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Enabling Resource Allocation Optimization in an SME's Sales Process

Metropolia University of Applied Sciences

Master's Degree

Degree Programme in Business Informatics

Master's Thesis

5.12.2022

Abstract

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Title:	Enabling Resource Allocation Optimization in an SME's Sales Process
Number of Pages:	95 pages + 2 appendices
Date:	5 December 2022
Degree:	Master of Business Administration
Degree Programme:	Business Informatics
Instructor:	Kevin McIntire, Senior Lecturer

This thesis focuses on the case company's digital transformation of its analog and unsynchronized sales process into a fully digital purpose-built digital sales process. The objective of the thesis is to propose and implement a tool that enables optimized resource allocation in the sales process. The case company launched the transformation initiative to improve its sales and resource allocation processes to optimize its resource allocation and utilization. To support process optimizations, the old analog and unsynchronized databases required digitizing and digitalization to enable integrating multiple separate databases into one single digital database and one tool.

The current state of the business problem was assessed by utilizing qualitative research methods. The data collection contained three data collection rounds with relevant stakeholders to the sales process, which included face-to-face interviews, participant observations and a co-creation workshop. The current state analysis revealed issues regarding three main summarized themes: information loss and accessibility, lack of database synergy and stakeholders' interests to adopt new procedures. The thesis tackles these issues by investigating existing knowledge and collecting best practices to offer a solution to the issues recognized in the current state analysis.

The outcome of the thesis is the proposal for and implementation of a tool that enables optimized resource allocation in the sales process. The implementation is based on the best practice collected from literature and the qualitative interviews and co-creation workshop organized with the key stakeholders. As a result, the company has received a modern digital tool for resource allocation in the sales process. Moreover, the new solution provides a foundation for future process improvements in the case company by leveraging opportunities of digital transformation.

Keywords: Digital transformation, Business process management, Business process mapping and design

Contents

Glossary

- **AV** – “Audiovisual is electronic media possessing both a sound a visual component” (Doyle, 2019).

- **Resource planning period** – “Resource planning period is a process of identifying, forecasting, and allocating various types of business resources to projects at a specific time. It ensures the efficient and effective utilization of resources across the enterprise. These business resources can be human resources, equipment, assets, facilities, time, and more” (Saviom Software Pty. Ltd., 2022).

- **Technician** – “Technician is someone who operates and maintains audio and visual technology. This person troubleshoots equipment problems, installs a system, and oversees the system, and links multiple pieces of hardware together” (Duff, 2019).

- **Resource allocation** – “Resource allocation is the process off assigning and managing assets in a manner that support an organization’s strategic planning goals. Resource allocation includes managing tangible (hardware, vehicles) assets to make the best use of softer assets (employees). In practice organizations establish their desired objectives, such as increased revenue or improved productivity, which can be improved through efficient resource allocation and utilization of resources available” (Lutkevich, 2022).

- **KPI** – “A key performance indicator (KPI) is a measurable value that demonstrates how effectively a company is achieving key business objectives” (Course Hero, 2022).

- **GANTT chart** – “A Gantt chart is a commonly used graphical depiction of a project schedule. It's a type of bar chart showing the start and finish dates of a project's elements such as resources, planning, and dependencies” (Investopedia, 2022).

List of Tables

List of Figures

1 Introduction

In the event industry, an event is a planned and targeted activity tied to time and space, aimed at some people whose daily routines are outside the event. The event industry is a professional and business activity related to the organization of such activities. The event industry includes actors whose entire business, or much of their business, is involved in events (Wirén, Westerholm, & Liikamaa, 2020). According to Wirén et al. (2020) professional production of events or rental of event technology and services are examples of sectors within the event industry. Audio visual (AV) equipment are electronic devices which possess a sound and visual component. Utilizing AV equipment enhance engagement and bring life to events, whether the event is a presentation, a speech, a conference, training or even just a standard face-to-face meeting. Event production is about creating experiences that matter to people, both in terms of content and the overall experience.

Over the last decade, the AV industry has witnessed remarkable advances in technology and systems. Along with these advances come additional challenges to managing AV projects, which on their own have grown more complex and require considerably improved coordination and cooperation among multiple stakeholders (Malone, 2013). To tackle the challenges of today's AV project management, companies in the industry need to understand the importance of mature project management, and how proactive resource management affects their value delivery and bottom-line. In fact, Project management Institute (2021) reports that only 46% of organizations strive to prioritize project management practices, which statistically are proven to make organizations far more likely to deliver on time and under budget. Furthermore, the report illustrates (Figure 1) that companies which achieve high project management maturity outperform companies which have not (Malone, 2013).

