



Strategic Alignment: Evaluating Organizational Processes through the Lens of Global Standardization

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Abstract

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<p>This thesis explores the organizational processes within a Manufacturing Company, emphasizing the need for consistent process documentation and effective Business Process Management (BPM). The study aims to identify gaps in current processes and suggest improvements for enhanced operational efficiency and adaptability. A mixed-methods approach was employed, utilizing participant observation, surveys, document analysis, process mapping, and workflow analysis to gather comprehensive data on existing processes. Root cause analysis and stakeholder interviews were also conducted to provide further insight into process inefficiencies and potential areas for improvement. The theoretical framework integrates various process management tools and methodologies, focusing on achieving a balance between global standardization and local flexibility.</p> <p>Data collection spanned six months, during which key processes were evaluated to identify inefficiencies. Findings revealed significant gaps in process understanding, documentation, stakeholder engagement, and infrastructure. A lack of standardized process documentation led to inconsistencies and reduced adherence. Additionally, cultural resistance and poor communication were substantial barriers to effective process management.</p> <p>This thesis recommends enhancing processes through comprehensive training, standardized documentation, and fostering a culture of continuous improvement. Emphasis is placed on balancing global standardization with local flexibility to ensure efficiency and adaptability. Establishing clear roles and responsibilities, along with systematic reviews, is suggested to maintain process relevance. Further research is suggested to explore consistent documentation practices and balancing standardized processes with local needs. The recommendations provided offer the Manufacturing Company a structured approach to overcoming existing challenges and enhancing its overall process management framework.</p>
Keywords Organizational Processes, Process Improvement, Process Development, Process Management, Standardization, Global Harmonization

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Abbreviations

ANOVA	Analysis of Variance
BPA	Business Process Analysis
BPM	Business Process Management
BPR	Business Process Re-engineering
COPQ	Cost of Poor Quality
CTQ	Critical to Quality
DPU	Defects per Unit
DMADV	Define, Measure, Analyze, Design, Verify
DMAIC	Define, Measure, Analyze, Improve, Control
DFSS	Design for Six Sigma
DOE	Design of Experiments
EHS	Environment, Health, Safety
ERP	Enterprise Resource Planning
FMEA	Failure Mode and Effects Analysis
HR	Human Resources
IT	Information Technology
ISO	International Organization for Standardization
JIT	Just in Time (Production)
PDCA	Plan-Do-Check-Act
PAT	Process Analytical Technology
PR	Public Relations
QBD	Quality by Design
SIPOC	Supplier, Input, Process, Output, Customer
TPM	Total Productive Maintenance
TQM	Total Quality Management
TPS	Toyota Production System
VSM	Value Stream Mapping

1 Introduction

Managing business processes is heavily focused on improving the business processes by increasing their effectiveness and efficiency (Bider et al., 2005, p.250). Developing a common methodology for process development in an organization thus allows for ensuring consistent improvement across company functions.

The Manufacturing Company, as a well-established global player, has developed their processes throughout its history. However, being an organization with extensive operations across the world and with presence in approximately 70 countries, means that despite guidelines and top-down recommendations, creating unified and cohesive processes remains a challenge. The primary concerns reported within the Manufacturing Company include several critical issues with their processes. Firstly, the manner in which processes are described is often incomprehensible and inconsistent, leading to confusion and inefficiency. Additionally, there is inconsistent and insufficient access to commonly used systems, meaning not all employees can access the necessary information. Furthermore, the use of languages when describing processes is inconsistent, with different processes or parts of processes being documented in various languages. Finally, there are instances of incomplete and/or missing global processes, further complicating operations.

In order to improve the quality and efficiency of the work, the Manufacturing Company is planning to launch a project that aims at resolving the aforementioned issues. The objectives of the project are as follows. First, to implement comprehensible and well-documented processes globally. Second, to assign clear roles and responsibilities. Finally, to ensure that all global functions are conducted in a unified manner, using common processes.

The goal of this thesis is to benchmark selected processes against chosen theoretical frameworks to identify gaps in the current processes and provide common guidelines for current and future process development.

1.1 Organization

The Manufacturing Company commissioning this thesis is a global engineering group that specializes in advanced materials and technology solutions. The organization is a market leader among providers of tools, equipment, and services for industries such as mining, manufacturing and construction. The Manufacturing Company operates through several organizational domains that allow it to develop highly specialized and innovative offerings customized to answer the specific requirements of the industry. The group is committed to continuous improvement and development, pushing the boundaries of technology and delivering advanced solutions to its customer base across

the world. At the same time, the organization has a strong focus on continuously making its operations sustainable through its products, operations, and partnerships.

Being a well-established international player is bound to the company's undeniable success. However, running a multi-faceted organization on a global scale entails inherent challenges. One such challenge is establishing coherent and pragmatic processes in one common language throughout the organization's multiple divisions, and a shared method for developing those processes.

The Manufacturing Company has developed the awareness of the above stated problem, and has since made arrangements to launch a project that will allow to produce a long-lasting and practical solution. It is the researcher's role to participate and support this process, and deliver the analysis and observations upon completion of this thesis.

1.2 Research Questions

In the pursuit of organizational excellence and global competitiveness, understanding and optimizing organizational processes stand as foundational imperatives. This chapter delves into the critical questions that shape the journey towards organizational excellence and global competitiveness. These research questions serve as guidelines, shedding light on how processes can be refined and standardized worldwide.

- Q1. What are the most suitable frameworks for benchmarking organizational processes to achieve global standardization, and how do these frameworks contribute to the development of unified and cohesive processes?
- Q2. To what extent do the current organizational processes align with internationally recognized frameworks, and what are the key gaps identified in the Gap Analysis?
- Q3. What are the critical success factors and metrics that can be used to measure the success of the implementation of unified and cohesive processes on a global scale?
- Q4. What strategies and methodologies can be employed to bridge the identified gaps in organizational processes and facilitate the adoption of unified processes across diverse global locations?
- Q5. How can the findings of the Gap Analysis be used to develop a roadmap for continuous improvement, ensuring that the organization maintains a state of global replicability and adapts to evolving frameworks over time?
- Q6. How can the identified gaps in the organizational processes be prioritized based on their impact on global replicability and overall organizational efficiency?

These research questions aim to address critical aspects of organizational process optimization and standardization within a global context. Firstly, they seek to identify the most suitable frameworks for benchmarking organizational processes and explore how these frameworks contribute to the development of cohesive and unified processes on a global scale. Secondly, the questions aim to assess the alignment of current organizational processes with internationally recognized frameworks, pinpointing key gaps through thorough analysis. Thirdly, they delve into identifying critical success factors and metrics for measuring the successful implementation of unified processes worldwide. Additionally, the research questions explore strategies and methodologies for bridging identified gaps and facilitating the adoption of standardized processes across diverse global locations. Furthermore, they inquire about the utilization of gap analysis findings to develop a roadmap for continuous improvement, ensuring the organization's adaptability to evolving frameworks and global replicability. Lastly, they aim to prioritize identified process gaps based on their impact on global replicability and overall organizational efficiency, guiding resource allocation and strategic decision-making.

1.3 Literature Review

The purpose of the literature review segment of this thesis is to examine existing academic literature, research studies, and other relevant sources related to the thesis' topic. The goal is to present comprehensive findings and analysis of available literary resources in order to develop a theoretical framework and introduce context for the study. In addition, it aims to identify potential gaps and discrepancies present in various sources such as academic journals, research papers, books, peer-reviewed papers and other respectable publications. Through the in-depth exploration of key concepts, theories and methodologies, this review aims to provide solid bases for the execution of the project launched by the Manufacturing Company, and at the same time to contribute to the broader academic discourse.

The researcher aims at identifying what is a process, and what are the most successful and suitable known methodologies for process development that are relevant to the nature of the Manufacturing Company. In addition, the researcher will explore the best practices for process adaptation that aims to improve chances for successful implementation of the newly developed process at the Manufacturing Company. Furthermore, the goal of this literature review is also to ascertain and suggest means of mitigating potential weaknesses and threats to process development and implementation in the future.

The literature review aims to provide a comprehensive analysis of available scholarly sources. In conclusion, it will identify key trends, concepts and theories discussed previously in academia. The

relevant findings will then be applied in practice within the process development project at the Manufacturing Company. The limitations and deficiencies recognized in available literature will serve as bases for identifying areas for development, and further research. (Saunders et al., 2015, pp.71-72)

2 Business Process

The main theme of the Manufacturing Company's project and this thesis pertains to process development and improvement. It is, therefore, necessary to define what a process is, and when it is necessary to enhance it. Forming a consistent and systematic process management methodology is a struggle across organizations worldwide. At the core of this struggle lies the inability to "establish a process management mechanism to improve the efficiency of the entire process and ensure the stability of the reformed processes (...)" (Monden et al., 2009, p.15). A method commonly used by practitioners in order to formulate well-functioning processes, is borrowing from the best practices and adapting them to an organization's specific requirements and nature. When assimilating proven approaches to a specific environment, it is important to ensure that source organizations are of similar nature, and aim to solve the same problems. (Bider et al., 2005, pp.250-52). There are various reasons for which a process might need an improvement, among those relevant in context of the Manufacturing Company are: (1) discrepancies in the manner processes are completed (for example, time, language, required resources), (2) miscommunication regarding the ownership and responsibilities, and (3) inefficiency of processes, including wasting time to search for access to information (Berman, 2014, p.21).

2.1 Understanding processes

The evolution of process as a concept began as early as the 6th century BC with General Sun Tzu's "Art of War," where he significantly advanced the concept through his strategic methodologies and disciplined approach. Process as a concept has further developed alongside industrial revolutions over the course of time (von Rosing et al., 2014, p.2). Currently, scholars and practitioners use a number of interpretations for what a *process* is. A core definition of a process is that it is "a set of interrelated activities designed to transform inputs into outputs. (...) An effective process realizes planned activities and achieves planned results." (Berman, 2014, pp.15-16). Davenport (1993) provides a similar definition of a process as "a structured, measured set of activities designed to produce a specified output for a particular customer or market." (p.5). Process centers on the methods employed within an organization, emphasizing the "how" rather than the "what". Process is a structured action, and it is the structure itself that facilitates systematic enhancement and evolution of process. (Davenport, 1993, p.5).

Broader perspective presents process as a value-adding asset. Process as a key asset, distinguishes an executor from competitors by uniquely satisfying customer needs. Moreover, process creates value to customers and shareholders via efficiency. (Lehmann, 2012, p.82). Lehmann (2012) identifies three classes of processes that either directly contribute to value creation, support

it, assist in decision-making, control variance, or solve problems to establish a competitive advantage. Firstly, *operating processes*, create, manufacture, market, and distribute products and services that customers are ready to spend resources on. These are processes such as product manufacturing, sales order processes and customer services. Second recognized class are *support processes*. They provide aid in execution of operational and management processes, but do not generate products and services themselves. Supply chain management, finance and accounting, and quality assurance are some examples of support processes. Thirdly, *management processes*, which encompass quality measurement, performance assurance, decision-making, variance control, problem resolution, and guidance of organizational behavior to facilitate strategy through workforce collaboration. These processes relate to, for example, strategic planning, mergers and acquisition or restructuring. Lehmann (2012), divides management processes further to *decision-making processes* (goal-setting, data analysis, guiding organizational actions) and *control processes* (corrective measures and problem solving). (pp.82-84)

Von Rosing et al. (2014) make a distinction between *process areas*, *process group* and *process*. A process area encapsulates a set of process groups, providing a high-level context for their nature. The necessary process areas define the required competencies for a business to perform effectively. They can be classified based on enterprise business areas, units, or divisions, as well as the end-to-end flow of process areas. (von Rosing et al., 2014, p.136). A process group is a collection of coordinated processes producing a final output for specific stakeholder benefits. A process group consists of one main process generating results, and a set of supporting processes facilitating high performance of the main process. (von Rosing et al., 2014, pp.138-39). A singular process produces “a single, usable, and complete business object: a product, a control object, or information object.”, and acts within a coordinated process group (von Rosing et al., 2014, p.143).

Processes serve as a multifunctional foundation for organizational success, playing crucial roles in orchestrating tasks, optimizing efficiency, and steering strategic endeavors. Unraveling these roles provides insights into how organizations operate, adapt, and thrive in dynamic environments. Berman (2014) outlines the subsequent functions of processes within an organization.

- *Model of the Business*. A process system provides a comprehensive model of the entire business, ensuring a shared understanding of its operations.
- *Path to Core Mission*. Procedures offer a tangible guide aligning daily operations with the business's core mission and customer satisfaction goals.
- *Agreed interfaces*. Procedures act as interface agreements, aligning divisions, departments, teams, and individuals to identify efficiencies and eliminate gaps.
- *Accelerated onboarding*. Detailed work instructions enable faster productivity for new employees, empowering them with the knowledge to perform tasks effectively.

- *Standardized work methods.* Procedures establish a standardized approach, reducing variation in process outputs and fostering consistency.
- *Facilitation of Improvement.* Thorough process understanding allows for continuous improvement by identifying goals, studying existing situations, and implementing enhancements.
- *Mitigation of Single Points of Failure.* Standardized and documented processes prevent disruptions caused by the absence of key personnel, avoiding delays and errors.
- *Quality Assurance for Customers.* A robust process system assures customers of quality production and service, meeting their growing demands.
- *Compliance with Certification Audits.* While not the main goal, a well-functioning process system naturally facilitates compliance with industry standards, ensuring successful certification audits. (pp.18-19)

In essence, processes are the cornerstone of organizational functionality, steering operations, aligning with strategic objectives, and fostering adaptability in dynamic environments. Therefore, understanding the process is pivotal for unraveling the intricate mechanisms of an organization. Processes, interpreted diversely by scholars and practitioners, are essentially characterized as organized activities that convert inputs into outputs within an organizational framework. Acting as a crucial asset, they play a pivotal role in distinguishing organizations by enhancing customer satisfaction and operational efficiency. Furthermore, processes assume diverse classifications based on their functions within the organizational context, always operating harmoniously as an interdependent cluster to optimally generate the desired outcomes.

2.2 Documenting Processes

Creating and maintaining process documentation severely impacts organizational functioning, facilitating consistency and standardization regardless of the operational scale. Both documenting and following the processes is challenging, and it will vary organization to organization depending on its culture, procedures, and employee background. Adherence to established processes, among other, depends on (1) how well and consistently an organization documents their procedures, and (2) how well its employees follow the processes. The latter differs depending on the educational background, experience, skill levels, and personal styles of employees. (Ungan, 2006).

Berman (2014) argues that processes are necessary for anything in an organization however, not all the processes require formalization. A formalized record of a process (a procedure) is required to (1) ensure uniformity in performing an activity, especially among individuals with varying expertise, during employee training, (2) for complex processes critical to external customers or subsequent activities, (3) to adhere to standards or business models, (4) for business-critical processes during unforeseen events, when those not directly involved (e.g., managers) need to understand the process, and (5) for measurable process improvement. (Berman, 2014, p.19)

Lehmann (2012) proposes that a documented process should be managed as any other asset portfolio within an organization. Portfolio management, as a general technique, is employed to control and optimize the efficiency and returns of diverse assets, with continuous evaluations leading to structural adjustments when necessary, enhancing individual asset value and, consequently, the entire portfolio (Lehmann, 2012, pp.92-93). A business process portfolio functions as a classification system and centralized data repository, inventorying, documenting, and managing detailed information about processes. It aids management in assessing process quality, effectiveness, and efficiency, identifying areas for improvement, and streamlining or eliminating noncore processes. (Lehmann, 2012, p.94)

Although the value of maintaining accurate process documentation is not direct, it cannot be understated. In simple terms, the better a process is described, the better employees can perform their tasks. Furthermore, documentation is “used to satisfy regulatory or certification requirements, to provide instruction, and to provide a baseline (...).” (Graham, 2004, p.5). Additionally, well documented processes allow for their effective analysis and improvement (Ungan, 2006).

Despite the significance of process documentation, according to the BP Trends report (2016) only 4% of companies always document their processes, as many as 50% do so occasionally, and equally 4% never document their processes. This is also consistent with Berman's (2014) findings, which list incomplete processes as one of the main issues contributing to their inefficiency. The other concern is overcomplicating processes, resulting in challenges for employees in effectively navigating and adhering to them. (Berman, 2014, pp.13-14)

Processes are usually documented with use of charts and flows, i.e. symbols arranged along a path of progression (Graham, 2004, p.5). Various conventions for flow diagramming exist, and numerous details must be determined when charting a process, including the level of detail (tasks and actors involved), naming conventions, sequencing, flow types, and more (Sharp and McDermott, 2009, pp.222-32). Uncomplicated processes, not revised on regular bases, are often mapped using simple tools, for example, elementary visualization applications. Systematically designed and redesigned at scheduled intervals, structured processes utilize techniques like process mapping, modeling, or business process analysis (BPA)¹. (Lehmann, 2012, p.99). A myriad of process documentation tools are available today, offering diverse solutions for capturing, visualizing, and managing organizational workflows and procedures.

¹ Business Process Analysis (BPA) is often considered an umbrella term that encompasses various methods, techniques, and tools used to analyze, model, and optimize business processes within an organization. It involves a comprehensive examination of workflows, activities, and procedures to enhance efficiency and effectiveness in achieving organizational goals. (Vergidis et al., 2008)

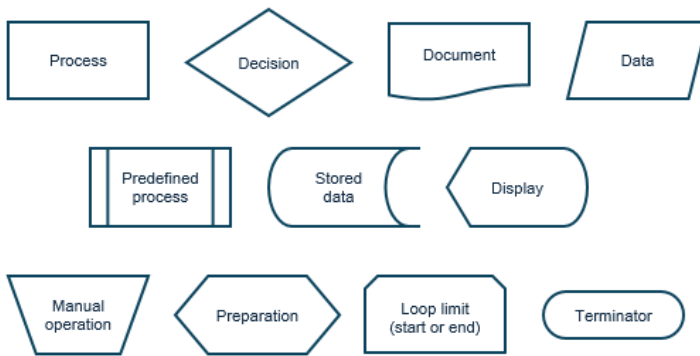


Figure 1. Most common flowchart symbols (Sharp and McDermott, 2009, p.220)

Clear and thorough processes are crucial for organizational efficiency, but challenges persist in both documentation and adherence. Managing processes as an asset portfolio is recommended, emphasizing clarity for effective task performance. A BP Trends report (2016) points to inconsistent documentation practices, with incomplete and complex processes posing challenges.

