeholder satisfaction is proven by the positive feedback that the standardization is extremely helpful, saves a lot of time, and makes the company work more efficiently. On the other side, Strong et al.'s (2001) gap model offers an explanation for the existing skepticism or restrained behavior. Regardless of the company size, the employees lack understanding when the management does not clearly explain the expectations. Thus, employees can be tempted to believe that the goal of standardization is solely to force them to change their ways of working. Therefore, it is crucial for all companies undertaking a standardization endeavor to clarify the reasons for the PM framework in detail and allow sufficient time for a transition period. Another reason listed in the gap model uncovered during this research is failure to perform. Meaning ”accurately assessed performance fails to meet clearly understood expectations” (Strong et al., 2001, p. 220). This is the case when the standard does not lead to the desired effect; for example, it leads to useless extra work, no time savings, or the output does not optimize the further processing of the object in the next step. In this case, the company must adjust the process and restore stakeholder satisfaction.

Due to standardization, the company reduced uncertain requirements, inadequate documentation, hidden business rules, and requirements creep, leading to better communication and increased satisfaction. Furthermore, the employees can build on a joint base of PM tools and techniques giving them confidence in their work routine. Confirming Li et al.’s (2013) argument that active involvement allows for the resolution of conflicts by including project stakeholders. Additionally, the study confirms Huijgens et al. (2017) argumentation that stakeholder satisfaction can be increased due to the expected

higher quality of results, clear and honest communication and sufficient time during the transition phase.

All stakeholders confirmed that standardization also enhances stakeholder satisfaction because it provides a better 'estimability' of the work. As displayed below in Figure 11, the input from Task B is known because the output from the previous step (A) is standardized, and the methodology defines the guidelines and best practices (orange highlight) and machine or human-based support systems (green highlight). This results in a framework for the process, and the 'activity & sequence' required to transform the input into the desired output can be easier estimated. Although there is room for variation depending on the specific subprocess, the overall process chain can be estimated from each worker, and the guides and enablers level the process variations. This "helps employees concentrate on their work" (2), " leads to good [and] efficient output" (4), and "shortens the amount of work for downstream departments […] [making] everyone happier" (5).

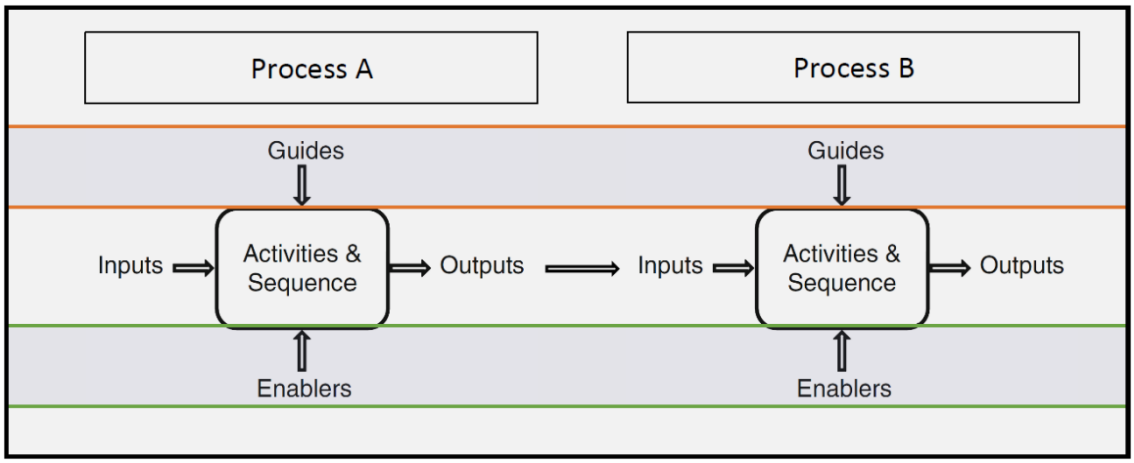

Figure 11 - Structured Process Diagram based on Tregear (2015)

6 Conclusion

This chapter contains concluding remarks on the study, underlines the limitations, and presents recommendations for future research.

6.1 Conclusion

This research aimed to study the role of project management standardization in SMEs, focusing on knowledge management, project management, and stakeholder satisfaction. At the beginning of the work, the different theoretical approaches were analyzed, and already first derivations became apparent. Throughout the standardization in the company, further implications were determined. Finally, after releasing the new standards and several months of transitioning time, the role of PM Standardization in SMEs can be determined.

Standardization of project management takes a central role in SMEs primarily specializing in project work. Regardless of specialization, KM is one of the critical drivers of sustainable business growth. When employed, the standardization leads to an active KM, enabling SMEs to thrive and develop detached from tacit knowledge and people-centered approaches. Explicit knowledge stored centrally and available for all stakeholders, managed by an interconnected entity, is the key to transparent structures and long-term stakeholder satisfaction.

The study connects the vast literature on process standardization, knowledge management, project management, and stakeholder satisfaction and catalyzes it for use in SMEs. A summary of the result of the first-time standardization in project management in this form and this level of detail, combined with the deep insights from the case company, cannot be found elsewhere in the literature. Therefore, this study makes several significant contributions to the scientific world as well as practical implications.

First, the results confirm the analysis and benefits of process standardization in SMEs. By documenting, analyzing, and comparing the performed standardization in the case company with the literature results, key aspects and essential company roles involved in

the process are outlined. This research aids companies in taking proper steps when standardizing their processes. Furthermore, the extensive lists of benefits from a standardization contain many of the advantages listed in the literature and enhance the catalog with more SME-relevant aspects. These should provide sufficient incentives for other SMEs to follow in the footsteps of a more standardized process framework and trigger more research analyzing the SME relevant aspects.