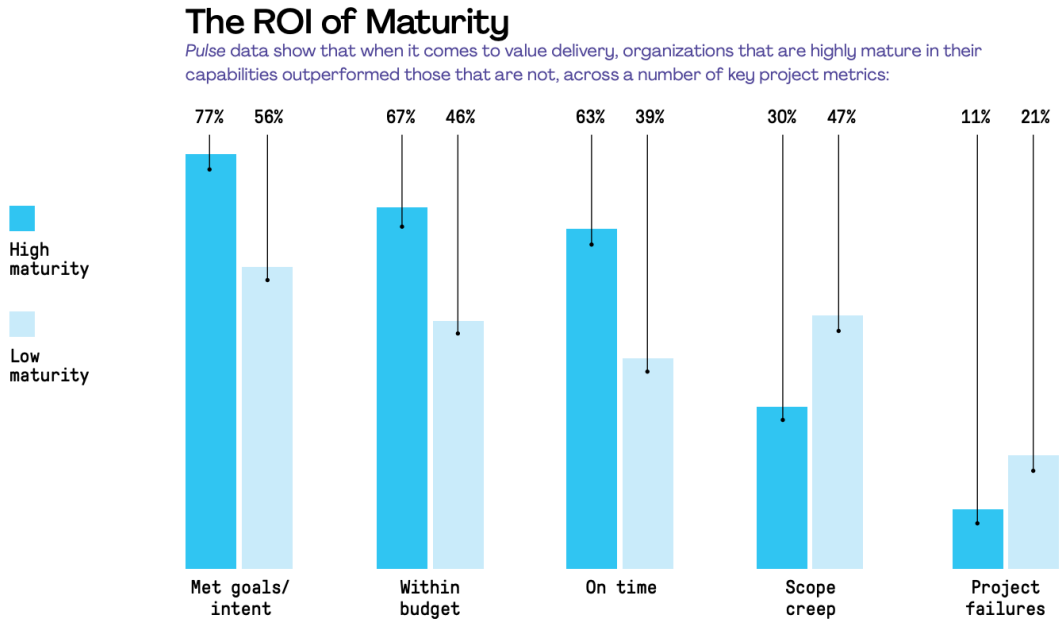

Figure 1. Project management software ROI of maturity (Project Management Institute, 2021).

1.1 Business Context

The case company of this thesis is a small Finnish audiovisual equipment provider that, for the past 40 years, has offered primarily the domestic market with conference, meeting and interpretation equipment rental, production, and planning services. The company employs 5 employees full-time, with additional freelancers hired during high-demand peaks and seasons.

In the audiovisual industry, audiovisual equipment and technical expertise are vital elements in delivering value to customers and in bringing success to the business. To ensure value and success, an event project manager combines customer needs and information with audiovisual equipment and technical expertise, to deliver audiovisual production for the customer's event. To succeed in the final production, the project manager needs to utilize and gather multiple sources of information to ensure smooth and informative transitions between different event sales process stages.

In the past, the vast amount of information required to handle everyday operations relating to event management was either kept in the head of the event project manager(s) or written onto various paper documents. The information was then communicated - either orally or in writing - to all stakeholders (project managers, technicians, customers, event and venue agents) tied to the event. However, such utilization of the project manager's memory and notes as the main source of project information presented great risk of miscommunication, information loss, resource and planning inconveniences, and decline in service quality.

Since then, the industry (in general) transformed to utilize primarily MS Excel and other supportive software to aid in resource management and planning of events. Tedious and time-consuming processes are used through complex Excel formulas and macros to aid the workflow of project managers. While the goal is to ease resources management and planning, the downside is the increased need for additional working hours spent processing the information in and between different platforms.

In addition, project managers in the AV-industry also utilize various other tools as they process various sources of information to form an overall picture of an event. The project managers assess which resources to use, collect and maintain customer and venue information, plan schedules, understand financial decisions, manage staff and their roles in an event. The need to structure the information in an easy-to-understand sheet(s) of paper (or digital format) demands the project managers to use various software packages as intermediary databases to store data because the case company has yet to recognize a turn-key software that has the databases and interoperability of needed databases built-in. In the industry, the companies are at various stages of digital maturity, but the general trend points to the growing trend of using specialized software and tools to support event management.