2.3 Process Development and Improvement

Designing a well-functioning and documented process is a daunting task for most. However, when successful, it allows for more effective strategies, and better management of: people, processes, technology, information, and marketing and PR. Before delving into the tools and methodologies of process development, it is crucial to establish what is the vision and level of commitment of (senior) management. The management should determine organization's specific goals related to process characteristics such as cost, quality, efficiency, effectiveness, customer and employee satisfaction, best practices adoption, or compliance with standards like ISO/IEC 20000, and define quantifiable improvement targets where feasible. (Knapp, 2010, pp.73-76)

Achieving a well-functioning process involves three crucial stages, with documenting the procedure being just the initial step among three interdependent components. The other two involve implementing changes (referred to as launching, rolling out, or deploying) and controlling the process during normal operation (also known as monitoring and managing the process). (Berman, 2014, p.106). Knapp (2010), proposes that a well-crafted process should include the following elements: (1) policies, (2) overview, (3) roles and responsibilities, (4) process maps, (5) activities, (6) vocabulary (pp.49-50). Other researchers debate whether all the components are necessary in all kinds of processes and situations. (Berman, 2014, p.92).

The complexity of business processes has led to the creation of various reference models for standardization in design and performance management. Without reference models and frameworks, conducting a business process inventory can be challenging. Developed by industry consortia, nonprofits, government programs, and academia, these models reflect real-world operating

environments based on input from numerous organizations. Industry-created reference models aim to standardize business process design and performance management, reflecting real-world environments shaped by input from diverse organizations. (Lehmann, 2012, p.95). Specific standardized process frameworks will be addressed in more detail further in this thesis.

Once a suitable process reference model is chosen for an organization, an internal process framework can be developed using fitting tools. A *process framework* “describes best practices that can be used to define and continually improve a given set of processes”, and additionally, offers a shared vocabulary for organizational use (Knapp, 2010, p.5).

Professionals and academics have developed a plethora of tools and methodologies helpful in formulating or revising organizational processes. Lehmann (2012) proposes ten *evaluation dimensions* (and subsequent actions) leading to better process inventory assessment and management:

- *Value*. What benefits does the process provide to the organization?
- *Type*. What type of asset should be determined for each process or activity?
- *Use*. What is the purpose and frequency of use for each category, group, process, and activity?
- *Complexity*. What is the extent of the process's complexity in terms of the number of decisions or business rules it involves?
- *Discipline*. What discipline is employed in designing and managing the process?
- *Automation*. To what extent is the process automated?
- *Documentation*. What is the status and quality of the process documentation?
- *Training*. How to evaluate the training quality for the category, group, process, or activity?
- *Effectiveness*. How effectively does the process contribute to desired outcomes and performance measures?
- *Efficiency*. How efficiently does the process perform, considering its use of time, resources, and costs? (pp.97-102).

In order to establish or improve a process, Knapp (2010) recommends following the *ten process design and improvement steps*. The ten steps are categorized into four coherent phases: requirement definition, process analysis, process design and implementation, continual process improvement. This methodology equips all stakeholders with a shared vocabulary and necessary tools for active participation in process design and improvement activities, fostering ongoing engagement and alignment.

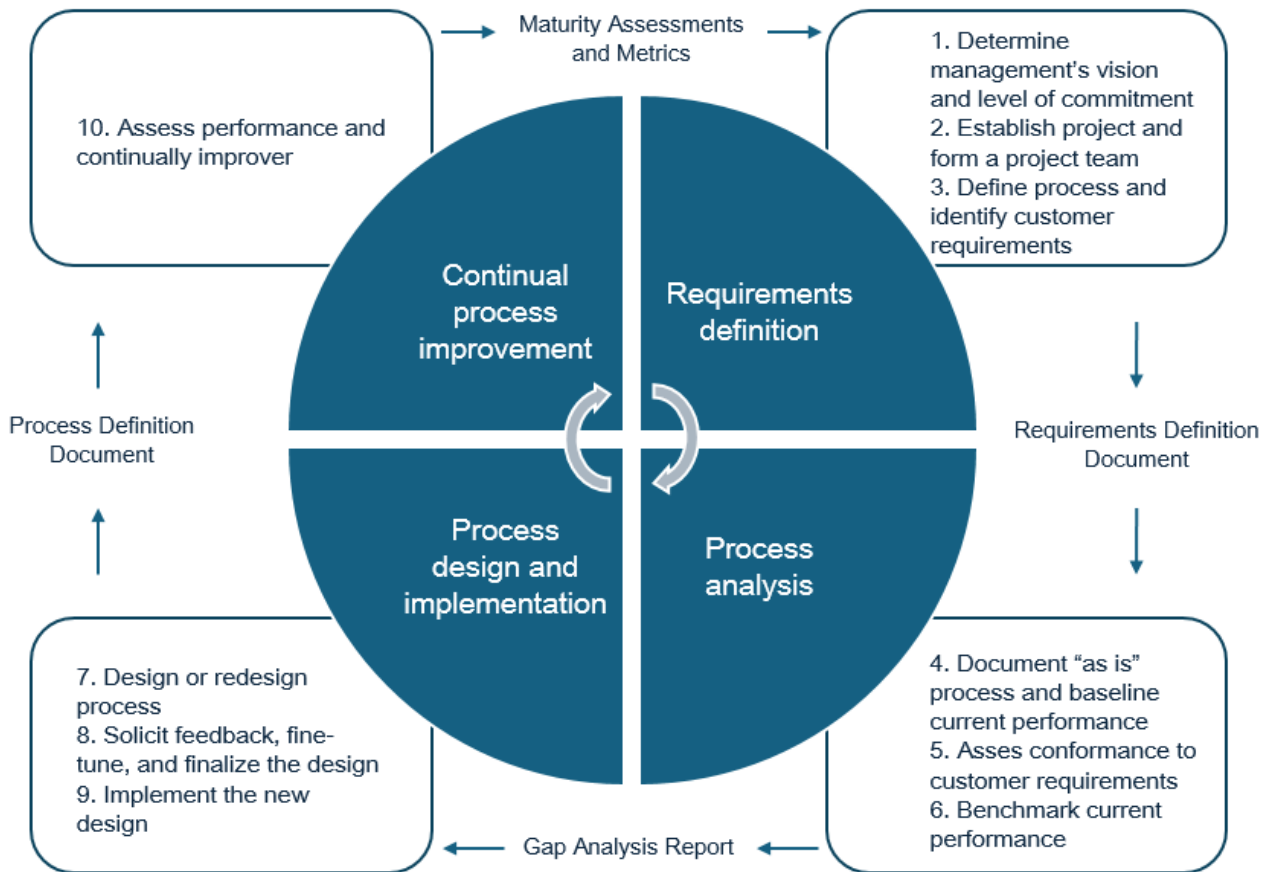


Figure 2. Ten process design and improvement steps (Knapp, 2010, p.74)

Among many tools, when formulating and refining specific processes, Lean and Six Sigma based tools such as SIPOC (Supplier, Input, Process, Output, Customer) and DMAIC (Define, Measure, Analyze, Improve, Control) are valued in determining the objectives of a process and its improvement (Mishra and Sharma, 2014). SIPOC allows identifying necessary inputs, specifying users of outputs, and establishing suppliers for the inputs (Berman, 2014, p.75). DMAIC involves selecting a process, gathering information, challenging the current method, developing improvements, and applying changes to enhance efficiency and effectiveness (Graham, 2004, p.6). These tools will be discussed in further sub-chapters of the Literature Review segment of this thesis.

Organizational processes are never fully complete and require constant development to optimize resources, and meet increasingly stringent market demands (Knapp, 2010, pp.45-46). Lehmann (2012) indicates two motives for process improvement, i.e. problem solving, and implementation of strategic measures (p.133). Problem solving pertains to *symptomatic processes*, which are processes impacting customer value, demand swift attention through immediate analysis and improvement projects. It's crucial to understand the problem's source and assess resolution requirements, considering resource consumption and opportunity costs during project initiation. In turn, executing strategic initiatives refers to *strategic processes*. Strategic processes are action plans

stemming from an organization's business strategy to enhance customer and shareholder value. Core and initiative-specific processes collectively form strategic processes. Selection and prioritization for design or redesign depend on their ability to achieve performance measures outlined by the strategic initiative. It is crucial to measure and test assumptions about expected results before committing resources. (Lehmann, 2012, pp.133-35)

Attempting to improve or develop processes is a project like any other. Therefore, the endeavor should be meticulously planned start to end, identifying particular objectives, scope, timeline, resources and roles. The goal of a process improvement project should be defined in detail, allowing to make the goal attainable within the project timeframe, and facilitating further process development. Furthermore, to ensure successful implementation, a project to reinvent a process cannot rely solely on theoretical knowledge. It's crucial to develop a practical procedure, preferably tested by those who will execute it. (Berman, 2014, pp.142-45). To ensure continuous improvement, it is necessary to analyze process metrics against customer requirements, pinpoint improvement opportunities (e.g., clarifying roles, eliminating inefficiencies, adopting technologies), and prioritize for project initiation (Knapp, 2010, p.45).

Developing and improving processes is a multifaceted undertaking that encompasses various layers, from a broad perspective down to intricate details. It demands a diverse set of skills, collaboration among different team members, a clear vision, defined targets, effective measurement methods, establishment of frameworks, and the selection of suitable tools, among other considerations. The meticulous planning and execution of the process development journey are critical across all stages, including documenting procedures, implementing changes, and maintaining control during regular operations to ensure a well-functioning system.

2.4 Standardization and Global Harmonization

In the context of business, globalization refers to the fundamental transformation of the primary economic arena, the "marketplace." This transformation is characterized by the denationalization of markets, making national economies subsets of a global, transnational marketplace. Globalization involves the worldwide integration of markets for goods, services, capital, finance, and labor. The advent of new electronic technology, particularly in information and telecommunications, has played a crucial role in abolishing natural barriers between national markets. The global communication facilitated by this technology has economic, social, and political consequences. (Madison, 1998, pp.6-7)

Standardization is the process of defining product characteristics, performance, safety, or quality based on consensus among firms, users, interest groups, and governments. It can be viewed as

both a facilitator and impediment to innovation, with its role varying from uniformity to fostering interoperability and supporting competitiveness. In the context of digitalization and globalization, standardization is crucial for navigating the evolving landscape of industries impacted by data-driven digitalization and increased global business dynamics. (Viardot et al., 2021, p.11)

Global standardization is a crucial aspect of modern international trade, focusing on the creation and application of consistent standards that transcend national borders. This strategic approach aims to simplify processes, improve interoperability, and establish uniformity in products, services, and systems globally. ISO 9000 initiatives symbolize the commitment to standardized frameworks, contributing to quality assurance, regulatory adherence, and enhanced market entry. Despite the efficiency and competitiveness advantages offered by global standardization, challenges such as diverse regional regulations and the necessity for mutual recognition agreements highlight the inherent complexities of this dynamic landscape. Businesses navigating the intricate and interconnected global market must possess a nuanced understanding of the implications associated with global standardization. (Kochan, 1993)

Navigating the complexities of global standardization presents multifaceted challenges, encompassing dynamic contexts, diverse partners, and the delicate balance between universal solutions and local adaptability. Many global companies are perceived to adopt an organizational approach characterized by a significant level of business standardization, resulting in a correspondingly lower level of business flexibility (Suurnäkki, 2019, p.127). Balancing standardization and local flexibility is a notable challenge in the broader landscape of global work coordination. The pursuit of standardization aims to streamline operations and enhance coordination across diverse teams operating in different locations. However, this endeavor often clashes with the necessity for adaptability at the local level. Establishing standardized systems becomes a central strategy, but the challenge lies in determining the extent and specifics of standardization. The dynamic global context and the need to respect local nuances raise critical questions about finding a practical symmetry. This delicate balance is essential for organizations striving to coordinate seamlessly on a global scale while accommodating the diverse and unique requirements of different regions. Achieving this equilibrium is a key consideration in navigating the complexities of global collaboration in various industries. (Sahay, 2003, pp.2-8)

Exploring successful instances of standardization and globalization in organizational processes, such as the case of Kone, sheds light on the challenges and strategies involved in achieving effective implementation. The success of merging global and local processes at Kone was achieved through strategic initiatives spanning decades, establishing a redefined process architecture focusing on core processes such as product development management, supply chain management, and customer relationship management. Each core process had a named global owner, emphasizing

integration and collaboration. The new process architecture aimed for operational excellence by reducing process variation and enhancing productivity, efficiency, and quality. Despite the emphasis on harmonization and global alignment, challenges persisted, including incomplete silo removal, a headquarters-focused governance model, and limited local rollout support. Contradictions arising from global integration and local flexibility demands were managed through strategies like including geographic business area leaders in decision-making, accepting the need for local flexibility, collecting and implementing local best practices, acknowledging competences in acquired companies, and allowing subsidiaries to continue with their own methods, fostering a positive reputation among potential acquisition candidates. While this strategy may have slowed down harmonization, it provided flexibility in local units. (Suurnäkki, 2019, pp.138-141, 147-152, 155-156)

Globalization transforms the marketplace, integrating economies into a transnational arena, facilitated by technological advancements. Standardization, defining product characteristics, is pivotal in navigating digitalization and global business dynamics. Global standardization seeks consistent standards across borders to streamline processes, despite challenges in balancing standardization with local flexibility. The Kone case study exemplifies successful global-local integration through strategic initiatives and process architecture, and managing contradictions for operational excellence.

3 Process Improvement and Development: Methodologies

In the pursuit of organizational excellence and efficiency, businesses frequently resort to various process improvement frameworks to streamline their operations. The subsequent sub-chapters lay the groundwork for a comprehensive exploration of these frameworks. Throughout this literature review, the intricacies of different methodologies aimed at enhancing organizational processes will be delved into. From Business Process Management, to Six Sigma to Lean Management and beyond, each framework offers unique approaches and methodologies to address inefficiencies and drive improvement. The researcher attempted to examine pros and cons of each framework, shedding light on their effectiveness in achieving organizational objectives. Furthermore, within this review, an analysis of the DMADV (Define, Measure, Analyze, Design, Verify) methodology is conducted. Despite not being categorized as a process improvement methodology, DMADV plays a vital role in shaping robust processes from their inception, offering valuable insights to complement the literature review. By critically analyzing these frameworks, valuable insights into their applicability and suitability for global standardization initiatives will be provided.

To allow a successful completion of this thesis, the researcher reviews a limited number of process improvement methodologies. The theories chosen for the review must be relevant both to the thesis' topic and to the nature of the Manufacturing Company. The thesis seeks to provide insights into opportunities for improvement, efficiency enhancement, and strategic alignment within the organization. For that reason, the researcher does not consider methodologies focusing on processes that result in production of any numeric data or tangible outcomes such as Process Analytical Technology (PAT)² or Total Productive Maintenance (TPM)³, will not be considered. Similarly, methodologies focusing on creating an experiment (Design of Experiments (DOE))⁴, modeling

² Process Analytical Technology (PAT) "is a system for designing, analyzing, and controlling manufacturing processes based on an understanding of the scientific and engineering principles involved and identification of variables that affect product quality." (Undey et al., 2011, p.1)

³ Total Productive Maintenance (TPM) is a maintenance program focused on optimizing equipment reliability and productivity by integrating maintenance activities into the manufacturing process, akin to the medical science of machines, with the aim of increasing production and enhancing employee morale. (Venkatesh, 2015)

⁴ Design of Experiments (DOE) is a statistical methodology used to systematically conduct experiments in various industries, offering more comprehensive techniques compared to traditional methods. (Tanco et al., 2008)

(Computational Modeling and Simulation (CMS))⁵ and specific processes control and optimization (Quality by Design (QBD))⁶ will not be included in the research.

As per Shankar's account (Shankar, 2008, pp.xv-xvi), a variety of approaches exist within the realm of continuous improvement methodologies. These encompass the instinctive reliance on gut feeling, advocating proactive engagement rather than passivity. Additionally, there's the Plan-Do-Check-Act (PDCA)⁷ methodology, emphasizing iterative cycles of planning, execution, evaluation, and adjustment. Lean manufacturing principles, epitomized by the Toyota Production System (TPS)⁸ and operationalized through the philosophy of Kaizen, represent another significant methodology. Furthermore, Six Sigma, operationalized via the Define-Measure-Analyze-Improve-Control (DMAIC) framework, stands as a structured approach to process enhancement.

The thesis will explore methodologies based on or related to the agile framework. It is a proven practice that allows for incremental project progress and iterative implementation ensuring that the process is tested, practical and applicable repeatedly. (Agile Alliance, 2017). The following methodologies will be reviewed in the thesis. Business Process Management, Lean Approach, Six Sigma, Six Sigma's DMAIC and DMADV, Business Process Re-engineering (BPR) and Total Quality Management (TQM).

3.1 Business Process Management

Business Process Management (BPM) has its roots in the management of business processes within horizontal organizations, influenced by Taylorist methods and later formalized with the adoption of Total Quality Management in the 1980s. The competitive pressures of the 1990s spurred

⁵ Computational Modeling and Simulation (CMS) is a methodological approach for representing and analyzing complex systems using computational tools, aiming to understand their behavior, predict outcomes, and optimize performance through virtual experimentation. (Garrido, 2013)

⁶ Quality by Design (QbD) "is a structured process for designing and launching new products. Products include goods, services, information, or internal processes. A high-quality product meets specific customer needs so effectively that they will buy or use more of the product in preference to other sources for meeting the need." (Juran, 2019)

⁷ Plan-Do-Check-Act (PDCA) is a continuous improvement cycle aimed at enhancing value in organizations by systematically identifying, prioritizing, and implementing solutions to address customer needs and feedback, ensuring ongoing refinement of products and processes to exceed both customer requirements and competitors' capabilities. (Gidey et al., 2014)

⁸ Toyota production System (TPS) also known as lean manufacturing, emphasizes cost reduction through the elimination of waste while prioritizing quality and exact quantity production, fostering employee confidence and ease, in accordance with principles laid out by its founders Sakichi Toyoda and Taiichi Ohno. (Anoop et al., 2020)

further development, leading to the emergence of approaches like Business Process Reengineering and Six Sigma. However, shortcomings in BPR and Enterprise Resource Planning (ERP)⁹ systems highlighted the need for more comprehensive solutions, paving the way for Business Process Management. Its precise origins, whether in the 1990s or after 2000, are debated, reflecting differing views on the role of IT innovation and historical context. Nevertheless, BPM is increasingly recognized as a holistic management system that integrates business processes with IT infrastructure to enhance flexibility and efficiency. (Monden et al., 2009, p.5)

Business Process Management has emerged as a framework aimed to contain the high speed of globalization, technology development and information sharing. BPM enables management of multiple organizational changes inevitable in context of the aforementioned, including the shift from vertical to horizontal relationship. Furthermore, utilizing this tool facilitates competitive advantage by aligning company output with environmental changes. (Monden et al., 2009, pp.3-15).