Second, the study connects how a standardization process affects the knowledge management or, in the case at hand, how it triggers the company to conduct KM actively. This study confirms the findings of many scholars, as it proves that KM processes are vital to the company (Cerchione et al., 2016), SMEs usually have people-centered and informal knowledge management (Desouza & Awazu, 2006; Egbu et al., 2005), outlining the benefits from transforming tacit in explicit knowledge (Durst & Runar Edvardsson, 2012), and the resulting facilitation in the infrastructure and processes for the use of internal knowledge (Hock-Doepgen et al., 2021). Moreover, the research highlights a cultural shift within SMEs when standardizing their processes, from informal and tacit knowledge to transparent, structured, and explicit knowledge. Finally, the author goes beyond the edge of standardization and explains the changes in BPM and what structural advantages it has, using KM actively in a circular approach with continuous improvement, even when focusing on individual processes rather than the whole company.

Third, the study contributes to the limited body of project management knowledge in SMEs. It outlines the specificities of high-tech companies during the formalization of PM. Combining the findings of the last years of research with current influences enables an accurate picture of the PM processes and their influence on the company's maturity. Through the detailed analysis, key factors such as the strategic alignment of the PM strategy with the organization's overall strategy are highlighted. Confirming the difficulties with organizational challenges and offering methods to improve them allows subsequent standardization attempts to avoid these difficulties.

Based on the findings, the PMOs standing at the organizational heart of project management could be consolidated. In addition, the mission of the PMO in the SME environment

could be confirmed, and the boundaries and success factors highlighted. Eventually, the dual role and the resulting difficulty in finding a balance as the central networking point for PM in the company were broad into the SME environment.

Fourth and final contribution is the evidence of a link between a consistent approach provided by standardization and stakeholder satisfaction within the organization. Due to the advantages of standardizing processes, such as adequate communication, dissatisfaction can be avoided, and satisfaction increases. Key findings are that standardization enhances stakeholder satisfaction through clear communication, transparent processes, better 'estimability' of the work, and reduced workload in downstream process steps.

In summary, managers can use this study as evidence that standardization in project management has several positive effects on knowledge management, project management, and stakeholder satisfaction. Therefore, its implementation "in an economic environment where businesses are constantly attempting to identify means to obtain incremental improvements and enhance the company's bottom line" (Sánchez-Rodríguez et al., 2006, p. 62) is justified. Furthermore, as argued initially, to increase performance, SMEs can either buy the PM knowledge required by hiring an experienced project manager or develop a guidance structure to educate and assist their project managers. Given the cultural and organizational influence of the latter, the research supports the effort to implement a company-specific standard to educate and assist their project managers.

6.2 Limitations

Every scientific work has limitations, and this work is no different. In addition to the methodological limitations discussed in chapter 3.5, further limitations exist. Even if the study's findings are promising, more research is needed to confirm them. Even though the number of respondents in a qualitative study is steady, especially when compared to the size of the reference population, a bias cannot be ruled out.

In line with the argumentation from Muenstermann et al. (2009), the chosen dimensions may be easily observed and measured, enabling an objective and consistent verification. The authors continue that other exciting aspects of the processes, such as flexibility,

agility, or resilience, would have been more challenging to measure and prohibited objective verification. Moreover, since the conclusions are based on a single case study, the applicability of the findings to other firms or industries is debatable. Likewise, the project management process was chosen as the research object, and the same conclusions may not apply to other organizational processes.

When it comes to conducting this study in practice, it should be noted that the responses and comments of the interviewees in this study reflect the time when the interviews were conducted and what was shortly after the initial standardization was released. A long-term study with multiple data extraction points could provide deeper insights. Furthermore, the intended profitability analysis could not be included due to the imitated scope of the thesis. This is currently underway, so a project-specific monetary estimate and valuation are not possible at this time.

Finally, different research methods can lead to different results in qualitative research. The complexity and individuality of the topic necessitate approximate reasoning based on human intuition, and the distinctive characteristics of SMEs limit the generalizability. Thus, it is left to the reader to interpret the implications relevant to them and their significance. In the light of transparent documentation, all methodological steps were highlighted, and the corresponding results were substantiated with qualitative evidence.

6.3 Directions for Future Research

Since part of the limitations is the limited generalizability, studies in the future should further validate or evaluate the results. The intended analysis on ‘How does standardization in project management affect project profitability?’ could not be executed within the scope of the thesis. One reason is that to measure the actual effect on quantitative variables, a significant amount of time needs to be allocated for the transitioning phase, and more time is needed afterward to measure the impact. Especially longitudinal studies can play a significant role in analyzing these long-term effects of standardization. At times of the essence, this research is restricted in its scope and limited to data created

and gathered throughout the thesis period; therefore, future research could take on this challenge with more time and resources.

In addition, the originally planned mixed methods approaches could bear more insights into the topic by combining quantitative and qualitative data. It could be used to statistically prove links and explore correlations between the standardization endeavor and knowledge management, project management, and stakeholder satisfaction in SMEs.

As a final remark, future research should focus on the Asian, Latin American, or African markets, as in these markets, there is a different dynamic of stakeholder collaboration than in the Anglo-Saxon and European areas. This would greatly expand the current literature based on Western research and increase the generalizability of the topic.