1.2 Business Challenge, Objective and Outcome

As it stands, the case company has yet to recognize a turn-key solution for AV equipment resource planning and management. There is demand in the case company for an AV-industry software, that has all resource management and planning functions built-in. To implement and deploy the software requires research on availability, knowledge and understanding of all stakeholders needs, and the capacity to integrate old databases in to the new one.

This study focuses on the case company's digital transformation in resource management and planning. The company´s goal is to transform an analog and unsynchronized sales process into a fully digital purpose-built digital sales process, which improves and optimizes stakeholders' effective working hours in the sales process. To accomplish the goal, a plan is required as a pre-requisite to streamline the transformation process on the way to implementation.

The objective of the thesis is to implement a tool that enables optimized resource allocation in the sales process.

The outcome of the thesis is the implementation of a tool that enables optimized resource allocation in the sales process.

1.3 Thesis Outline

The thesis is written in seven sections. Section 1 is Introduction. Section 2 describes the method and materials used in this study. Section 3 reports on the challenges of the current sales process of the case company. The analysis of the challenges is done based on internal document review, participant observations and stakeholder interviews. Section 4 explores literature and best practice in relation to the identified challenges. The goal is to create a theoretical foundation and find the best practices to solve the challenges. Therefore, in each part, the focus is on the characteristics of modern resource and project management and the challenges of optimizing resource allocation in the sales process. Section 5 reports on the proposal construction phase, which includes a co-creation workshop with the stakeholders to gather and formulate the proposal for the case company. Section 6 reports on the results of evaluation of the proposed solution, and subsequently the final outcome of the study supported by the action plan. The thesis ends with Section 7 which contains the summary and brief evaluation of the study.

2 Method and Material

This section describes the research approach, research design, data collection and analysis methods used in this thesis. It also presents the foundation for choosing the methods used to tackle the business problem and reach the thesis objective. As mentioned earlier, the objective of the thesis is to implement a tool that enables optimized resource allocation in the sales process.

2.1 Research Approach

Researchers typically address numerous questions and use these methods to obtain answers to their hypothesis and questions. The researcher must decide on the type and combination of choices that would best serve the research objectives. Regarding the research family, the researcher typically makes a choice between fundamental and applied research, as well as field or desk studies, and qualitative or quantitative research. Applied research is applied when a study is designed to discover solutions to specific real-life problems. Scientists conduct applied research primarily with the aim of improving or creating products and services, new technologies or processes (Adams, Khan, & Raeside, 2013).

Regarding the strategy for research, typically studies in business context rely on the choice between case studies and action research, and a few other strategies such as surveys, narrative inquiries, etc. Action research focuses on action in practice and relies on collaboration and experiences related to the research problem (Tripp, 2005). The objects of such research commonly are a specific group of people, an organization or action, process, or an environment within the organization. In action research, the research questions and solutions are formed and co-developed with the individuals' active participation (Eriksson & Kovalainen, 2016). In action research, the researcher is viewed as a facilitator who reflects with the stakeholders. How the researcher communicates and interacts with the subject and individuals tied to the subject, plays a central role in building trust and achieving results. Through this blend of trust and assistance of the researcher, the research subject can examine central points of interest in a critical and productive manner (Anderson & Herr, 2005, pp. 194-196).

In scope of research techniques, there are various research methods suited for different needs and for different research questions. Quantitative research techniques are suited for numerical measurements. Qualitative research methods collect data and conduct non-numerical analysis of data designed to explore and understand how respondents experience reality (Adams et al., 2013, p. 6). To summarize, quantitative research uses numbers and statistics as data to validate theories, while qualitative research methods use more descriptive data to either build or test theories and hypotheses.

In this study, the main content is to jointly develop an action plan with stakeholders of the case company. Furthermore, the action plan is intended to be part of daily organizational practice, which can be adapted in an agile manner if necessary. When developing this action plan, the task of the researcher is to act as a facilitator and member of the organization, and support both individuals and groups during the development process. Thus, this study comes closest to Applied action research which follows the path from selecting the business problem and topic definition; selection of the research approach, methodology and particular methods for developing a solution; conducting data collection and data analysis; and obtaining and integrating the results, and ending in solution development (Kananen, 2013, p. 12). This approach especially fits thesis research as it is limited in time and has a practical developmental goal to be reached in one development iteration.

This thesis will use qualitative research methods due to relying on descriptive data, rather than statistics. As the thesis focuses on co-creating a solution with the company´s stakeholders, it is appropriate to select the approach which supports data collection through face-to-face interactions. Qualitative data will provide insights on the current sales processes and its practical strengths, while on the contrary it will surface weaknesses that require addressing in the resource allocation in the organization’s sales process. Thus, the study and proposals rely on the qualitative research techniques.