Several definitions of Business Process Management offer insights into its multifaceted nature. The Cambridge Dictionary Online defines BPM as the development and control of processes within organizations to ensure effectiveness, yet it lacks emphasis on efficiency and quality improvement, crucial components of BPM. Rummler and Brache's definition focuses on managing the series of steps in producing a product or service, but it may lead to confusion between task automation and process improvement. Smith and Fingar describe BPM as managing collaborative and transactional activities delivering value, emphasizing coordination but overlooking improvement. Martyn Ould highlights BPM as managing a coherent set of activities to achieve goals, yet it does not clearly address ongoing improvement. Marlon Dumas et al. provide a comprehensive definition, emphasizing oversight of work for consistent outcomes and improvement opportunities. IBM defines BPM as a discipline leveraging software and services for total visibility into an organization, focusing on automating and continuously improving business processes to enhance efficiency and reduce costs. These diverse perspectives underscore BPM's multifaceted role in organizational efficiency and performance enhancement. (von Rosing et al., 2014, pp.80-83)

BPM is not solely about automating processes but rather about enhancing them. It assumes a process-oriented view of business, focusing on improving those processes. While some argue that everyone should contribute to process improvement, BPM is more narrowly defined as the activity primarily undertaken by those specifically focused on improving business processes. Engaging in a process, suggesting improvements, or optimizing individual steps does not inherently constitute

⁹ Enterprise Resource Planning (ERP) is a comprehensive software system that integrates and automates core business processes such as finance, human resources, and supply chain management, providing a centralized platform for data management and decision-making within an organization. (Rajnoha et al., 2014)

BPM unless there is a holistic understanding of the entire process and active efforts to improve it. (von Rosing et al., 2014, pp.83-86)

Challenges associated with BPM are not inherently rooted in BPM itself, but rather in the technical intricacies of implementing the model. While BPM techniques and tools offer a structured approach to managing processes, the execution often involves addressing various technical aspects. These challenges encompass areas such as process modeling languages, enactment infrastructures, model analysis, process mining, flexibility, and reuse. Thus, the hurdles encountered in BPM implementation primarily stem from navigating these technical details rather than inherent flaws within the BPM framework. (Aalst, van der, 2013)

Many recent process management techniques fall under the umbrella term BPM. Process-oriented management, while not new, has become feasible due to advancements in IT, enabling cooperation and integration among business processes. In today's highly competitive environment, effective process management is essential for addressing customer satisfaction, time constraints, flexibility, and cost concerns. Despite attempts at process restructuring like BPR, few companies have achieved their objectives, often due to a lack of a comprehensive process management mechanism. Consequently, while new techniques emerge to tackle these challenges, creating a systematic approach to improving the efficiency and stability of restructured processes remains complex. In such a dynamic environment, BPM offers a means to synchronize a company's output with environmental changes, providing a competitive advantage. (Monden et al., 2009, p.15)

3.2 Lean Approach

Lean has emerged in the automotive industry but has since evolved into a versatile methodology that under the right circumstances can be applied to various business fields and environments. Lean, along with its tools, when applied properly and with necessary modifications, may provide managers with means to recognize areas that could benefit from improvement. (Bateman et al., 2014, pp.551-52). Lean thinking aims to eradicate inefficiencies in product manufacturing or service delivery through systematic approaches and measurement techniques. While traditionally associated with manufacturing, the concept extends to diverse areas such as financial transactions and service provision. Central to Lean thinking is the meticulous identification of value-added and non-value-added activities. (Harry et al., 2010, p.207)

The understanding of Lean TPS (Toyota Production System), developed in the 1950s and consolidated into the Toyota Way in 2001, continues to evolve to address contemporary challenges. Initially termed Lean to describe superior performance observed in leading organizations like Toyota, it became evident that merely adopting lean tools was insufficient to replicate Toyota's success.

The authors of Lean Thinking identified five principles behind a Lean system, emphasizing the importance of horizontal value streams over vertical departmental optimization. Value Stream Mapping emerged as a tool to visualize end-to-end processes, revealing broken processes rather than individual shortcomings. Through collaboration and continuous improvement, teams streamlined value streams, reducing lead times and defects while enhancing adaptability. This contrasted with traditional management practices, which relied on numerical targets and hierarchical control, often leading to inefficiencies and disconnect from frontline activities. Toyota's Hoshin Kanri strategy formulation process prioritized resources and fostered collaboration, facilitating frontline problem-solving and creating an environment conducive to employee development. (von Rosing et al., 2014, pp.47-48)

3.3 Key Lean Principles

Key Lean Principles ensure the timely delivery of accurate products in the requested quantity while minimizing waste and remaining adaptable to changes. It encompasses a holistic, organization-wide approach integrated into the core strategy. Advocates of this philosophy-driven approach, such as those following the "Toyota Way" popularized by Dr. Jeffrey Liker, emphasize the necessity of fostering the right environment for lean thinking to flourish. These principles include striving for perfect first-time quality to eliminate defects at the source, minimizing waste by removing non-value-added activities, continuous improvement to enhance quality and productivity, adopting pull processing based on consumer demand, maintaining flexibility in production, and fostering collaborative relationships with suppliers to share risk, cost, and information. (Harry et al., 2010, pp.207-08).

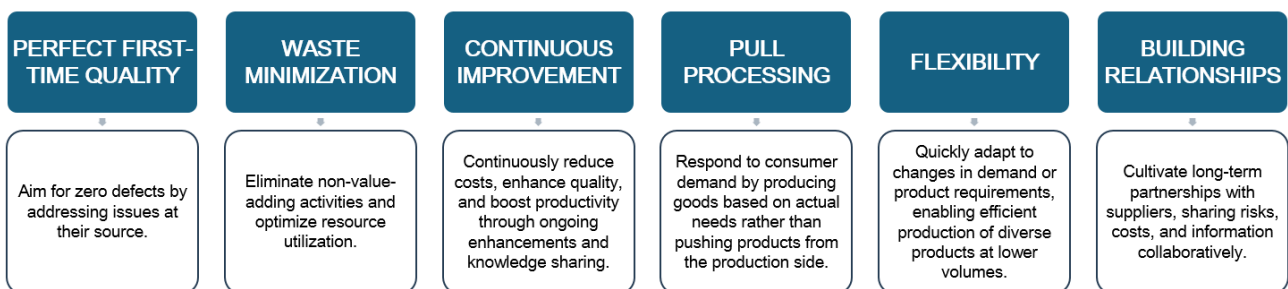


Figure 3. Key Lean Principles (Harry et al., 2010, pp.207-08)

Lean thinking has expanded across various industries, promoting value creation and customer-centric practices. Toyota's efficient aftermarket parts distribution system has influenced retailers like Tesco and Amazon to develop rapid response distribution networks. Similarly, manufacturers such as GKN have shifted towards agile supply chains to meet regional customer demands. Lean principles, outlined in Lean Solutions by Womack and Jones, emphasize understanding customer needs and optimizing processes accordingly, fostering innovation and cost reduction. In the digital

age, customer engagement plays a pivotal role in refining products/services and shaping future solutions, highlighting the evolving role of customers in supply chain dynamics. (von Rosing et al., 2014, pp.48-49)

An array of Lean tools serves as indispensable assets for organizations seeking to optimize their operations and achieve sustainable improvement. **Lean Value Stream Mapping (VSM)** serves as a pivotal tool in process improvement, originating from the Toyota Production System (TPS) and aimed at comprehensively documenting and optimizing organizational processes. VSM entails creating both current-state and future-state maps to visualize the flow of value within an organization, identifying inefficiencies and areas for improvement. By concurrently analyzing material and information flow, VSM enables the identification and elimination of various forms of waste, such as overproduction, transportation, and defects, ultimately enhancing productivity and customer value. Additionally, VSM provides a common language for process improvement initiatives, facilitating communication and alignment across organizational levels. (Cudney, 2009, pp.45-47)

Another widely utilized method in process improvement is **Kaizen**. It is characterized by its focused approach and team-based methodology. When analysis suggests its suitability for an improvement project, a Kaizen event is typically initiated. Functioning as a continuous improvement process that encourages individuals to harness their creativity, Kaizen is instrumental in addressing specific issues, workflow challenges, or aspects of business operations. Through quantitative analysis, attention is directed towards examining work processes, aiming to identify inefficiencies through tasks' time and motion studies, involving input from both employees and managers. The preparation phase involves assembling and training the team, selecting the problem area, and conducting training on waste control, standardized work, and continuous flow if necessary. The subsequent analysis phase utilizes video recordings to scrutinize material flow, cycle time, layout, and process waste. This phase also involves generating standardized work and recording operational metrics and defect rates. Subsequent stages encompass brainstorming, testing, and evaluating improvement ideas, followed by the implementation and evaluation of identified improvements. The results are documented, and presentations are made to management, highlighting achieved improvements and suggesting future actions, thereby fostering a cycle of continuous improvement within the organization. (Breyfogle III , 2007)

Lean stands apart as a unique approach to improvement. It's a distinct set of behaviors and management practices that go beyond production tools, extending to various sectors. It differs from other methodologies like BPR, Six Sigma, and TQM by empowering frontline problem-solving capabilities rather than relying on experts. Lean emphasizes practical application over theoretical study, fostering individual and organizational learning through repeated practice. It raises intriguing

hypotheses for academic exploration into collaborative practices across disciplines. (von Rosing et al., 2014, p.49)

3.4 Six Sigma

The Six Sigma methodology facilitates multi-faceted customer satisfaction by means of “uniform quality metrics (...), and identical improvement rates for all areas of the business”, and focusing on the goal along with the relevant training that enables the goal achievement. (Motwani et al., 2004, p.273). Various perspectives define Six Sigma, portraying it as a technical methodology utilized by engineers and statisticians to refine products and meet customer requirements. It is also perceived as a strategic initiative within companies aimed at enhancing competitiveness. From its own standpoint, Six Sigma embodies a statistical approach, aspiring to operate with only 3.4 defects per million opportunities, thereby facilitating continuous improvement and culture change within organizations. Fundamentally, Six Sigma is characterized by a commitment to understanding customer needs, employing factual data and statistical analysis, and diligently managing, improving, and re-inventing business processes to maximize profitability and ensure sustained customer satisfaction. (Desai, 2010, p.8).

Six Sigma employs a hierarchical structure of expertise to drive process improvement and efficiency. Practitioners are designated as Green Belts, Black Belts, and Master Black Belts, each with increasing levels of expertise and responsibility, allowing for a clear progression of skills and leadership. These belts work on specific projects to eliminate defects and optimize processes. The process owner or champion oversees the implementation of Six Sigma methodologies, ensuring alignment with business and financial objectives. (Desai, 2010, pp.60-61)

The understanding of Six Sigma methodology is shaped by numerous definitions provided by different sources. According to Snee (2004), Six Sigma is perceived as a business improvement approach aimed at identifying and eradicating the root causes of errors or defects in business processes, with a focus on outputs critical to customer satisfaction. McAdam and Evans (2004) view Six Sigma as a valuable management philosophy and problem-solving methodology, albeit not as a comprehensive management system. Breyfogle III et al. (2001) describe Six Sigma as an initiative intended to foster a cultural shift within organizations through breakthrough improvements across all business facets. Pearson (2001) characterizes Six Sigma as a program that integrates the most effective statistical and non-statistical methods to enhance overall business performance. Additionally, General Electric (GE) presents Six Sigma as a highly disciplined process centered on developing and delivering near-perfect products and services. GE emphasizes the systematic identification and elimination of defects, resulting in a culture shift towards quality excellence permeating all aspects of the organization. (Snee, 2004; McAdam Evans, 2004; Breyfogle III et al., 2001; Pearson, 2001; General Electric at www.ge.com as cited by (Desai, 2010, pp.7-8))

Six Sigma embodies various meanings across different organizational levels, reflecting its strategic and tactical applications within a business. At the enterprise level, Six Sigma serves as a strategic initiative, focusing on significant improvements in areas such as business growth, capacity enhancement, investor relationships, and customer satisfaction. Meanwhile, at the operations level, it takes on a more tactical approach, targeting improvements in delivery time, cost of poor quality (COPQ)¹⁰, defects per unit (DPU)¹¹, and other critical measures of operational efficiency. Furthermore, at the process level, Six Sigma methodology aims to reduce variability, leading to fewer defects, shorter process cycle times, and decreased direct costs. The fundamental principle at this level emphasizes that improvements should yield measurable benefits, such as reduced headcount and material costs. Ultimately, Six Sigma functions as both a strategic and tactical system for managing total business enterprises, with the capacity to deliver customer and provider satisfaction, thereby optimizing overall business performance and enhancing control functions. (Harry et al., 2010, pp.41-42)

3.4.1 Key Elements of Six Sigma

Six Sigma encompasses several key ingredients essential for achieving operational excellence and customer satisfaction. Foremost is a relentless **focus on the customer**, recognizing their centrality in today's market landscape and prioritizing their needs throughout the business process. The systematic identification and refinement of customer requirements are emphasized, directing efforts towards developing processes that align with these needs and minimize defects to enhance customer satisfaction. Additionally, **data-driven decision-making** plays a crucial role, enabling organizations to collect and analyze relevant data to drive process improvement and value addition. **Proactive management** practices are advocated, encouraging forward-thinking leadership and a willingness to embrace change to drive continuous improvement and organizational success. **Collaborative teamwork** is also emphasized, fostering a culture where individuals across departments work together to improve core business processes and deliver enhanced value to customers. Overall, Six Sigma methodology promotes a drive for perfection, aiming to reduce defects and improve business performance while recognizing the importance of risk management in achieving better, more effective decisions. (Desai, 2010, p.6)

The core principles of Six Sigma underscore the emphasis placed on reducing business risk and achieving breakthrough performance through quality improvement initiatives. Beyond mere quality

¹⁰ The Cost of Poor Quality (COPQ) refers to expenses incurred by a company due to failures in meeting product, service, or process requirements, encompassing both visible and hidden costs that detract from profitability and necessitate quality improvement efforts. (Axelsson and Skogum, 2016)

¹¹ Defects per Unit (DPU) also known as Count Data, refers to the tally of defects discovered within a single unit, for example the quantity of mistakes within a shipment. (Shankar, 2008, p.20)

targets, Six Sigma is understood as encompassing essential components vital for organizational success. These components, referred to as the essentials of Six Sigma, revolve around several key pillars: (1) **Thinking Six Sigma**, involving the exploration of overarching ideas driving performance improvement and value creation for enterprises of all types; (2) **Applying Six Sigma**, which entails the profiling of essential improvement tools utilized in project execution to solve a wide array of problems; (3) **Targeting Six Sigma**, focusing on the identification, definition, and execution of projects aligned with organizational goals, while tracking and validating progress; (4) **Leading Six Sigma**, emphasizing the selection, training, and motivation of leaders at all levels to sustain continuous improvement momentum; (5) **Enabling Six Sigma**, understanding and fulfilling information and reporting needs to support global deployment while effectively integrating them at the local level; (6) **Deploying Six Sigma**, adhering to guidelines for scaling and creating a global deployment plan to drive focused management activity; and (7) **Initializing Six Sigma**, leveraging top programs to support rapid initialization, deployment, and implementation across all levels of the enterprise. These components collectively form a comprehensive framework for achieving organizational excellence and performance enhancement. (Harry et al., 2010, pp.42-43)

3.4.2 Limitations of Six Sigma Methodology

According to Jiju et. al (2019), several notable limitations are confronted by Six Sigma, among which the following are deemed most relevant in the context of process improvement. Firstly, empirical studies suggest a **considerable failure rate** among Six Sigma initiatives, indicating the imperative need for discerning the root causes of such failures and formulating remedial strategies. Additionally, the **substantial initial financial investment** required for embedding Six Sigma practices within organizational frameworks may dissuade smaller enterprises from its adoption. Moreover, instances of inadequate Six Sigma implementation leading to **compromised customer satisfaction** underscore the pivotal role of proper execution. Similarly, suboptimal deployment of Six Sigma methodologies may result in **varying levels of employee job satisfaction**, potentially dampening overall morale and engagement. Furthermore, the structured problem-solving approach inherent to Six Sigma may inadvertently **curtail employee creativity and innovation**, although opinions on this matter vary. Lastly, the **efficacy of Six Sigma initiatives relative to the resources** and effort expended warrants further empirical inquiry to ascertain the correlation between investment and outcomes.

Additionally, as Selvi & Majumdar (2014) state, Six Sigma may not always result in cost savings, as improving product quality can lead to increased capital and long-term overhead costs due to the need for more quality personnel. Tighter quality standards may be implemented or closely supervised processes may remain unchanged as product quality improves, requiring extensive data collection and analysis, known as the cost of quality, which must be balanced against other business

objectives. Intangible results do not align well with Six Sigma projects, which are most effective for physical products that deviate from specifications.

3.4.3 Summary

In the realm of corporate business leadership, the process of change is often steered by executives who devote significant efforts to refining these initiatives. Senior leaders frequently ponder the practical application of Six Sigma, viewing it as a means to embed practices that yield tangible enhancements in business operations and processes. At the business level, Six Sigma entails setting ambitious objectives aimed at driving key performance indicators such as customer satisfaction, profit margins, and market share. Operational improvements under Six Sigma exhibit substantial annualized growth rates, notably reducing metrics like defects per unit and delivery delays. Achieving these goals necessitates a meticulous validation of interconnections between different business functions and processes to ensure comprehensive realization of Six Sigma's overarching objectives. The evolution of Six Sigma traverses distinct phases—from exploration to continuation—resembling the developmental trajectory of human life, as organizations acquire knowledge, adapt, and leverage their experiences to shape their destiny. The transformation of quality, previously dependent on artisanal abilities, has evolved into a scientific discipline integrated with engineering and production. This evolution emphasizes the optimization of diverse organizational aspects, extending beyond product quality to encompass considerations such as cost, time, and resource management, aligning with the evolving expectations of customers and shareholders. (Harry et al., 2010, pp.205-07)

3.5 Exploring Six Sigma's DMAIC and DMADV Methodologies

This chapter delves into DMAIC and DMADV, essential methodologies in process improvement, renowned for their structured frameworks and effectiveness in enhancing quality and organizational outcomes. Through a detailed examination of their principles and applications, readers gain insights into their roles in driving continuous improvement across diverse business processes.