References

Ahmed, R., & Anantatmula, V. S. (2017). Empirical Study of Project Managers Leadership Competence and Project Performance. *Engineering Management Journal*, *29*(3), 189–205. https://doi.org/10.1080/10429247.2017.1343005

Ahmed, S. M., & Kangari, R. (1995). Analysis of client-satisfaction factors in construction industry. *Journal of Management in Engineering*, *11*(2), 36–44.

Alavi, M., Kayworth, T. R., & Leidner, D. E. (2005). An Empirical Examination of the Influence of Organizational Culture on Knowledge Management Practices. *Journal of Management Information Systems*, *22*(3), 191–224. https://doi.org/10.2753/MIS0742-1222220307

Alves, P. R., Tereso, A. P., & Fernandes, A. G. G. (2019). *Project management system implementation in SMEs: A case study*.

Anagnostopoulos, K. P. (2004). Project management: Epistemological issues and standardization of knowledge. *Operational Research*, *4*(3), 249–260. https://doi.org/10.1007/BF02944144

Anand, A., Kant, R., & Singh, M. D. (2013). Knowledge sharing in SMEs: Modelling the barriers. *International Journal of Management and Enterprise Development*, *12*(4–6), 385–410.

Anand, J. (2011). Permeability to inter- and intrafirm knowledge flows: The role of coordination and hierarchy in MNEs. *Global Strategy Journal*, *1*(3–4), 283–300. https://doi.org/10.1002/gsj.19

Anfara, V. A. Jr., Brown, K. M., & Mangione, T. L. (2002). Qualitative analysis on stage: Making the research process more public. *Educational Researcher*, *31*(7), 28–38.

Atlassian. (n.d.). *Confluence | Your Remote-Friendly Team Workspace*. Atlassian. Retrieved May 24, 2022, from https://www.atlassian.com/software/confluence

Aubry, M., Hobbs, B., & Thuillier, D. (2007). A new framework for understanding organisational project management through the PMO. *International Journal of Project Management*, *25*(4), 328–336. Scopus. https://doi.org/10.1016/j.ijproman.2007.01.004

Babbie, E. R. (2013). *The practice of social research* (Thirteenth edition). Wadsworth Cengage Learning.

Bauwens, C., & Van Dorpe, T. (2018). *Business Process Management in SMEs*. Universiteit Gent.

Beimborn, D., Gleisner, F., Joachim, N., & Hackethal, A. (2009). The Role of Process Standardization in Achieving IT Business Value. *2009 42nd Hawaii International Conference on System Sciences*, 1–10. https://doi.org/10.1109/HICSS.2009.453

Blind, K., & Jungmittag, A. (2008). The impact of patents and standards on macroeconomic growth: A panel approach covering four countries and 12 sectors. *Journal of Productivity Analysis*, *29*(1), 51–60. https://doi.org/10.1007/s11123-007-0060-8

Blind, K., & Mangelsdorf, A. (2016). Motives to standardize: Empirical evidence from Germany. *Technovation*, *48–49*, 13–24. https://doi.org/10.1016/j.technovation.2016.01.001

Brettel, M., Engelen, A., & Voll, L. (2010). Letting go to grow—Empirical findings on a hearsay. *Journal of Small Business Management*, *48*(4), 552–579.

Centobelli, P., Cerchione, R., & Esposito, E. (2017). Knowledge Management in Startups: Systematic Literature Review and Future Research Agenda. *Sustainability*, *9*(3), 361. https://doi.org/10.3390/su9030361

Cerchione, R., Esposito, E., & Spadaro, M. R. (2016). A literature review on knowledge management in SMEs. *Knowledge Management Research & Practice*, *14*(2), 169–177. https://doi.org/10.1057/kmrp.2015.12

Cerruti, C., Borra, S., & Appolloni, A. (2019). *Survey of the European Management Consultancy* (p. 46). European Federation of Management Consultancies Associations. https://feaco.org/sites/default/files/sitepagefiles/Feaco.Survey%202018-2019.pdf

Charvat, J. (2003). *Project management methodologies: Selecting, implementing, and supporting methodologies and processes for projects* (Illustrated Edition). John Wiley & Sons.

Clark, D. (2021, July 7). *Europe: Number of SMEs*. Statista. https://www.statista.com/statistics/878412/number-of-smes-in-europe-by-size/

Coffey, A., & Atkinson, P. (1996). *Making sense of qualitative data: Complementary research strategies.* Sage Publications, Inc.

Colquhoun, G. J., Baines, R. W., & Crossley, R. (1996). A composite behavioural modelling approach for manufacturing enterprises. *International Journal of Computer Integrated Manufacturing*, *9*(6), 463–475. https://doi.org/10.1080/095119296131436

Crehan, P. (2020). *Reflections on a revision of the definition of the EU SME.* (J. Gavigan, Ed.). Publications Office of the European Union. https://data.europa.eu/doi/10.2760/602855

Davenport, T. H., & Short, J. E. (1990). The new industrial engineering: Information technology and business process redesign. *Sloan Management Review*, *31*(4), 11–27.

de Vries, H., Slob, F., & Zuid-Holland, V. G. (2006). Best Practice in Company Standardization. *International Journal of IT Standards and Standardization Research (IJITSR)*, *4*(1), 62–85. https://doi.org/10.4018/jitsr.2006010104

Desouza, K. C., & Awazu, Y. (2006). Knowledge management at SMEs: Five peculiarities. *Journal of Knowledge Management*, *10*(1), 32–43. https://doi.org/10.1108/13673270610650085

Durst, S., & Runar Edvardsson, I. (2012). Knowledge management in SMEs: A literature review. *Journal of Knowledge Management*, *16*(6), 879–903. https://doi.org/10.1108/13673271211276173

Egbu, C. O., Hari, S., & Renukappa, S. H. (2005). Knowledge management for sustainable competitiveness in small and medium surveying practices. *Structural Survey*, *23*(1), 7–21. https://doi.org/10.1108/02630800510586871

Eriksson, P., & Kovalainen, A. (2016). *Qualitative methods in business research* (2nd edition). SAGE.