2.2 Research Design

The research design of the thesis has five stages. Stage 1 is setting the thesis objective Stage 2 is the current state analysis where the identification and evaluation of the target organization’s current processes is carried out. Stage 3 is existing knowledge & best practice where relevant literature and best practice are discussed. It ends with the

conceptual framework for guiding the proposal building. Stage 4 is the initial proposal building, and Stage 5 is validation where the proposed plan is revised and the final proposal is built. The figure below (Figure 1) illustrates the research design of this study.

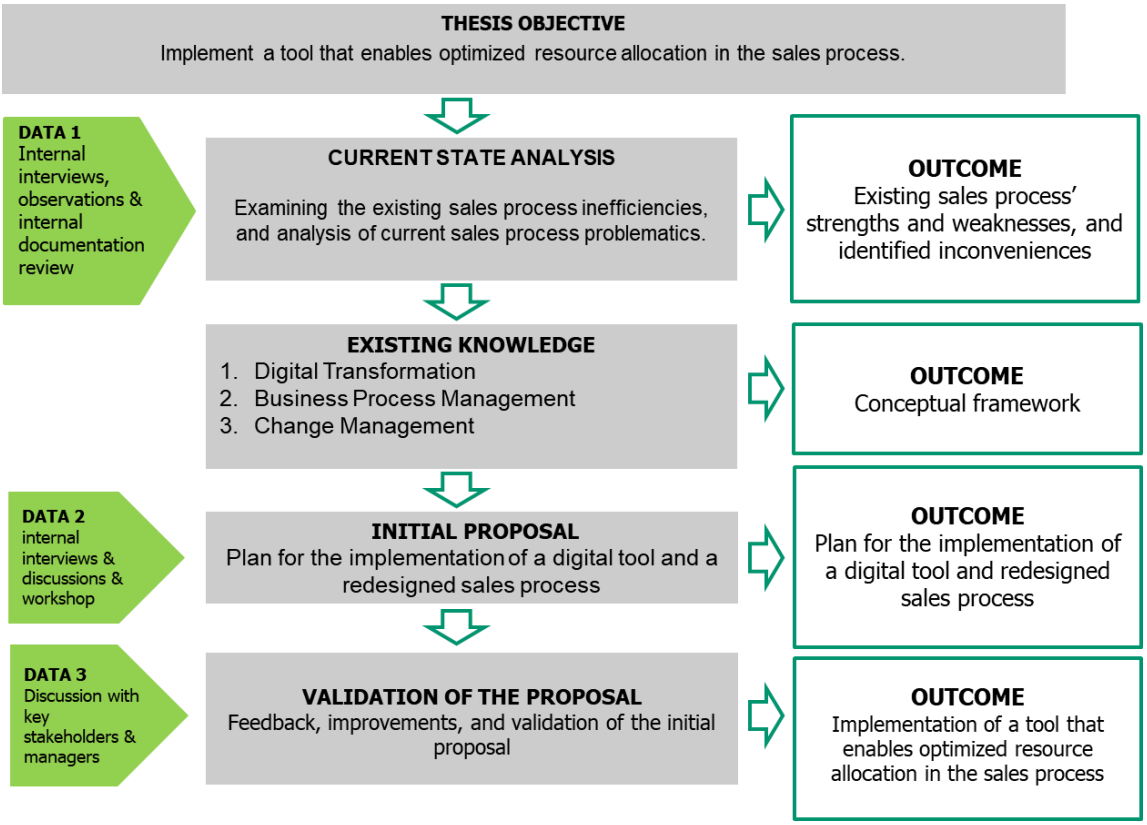

Figure 2. Thesis research design.

2.3 Data Collection and Analysis

The data for this thesis was collected in three rounds and includes varied types of data. Tabel 1 shows details of the three data collection rounds in this study.

Table 1. Details of the data collection plan.