3.5.1 DMAIC

This Six Sigma methodology is widely recognized and employed across industries as a systematic approach to enhancing overall process efficiency and achieving high-quality standards. Among the various strategies within Six Sigma, the DMAIC (Define–Measure–Analyze–Improve–Control) process stands out as a classic problem-solving method. Despite its association with Six Sigma, DMAIC is not exclusive to this framework and can serve as a versatile tool for improvement endeavors. (Patil and Inamdar, 2014). “The DMAIC methodology takes a problem that has been identified by the organization and utilizes a set of tools and techniques in a logical fashion to arrive at a

sustainable solution(s). The resultant solution(s) will minimize or eliminate the problem, placing the organization in a competitive position.” (Shankar, 2008, p.xvi).

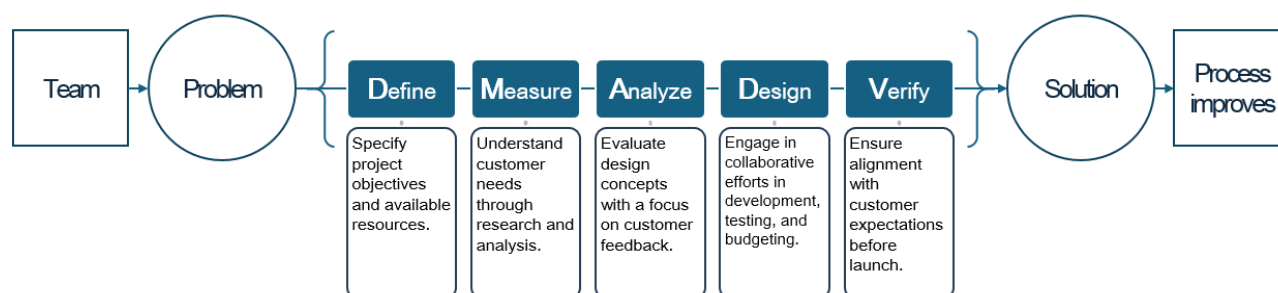


Figure 4. DMAIC process (Shankar, 2008, p. xviii; Patil & Inamdar, 2014)

Shankar (Shankar, 2008, p.95) draws parallels between the DMAIC process and a patient's visit to a hospital. It involves diagnosing the problem (Define), conducting tests (Measure), prescribing treatment (Analyze), monitoring progress (Improve), and ensuring stability (Control), with the process improvement team playing the role of the physician guiding the process towards a solution.

Define. In the initial phase the focus lies on aligning the chosen problem or process for improvement within the DMAIC methodology with the organizational objectives, ensuring endorsement from management. This phase commences with the identification of the issue necessitating resolution and concludes with a comprehensive comprehension of the problem's extent and affirmation of management backing, facilitating the project's advancement through the allocation of resources. (Shankar, 2008, p.1). According to Selvi & Majumdar (2014), three key activities occur during this phase: developing a Team Charter, focusing on customer needs, and conducting process mapping. The Team Charter involves identifying business case details, problem statements, project scope, milestones, and roles. Customer needs are translated into specific requirements, and methods for gathering customer information are determined. Process mapping defines the process and connects it to the customer, with business process mapping revealing the benefits and applications of the existing process.

Measure. The objective of the Measure phase is to compile foundational data regarding the process identified for enhancement. This data aids in comprehending the process's current state, customer expectations, and areas of concern. Initially, data collection begins to quantify the problem, assessing instances where the process fails to meet customer-required factors. Primarily relying on historical data, this passive data collection phase serves as groundwork for showcasing improvement in the Control phase of the DMAIC methodology. In instances where organizational data is limited, efforts are directed towards studying the process and gathering data from the current state. Four key tasks are undertaken during the Measure phase: creating a process map of the current

state to understand process activities, conducting a failure mode and effects analysis (FMEA) to identify process risks, calculating process capability to gauge alignment with customer expectations, and evaluating the measurement system to ensure data accuracy and mitigate inherent variations in data collection methods. (Shankar, 2008, p.11)

Analyze. In this phase, the collected data undergoes review to identify the root causes of defects. This phase involves several steps: firstly, evaluating the value of each process step; secondly, inspecting the collected data and converting it into charts and graphs; thirdly, brainstorming potential problem causes using Cause-Effect diagrams; and finally, conducting additional analysis on the identified problem causes. (Selvi and Majumdar, 2014). The objective of the Analyze phase is to comprehend cause-and-effect relationships in the process, with insignificant input factors being filtered out through statistical analysis of collected data. Action items identified in the Measure phase are implemented, and further data is collected post-implementation for analysis using statistical tools such as hypothesis testing, correlation and regression, and analysis of variance (ANOVA)¹². Interpretation of the statistical output aids in determining the significance of input factors on the output, guiding subsequent testing to identify factors crucial to the process. (Shankar, 2008, p.41).

Improve. The potential solutions based on the problem's cause are identified, with the easiest one to implement being selected, communicated to stakeholders, and piloted using process maps and a high-level plan, followed by evaluating the improvement benefits and impacts upon implementing the final solution (Selvi and Majumdar, 2014). Shankar (Shankar, 2008, p.67) recommends employing design of experiments (DOE) as a tool for process improvement, suggesting its utilization to mathematically model the process with significant input factors identified during the Analyze phase, thereby facilitating enhanced control over these factors.

Control. In this phase, the primary aim is to establish metrics facilitating ongoing monitoring and documentation of sustained success. Six Sigma methodologies are characterized by adaptability and continuous refinement. Following the completion of the initial cycle, adjustments and new changes may be introduced based on the outcomes. Additionally, the Control Phase may involve addressing additional processes or concluding the initial project. (Selvi and Majumdar, 2014)

DMAIC methodology offers a systematic approach to process improvement. Its structured framework allows organizations to define, measure, analyze, improve, and control processes, facilitating

¹² Analysis of Variance (ANOVA), is a statistical method used for comparing means of three or more groups to determine if there are any statistically significant differences between them. It assesses whether the variability between group means is greater than the variability within groups, thereby helping to identify influential input factors in a process. (Shankar, 2008, p.53)

enhanced efficiency and quality. However, while DMAIC provides a methodical pathway for addressing issues, its implementation may be time-consuming and resource-intensive. Additionally, adherence to the rigid phases of DMAIC may limit flexibility in addressing dynamic organizational challenges. Despite these potential drawbacks, DMAIC remains a valuable tool for organizations committed to quality enhancement and continuous improvement.

3.5.2 DMADV

DMADV (Define–Measure–Analyze–Design–Verify) serves as a structured approach for projects focused on the creation of new product or process designs. Also referred to as DFSS (Design for Six Sigma), DMADV encompasses five distinct phases, each crucial for ensuring the success of the project. By adhering to this methodology, organizations can systematically develop innovative solutions that align with customer demands and organizational strategies. (von Rosing et al., 2014, p.70)

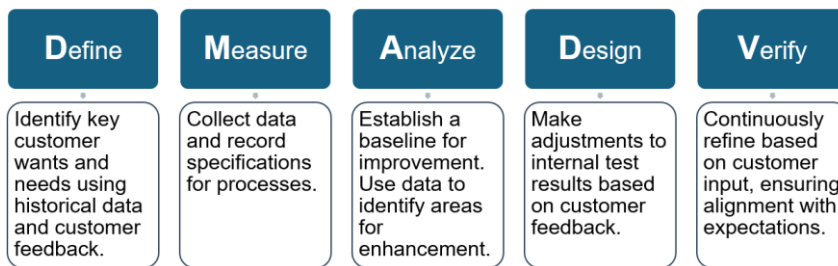


Figure 5. DMADV process (Selvi and Majumdar, 2014)

In the initial **Define phase (1)** of DMADV, the emphasis lies on establishing clear design goals that are consistent with customer demands and enterprise strategy. This phase sets the foundation for the entire project, ensuring alignment with stakeholders' expectations and organizational objectives. By precisely defining the project scope and objectives, organizations can effectively steer the subsequent phases towards achieving desired outcomes. Transitioning into the **Measure phase (2)**, the focus shifts towards identifying Critical to Quality (CTQ) characteristics, product capabilities, production process capability, and associated risks. Through comprehensive measurement and analysis, organizations gain valuable insights into the current state of affairs, laying the groundwork for informed decision-making. By quantifying key parameters and risks, organizations can better assess the feasibility and viability of potential design alternatives. In the **Analyze phase (3)**, organizations delve deeper into data analysis to develop and evaluate various design alternatives. Drawing upon statistical techniques and analytical tools, teams assess the strengths and weaknesses of each design option to identify the most promising solution. This phase plays a critical role in refining the design concepts and optimizing them to meet established design goals and customer requirements. Subsequently, the **Design phase (4)** focuses on developing an improved alternative based on the analysis conducted in the previous step. Teams collaborate to translate

conceptual ideas into tangible designs, considering factors such as functionality, feasibility, and cost-effectiveness. Through iterative design iterations, organizations strive to achieve optimal solutions that address identified needs and mitigate potential risks. Finally, in the **Verify phase (5)**, organizations validate the chosen design through pilot runs and implementation trials. By subjecting the design to real-world testing and scrutiny, organizations ensure its effectiveness and suitability for widespread adoption. This phase culminates in the formal handover of the approved design to process owners, marking the completion of the DMADV project cycle and the commencement of the implementation phase. (von Rosing et al., 2014, p.70)

In the context of process improvement, the DMADV process hinges on the company's capability to discern and address customer needs that are currently unmet. Unlike the broader Six Sigma framework commonly used in manufacturing organizations, DMADV specifically focuses on the inception phase of new products, services, or processes, prioritizing innovation over rectifying existing issues. Each phase within the DMADV process serves a distinct purpose: Define delineates project objectives and parameters, Measure delves into comprehending customer preferences and Critical To Quality Characteristics, Analyze evaluates ideas against established CTQs, Design involves collaborative efforts in development, testing, and budgeting, while Verify ensures the seamless transition of the finalized product, process, or service to the customer. (Desai, 2010, p.62)

3.5.3 Selecting the Right Methodology for Process Improvement

DMAIC and DMADV methodologies offer nuanced perspectives on their divergent approaches to enhancing processes and developing products. Understanding the disparities between DMAIC and DMADV methodologies is essential for organizations to discern the appropriate application for each, ensuring optimal outcomes in process improvement and product development initiatives.

Within organizational routines theory, DMAIC and DMADV serve as distinct approaches within the Six Sigma framework, each tailored to specific contexts and objectives (Patil and Inamdar, 2014). DMAIC functions as a meta-routine, suited for addressing discrepancies between existing processes and customer specifications, facilitating incremental process enhancement (Knapp, 2010, p.38). In contrast, DMADV is recommended for scenarios involving the development of new products or processes, or when existing systems fail to meet desired standards despite optimization efforts (Patil and Inamdar, 2014). While DMAIC focuses on improving existing processes not meeting performance specifications, DMADV is employed for developing new processes or products at Six Sigma quality levels, with the potential for incremental process improvement (Knapp, 2010, p.38).

The DMAIC methodology is applied when an existing product or process within the company fails to meet customer specifications or performs inadequately, while DMADV is employed in two sce-

narios: for development needs of new products or processes, and for existing products or processes that fail to meet customer specifications despite optimization efforts. Although initially scoped as DMAIC, managing projects may later require a shift to the DMADV methodology, providing valuable insights and a deeper understanding of the process. Both DMAIC and DMADV are data-intensive approaches executed by Six Sigma practitioners.

Within organizational routines theory, DMAIC functions as a meta-routine, facilitating the alteration of established routines or the creation of new ones. This approach is commonly utilized as a generic problem-solving and improvement technique, particularly suited for addressing discrepancies between existing processes and customer specifications. Conversely, the DMADV approach is recommended for scenarios involving the development of new products or processes or when existing systems fail to meet desired standards despite optimization efforts. (Patil and Inamdar, 2014)

3.6 Benchmarking

Benchmarking, a widely employed practice within an industry or market segment, serves to standardize business practices, processes, and performance measures, enabling organizations to compare their operations and performance against peers and competitors and facilitating the development of industry standards. It aids in determining optimal methods for standardizing and normalizing business processes. In business process management and improvement, benchmarking identifies weaknesses and strengths, enabling strategic adjustments and resource realignment, while also guiding investment decisions for competitive advantage. (Lehmann, 2012, p.118)

Benchmarking aims to investigate the mechanisms behind organizations' attainment of heightened efficiency levels, discerning their relative cost position and uncovering improvement opportunities. Strategic advantage is attained by focusing on the competencies necessary to elevate performance levels. Additionally, benchmarking initiates innovation through organizational learning, idea generation, and knowledge dissemination. Core business process benchmarking involves assessing critical processes to enhance efficiency, reduce costs, and potentially consider outsourcing as an option. (Sammut-Bonnici, 2015). A company should benchmark their processes against industry standards and competitors' best practices by systematically analyzing key performance metrics, conducting detailed comparative studies, and implementing insights gained to drive continuous improvement

Benchmark measures may not always accurately reflect an organization's true state. Simply surpassing industry standards does not guarantee meeting customer or shareholder expectations. Therefore, it's vital to critically evaluate benchmarks to ensure they match customer values and shareholder needs. Achieving a benchmark can create a false sense of security, leaving organizations vulnerable to competitors who exploit perceived complacency. Benchmarks evolve over time,

so staying updated is crucial. Caution should be exercised in relying solely on benchmarks without thorough research and analysis of core processes. Ultimately, benchmarking should be seen as an ongoing process of evaluating organizational performance and identifying competitive advantages, not just reaching a goal. (Lehmann, 2012, pp.119-20)

3.7 Total Quality Management

Total Quality Management (TQM) represents an evolution in conventional business practices, offering a systematic approach to ensure competitiveness in a global marketplace. The transformation of an organization's culture and practices hinges upon the alteration of managerial behaviors, signaling a fundamental shift in organizational dynamics. TQM is fundamentally grounded in common sense principles, encapsulated by its components: "Total" denotes the comprehensive nature of the approach, emphasizing integration across all facets; "Quality" pertains to the standard of excellence delivered by products or services; and "Management" encompasses the strategic direction and control exercised over organizational processes and resources. (Naidu et al., 2006, pp.27-28)

TQM, regarded as the foundational process improvement methodology, marked the inception of the quality movement and instilled the concept of continuous improvement within management paradigms. Rooted in Deming's 14 points, TQM encompasses four principal domains: managerial commitment to perpetual enhancement, emphasis on refining work processes, utilization of statistical tools for assessing process efficacy, and fostering employee engagement and empowerment. TQM sparked a transformative shift in managerial ideology and garnered global adoption. However, after approximately two decades, businesses sought novel approaches, leading to the evolution of TQM into Six Sigma. (Gershon, 2010, pp.62-63)

When compared to TQM, Six Sigma, although a newer concept, was not initially intended as a replacement. Despite their differences, both Six Sigma and TQM share many similarities and are adaptable to various business environments, including manufacturing and service industries. (Desai, 2010, p.14). The comparison between TQM and Six Sigma reveals that Six Sigma methodology encompasses all the tools and ideologies of TQM, with nearly all activities conducted in a Six Sigma project being feasible within the realm of TQM as well. However, Six Sigma has evolved from the lessons learned from TQM's historical failures, incorporating several improvements. Firstly, where TQM faltered due to inadequate management involvement, Six Sigma mandates participation through its structured framework involving belts, champions, and sponsors. Secondly, while TQM often neglected the formation of project groups, Six Sigma emphasizes both cultivating a culture of continuous improvement and engaging in project-based initiatives to drive achievements. Thirdly, unlike TQM, which lacked a prescribed implementation methodology, Six Sigma

introduces a well-defined improvement model called DMAIC, ensuring a systematic approach leading to success and its sustenance. Additionally, Six Sigma offers more sophisticated statistical tools, enhancing the potential for substantial and previously undiscovered improvements beyond what TQM tools alone could achieve. (Gershon, 2010, p.67)

Six Sigma introduces an extension of improvement tools to address various business concerns, including cost and cycle time reduction, while discarding a significant portion of the traditional quality toolkit. Furthermore, Six Sigma aligns organizational objectives with improvement endeavors, ensuring that quality enhancement is integrated with broader business goals under top-level oversight. (Desai, 2010, pp.14-15)

3.8 Business Process Re-engineering

The concept of Business Process Re-engineering (BPR) has evolved over time, transitioning from a focus on various processes to encompassing technological elements related to these processes. BPR, considered by some as an outdated method, emphasizes the overhaul of entire business processes with innovative ones, necessitating management insight and adaptability to change. Recent studies incorporate technical elements to facilitate business process reengineering. These steps involve identifying the business process for re-engineering, understanding the existing process, collecting data, developing business process and simulation models, testing the models, analyzing results, and assessing goals. Each phase contributes to comprehending process dynamics, identifying inefficiencies, and ultimately achieving process improvement goals. Through simulation modeling and experimentation, organizations can evaluate performance indicators and determine the success of reengineering efforts, paving the way for implementation of improved processes. (Näslund, 2008)

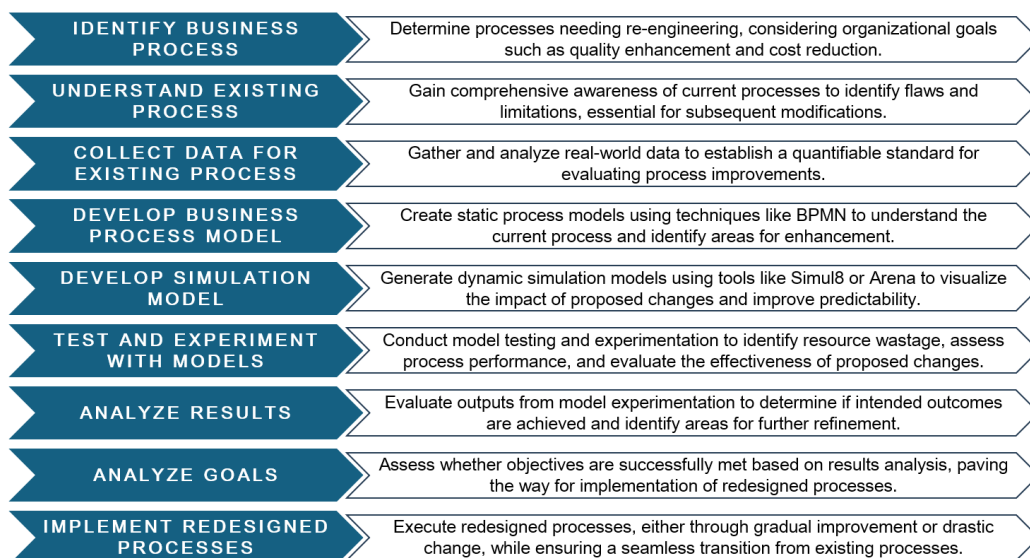


Figure 6. Steps for business process re-engineering (Näslund, 2008)

BPR offers several advantages, including the optimization of business processes, enhanced efficiency and quality, cost reduction, improved employee collaboration, increased flexibility to adapt to changes, establishment of a growth-oriented foundation, and enhanced cooperation between departments. Success in BPR implementation requires strong leadership support, involvement of senior management in decision-making, and the inclusion of skilled project managers and consultants. Despite its demanding nature, BPR can yield financial and competitive benefits for companies by identifying and redesigning inefficient processes. However, challenges may arise, such as resource constraints, resistance to change, and the need for ISO certification, which can increase implementation complexity and resource requirements. Despite these challenges, the structured approach of BPR, combined with ISO certification, can lead to long-term financial gains and facilitate the implementation of activity-based costing systems with reduced resource investment. (von Rosing et al., 2014, pp.56-57)

When considering the selection between BPR and Six Sigma for a Process Improvement initiative, BPR might be chosen when there is a necessity for radical restructuring and redesign of existing processes to attain substantial breakthrough improvements in efficiency and effectiveness. Conversely, Six Sigma could be favored when the emphasis is placed on achieving incremental enhancements in quality and reducing variation within existing processes, particularly in scenarios where process stability and continuous refinement are deemed essential.