Ernø-Kjølhede, E. (1999). *Project management theory and the management of research projects* (No. 3/2000; p. 35). Department of Management, Politics and Philosophy,

CBS. https://research.cbs.dk/en/publications/project-management-theory-and-the-management-of-research-projects

Eskerod, P., Huemann, M., & Savage, G. (2015). Project stakeholder management—Past and present. *Project Management Journal*, *46*(6), 6–14. https://doi.org/10.1002/pmj.21555

Eskerod, P., & Jepsen, A. L. (2013). *Project Stakeholder Management* (1st ed.). Gower Publishing. https://doi.org/10.4324/9781315245881

European Commission. (2016). *User guide to the SME Definition* (Ref. Ares(2016)956541; p. 60). Publications Office of the European Union. https://ec.europa.eu/regional_policy/sources/conferences/state-aid/sme/smedefinitionguide_en.pdf

Fernandes, G., Ward, S., & Araújo, M. (2015). Improving and embedding project management practice in organisations—A qualitative study. *International Journal of Project Management*, *33*(5), 1052–1067.

Froger, M., Bénaben, F., Truptil, S., & Boissel-Dallier, N. (2019). A non-linear business process management maturity framework to apprehend future challenges. *International Journal of Information Management*, *49*, 290–300. https://doi.org/10.1016/j.ijinfomgt.2019.05.013

Geertz, C. (1973). *The interpretation of cultures* (Vol. 5019). Basic books.

Ghobadian, A., & Gallear, D. (1997). TQM and organization size. *International Journal of Operations & Production Management*.

Golafshani, N. (2003). Understanding Reliability and Validity in Qualitative Research. *The Qualitative Report*, *8*(4), 597–606. https://doi.org/10.46743/2160-3715/2003.1870

Gomo, N., Steyn, H., & van Waveren, C. C. (2021). The Role of the Project Management office in Knowledge Transfer in a Matrix-Structured Organisation: A Case Study. *South African Journal of Industrial Engineering*, *32*(4), 129–140.

Güngör, D. Ö., & Gözlü, S. (2017). Investigating the relationship between activities of project management offices and project stakeholder satisfaction. *International Journal of Information Technology Project Management (IJITPM)*, *8*(2), 34–49.

Hansen, M. T., Nohria, N., & Tierney, T. J. (1999, March 1). What's Your Strategy for Managing Knowledge? *Harvard Business Review*. https://hbr.org/1999/03/whats-your-strategy-for-managing-knowledge

Hargadon, A., & Fanelli, A. (2002). Action and possibility: Reconciling dual perspectives of knowledge in organizations. *Organization Science*, *13*(3), 290–302. https://doi.org/10.1287/orsc.13.3.290.2772

Harmon, P. (2018). *The State of Business Process Management 2018*.

Harmon, P., & Wolf, C. (2016). The state of business process management. *BP Trends*.

Haynes, A. B., Weiser, T. G., Berry, W. R., Lipsitz, S. R., Breizat, A.-H. S., Dellinger, E. P., Herbosa, T., Joseph, S., Kibatala, P. L., Lapitan, M. C. M., Merry, A. F., Moorthy, K., Reznick, R. K., Taylor, B., & Gawande, A. A. (2009). A surgical safety checklist to reduce morbidity and mortality in a global population. *New England Journal of Medicine*, *360*(5), 491–499. https://doi.org/10.1056/NEJMsa0810119

Hock-Doepgen, M., Clauss, T., Kraus, S., & Cheng, C.-F. (2021). Knowledge management capabilities and organizational risk-taking for business model innovation in SMEs. *Journal of Business Research*, *130*, 683–697. https://doi.org/10.1016/j.jbusres.2019.12.001

Huijgens, H., Van Deursen, A., & Van Solingen, R. (2017). The effects of perceived value and stakeholder satisfaction on software project impact. *Information and Software Technology*, *89*, 19–36.

Huse, M., & Eide, D. (1996). Stakeholder management and the avoidance of corporate control. *Business & Society*, *35*(2), 211–243.

Ihrig, M., & MacMillan, I. (2015, January 1). Managing Your Mission-Critical Knowledge. *Harvard Business Review*. https://hbr.org/2015/01/managing-your-mission-critical-knowledge

Imanipour, N., Talebi, K., & Rezazadeh, S. (2012). *Obstacles in business process management (BPM) implementation and adoption in SMEs*. University of Tehran. https://dx.doi.org/10.2139/ssrn.1990609

Jepsen, A. L., & Eskerod, P. (2009). Stakeholder analysis in projects: Challenges in using current guidelines in the real world. *International Journal of Project Management*, *27*(4), 335–343. https://doi.org/10.1016/j.ijproman.2008.04.002

Johannsen, F., Leist, S., & Zellner, G. (2010). Implementing Six Sigma for Improving Business Processes at an Automotive Bank. In J. vom Brocke & M. Rosemann (Eds.), *Handbook on Business Process Management 1: Introduction, Methods, and Information Systems* (pp. 361–382). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-00416-2_17

Johnson, M. A., Joyner, T. G., & Martin Jr., R. J. (2002). *Process-driven project management office implementation*. PM111–PM117. Scopus. https://www.scopus.com/inward/record.uri?eid=2-s2.0-0036351676&partnerID=40&md5=ae16fbff724aff8ab9e53e26fcbc989c

Jovanovic, P., & Beric, I. (2018). Analysis of the available project management methodologies. *Management: Journal of Sustainable Business and Management Solutions in Emerging Economies*, *23*(3), 1–13.

Jugdev, K., Thomas, J., & Delisle, C. (2001). Rethinking project management—Old truths and new insights. *International Project Management Journal*, *7*(1), 36–43.

Kaewta, S., & Chutima, P. (2014). Improvement of Project Portfolio Management in an Information Technology Consulting Company. *IOP Conference Series: Materials Science and Engineering*, *58*, 012012. https://doi.org/10.1088/1757-899X/58/1/012012

Källman, A., & Williamson, D. (2002, October 3). *Everything's a project!* Project Management Institute Annual Seminars & Symposium, San Antonio, TX. https://www.pmi.org/learning/library/everythings-project-hints-improve-projectivity-1061

Keegan, A., & Turner, J. R. (2002). The management of innovation in project-based firms. *Long Range Planning*, *35*(4), 367–388.

Kemsley, S. (2015). Business Process Management and the Social Enterprise. In J. vom Brocke & M. Rosemann (Eds.), *Handbook on Business Process Management 1: Introduction, Methods, and Information Systems* (pp. 463–474). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-45100-3_20

Lee, H., & Choi, B. (2003). Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination. *Journal of Management Information Systems*, *20*(1), 179–228. https://doi.org/10.1080/07421222.2003.11045756

Lester, J. N., Cho, Y., & Lochmiller, C. R. (2020). Learning to Do Qualitative Data Analysis: A Starting Point. *Human Resource Development Review*, *19*(1), 94–106. https://doi.org/10.1177/1534484320903890

Leung, M.-Y., Ng, S. T., & Cheung, S.-O. (2004). Measuring construction project participant satisfaction. *Construction Management and Economics*, *22*(3), 319–331.

Leymann, F., Karastoyanova, D., & Papazoglou, M. P. (2015). Business Process Management Standards. In J. vom Brocke & M. Rosemann (Eds.), *Handbook on Business Process Management 1: Introduction, Methods, and Information Systems* (pp. 595–624). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-45100-3_26

Li, T. H., Ng, S. T., & Skitmore, M. (2013). Evaluating stakeholder satisfaction during public participation in major infrastructure and construction projects: A fuzzy approach. *Automation in Construction*, *29*, 123–135.

Liang, H., Saraf, N., Hu, Q., & Xue, Y. (2007). Assimilation of Enterprise Systems: The Effect of Institutional Pressures and the Mediating Role of Top Management. *MIS Quarterly*, *31*(1), 59–87. JSTOR. https://doi.org/10.2307/25148781

Lientz, B. P., & Rea, K. P. (2001). *Breakthrough technology project management* (2nd ed). Academic Press.

Lillrank, P., & Liukko, M. (2004). Standard, routine and non-routine processes in health care. *International Journal of Health Care Quality Assurance*, *17*(1), 39–46. https://doi.org/10.1108/09526860410515927

Liu, J. Y.-C., Chen, V. J., Chan, C.-L., & Lie, T. (2008). The impact of software process standardization on software flexibility and project management performance: Control theory perspective. *Information and Software Technology*, *50*(9–10), 889–896.

Masurel, E., & Van Montfort, K. (2006). Life cycle characteristics of small professional service firms. *Journal of Small Business Management*, *44*(3), 461–473.

Miller, B. (2004). The pathway to OPM3: A busy project manager's guide to advancing organizational maturity. *Paper Presented at PMI® Global Congress 2004*. https://www.pmi.org/learning/library/pathway-organizational-project-management-maturity-8221

Milosevic, D., Inman, L., & Ozbay, A. (2001). Impact of Project Management Standardization on Project Effectiveness. *Engineering Management Journal*, *13*(4), 9–16. https://doi.org/10.1080/10429247.2001.11415133

Molina-Azorin, J. F., Bergh, D. D., Corley, K. G., & Ketchen, D. J. (2017). Mixed Methods in the Organizational Sciences: Taking Stock and Moving Forward. *Organizational Research Methods*, *20*(2), 179–192. https://doi.org/10.1177/1094428116687026

Muenstermann, B., & Eckhardt, A. (2009). What drives business process standardization? A case study approach. *Proceedings of the International Conference on*

Information Resources Management (Conf-IRM 2009), *38*. http://aisel.aisnet.org/confirm2009/38

Muenstermann, B., Eckhardt, A., & Weitzel, T. (2009). Join the standard forces Examining the combined impact of process and data standards on business process performance. *Proceedings of the International Conference on Information Resources Management (Conf-IRM 2009)*. https://doi.org/10.1109/HICSS.2009.280

Müller, R., Glückler, J., & Aubry, M. (2013). A relational typology of project management offices. *Project Management Journal*, *44*(1), 59–76.