3.9 Summary of Methodologies for Organizational Process Improvement

The discussed methodologies encompass various approaches to process improvement within organizational contexts. Business Process Management focuses on the continuous optimization of processes, whereas Business Process Reengineering entails radical redesigning. Lean methodology emphasizes waste elimination and flow improvement, while Six Sigma aims at minimizing variation and defects through statistical problem-solving. Both Six Sigma DMAIC and DMADV methodologies follow sequential problem-solving methodologies, with DMAIC targeting existing processes and DMADV focusing on the design of new ones. Benchmarking for process improvement entails comparing performance against industry standards to enhance operational efficiency, while Total Quality Management centers on customer satisfaction and continuous improvement, integrating quality principles throughout organizational processes. Each methodology offers distinct tools, techniques, and philosophies, contributing to the broader framework of process improvement within diverse industries.

ASPECT	BUSINESS PROCESS MANAGEMENT (BPM)	LEAN	SIX SIGMA	SIX SIGMA DMAIC	SIX SIGMA DMADV	BENCH-MARKING	TOTAL QUALITY MANAGEMENT (TQM)	BUSINESS PROCESS RE-ENGINEERING
FOCUS	Continuous optimization of processes	Eliminating waste and optimizing process	Reducing variation and defects in processes	Improving existing processes through analysis	Designing new processes	Identifying areas needing improvement.	Customer satisfaction, continuous improvement	Redesigning and restructuring processes
OBJECTIVE	Improvement of efficiency, agility, and effectiveness	Continuous improvement	Minimized variation, quality improvement	Solving specific problems systematically	Design new process, improve quality	Cost reduction, efficiency improvement, quality enhancement, etc.	Achieving and maintaining high-quality standards	Radical improvement
SCOPE	Organization-wide process optimization	Entire organization and value stream	Specific projects or processes	Specific process improvement projects	New product or process development	Internal, competitive, or functional benchmarking.	Organization-wide quality management	Departmental or enterprise-wide process overhaul
APPROACH	Managing process as assets	Incremental improvements	Data-driven problem-solving	Systematic problem-solving approach	Sequential problem-solving with emphasis on design	Strategic, operational, or tactical benchmarking.	Customer-driven quality improvement, continuous monitoring	Redesigning processes from scratch
KEY TOOLS/ TECHNIQUEST	Process mapping, automation, KPIs	Value stream mapping, Kaizen	Statistical tools, DMAIC	Statistical tools	Statistical tools	Surveys, interviews, metrics, process mapping.	Statistical process control, quality circles	Process mapping, analysis, and redesign
IMPACT	Enhanced process efficiency, agility, and effectiveness	Waste reduction, improved flow	Reduced defects, improved quality	Reduced defects, improved performance	Improved quality, streamlined processes	Productivity, cost savings, customer satisfaction, etc.	Enhanced customer satisfaction, continuous improvement	Dramatic performance improvement
TIME FRAME	Ongoing process optimization	Continuous improvement with varying timelines	Project-based	Project-based	Project-based	Project-based	Ongoing quality management and improvement	Radical overhaul with varying long-term timelines

Table 1. Comparison of the chosen process improvement and development methodologies

The table provides a comprehensive comparison of various methodologies for organizational process improvement, explaining their distinct approaches, goals, tools, and applications. Through this comparative analysis, the methodologies are clearly juxtaposed, offering insights into their respective philosophies and contributions to process enhancement.

4 Research and Development Methods

4.1 Research Approach

The main objective of this study was to develop and describe the optimal method for process development at the Manufacturing Company. As the researcher's goal was to explore and solve a specific problem at the Manufacturing Company, action research was chosen as the most applicable research approach. According to Gillis & Jackson (2002), action research is the "systematic collection and analysis of data for the purpose of taking action and making change". The researcher collected and analyzed primary and secondary data for the Manufacturing Company, aiming to enhance business functioning. The findings were then utilized as a practical process development tool. The researcher participated actively in the process of developing the project plan and throughout its implementation.

4.2 Methods of Data Collection

Throughout the study, qualitative data were collected using three methods specifically employed for this thesis. The primary data, that is the data generated by the researcher (Vogt et al., 2012, p.86), was gathered through participant observation and survey. The secondary data was collected by analyzing existing documentation of the Manufacturing Company, mainly the processes charts and descriptions. Secondary data is a set of documents, raw data, and publications etc. generated by a different entity prior to current research. It can be utilized in research for analysis and producing new insights based on pre-existing knowledge. (Saunders et al., 2015, p.316)

The majority of data was collected through observational research, which enabled the researcher to study the environment as is (Vogt et al., 2012, p.67). The participatory research methodology involved the active engagement of the observer within the studied environment, facilitating the collection of high-quality insights (Vogt et al., 2012, p.76). Secondly, a survey was conducted at the beginning of the research. The aim of the survey was to collect feedback on the current state of organizational processes, alignment with global frameworks, and opinions on strategies for global standardization. Thirdly, the researcher analyzed and reviewed the Manufacturing Company's existing documentation in order to establish the current practices related to process development and identify which elements should be developed and improved.

4.2.1 Participant Observation

The goal of this thesis was to reflect upon gathered information, rather than generating a new set of data, and thus the participant research was chosen as the main methodology of data collection. As Vogt (2012) explains, "Observational research (...) means studying events, situations, settings, practices, and other social phenomena as they occur" (p.67). Engaging in participant observation,

in particular, facilitated experiencing the research setting directly through immersion in the studied environment (Saunders et al., 2015, p.356). Participation in the Manufacturing Company's process development project allowed the researcher to gather data through observation rather than active involvement. The latter was limited and focused on sharing theoretical insights with the project's steering group.

The main challenges of observational research pertain to the method of data recording, and ensuring its accuracy (Kothari, 2004, p.96). During the study of the Manufacturing Company, the observations were recorded in the form of notes with focus on their consistency. Each time, the date, time, and the context of observation was noted. The researcher paid attention to use clear and descriptive language enabling reading and interpreting the data at any later stage.

Observational research is typically applied when examining social phenomena (Saunders, 2015, p. 356) however, it remains relevant for this thesis as the researcher's goal was to examine a specific set of practices from within the Manufacturing Company. Furthermore, observational research enabled the researcher to approach the information with a fresh perspective, and shed new insights and reflections that might have been otherwise easy to overlook (Vogt et al., 2012, p.67).

As part of the participant observation methodology employed in this research, an active role within the organization was assumed by the researcher, involving participation in five official project meetings of the Core Team. During these sessions, discussions, decision-making processes, and team dynamics were observed closely. Furthermore, meticulous review of the organization's process documentation, project notes, and other pertinent records was conducted to deepen understanding of operational procedures and challenges. Additionally, a significant contribution was made in presenting the findings of the literature review to provide a solid foundation and support internal training sessions on processes. This endeavor included synthesizing academic literature into comprehensible insights tailored to the organization's context, thereby facilitating knowledge transfer and fostering a deeper understanding of process improvement methodologies among team members. Through these activities, the researcher actively contributed to the research process while immersing herself in the organizational context, enabling a comprehensive analysis of its processes and alignment with global standardization frameworks.

4.2.2 Survey

The main focus of the researcher was to create a useful and applicable result that would be beneficial for both, ongoing and upcoming projects related to processes. For that reason, gathering practical insights from the project's stakeholders was one of the key parts to data collection for this thesis. This ensured that the discoveries are not solely grounded in theory but also stay valid to the real-world implementation.

A survey, as a data collection tool, enables gathering insights from a larger group of respondents in an effective and time efficient manner. It is aimed at obtaining concise and structured answers, which simplifies the analysis. Additionally, it proves to be a noteworthy tool when a high response rate is anticipated. (Vogt et al., 2012, p.12). Even though surveys are typically considered a quantitative data collection method, in this thesis, the survey was utilized as a qualitative tool to gain deeper insights into participants' perspectives and experiences, allowing for the exploration of nuanced responses that go beyond numerical analysis.

The survey was deployed during the initial phases of the project, and thesis writing. Its aim was to gather data on current organizational processes, their alignment with global frameworks, and opinions on global standardization strategies. The self-completed questionnaire was distributed via the Internet using a specialized tool, and there were no imposed time constraints. The survey was open for 4 weeks to accommodate the participants' busy schedules, in hope of increasing the response rate.

To ensure satisfactory results – valid and reliable data – a survey must be well designed in terms of structure, and number and quality of questions. The quality of questions refers to their appropriate formulation and clarity, ensuring the respondents will interpret the questions as intended by the researcher. (Saunders et al., 2015, p.449). The thesis' survey comprised 12 questions, with 7 being open-ended, and 5 multiple-choice questions. In designing the survey, the researcher focused on two aspects. (1) Arranging the questions in a logical sequence, progressing in complexity; and (2) interspersing open-ended questions with multiple-choice questions to mitigate respondent fatigue.

Using a survey allowed to collect the responses anonymously, thus amplifying the probability of obtaining more honest and robust answers. Additionally, when analyzing data collection tools, choosing survey was predicted to attain a high response rate. Firstly, surveyed stakeholders had a deep interest in the success of the process development project. Secondly, the Project Manager encouraged active participation from selected respondents, anticipating valuable insights crucial for the successful implementation of the project.

4.2.3 Organizational Records

According to Vogt (2012, p.95), existing documents analysis is one type of archival research which can be a source of invaluable contextual insights. The existing documentation of the Manufacturing Company served as a significant source of information on the chosen processes that were benchmarked against selected theoretical frameworks in this thesis.

The researcher had access to organizational records, enabling the extraction of insights into operational processes and practices. This encompassed access to current processes and the organization's process management system. By delving into these records, the researcher gained valuable firsthand understanding of the organization's workflow, encompassing its structure, sequences, and interdependencies. Additionally, the researcher was granted access to process development project notes and related documentation, affording a comprehensive overview of ongoing and past initiatives aimed at enhancing operational efficiency and effectiveness. Through systematic review and analysis of these records, patterns, trends, and areas for improvement within the organization's processes were discerned. These insights provided a solid foundation for assessing the organization's alignment with global standardization frameworks and identifying potential areas for enhancement to foster greater consistency and competitiveness in the global market landscape.

The access to the organizational records at the Manufacturing Company is highly restricted. The researcher had to carefully interpret and present the data, ensuring that strategic information remains confidential.

4.3 Methods of Data Analysis

For the purposes of this thesis, *data analysis* is used as an umbrella term encompassing both data processing and analysis. Some researchers distinguish between data processing and data analysis, with *processing* meant as reviewing, encoding, categorization, and summarization of data, and *analysis* being calculating specific measures and identifying patterns within data groups. In this thesis, *data analysis* involves closely connected operations to summarize and organize collected information, addressing the underlying research questions. (Kothari, 2004, p.122)

In qualitative research, meanings are extracted mainly from words and images rather than numerical data. The quality hinges on the interaction between data collection and analysis, enabling the exploration and clarification of meanings. (Saunders et al., 2015, p.568)

The data collected during research for this thesis were processed using thematic analysis method. The method allows for an "orderly and systematic way to analyze qualitative data" by enabling recognition and integration of common themes from different sources, generating a thematic representation of the data as well as determining and validating conclusions (Saunders et al., 2015, p.579). The main themes for the data collected in this thesis were. Best practices for process creation, main challenges in incorporating new practices, factors inhibiting the promotion of process creation method adaptation, and recognizing the added value of improving the process creation method.

The researcher has incorporated diverse reflective concepts to improve the data analysis development. Interim and document summaries, and self-memos, facilitated accessing the records content

as contextualized at the time of the documentation process. Interim summaries enabled reflecting upon so far progress, assessing data reliability and possible methods of improving the data recording or quality. The purpose of creating document summaries was to outline the essential points of the document for the research, and additionally, contemplate their relevance and significance. Finally, utilizing self-memos helped capture ideas in real-time during the research, preventing the loss of ideas and valuable information. (Saunders et al., 2015, pp.575-78)

4.4 Gap Analysis

Gap Analysis serves as either a tool or a process utilized to pinpoint gaps and discern the disparities between an organization's current state and the desired state it should ideally achieve (Kim and Ji, 2018). It assesses differences between realized outcomes and anticipated results, aiming to pinpoint deficient or absent strategies, processes, technologies, or skills. The findings can be utilized to propose strategic measures that the organization should implement to align with its objectives. (Weller, 2018). Various types of gaps, including market, product, usage, performance, expectation, legitimacy, conformance, and ideal gaps, serve as indicators of organizational legitimacy failures, reflecting discrepancies between organizational behavior and stakeholder expectations. (Kim and Ji, 2018)

Gap analyses ensure project requirements are met, identify weaknesses for remediation, reveal disparities between perception and reality, provide decision-makers with crucial information, facilitate resource allocation and energy focus, and prioritize organizational needs. However, despite their benefits, gap analyzes present challenges such as dependency on knowledgeable and persistent individuals, potential superficiality leading to ineffective resolutions, and the possibility of inaccuracies due to dynamic organizational environments, particularly in large or rapidly evolving industries. (Weller, 2018)

When performing a Gap Analysis, consideration should be given to which areas, items, and processes to analyze, and which recommendations to adopt, with attention paid to potential impacts on others. Recommendations should be backed up with supporting data from the analysis, utilizing charts to illustrate the data and make it easier to understand. Factors such as cost, resources, and consequences should be taken into account when recommending problems to address and solutions. It is important to assign an owner to each part of the process to ensure completion, and alternative solutions should be explored beyond the obvious to address identified gaps thoroughly. (Weller, 2018).

Gap Analysis can be performed at any time, with a focus on routine assessments, especially before strategic planning, during periods of underperformance, or when specific initiatives such as marketing campaigns, or audits are being prepared, in order to identify areas for improvement and

ensure effective alignment of strategies with organizational goals. (Weller, 2018). Conducting a Gap Analysis follows a clear process, which involves four key stages: (1) identifying the organization's current key needs, (2) defining the ideal future state, (3) pinpointing existing gaps, and (4) adjusting organizational plans to address these gaps effectively (Kim and Ji, 2018).

Gap analyses conducted by businesses may serve to identify discrepancies between their current processes and desired outcomes. These assessments enable the evaluation of process shortcomings, identification of underlying causes, and development of effective strategies to align actual outcomes with expected results. (Weller, 2018). In this context, Gap Analysis transforms into a reporting mechanism aimed at enhancing performance. In the case of the Manufacturing Company, Gap Analysis will play an essential role in scrutinizing existing processes and aligning them with the frameworks outlined in this thesis. This examination serves as the cornerstone for initiating a comprehensive evaluation aimed at identifying discrepancies between current practices and the standards proposed within the thesis. By systematically analyzing these gaps, the project aims to lay the groundwork for establishing robust process standards that align with industry best practices and the company's strategic objectives.

4.5 Ethical Considerations in Research

As Saunders et al. state, "In the context of research, ethics refer to the standards of behavior that guide one's conduct in relation to the rights of those who become the subject of one's work, or are affected by it." (2015, p.239). Usually, a researcher's conduct is determined by social norms, code of ethics (Saunders et al., 2015, p.240), or discretionary agreement between involved parties as is the case with this thesis. Prior to the thesis writing, the commissioning company and the researcher agreed on. (1) the role of the researcher in the project, (2) extent of access to the organization's tools and data, (3) maintaining anonymity of the company by referring to it as "the Manufacturing Company" and not including any information that might reveal its identity.