Münstermann, B., Eckhardt, A., & Weitzel, T. (2010). The performance impact of business process standardization: An empirical evaluation of the recruitment process. *Business Process Management Journal*, *16*(1), 29–56. https://doi.org/10.1108/14637151011017930

Münstermann, B., & Weitzel, T. (2008). What Is Process Standardization. *Proceedings of the International Conference on Information Resources Management (Conf-IRM 2008)*, *64*. https://aisel.aisnet.org/confirm2008/64

Murphy, A., & Ledwith, A. (2007). Project management tools and techniques in high-technology SMEs. *Management Research News*, *30*(2), 153–166. https://doi.org/10.1108/01409170710722973

Nagyová, A., Pačaiová, H., Markulik, Š., Turisová, R., Kozel, R., & Džugan, J. (2021). Design of a model for risk reduction in project management in small and medium-sized enterprises. *Symmetry*, *13*(5). Scopus. https://doi.org/10.3390/sym13050763

Nissinboim, N., & Naveh, E. (2018). Process standardization and error reduction: A revisit from a choice approach. *Safety Science*, *103*, 43–50.

Nkado, R. N., & Mbachu, J. I. (2001). Modelling client needs and satisfaction in the built environment. *Proceedings of the ARCOM Conference*, 5–7.

Nonaka, I. (1991). The knowledge creating company. *Harvard Business Review*, *69*(6), 96–104.

Nonaka, I. (1994). A Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, *5*(1), 14–37. https://doi.org/10.1287/orsc.5.1.14

Nonaka, I., & Takeuchi, H. (1995). The Knowledge Creating Company: Oxford University Press. *New York*, *995*.

Nonaka, I., & Toyama, R. (2003). The knowledge-creating theory revisited: Knowledge creation as a synthesizing process. *Knowledge Management Research & Practice*, *1*(1), 2–10. https://doi.org/10.1057/palgrave.kmrp.8500001

Oppong, G. D., Chan, A. P., & Dansoh, A. (2017). A review of stakeholder management performance attributes in construction projects. *International Journal of Project Management*, *35*(6), 1037–1051.

Oxford Dictionaries. (2022). *PROJECT | Meaning & Definition for UK English | Lexico.com*. Lexico Dictionaries | English. https://www.lexico.com/definition/project

Packendorff, J. (1995). Inquiring into the temporary organization: New directions for project management research. *Scandinavian Journal of Management*, *11*(4), 319–333. https://doi.org/10.1016/0956-5221(95)00018-Q

Pagano, P., & Schivardi, F. (2003). Firm size distribution and growth. *Scandinavian Journal of Economics*, *105*(2), 255–274. https://doi.org/10.1111/1467-9442.t01-1-00008

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, *42*(5), 533–544.

Payne, J. H., & Turner, J. R. (1999). Company-wide project management: The planning and control of programmes of projects of different type. *International Journal of Project Management*, *17*(1), 55–59.

Pérez-Ezcurdia, A., & Marcelino-Sádeba, S. (2012). The small project paradox in SMEs. *Prime Journal of Business Administration and Management*, *2*(9), 687–692.

Perren, L., & Grant, P. (2000). The evolution of management accounting routines in small businesses: A social construction perspective. *Management Accounting Research*, *11*(4), 391–411.

Piekkari, R., & Welch, C. (2011). *Rethinking the case study in international business and management research*. Edward Elgar Publishing.

pmsolutions. (2014). *The State of the Project Management Office (PMO) 2014* (The State of the PMO, p. 12). https://www.pmsolutions.com/reports/State_of_the_PMO_2014_Research_Report_FINAL.pdf

pmsolutions. (2016). *The State of the Project Management Office (PMO) 2016* (The State of the PMO, p. 12). https://www.pmsolutions.com/reports/State_of_the_PMO_2016_Research_Report.pdf

Pobobsky, G. (1992). Small and Medium Sized Enterprise and Labor Laws. *International Labour Review*, *131*(6).

Poveda Bautista, R., Diego-Mas, J. A., & Francés de La Espirella, J. I. (2019). *Implementation of improvements in a project management office in a technology consulting company*. https://digital.csic.es/handle/10261/212892

Project Management Institute (Ed.). (2017a). *A guide to the project management body of knowledge* (Sixth edition). Project Management Institute.

Project Management Institute (Ed.). (2017b). *Agile practice guide*. Project Management Institute.

Rigby, D., Sutherland, J., & Takeuchi, H. (2016, May 1). Embracing Agile. *Harvard Business Review*. https://hbr.org/2016/05/embracing-agile

Riillo, C. A. F. (2013). Profiles and Motivations of Standardization Players. *International Journal of IT Standards and Standardization Research (IJITSR)*, *11*(2), 17–33. https://doi.org/10.4018/jitsr.2013070102

Riley, M. J., & Brown, D. C. (2001). Case study of the application of BPR in an SME contractor. *Knowledge and Process Management*, *8*(1), 17–28.

Rummler, G. A., & Ramias, A. J. (2010). A Framework for Defining and Designing the Structure of Work. In J. vom Brocke & M. Rosemann (Eds.), *Handbook on Business Process Management 1: Introduction, Methods, and Information Systems* (pp. 83–106). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-00416-2_4

Sánchez-Rodríguez, C., Hemsworth, D., Martínez-Lorente, Á. R., & Clavel, J. G. (2006). An empirical study on the impact of standardization of materials and purchasing

procedures on purchasing and business performance. *Supply Chain Management: An International Journal*, *11*(1), 56–64. https://doi.org/10.1108/13598540610642475

Saunders, M. N. K., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (Eighth Edition). Pearson.

Schäfermeyer, M., Grgecic, D., & Rosenkranz, C. (2010). Factors Influencing Business Process Standardization: A Multiple Case Study. *2010 43rd Hawaii International Conference on System Sciences*, 1–10.