Researchers contributing to the academic exploration hold responsibility towards the studied subjects, other researchers and broader society. It is critical to maintain transparency in communication with the involved parties and the potential readers. Researchers should accurately showcase their research results with fairness towards academic community, and maintain legal compliance if relevant. (Vogt et al., 2012, pp.227-39)

4.5.1 Ethics in Surveys

There are several components to ensuring a dependable data collection via surveys. To start with, maintaining anonymity of respondents and their responses. For this thesis, a limited number of employees was asked to answer the survey. That meant that the researcher had to pay particular at-

tention to avoiding disclosing their identity or any information that might link their identity to the answers. Firstly, it was important to provide secure circumstances in order to obtain honest and exhaustive answers. Secondly, the researcher had a moral duty to avoid provoking any personal consequences for respondents in relation to the survey. Another component relates to upholding transparency and informed consent, as well as communicating the researcher's intentions and expectations clearly. The researcher prioritized formulating valid questions and providing guidance so that the survey participants knew what was expected of them, and how to respond to the questions. That allowed the researcher to obtain relevant and thorough answers from the respondents. Lastly, data analysis and reporting. The collected answers were synthesized rigorously in order to deliver reliable data without distorting the participants' responses. (Vogt et al., 2012, pp.244-46)

4.5.2 Ethics in Observational Research

There is a plethora of ethical concerns pertaining to observational research depending on the research background and goals, and observed entity or social group. In this thesis, the primary focus was on warranting anonymity and confidentiality of the organization, as well as ensuring transparency regarding the researcher's role in the project. (Vogt et al., 2012, p.239). Another focal area was objectivity. Transparent and reliable data collection and its synthesis, regardless of formed relationships (Kothari, 2004, p.97). Additionally, the researcher was diligent in avoiding any impediment to the project.

4.5.3 Ethics in Secondary Data Collection

There are fewer ethical considerations related to secondary data collection compared to other methods. Namely, the researcher is morally obligated to truthfully report data, refrain from manipulating information, and mitigate biases. (Vogt et al., 2012, p.298). Additionally, in the case of the Manufacturing Company, the main concern was to ensure confidentiality of the organization and its employees.

4.6 Ensuring Trustworthiness in Research

Reliability and validity are at the core of any research. According to Saunders et al. "Reliability refers to replication and consistency. (...) Validity refers to the appropriateness of the measures used, accuracy of the analysis of the results and generalizability of the findings." (2015, p.202). In the pursuit of robust and credible research, a meticulous consideration of reliability and validity is paramount, ensuring the integrity and trustworthiness of the study's findings.

It is easy to assess reliability and validity in the case of quantitative research, where well established and acknowledged measures are universally applied by researchers. (Onwuegbuzie and Johnson, 2006, p.49). In the case of qualitative research however, scholars have not reached a

consensus, adopting various philosophies and employing different methodologies to assess both aspects. Saunders et al. argue that “If good-quality research is judged against the criteria of reliability and validity, but these concepts are applied in a rigid way that is inappropriate to qualitative research, it becomes difficult for qualitative researchers to demonstrate that their research is of high quality and credible.” (2015, pp.204-05). Furthermore, the authors claim that “qualitative research is not necessarily intended to be replicated because it will reflect the socially constructed interpretations of participants in a particular setting at the time it is conducted.” (Saunders et al., 2015, p.205). In this thesis, the researcher’s approach towards reliability and validity is explained in the following sub-chapters.

4.6.1 Research Reliability

Saunders et al. differentiate between internal and external reliability. Consistency throughout a research project is ensured with internal reliability. Stability in coding, analyzing, and interpreting data is promoted through the writing of memos. External reliability pertains to the consistency of findings when data collection techniques and analytical procedures are replicated, either by the same researcher on another occasion or by a different researcher. (Saunders et al., 2015, p.202). This study emphasized internal reliability, with consideration given to external reliability in terms of the replicability of the outcome quality, rather than solely focusing on the outcome itself.

Safeguarding reliability is often challenging and it encounters various risks. The most common threats involve. *Participant error* (factors impacting participant performance negatively), *participant bias* (factors prompting inaccurate responses), *researcher error* (factors influencing the researcher’s analysis), and *researcher bias* (factors biasing the researcher’s response recording). (Saunders et al., 2015, pp.202-03). The researcher has employed a set of strategies to mitigate the potential adverse effects of the threats to research’s reliability. Necessary instructions and guidance were communicated to participants to prevent *participant error*. In order to evade *participant bias*, confidential data collection methods were employed to encourage honest responses. Maintaining transparency in reporting methodologies and potential limitations, served to counter *researcher error*. To avert *researcher bias*, clear objectives were set beforehand, and continuous review and reflection on potential biases were undertaken throughout the research process.

4.6.2 Research Validity

Similar to reliability, the concept of validity differs in its application between qualitative and quantitative research. Academics advocate diverse methodologies for applying validity to qualitative research in a meaningful manner. The proposal of Lincoln and Guba (as cited in (Onwuegbuzie and Johnson, 2006, p.49)), includes reinterpretation of quantitative validity frameworks to accommodate specificity of qualitative research. In turn, Maxwell (as cited in (Onwuegbuzie and Johnson,

2006, p.49)) offers the five types of validity in qualitative research. *descriptive validity* (documented factual accuracy by the researcher), *interpretive validity* (the degree to which an interpretation represents the perspective and meanings of the underlying group), *theoretical validity* (the consistency of a theoretical explanation with research findings.), *evaluative validity* (the applicability of an evaluation framework to study objects, distinct from descriptive, interpretive, or explanatory approaches), and *generalizability* (the researcher's ability to generalize an account from a specific situation, context, etc.). Saunders et al. divide the concept of validity into three aspects. *Measurement validity* (the extent to which an assessment tool precisely measures its intended construct or concept), *internal validity* (a research effectively establishes a causal link between two variables), and *external validity* (can study findings be applied to other settings or groups?) (2015, pp.202-03).

In addressing validity in the qualitative research for this thesis, meticulous attention was given to ensure the credibility and trustworthiness of the findings. To enhance internal validity, multiple data sources and collection methods (survey, document analysis, and observations) were employed, ensuring a comprehensive understanding of the organizational processes under scrutiny. Employing the triangulation method, data consistency was verified across different sources, contributing to the robustness of the analysis (Saunders et al., 2015, p.730). Additionally, reflexivity was applied as a supplementary research validation tool. Reflexivity plays a crucial role in acknowledging and addressing the researcher's subjectivity and potential biases. By engaging in continuous self-reflection throughout the research process, the researcher enhances the credibility of the study. Reflexivity involves an awareness of one's assumptions, preconceptions, and their potential impact on data interpretation. This self-awareness allows for a more transparent and honest exploration of the research topic, contributing to the overall validity of the findings. (Haynes, 2012). These strategies aimed not only to align with the theoretical frameworks discussed in the introduction but also to fortify the practical application, fostering a rigorous and reliable qualitative research process in the pursuit of valid and credible insights.

Certain threats to research validity, including *testing* (the influence of assessments on participants' perspectives or behaviors), and *maturation* (The effect of assessments on the perspectives or behaviors of participants), (Saunders et al., 2015, p.203) were addressed through specific mitigation strategies in this study. Transparent communication strategies were employed to counteract the impact of testing, emphasizing the confidential and non-intrusive nature of the study to prevent unintended alterations in participants' behaviors or responses. Regarding the threat of maturation, careful attention was given to the research timeline, ensuring that the study's duration did not inadvertently contribute to shifts in participants' perspectives or behaviors over time. These proactive measures were designed to safeguard the internal validity of the research, minimizing external influences and preserving the integrity of participants' responses throughout the study.

4.7 Evaluation of the Development Task

The evaluation of the development task entails critical assessment of the progress made in regard to set goals. It involves analyzing achieved results in comparison to intended outcomes by exploring the effectiveness of employed methodologies and strategies, and reviewing strengths and weaknesses of the chosen approach, as well as identifying areas for further improvement.

(Saunders et al., 2015, pp.661-62)

The key tools for development task evaluation in this thesis are self-assessment and stakeholder feedback, along with comparative analysis of the research plan versus its actual execution. The self-assessment is a method that allows for a critical reflection on the complete thesis and the writing process, and includes evaluation of the achieved progress, adherence to the objectives and identifying areas for improvement. The means to complete self-assessment are primarily self-reflection, journaling and self-evaluation. (Creswell and Creswell, 2008, p.177)

The second evaluation method, stakeholder feedback, aims to obtain comments from stakeholders who are directly involved in the research. The perspectives of the Manufacturing Company's representatives may provide valuable insights in regard to relevance, influence and efficacy of the development task. (Kennon et al., 2009, pp.10-11)

5 Process Development Project at the Manufacturing Company

The Manufacturing Company initiated the process development project having identified issues such as incomprehensible and inconsistent process descriptions, uneven access to essential systems, variations in language usage across processes, and incomplete or absent global process documentation. In the context of organization and management, the articulation of operational processes was identified as an area requiring improvement, with a need for consistent and coherent process descriptions within the organization. Within the organizational framework, variations were observed in the adherence and interpretation of described processes, leading to global inefficiencies in operations and complicating managerial oversight. Widespread inconsistencies in operational methodologies were noted across the organization. Within the Integrated Management System, which delineates processes and directives, documentation was formulated in diverse languages. The onboarding process for new employees was found to be challenging due to the lack of updates in certain processes to align with current operational practices.

5.1 Project Overview

The project's principal was based on the Manufacturing Company's strategy, and aimed at achieving "shared spirit and culture with common processes". The process development project was planned and implemented with the aim of ensuring clarity and consistency in processes at levels 1 and 2, aligning them with current operating methods. The objectives included ensuring the implementation of comprehensible and documented processes globally, assigning clear roles and responsibilities, and unifying global functions through the utilization of common processes.

In the project, roles were distributed among various team members to ensure effective management and execution. The project core team, tasked with supporting the project manager, assisted in defining and maintaining project objectives and scope, while also facilitating stakeholder communication and coordination. The project manager took on the pivotal responsibility of overseeing the project's management, direction, and development, ensuring effective communication with stakeholders and documenting project outcomes. Additionally, the project assistant played a crucial role in documenting and reporting project results, providing vital support to the project manager in document preparation and research activities. The process development managers actively drove process development initiatives forward, ensuring alignment with broader organizational goals and impacts on global business functions, while also defining processes at the local level within production units. Lastly, process owners assumed responsibility for overseeing the operation, outcomes, and ongoing development of assigned processes, ensuring their alignment with organizational objectives and priorities.

The business case behind the project entailed aligning with the organization's strategic objective of achieving uniformity and clarity in processes. By developing business processes, operational efficiency is enhanced, and roles and responsibilities are elucidated. Streamlining operations aims to eliminate redundant work phases and task transfers between individuals. Furthermore, articulating global and local processes serves to clarify operational methodologies. This endeavor facilitates clearer, swifter, and more straightforward employee orientation processes.

The project's scope encompassed the comprehensive description of organization's process development, entailing the delineation of the process map at level 1, with specific attention given to both main/core processes and support processes. Furthermore, it involved the thorough elaboration of second-level processes (level 2) and their respective sub-processes, while also recognizing the existence of global processes within the established framework. Items designated for potential inclusion in a subsequent project encompassed the local process description at level 3, entailing the specification of production unit-specific processes, as well as the creation of working instructions and the oversight of records. Additionally, for the successful implementation of the project, the core group pursued answers to the following questions concerning global processes: 1. What constitutes global processes within the Manufacturing Company? 2. Where do gaps exist in global processes?

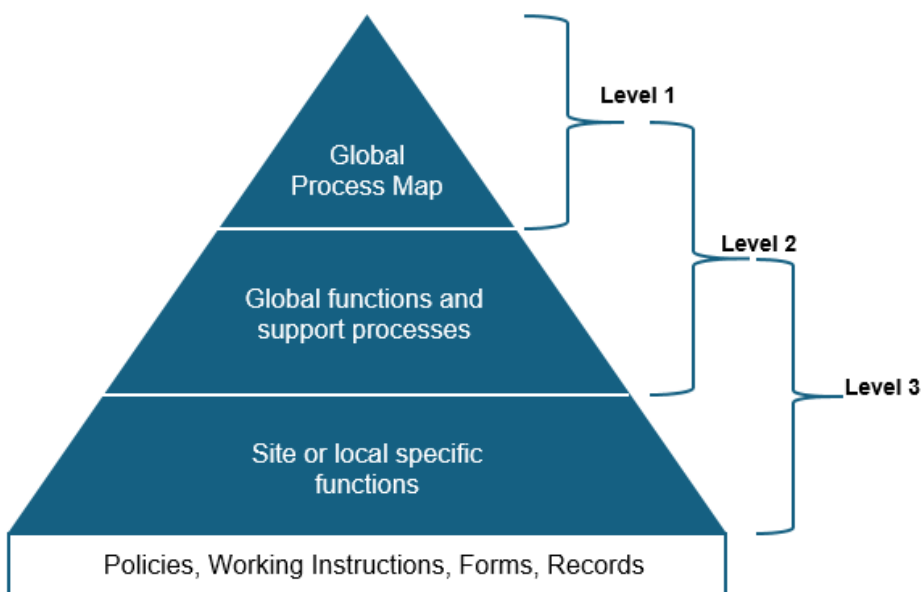


Figure 7. Process levels at the Manufacturing Company

The project commenced with the core team's kickoff in January 2024, with planning concluding by the end of April 2024. The projected completion aimed for the end of 2024. In addition to process mapping and development, the project encompassed a comprehensive training program on the tools utilized, ensuring active involvement of stakeholders throughout the process

5.2 Process Mapping

Before the commencement of the project, the Integrated Management System (IMS) encompassed a total of 251 processes, reflecting a diverse array of operational activities within the organization. However, the level of sophistication and complexity among these processes exhibited notable variation, contributing to challenges in navigating the system effectively. Furthermore, the existing structure of the processes was characterized by a lack of logical organization, rendering it cumbersome and challenging for stakeholders to locate and follow specific processes within the system.

Following the project, in process mapping, the management process encompasses the setting of goals, planning, controlling, organizing, and leading the execution of various activities. Responsibility for conducting this process lies with the organization's senior management, tasked with ensuring the effective oversight and execution of organizational objectives.

The core process, fundamental to business operations, is characterized by its continuous, end-to-end nature, aimed at achieving business goals and satisfying customer needs. This process, deemed essential by customers and thus worthy of payment, generates value for them, emphasizing a customer-centric approach that begins and ends with their interests in mind.

Support processes, designed to facilitate the execution of core processes, provide the necessary resources and infrastructure to enable the delivery of value to customers effectively. These enabling processes play a critical role in bolstering the efficiency and effectiveness of primary processes, thereby contributing to overall organizational performance and customer satisfaction.

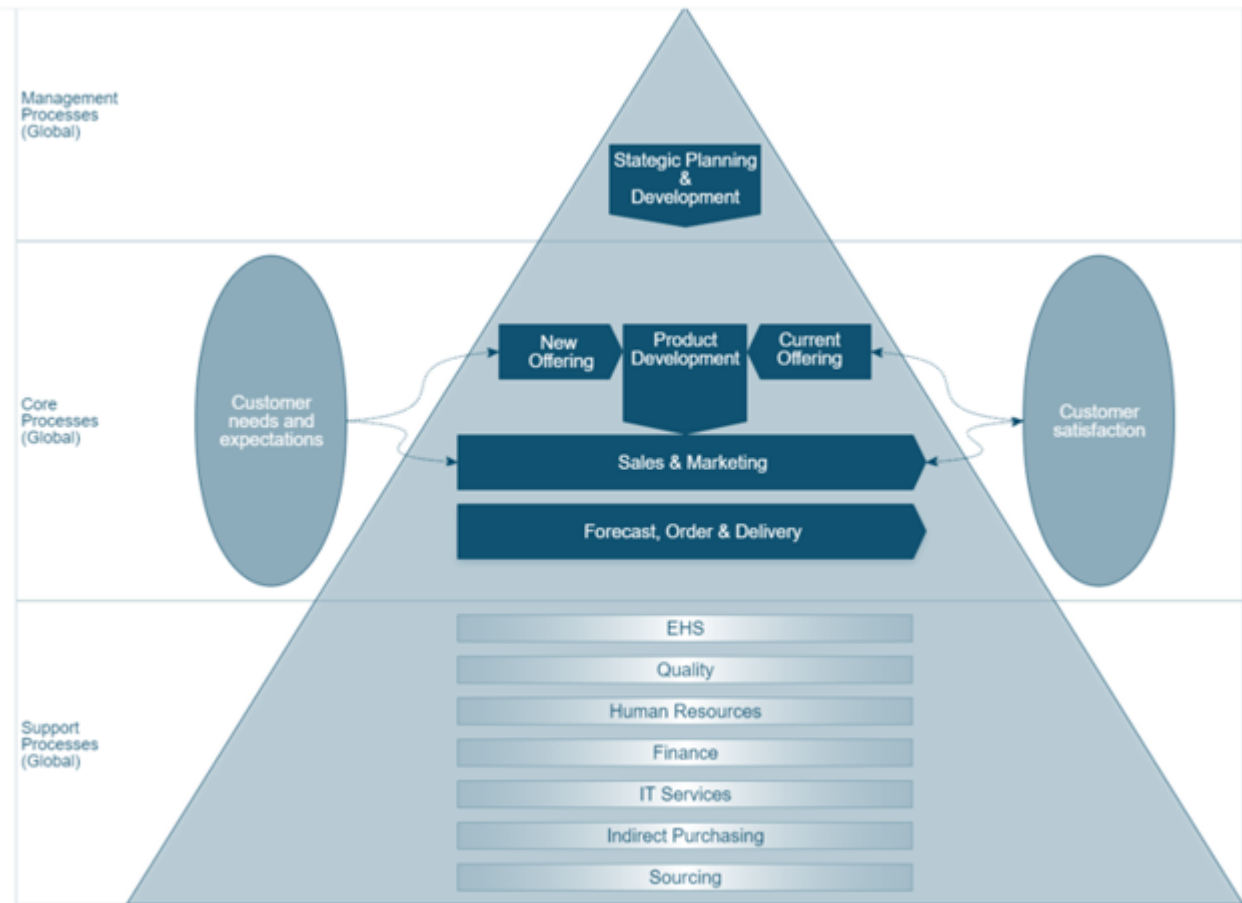


Figure 8. Process mapping at the Manufacturing Company

In summary, process mapping entails the delineation of management, core, and support processes, each playing a distinct yet interconnected role in achieving organizational goals, satisfying customer needs, and enhancing operational performance.

5.3 Project Implementation

In the project implementation, the organization embarks on a systematic approach to delineate and enhance its operational processes, advancing through distinct phases to achieve greater clarity and consistency across global and local functions.

In Phase 1 of the project implementation, the organization embarked on a systematic endeavor to enhance its operational processes, with a focus on drafting and approving the main process description. This phase was characterized by comprehensive process trainings and the validation of access rights, ensuring that stakeholders were equipped with the necessary knowledge and permissions. Furthermore, Phase 1 aimed to structure and describe processes at levels 1 and 2 within the Integrated Management System (IMS), setting the groundwork for subsequent phases.