Shenhar, A., & Dvir, D. (2008). Project Management Research—The Challenge and Opportunity. *Engineering Management Review, IEEE*, *38*, 112–121. https://doi.org/10.1109/EMR.2008.4534315

Smith, H., & Fingar, P. (2003). *It Doesn't Matter--Business Processes Do: A Critical Analysis of Nicholas Carr's I.T. Article in the Harvard Business Review*. Meghan Kiffer Pr.

Smith, K. G., Collins, C. J., & Clark, K. D. (2005). Existing knowledge, knowledge creation capability, and the rate of new product introduction in high-technology firms. *Academy of Management Journal*, *48*(2), 346–357. https://doi.org/10.5465/AMJ.2005.16928421

Smith, L. W. (2000, September 7). *Stakeholder analysis a pivotal practice of successful projects*. Project Management Institute Annual Seminars & Symposium, Houston, TX. https://www.pmi.org/learning/library/stakeholder-analysis-pivotal-practice-projects-8905

Speer, S. A. (2008). Natural and contrived data. In P. Alasuutari, L. Bickman, & J. Brannen (Eds.), *The SAGE handbook of social research methods* (Paperback ed., reprinted, pp. 290–312). Sage.

Strasser, J., & Schmidt-Sibeth, A. (2020). *PMO Studie 2020* (p. 143). TPG The Project Group GmbH. https://www.projektmagazin.de/sites/default/files/2021-02/pmo-studie-2020-kurzversion_-_tpg_theprojectgroup-liohne-zusammenfassung.pdf

Strong, K. C., Ringer, R. C., & Taylor, S. A. (2001). THE* rules of stakeholder satisfaction (* Timeliness, honesty, empathy). *Journal of Business Ethics*, *32*(3), 219–230.

Svejvig, P., & Andersen, P. (2015). Rethinking project management: A structured literature review with a critical look at the brave new world. *International Journal of Project Management*, *33*(2), 278–290. http://dx.doi.org/10.1016/j.ijproman.2014.06.004

Swap, W., Leonard, D., Shields, M., & Abrams, L. (2001). Using Mentoring and Storytelling to Transfer Knowledge in the Workplace. *Journal of Management Information Systems*, *18*(1), 95–114. https://doi.org/10.1080/07421222.2001.11045668

Symons, R. T., & Jacobs, R. A. (1997). Multi-level process mapping: A tool for cross-functional quality analysis. *Production and Inventory Management Journal*, *38*(4), 71.

Taylor, S. A. (1993). The Roles of Service Quality, Consumer Satisfaction, and Value in Quinn's (1992) Paradigm of Services. *Journal of Marketing Theory and Practice*, *2*(1), 14–26. https://doi.org/10.1080/10696679.1993.11501636

Tregear, R. (2015). Business Process Standardization. In vom Brocke & Rosemann (Eds.), *Handbook on Business Process Management 2* (pp. 421–441). Springer. https://doi.org/10.1007978-3-642-45103-4_18

Tshuma, B., Steyn, H., & van Waveren, C. (2018). The role played by PMOs in the transfer of knowledge between projects: A conceptual framework. *South African Journal of Industrial Engineering*, *29*. https://doi.org/10.7166/29-2-1966

Turner, R., & Ledwith, A. (2018). Project Management in Small to Medium-Sized Enterprises: Fitting the Practices to the Needs of the Firm to Deliver Benefit. *Journal of Small Business Management*, *56*(3), 475–493. https://doi.org/10.1111/jsbm.12265

Turner, R., Ledwith, A., & Kelly, J. (2009). Project management in small to medium-sized enterprises: A comparison between firms by size and industry. *International Journal of Managing Projects in Business*, *2*(2), 282–296. https://doi.org/10.1108/17538370910949301

Turner, R., Ledwith, A., & Kelly, J. (2010). Project management in small to medium-sized enterprises: Matching processes to the nature of the firm. *International Journal of Project Management*, *28*(8), 744–755. https://doi.org/10.1016/j.ijproman.2010.06.005

Turner, R., Ledwith, A., & Kelly, J. (2012). Project management in small to medium-sized enterprises: Tailoring the practices to the size of company. *Management Decision*, *50*(5), 942–957. https://doi.org/10.1108/00251741211227627

Ungan, M. C. (2006). Standardization through process documentation. *Business Process Management Journal*.

van der Aalst, W. M. P., La Rosa, M., & Santoro, F. M. (2016). Business Process Management. *Business & Information Systems Engineering*, *58*(1), 1–6. https://doi.org/10.1007/s12599-015-0409-x

van der Aalst, W. M. P., Netjes, M., & Reijers, H. A. (2007). Supporting the Full BPM Life-Cycle Using Process Mining and Intelligent Redesign. In K. Siau (Ed.), *Contemporary Issues in Database Design and Information Systems Development* (pp. 100–132). IGI Global. https://doi.org/10.4018/978-1-59904-289-3.ch004

van der Aalst, W. M. P., ter Hofstede, A. H. M., & Weske, M. (2003). Business Process Management: A Survey. *Business Process Management*, 1–12.

Van der Raadt, B., Bonnet, M., Schouten, S., & Van Vliet, H. (2010). The relation between EA effectiveness and stakeholder satisfaction. *Journal of Systems and Software*, *83*(10), 1954–1969. https://doi.org/10.1016/j.jss.2010.05.076.

Van Du, N., & Tran, H.-B. (2021). Assessing stakeholder satisfaction in PPP transport projects in developing countries: Evidence from Vietnam. *Built Environment Project and Asset Management*.

vom Brocke, J., Schmiedel, T., Recker, J., Trkman, P., Mertens, W., & Viaene, S. (2014). Ten principles of good business process management. *Business Process Management Journal*.

Waddock, S. A., & Graves, S. B. (1997). Quality of management and quality of stakeholder relations: Are they synonymous? *Business & Society*, *36*(3), 250–279.

Wakke, P., Blind, K., & de Vries, H. J. (2012). Service Innovation from a Standardization Perspective. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2045484

Willis, B. (2014, July 5). The Advantages and Limitations of Single Case Study Analysis. *E-International Relations*. https://www.e-ir.info/2014/07/05/the-advantages-and-limitations-of-single-case-study-analysis/

Xie, Z., Hall, J., McCarthy, I. P., Skitmore, M., & Shen, L. (2016). Standardization efforts: The relationship between knowledge dimensions, search processes and innovation outcomes. *Technovation*, *48–49*, 69–78. https://doi.org/10.1016/j.technovation.2015.12.002

Yen, Y. Y., Yen, W. T. M., & Xin, L. J. (2021). Employee's Performance in Small and Medium Enterprises (SME). *Elementary Education Online*, *20*(4), 970–974.

Yin, R. K. (2017). *Case study research and applications: Design and methods* (Sixth edition). SAGE. https://us.sagepub.com/en-us/nam/case-study-research-and-applications/book250150

Yu, J., & Leung, M. (2018). Structural stakeholder model in public engagement for construction development projects. *Journal of Construction Engineering and Management*, *144*(6), 04018046.

Zetlin, M. (2015, April 16). *6 Reasons Small Companies Have More Engaged Employees-And One Thing Their Bosses Are Still Getting Wrong*. Inc.Com. https://www.inc.com/minda-zetlin/5-reasons-small-companies-have-more-engaged-employees-and-one-thing-their-bosses.html

Zwikael, O. (2009). The Relative Importance of the PMBOK ® Guide's Nine Knowledge Areas during Project Planning. *Project Management Journal*, *40*(4), 94–103. https://doi.org/10.1002/pmj.20116

Appendices

Appendix 1. Interview Questions

Background

1. When did you join the company?
2. What is your highest level of education?
3. Have you had any experience with process standardization outside the company?

Beliefs about Process Standardization

4. Do you see added value in the Standardization of knowledge? If yes, what added value do you see?
5. The Standardization introduced contains strict guidelines and sometimes "best practice" recommendations depending on the area.
    a. How strict should Standardization be?
    b. What is your opinion of this flexibility?

Process Standardization

6. What benefits are you looking to get from the Standardization (role-specific perspective)?
    a. Does Process Standardization help the company's activities to get more coordinated?
7. Do you see a connection between business growth, formalization of process, and coordinated knowledge processing/dissemination?
8. Could you observe an improvement and development of processes because of Standardization?
    a. Increasing awareness of PM value?

Development of Knowledge Management

9. Do you see added value in documenting knowledge? If yes, what added value do you see?
10. Before process standardization, was there a place you knew of where you could find knowledge, or was it always through personal communication and your own documentation?
11. Has the way you gain knowledge about the process of PM changed since the introduction of PM documentation? If yes, how do you obtain your knowledge now, or what has changed?
12. Many departments (process masters) have helped collect the knowledge and bundle it. Do you see the knowledge of your department sufficiently represented?

13. How do you rate the effectiveness of communicating the new standards? [Distribution of knowledge]
    a. Whom do you see as responsible for implementing the new processes? [PMO, management, individual responsibility of the project managers].
    b. Often new efforts struggle with resistance within the company
14. "KM improves performance (especially technical performance) ". Do you agree? Elaborate.
    a. Reduced headcount when searching for information?

Process Documentation

15. "The key to Process Documentation is the ease of use and a high level of comprehensibility."
    a. Is the Standardization easy to use and documented in a comprehensible way?
    b. Is the codified knowledge accessible and useful in daily operations?

Business Process Management (PMO)

16. The newly formed PMO is "in charge of establishing companywide processes, policies, and procedures for project management."
    a. Do you think the PMO has sufficient power to do so?
    c. The PMO quickly needs to learn how to cope with organizational resistance
       → Was that successful?
17. "After establishing the first set of procedures, the PMO should work on continuous process improvement, including a proactive evaluation of the validity."
    a. How can this work be enabled or supported in your role?
18. Significance of the PMO in knowledge transmission. Moderating function (establishing infrastructure and facilitating knowledge transfer) and mediation role (assisting in transferring knowledge across projects).
    a. How important is the role of the PMO in the area of KM in the company? Is it living up to the findings in the literature? Where does the PMO need to improve?
19. Knowledge and Business Processes must be managed. Do you feel the Standardization and knowledge documentation are sufficiently up to date?

Project Management

20. Does Standardization lead to a natural maturity process of the firm, where the SMEs go away from "project management approaches that are more informal, less bureaucratic, and more people-centered"?
21. Three levels of formality are based on PM. Did Process Standardization help to develop the company's maternity and formality? Did the maternity change throughout the Standardization?

a. Only relying on ad hoc tools
b. Templates that are organized around certain project management functions
c. Methodologies or guidelines for integrated project management

Satisfaction through Process Standardization

22. Has the work handed over to you been affected by the Standardization?
23. How did the Process Standardization influence your work?
24. Do you believe/receive feedback that a unified business process output helps the next person continue with the task?
25. Are you more satisfied with a standardized procedure, or do you prefer individual approaches?