Additionally, Phase 1 sought to identify global processes and address existing gaps, initiating harmonization efforts led by process owners. To achieve this, the organization targeted the description of five main processes, each accompanied by two to five sub-processes, totaling at approximately 17 processes. Furthermore, eight support processes were delineated, each comprising three to five sub-processes, resulting in a total of 28 to 42 processes. Overall, Phase 1 aimed to establish a robust foundation for process development, encompassing a total of 45 to 57 processes.

Subsequently, Phase 2 of the project implementation commenced, focusing on the comprehensive implementation and review of processes across various functions. This phase involved the execution of plans developed during Phase 1, with an emphasis on defining, planning, and implementing global functions and support processes. As Phase 2 progressed, efforts were made to align local and production unit-specific processes with global standards, fostering operational uniformity and harmonization.

It is noteworthy that Phase 2 was finalized after the completion of this thesis, marking a pivotal milestone in the organization's journey towards optimizing its operational processes and achieving greater efficiency and consistency.

6 Survey Analysis: Insights into Organizational Processes at the Manufacturing Company

This chapter presents a comprehensive analysis of the survey titled "Exploring Current State of Organizational Processes" conducted within the framework of the thesis. The survey aimed to delve into Manufacturing Company's current processes, identify areas for improvement, and gauge stakeholders' perspectives on process standardization. This section outlines the survey methodology, demographics of respondents, and a detailed analysis of their responses.

6.1 Survey Methodology

The survey was distributed through company email lists to designated stakeholders, including employees across various functions, that is the function managers and team members who utilize processes on daily bases. The survey comprised twelve structured questions categorized into four sections: Current Process Assessment, Process Improvement Objectives, Thesis Research Questions, and General Feedback. Respondents were asked to rate their understanding of existing processes, provide examples of effective processes, and share challenges encountered during process execution. Additionally, they were queried about the importance of standardized processes, critical success factors in process improvement projects, and potential risks associated with process development and management.

6.2 Demographics of Respondents

A total of 27 individuals participated in the survey, representing diverse functions and roles within the organization. The demographic profile of respondents includes a diverse range of functional affiliations, such as Supply Chain, Project Management, HR, IT Services, Sourcing, EHS and Finance. This diverse representation ensured a comprehensive understanding of organizational processes across various functional areas and hierarchical levels.

6.3 Analysis of Responses

The chapter "Analysis of Responses" delves into the insights gathered from the survey conducted within the Manufacturing Company. This analysis seeks to uncover the collective perspectives of employees regarding the current state of organizational processes, their thoughts on process improvement objectives, and their views on the essential steps and potential risks involved in process development. By synthesizing this feedback, the researcher aims to identify common themes, challenges, and opportunities that can inform strategic decisions and drive effective process improvements across the organization. The findings will provide a nuanced understanding of the existing process landscape and highlight areas requiring targeted interventions for enhanced efficiency and global standardization.

6.3.1 Survey Questions Regarding Current Process Assessment

The "Current Process Assessment" section of the survey gathered insights into employees' understanding and perceptions of existing processes within their functions. The responses varied, with a few individuals rating their understanding as excellent, while a significant number indicated a good understanding. Some respondents reported an average grasp of the processes, and a smaller group admitted to a poor understanding. This distribution suggests that while many employees are relatively confident in their knowledge of current processes, there are gaps that need to be addressed to ensure comprehensive awareness across the board.

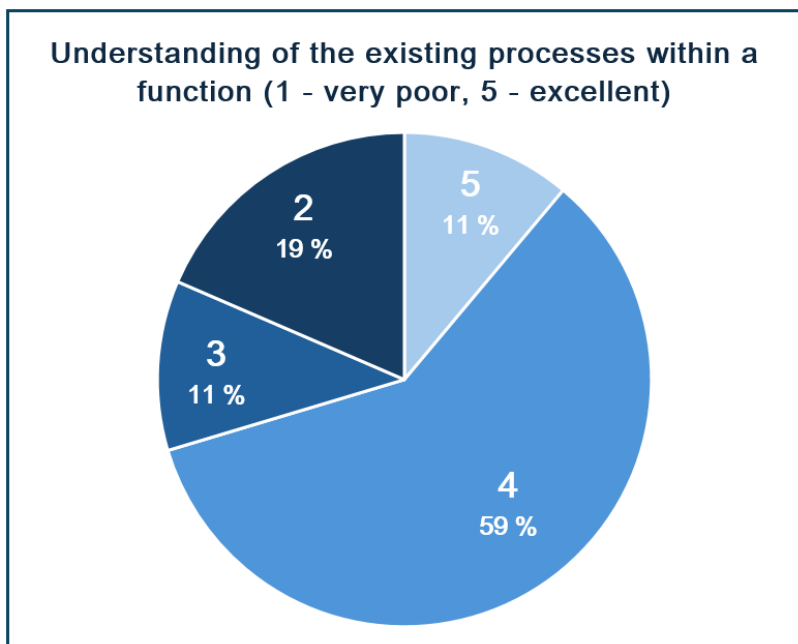


Figure 9. Breakdown of responses to question "On a scale of 1 to 5, how well do you understand the existing processes within your function?"

Respondents were asked to provide examples of effective and efficient processes. Many highlighted New Product Development (NPD) and supply processes as well-structured and effective. Quality processes were frequently mentioned as being well-defined and followed, with specific examples including the Sales area's monthly operating reviews and various HR-related processes. Other well regarded processes included demand planning, performance reviews, and procurement related processes. Some specific frameworks such as "Purchase-to-pay," "Record-to-report," and "Invoice-collect-receipt (cash)" were also cited as working well. The detailed responses indicate a range of processes across different functions that are considered effective, though there is room for improvement in documentation and consistency.

When it came to the documentation of these processes, the responses varied significantly. Some processes, like the quality processes, were noted as well-documented, though there were concerns about the completeness and accessibility of documentation. Certain respondents pointed out that while some processes are described at a high level, there are no detailed work instructions, which hampers their effectiveness. Other feedback highlighted a lack of documentation for several processes, with some employees acknowledging that efforts to improve this are underway but not yet completed. The inconsistency in documentation quality and availability across different processes indicates a critical area for improvement.

Challenges in following existing processes were also a significant concern for respondents. Common issues included processes being inadequate, outdated, or not followed due to their complexity or lack of clarity. Some processes were described only in Finnish, creating language barriers. A recurring theme was the lack of standardized documentation and the reliance on informal knowledge transfer, such as learning processes by word of mouth. The absence of defined process owners, unclear process steps, and outdated instructions were also mentioned as obstacles. Additionally, respondents highlighted the tendency for management and employees to bypass established processes, leading to inconsistencies and inefficiencies. The feedback underscores the need for clear, accessible, and updated process documentation, along with better adherence to established procedures.

Overall, the "Current Process Assessment" responses reveal a mixed understanding and execution of processes within the company. While there are areas where processes are effective and well-regarded, significant gaps in documentation, clarity, and adherence present challenges. Addressing these issues through comprehensive documentation, clear ownership, and consistent application will be crucial for improving process effectiveness and efficiency across the organization.

6.3.2 Survey Questions Regarding Process Improvement Objectives

The "Process Improvement Objectives" section of the survey aimed to understand the perceived importance and benefits of implementing comprehensible and documented processes on a global scale. The survey responses provide valuable insights into the priorities and expectations of employees regarding process standardization and improvement.

When asked about the necessity of implementing comprehensible and documented processes globally, 79% of respondents deemed it "very essential" for the company's success, with only a smaller segment, 18%, considering it "somewhat essential." This indicates a strong consensus on the critical role that standardized and well-documented processes play in achieving organizational goals. Similarly, the survey explored the importance of conducting all global functions in a unified manner using common processes. 64% of respondents rated this as "very important," emphasizing

the value placed on consistency and standardization across the organization. An additional 32% of respondents found it "somewhat important," reflecting an understanding that while unity is crucial, there might be functional nuances that require tailored approaches. Overall, these responses highlight a strong preference for unified, standardized processes to ensure efficiency and coherence across global operations.

The respondents were also asked to identify the top three benefits of having an established method for process creation. The most frequently cited advantages included enhanced efficiency, consistency across functions, and quality assurance. Enhanced efficiency was recognized as a direct impact of standardized processes on operational productivity. Consistency across functions was seen as vital for maintaining seamless operations and minimizing discrepancies. Quality assurance was emphasized for maintaining high standards in task and process execution, reflecting a strong emphasis on quality and reliability within the organization.

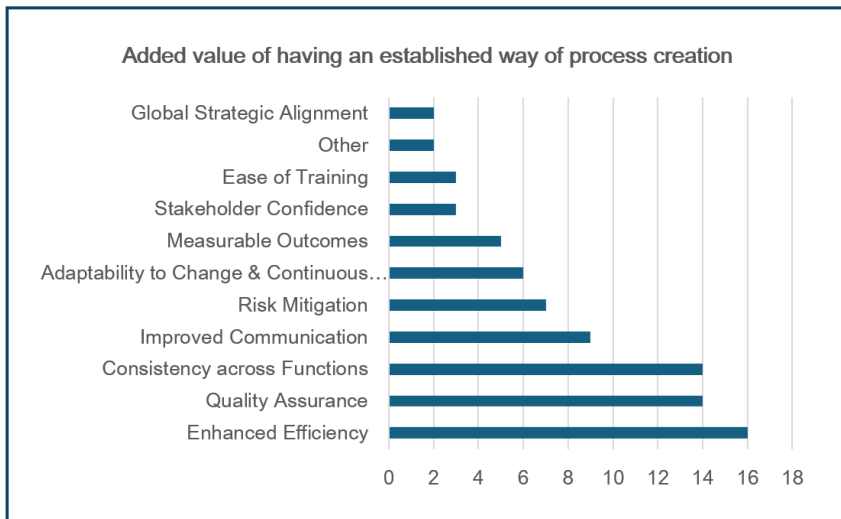


Figure 10. Distribution of responses to "In your opinion, what is the added value of having an established way of process creation (select 3)?"

Other notable benefits identified by respondents include improved communication and understanding among team members, which fosters better collaboration. Risk mitigation was mentioned as an important benefit, as standardized methods help in identifying and mitigating potential risks, thereby safeguarding the organization against unforeseen issues. Additionally, the adaptability to change and continuous improvement was valued for promoting the organization's ability to evolve with industry standards. The measurement of outcomes was also appreciated for enabling data-driven decision-making, while the ease of training was noted for helping new employees quickly become productive members of the team. Some respondents also highlighted the confidence instilled in stakeholders by having an organized and effective process creation method and the alignment with the organization's strategic goals that standardized processes foster.

In summary, the survey responses highlight a strong consensus on the essential role of standardized and well-documented processes in achieving organizational success. Employees across various functions recognize the significant benefits of enhanced efficiency, consistency, and quality assurance, alongside improved communication and risk mitigation. These insights will be invaluable in guiding the development and implementation of global process improvement initiatives.

6.3.3 Survey Questions Regarding Thesis Research Questions

The responses to the “Thesis Research Questions” section in the survey highlight essential steps, risks, and critical success factors associated with creating and improving business processes within the manufacturing company.

Respondents emphasized the importance of accountability and ownership throughout the process. Early involvement of users and key stakeholders is crucial to ensure processes are tailored to actual work and not just theoretical constructs. Understanding gaps from a global perspective and ensuring the process fits the purpose are key initial steps. Experienced personnel who are connected to the operational work should create processes that aid rather than constrain. The steps generally involve setting targets, mapping current workflows, analyzing and developing processes, and implementing and measuring their effectiveness. Drafting processes with subject matter experts, seeking feedback from key stakeholders, and fine-tuning the process are essential to ensure all interfaces are connected to the relevant functions.

Stakeholders suggested a variety of steps including process mapping, identifying gaps, aligning discussions, and deciding on a common approach. Engaging key stakeholders, including end-users, in testing, obtaining honest feedback, clear communication, and ensuring accountability are crucial steps in process improvement. Defining inputs and outputs, evaluating the current status, and discussing with employees how they perceive current processes are important preliminary activities. The process should be understandable to all, not just experts, with visual aids like pictures to aid comprehension. Involvement of stakeholders, respect for specific business needs, common guidelines, and clear definition of roles, especially for process owners, are emphasized.

Critical success factors identified include having a vision and aligning goals with the company’s strategy. Key processes that create direct value to customers need to be well-described, and business improvement needs should be identified from process outputs. The process improvement steps should include defining objectives, mapping current stages, setting development priorities, and communicating plans and progress effectively. Engaging stakeholders throughout the process, leveraging technology, continuous monitoring, and a culture of continuous improvement are vital. Clear documentation of process steps, roles, responsibilities, and expected outcomes are necessary for effective process improvement.

Risks and challenges in process development and management include implementing policies without considering local nuances and the complexity of global and local regulations. There is a tendency to get too granular, losing momentum, and failing to prioritize correctly. Lack of IT systems to support fast responses and proper implementation of new processes are notable challenges. Unclear roles and responsibilities can lead to inefficiency and frustration. Other risks include neglecting global, national, and union regulations, the complexity of standardized processes across different locations, and the risk of over-standardization. Ensuring simplicity and avoiding unnecessary details are also crucial. Commitment to process development and continuous improvement are critical, as is ensuring that process owners and stakeholders are properly identified and engaged.

Identifying gaps in current processes is essential for continuous improvement. These gaps can serve as the basis for action plans to harmonize and unify processes. Involvement of people who follow processes in their development, systematic approaches to process needs, and collaboration among functions can help in identifying and filling these gaps. Continuous improvement methods like Six Sigma and trained professionals or consultants can be beneficial. Benchmarking performance against other organizations can help identify areas needing improvement.

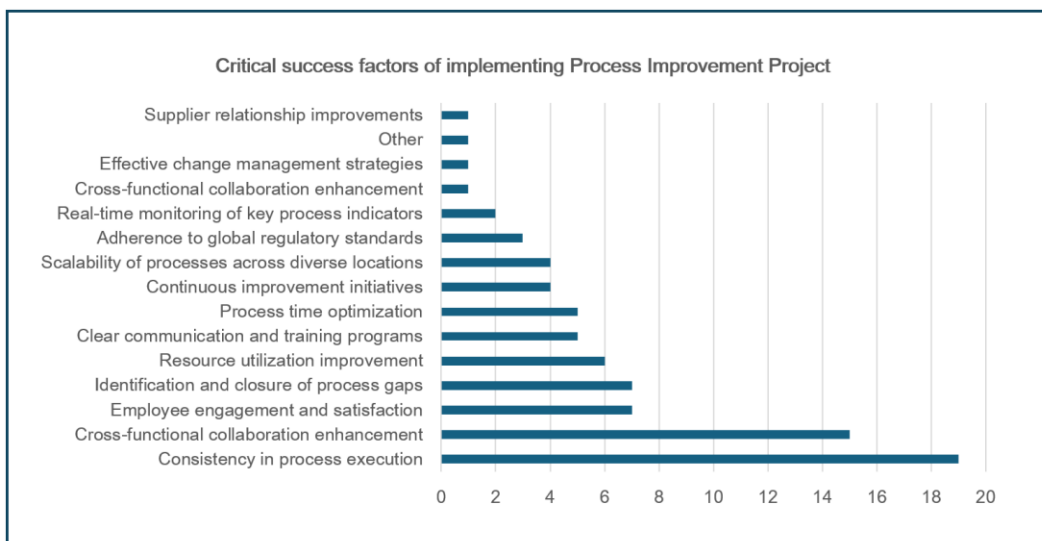


Figure 71. Distributions of responses to “In your perspective, what are the critical success factors of implementing a Process Improvement Project (particularly in terms of operational efficiency, cost reduction, and stakeholder satisfaction)?”

Critical success factors for implementing process improvement projects include consistency in process execution, enhanced cross-functional collaboration, and employee engagement. Identifying and closing process gaps, improving resource utilization, clear communication, and training programs are also vital. Process time optimization, continuous improvement initiatives, scalability across diverse locations, and adherence to global regulatory standards contribute to operational

efficiency, cost reduction, and stakeholder satisfaction. Real-time monitoring of key process indicators, effective change management strategies, and supplier relationship improvements are also noted as important factors.

6.3.4 Survey Questions Regarding General Feedback

The general feedback from the survey reveals a mix of optimism and concern regarding the current state of organizational processes and the potential for global standardization. Several respondents underscore the need for a dedicated quality engineer to oversee the writing of processes, noting that the current efforts to document processes lack global understanding and coordination. While there is a strong drive to unify and harmonize processes, this ambition is hindered by the diverse production teams and cultural differences across regions. There is a call for strict adherence to processes, with consequences for non-compliance, and a desire for leadership to lead by example, ensuring consistent behavior across all levels of management.

Understanding local cultural variances and organizational maturity is deemed crucial for effective global cooperation during the implementation and planning phases. There is a significant emphasis on the importance of this project for the division, with hopes pinned on strong support from the management team to ensure its success. The feedback highlights the necessity to share best practices and appoint leaders to spearhead the initiative, recognizing that while the potential for process improvement and global standardization is vast, prioritization is key due to limited resources and varying process orientations among employees.

Several responses point out the varying levels of process descriptions and adoption across different functions, especially following acquisitions, which create both a need and an opportunity for standardization. Specific areas like sustainability and circularity processes have not been clearly defined, despite being strategic priorities. The importance of agility alongside robust processes is emphasized, with the notion that an effective organization balances core processes with the ability to address exceptions swiftly and creatively.

Reflecting on past initiatives like the division's process improvement project, there is some skepticism about the current project's potential, given past failures. Respondents stress the need to balance internal process focus with customer needs, warning against processes becoming idle entries in the system. There is a call to include compliance, particularly Trade Compliance, in the process improvement agenda, highlighting the need for context-specific steps tailored to the manufacturing company's requirements.

Other feedback points to the lack of detailed cycle times for process steps and a cross-functional understanding of inputs and outputs. The current processes are seen as relatively functional, but there is a need for fine-tuning and addressing management issues rather than just process flaws.

Improved communication and information dissemination at all organizational levels are suggested to enhance global process understanding. Quick wins and small successes are encouraged over attempting to overhaul the entire system at once.

There is also a call for more localized approval authority for critical process steps, rather than centralized approval by a small group, which can cause delays and inefficiencies. Training sessions, materials, and videos are recommended to help employees find and understand processes relevant to their functions. The overall sentiment is supportive of the initiative, with an emphasis on starting with key processes, avoiding excessive scientific and detailed approaches initially, and ensuring early success to build momentum.

6.4 Implications of Survey Results

The survey reveals a strong consensus on the importance of comprehensible and documented processes for the company's success. There is a clear acknowledgment of the need for global standardization, with a significant portion of respondents considering it very essential for consistency and efficiency across functions. However, there are notable challenges, including the cultural differences and varying levels of process maturity among different regions and functions. The feedback indicates that while the current processes are generally functional, they often suffer from a lack of clarity, proper implementation, and enforcement. There is a significant gap in communication, training, and the involvement of stakeholders in process creation and improvement. Additionally, previous process improvement initiatives have left some skepticism about the effectiveness of new efforts, emphasizing the need for a more balanced approach that combines standardization with flexibility to adapt to local needs.

7 Reflective Analysis and Future Directions

In this chapter, the insights gleaned from the preceding chapters' investigations are reflected upon, focusing on the critical evaluation of the development task and its outcomes within the organizational framework of the Manufacturing Company. Gaps, obstacles, and prospects for advancement within the organizational processes are discerned, and future directions are charted, along with recommendations to rectify the identified shortcomings, aiming to foster heightened operational efficiency and enduring competitiveness.

7.1 Assessment of the Development Endeavor

The primary objective of the development task within the larger project framework was to assess and enhance the organizational processes of the Manufacturing Company. The task aimed to identify critical gaps, obstacles, and opportunities for improvement within existing processes and to propose actionable recommendations to foster heightened operational efficiency and enduring competitiveness. The development task employed a multifaceted approach to achieve its objectives. Initially, a comprehensive review of existing literature and best practices in organizational process management provided a theoretical foundation. Subsequently, qualitative research methodologies such as participant observation, survey, and reviewing organizational documentation were employed to gather insights from key stakeholders within the Manufacturing Company. These methodologies facilitated the exploration of diverse perspectives and the identification of nuanced challenges and opportunities.

Despite its strengths, the research methodologies employed in the development task faced certain limitations. The reliance on qualitative methods, while valuable for capturing rich insights, may have limited the generalizability of findings across broader organizational contexts. Moreover, constraints such as time and resource limitations may have impacted the depth and scope of data collection and analysis. Additionally, the subjective nature of some qualitative data may have introduced bias, requiring careful interpretation and validation. Despite these limitations, the development task provided valuable insights and served as a foundation for subsequent improvement initiatives.

7.2 A Critical Examination of Process Gaps

The insights derived from this thesis reveal several gaps and challenges within the organizational processes of the Manufacturing Company. Through a comprehensive evaluation of existing processes and the effectiveness of the development task, key areas requiring attention have been identified.

One of the prominent gaps identified pertains to the understanding and awareness of processes among employees. While some individuals demonstrated a strong grasp of existing processes, a significant portion expressed average or poor comprehension. This gap suggests a need for targeted efforts to improve awareness and understanding of organizational processes across all levels of the company.

While certain processes were deemed effective and well-structured, concerns were raised regarding the documentation and consistency of processes. Inconsistent documentation and accessibility hindered the effectiveness of processes and contributed to challenges in execution and adherence. Addressing this gap requires efforts to enhance process documentation, ensuring clarity, consistency, and accessibility for all employees.

Communication deficiencies and insufficient stakeholder engagement emerged as significant barriers to process improvement. Employees highlighted the importance of clear communication channels and greater involvement of stakeholders in the development and implementation of processes. Bridging this gap necessitates strengthening communication channels and fostering greater collaboration and engagement among stakeholders.

Cultural resistance to change was identified as another notable barrier to process improvement, particularly in the context of global operations. Differences in organizational culture and resistance to standardized processes hindered the successful implementation of improvement initiatives. Overcoming this gap requires targeted change management strategies and efforts to foster a culture of collaboration and continuous improvement.

Resource allocation and prioritization emerged as key challenges in the implementation of process improvement initiatives. Limited resources and competing priorities often hindered the successful execution of improvement projects. Addressing this gap requires careful resource allocation and prioritization of initiatives based on their potential impact on organizational objectives.

Technological limitations and inadequate infrastructure were identified as additional barriers to process improvement. Insufficient IT systems and tools hindered the effective implementation of new processes and workflows. Bridging this gap necessitates investments in technology and infrastructure to support the efficient execution of organizational processes.

7.3 Recommendations for Improvement

The findings of this thesis illuminated various gaps and challenges within the organizational processes of the Manufacturing Company. Alongside the identification of these gaps, it is imperative to propose actionable recommendations for improvement to address these deficiencies effectively.

The researcher presents the following initiatives that could be considered for the process development and improvement project, as well as for continuous operational enhancement.

Understanding and awareness of processes. Comprehensive training programs should be implemented to enhance employees' understanding of organizational processes. Interactive modules, workshops, and documentation repositories should be developed to facilitate easy access to process information. Regular feedback sessions should be encouraged to address any lingering concerns or confusion.

Effectiveness and consistency of processes. Standardized templates and guidelines for process documentation should be established to ensure consistency across functions. A centralized repository for process documentation with clear version control and access protocols should be implemented. Periodic reviews and audits should be conducted to proactively identify and rectify inconsistencies.

Communication and stakeholder engagement. A culture of open communication and collaboration should be fostered by organizing cross-functional workshops, forums, and town hall meetings. Active participation from stakeholders in process improvement initiatives and decision-making processes should be encouraged. Feedback mechanisms should be implemented to solicit input and effectively address concerns.

Cultural resistance to change. Change management strategies tailored to the organizational culture and context should be developed. Education and training should be provided to employees to help them understand the benefits of standardized processes. Change champions and leaders should be empowered to drive cultural transformation and facilitate acceptance of change initiatives.

Resource allocation and prioritization. A comprehensive assessment of resource requirements should be conducted, and process improvement initiatives should be aligned with organizational goals and priorities. Resources should be allocated judiciously, focusing on initiatives with the highest potential impact on operational efficiency and effectiveness. Opportunities for collaboration and resource sharing across departments should be explored.

Technology and infrastructure. Investments should be made in upgrading existing IT systems and infrastructure to support the implementation of new processes and workflows. Automation and digitalization tools should be leveraged to streamline processes and enhance productivity. Training and support should be provided to employees to ensure optimal utilization of technology resources.

Gap Identified	Development Questions	Recommendation for Future Actions
Understanding and Awareness of Processes	How can employees be better trained to understand organizational processes?	Implement comprehensive training programs, interactive modules, workshops, and documentation repositories. Encourage regular feedback sessions.
Effectiveness and Consistency of Processes	How can process documentation be standardized and made more accessible?	Establish standardized templates, a centralized repository for documentation, clear version control, and periodic reviews.
Communication and Stakeholder Engagement	How can communication channels be strengthened, and stakeholder involvement increased?	Foster a culture of open communication, organize cross-functional workshops, forums, and town hall meetings, and implement feedback mechanisms.
Cultural Resistance to Change	How can resistance to change be addressed within the organizational culture?	Develop change management strategies, provide education and training, empower change champions, and leaders.
Resource Allocation and Prioritization	How can resources be allocated more effectively to process improvement initiatives?	Conduct a comprehensive assessment of resource requirements, align initiatives with organizational goals, and explore collaboration opportunities.
Technology and Infrastructure	How can technology limitations be addressed to support process improvement?	Invest in upgrading IT systems and infrastructure, leverage automation and digitalization tools, and provide training and support to employees.

Table 2. Addressing Organizational Process Gaps Development Questions and Recommendations

In summary, addressing the identified gaps in organizational processes requires a multifaceted approach encompassing training and awareness programs, standardization initiatives, enhanced communication and stakeholder engagement, change management strategies, strategic resource allocation, and investments in technology and infrastructure. By implementing these recommendations, the Manufacturing Company can overcome existing challenges and position itself for long-term success and competitiveness in the dynamic business environment.

7.4 Addressing the Research Questions

The examination of the organizational processes within the Manufacturing Company has provided a comprehensive understanding of the challenges and opportunities related to global standardization and process management. Through a detailed analysis of frameworks, alignment with standards, and the identification of key gaps, the study has highlighted the steps necessary for improving process cohesion and effectiveness on a global scale.

The analysis presented in this thesis reveals that several frameworks are particularly suitable for benchmarking organizational processes with the aim of achieving global standardization. Frameworks such as the Business Process Management (BPM) principles, Lean methodology, and tools originating from Six Sigma such as DMADV and DMAIC have been identified as effective in fostering unified and cohesive processes. These frameworks contribute by offering structured approaches to process evaluation and improvement, ensuring consistency across diverse locations and aligning processes with global standards.

An assessment of the current organizational processes reveals a partial alignment with internationally recognized frameworks. Key gaps identified include inconsistencies in process documentation, variations in stakeholder engagement, and resistance to standardized procedures. These discrepancies hinder the development of cohesive processes and affect overall process efficiency. The

Gap Analysis highlights that while some processes adhere to global standards, significant gaps remain in areas such as process documentation and stakeholder communication.

Critical success factors and metrics essential for measuring the success of unified and cohesive processes on a global scale have been identified. Metrics such as process compliance rates, operational efficiency indicators, and stakeholder satisfaction are crucial. Success is measured by the degree to which processes meet standardized criteria and contribute to organizational goals. Effective monitoring of these metrics enables the evaluation of process implementation and highlights areas requiring adjustment.

To address the identified gaps and facilitate the adoption of unified processes, strategies such as comprehensive training programs, enhanced documentation practices, and improved communication channels are recommended. Methodologies for bridging these gaps include the application of change management techniques and the establishment of clear roles and responsibilities. These strategies aim to overcome resistance and ensure that standardized processes are effectively integrated across different global locations.

The findings from the Gap Analysis provide a basis for developing a roadmap for continuous improvement. This roadmap emphasizes the need for ongoing review and adaptation of processes to maintain global replicability. Continuous improvement efforts should focus on refining process documentation, enhancing stakeholder engagement, and adapting to evolving frameworks to sustain efficiency and effectiveness.

Prioritization of identified gaps should be based on their impact on global replicability and overall organizational efficiency. Gaps affecting critical processes and those with significant implications for standardization and operational performance should be addressed first. By focusing on these areas, the organization can improve its overall process management framework and achieve better alignment with global standards.

8 Conclusions

In conclusion, this thesis has elucidated crucial aspects of the organizational processes within the Manufacturing Company and provided actionable insights for improvement. Through a comprehensive analysis, several key findings have emerged, underscoring the significance of consistent process documentation and the imperative for implementing the project.

8.1 Key Findings

The researcher's findings regarding the necessity for consistent process documentation have underscored the importance of implementing the project. In today's dynamic business environment, where agility and efficiency are paramount, clear and standardized process documentation is essential for driving operational excellence. By ensuring that processes are well-documented and accessible to all stakeholders, the Manufacturing Company can enhance transparency, mitigate risks, and improve decision-making processes.

Moreover, the Manufacturing Company's engagement in Business Process Management (BPM) is a significant step towards optimizing its organizational processes. BPM encompasses various elements, including defining, designing, implementing, monitoring, and optimizing business processes. By embracing BPM principles, the Manufacturing Company can streamline its operations, improve efficiency, and align its processes with strategic objectives.

A key challenge highlighted in this thesis is the need to find a balance between standardization and local flexibility. While standardized processes promote consistency and efficiency, local flexibility allows for adaptation to specific organizational contexts and requirements. Achieving this balance requires careful consideration of organizational culture, stakeholder needs, and industry best practices.

Establishing Key Performance Indicators (KPIs) for processes is another critical aspect of process management. KPIs provide measurable benchmarks for evaluating process performance and identifying areas for improvement. By defining relevant KPIs and regularly monitoring them, the Manufacturing Company can track progress, identify bottlenecks, and drive continuous improvement initiatives.

Furthermore, it is essential for all stakeholders to understand their roles and the importance of processes within the organization. Clear communication and training programs can help ensure that employees are aware of their responsibilities and actively contribute to process improvement efforts.

Identifying responsible process owners and ensuring their awareness of their responsibilities is crucial for effective process management. Process owners play a key role in overseeing process execution, resolving issues, and driving improvement initiatives. By empowering process owners and providing them with the necessary support, the Manufacturing Company can enhance accountability and drive positive change.

Additionally, there is a need for systematic and cyclical process review processes to ensure ongoing improvement. Regular reviews allow for the identification of emerging trends, changing business requirements, and opportunities for optimization. Benchmarking against industry standards and best practices can also provide valuable insights for process improvement.

Finally, considering methodologies such as DMAIC and DMADV can further enhance the effectiveness of process improvement initiatives. These structured approaches provide systematic frameworks for problem-solving and innovation, ensuring that process improvement efforts are data-driven and result-oriented.

In summary, by embracing these recommendations and adopting a holistic approach to process management, the Manufacturing Company can position itself for long-term success in a competitive marketplace. Through continuous improvement, collaboration, and a commitment to excellence, the Manufacturing Company can achieve its strategic objectives and drive sustainable growth.

8.2 Recommendations for further research

Building upon the insights gained from this thesis, several areas warrant further exploration to advance knowledge and practice in organizational process management.

Firstly, it is recommended to delve deeper into the importance of consistent process documentation. Research in this area could focus on understanding the specific impact of well-documented processes on organizational performance, employee productivity, and decision-making processes. Exploring the challenges and barriers to maintaining consistent documentation across diverse organizational functions and geographical locations would also be valuable. Additionally, investigating best practices and innovative approaches for enhancing process documentation effectiveness and accessibility could provide practical insights for organizations seeking to improve their process management practices.

Secondly, there is a need to explore the concept of global harmonization in process management, with a focus on finding the right balance between standardization and local flexibility. Research in this area could examine the strategies and frameworks used by multinational corporations to standardize processes across diverse geographical regions while accommodating local variations and requirements. Understanding the factors that influence the success of global harmonization

initiatives, such as organizational culture, regulatory environments, and stakeholder dynamics, would be crucial. Furthermore, exploring innovative approaches for achieving harmonization, such as adaptive process management models or digital technologies, could provide valuable insights for organizations operating in complex and dynamic global environments.

Moreover, it would be interesting to examine how the principles of global companies seeking a balance between *global harmonization and local flexibility* translate to internal organizational dynamics, particularly in terms of *organizational harmonization and individual flexibility*. Investigating how organizations align their overarching standardized processes with the need for individual employee flexibility can provide a deeper understanding of effective process management. This research could explore the impact of such alignment on employee satisfaction, innovation, and overall organizational adaptability. Identifying best practices and potential challenges in achieving this balance within different organizational contexts would be instrumental for managers and leaders aiming to foster a cohesive yet flexible work environment.

By addressing these research recommendations, scholars and practitioners can further advance our understanding of organizational process management and contribute to the development of effective strategies for enhancing operational efficiency, agility, and competitiveness in today's dynamic business landscape.

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Appendices

Appendix 1. Survey questions

Exploring Current State of Organizational Processes (Thesis Survey)

Welcome to the survey on " Strategic Alignment: Evaluating Organizational Processes through the Lens of Global Standardization."

Your input is crucial in evaluating current organizational processes, their alignment with global standards, and devising effective improvement strategies. Your valuable insights will directly contribute to a thorough Gap Analysis and the development of practical guidelines for enhancing organizational processes within the realm of global standardization.

Your participation is completely anonymous. The survey is designed to take app. 20 minutes of your time, and the completion timeframe is 2 weeks. Your responses will be aggregated and processed as a whole, ensuring that no individual's identity is disclosed.

Thank you for joining us on this impactful journey.

(Questions marked with "*" are mandatory)

I. CURRENT PROCESS ASSESSMENT

1. On a scale of 1 to 5, how well do you understand the existing processes within your function? (1 - very poor, 5 - excellent) *
2. Please provide specific examples (names) of processes that you find effective and efficient at this time. What works well? *
3. Which of the processes listed by you in question 2. are well documented? *
4. What are the main challenges you encounter when following existing processes? Please elaborate. *

II. PROCESS IMPROVEMENT OBJECTIVES

5. To what extent do you believe that implementing comprehensible and documented processes globally is essential for the company's success? *
 - Not at all
 - Somewhat
 - Very essential
6. How important is it to you (your function/team/department) that all global/local functions are conducted in a unified way, using common processes? *
 - Not important
 - Somewhat important
 - Very important
7. In your opinion, what is the added value of having an established way of process creation (select 3)? *
 - **Enhanced Efficiency** A well-established process creation method streamlines operations, leading to increased efficiency.
 - **Consistency across Functions** Having a set process creation approach ensures consistency across different functions within the organization.
 - **Quality Assurance** It contributes to maintaining high-quality standards in the execution of tasks and processes.

- **Measurable Outcomes** It facilitates the measurement of outcomes, enabling data-driven decision-making.
- **Improved Communication** An established process creation method enhances communication and understanding among team members.
- **Ease of Training** An established way of process creation facilitates easier training for new employees.
- **Adaptability to Change & Continuous Improvement** Having a structured process creation approach allows for better adaptability to evolving industry standards and needs.
- **Stakeholder Confidence** It instills confidence in stakeholders, demonstrating a commitment to organized and effective operations.
- **Global Strategic Alignment** Having an established process creation method fosters standardization and ensures alignment with the overall strategic goals of the organization.
- **Risk Mitigation** An established process creation method helps in identifying and mitigating potential risks.
- Other specify

III. THESIS RESEARCH QUESTIONS

8. What, in your opinion, are the essential steps involved in the creation and development of a business process within the Manufacturing Company?
9. Based on your experience, what are the potential risks and challenges associated with the development and management of business processes in the Manufacturing Company, and how do you think they can be mitigated? *
10. How do you think identifying gaps in current processes can be used to improve them? *
11. In your perspective, what are **the critical success factors** of implementing a Process Improvement Project (particularly in terms of operational efficiency, cost reduction, and stakeholder satisfaction)? *

- Resource utilization improvement
- Process time optimization
- Budget variance improvement
- Employee engagement and satisfaction
- Supplier relationship improvements
- Consistency in process execution
- Identification and closure of process gaps
- Cross-functional collaboration enhancement
- Adherence to global regulatory standards
- Scalability of processes across diverse locations
- Effective change management strategies
- Clear communication and training programs
- Continuous improvement initiatives
- Real-time monitoring of key process indicators
- Other please specify

IV. GENERAL FEEDBACK

12. Is there anything else you would like to share regarding the current state of organizational processes and the potential for global standardization?