Participant(s) / role(s)	Data type	Description	Date & document type
Data 1. Current state analysis			
Respondent A	Face to face interview	*Current sales process & resource allocation practices*	15.2.2022 Written document
Respondent B	Face to face interview	*Current sales process & resource allocation practices*	28.2.2022 Written document
Respondent C	Face to face interview	*Current sales process & resource allocation practices*	21.2.2022 Written document
Respondent D	Face to face interview	*Current sales process & resource allocation practices*	25.2.2022 Written document
Respondent E	Face to face interview	*Current sales process & resource allocation practices*	21.2.2022 Written document
Participants	Observations	*Observations of current sales process & resource allocation practices*	1.-20.3.2022 Field notes
Thesis Author	Documentation review	*Database and sales process documentation review and mapping*	1.-20.3.2022 Illustrations (Figures 5-12)
Data 2. Proposal building			
Respondent A	Face to face discussions	*Discussions of the 3 new digital tool options*	02.-26.8.2022 Field notes
Respondent B	Face to face discussions	*Discussions of the 3 new digital tool options*	02.-26.8.2022 Field notes
Respondent C	Face to face discussions	*Discussions of the 3 new digital tool options*	02.-26.8.2022 Field notes
Respondent D	Face to face discussions	*Discussions of the 3 new digital tool options*	02.-26.8.2022 Field notes
Respondent E	Face to face discussions	*Discussions of the 3 new digital tool options*	02.-26.8.2022 Field notes
Employee A-E	Stakeholder meetings	*Evaluations of the 3 new digital tool options*	02.-26.8.2022 Field notes
Employee A-E	Workshop	*Current State analysis review*	07.9.2022 Field notes
	Workshop	*Current sales process workflow & weaknesses*	07.9.2022 Field notes
	Workshop	*Conceptual framework*	07.9.2022 Field notes
Employee A-E	Workshop	*Feedback & input*	07.9.2022 Field notes
Employee A-E	Workshop	*Sales process redesign*	07.9.2022 Field notes
Employee A-E	Workshop	*Review of processes and next steps*	07.9.2022 Field notes
Employee A-E	Workshop / Documentation	*Redesigned sales process map*	07.9.2022 Field notes / Illustration (Figure 23)
Data 3. Final proposal			
Respondent A	Face to face interview	Feedback, input, revisions and validation	17.-23.10.2022 Field notes
Respondent B	Face to face interview	Feedback, input, revisions and validation	17.-23.10.2022 Field notes
Respondent C	Face to face interview	Feedback, input, revisions and validation	17.-23.10.2022 Field notes
Respondent D	Face to face interview	Feedback, input, revisions and validation	17.-23.10.2022 Field notes
Respondent E	Face to face interview	Feedback, input, revisions and validation	17.-23.10.2022 Field notes

As seen from Table 1, data collection was conducted in three rounds and formed the basis of the analysis with (1) staff interviews, (2) participant observations, and (3) internal documentation review that were used as the data sources for the analysis to understand the existing sales process from multiple stakeholders' viewpoints. This qualitative data provided insights on the current sales processes and the strengths of the current practices, as well as the weaknesses that require change to optimize resource allocation in the organization's sales process. In addition, internal documentation was reviewed regarding the sales process' databases and the whole sales process was mapped to gain insights about the current pain points in the current sales process.

In the next round, Data 2 was collected to gather suggestions and inputs from the stakeholders for building the initial proposal. This data included further individual interviews with the stakeholders and a cocreation workshop for the initial proposal, which was documented on field notes. The result of Data 2 is a plan for the implementation of a digital tool and redesigned sales process enabling optimized resource allocation in the sales process was cocreated.

Data 3 was collected in the final phase and included feedback and improvements to the initial proposal gathered in stakeholder interviews and discussions. The outcome of Data 3 is the implementation of a tool that enables optimized resource allocation in the sales process.

In this thesis, the primary method of data collection was interviews, internal documentation review, participants observations, mapping the sales process, and the cocreation workshop. The semi-structured interviews were conducted face-to-face, on the company premises, and the interview questions were formulated in advance. The interviews were recorded, and field notes were taken. The interview questions for Respondent A-E interviews may be found in Appendix 1. The summaries of interview answers from Respondent A-E can be found in Appendix 2. The textual data was analyzed using content analysis.

3 Current State Analysis of the Existing Sales Process

This section reports on the results from the current state analysis of the existing sales process of the case company. The focus of the current state analysis is to form an understanding of the current sales process, steps included in the process, tools utilized, and the interdependencies and effect of each step for each stakeholder and their efficient working hours.

3.1 Overview of the Current State Analysis

The aim of the current state analysis is to determine the current state of the sales process in the case company. To form the basis of the analysis, (1) staff interviews, (2) participant observations and (3) internal documentation reviews were used as the data sources for the analysis to understand the existing sales process from multiple stakeholders' viewpoints. This qualitative data provides insights on the current sales processes and the strengths of the current practices, as well as the weaknesses that require change to optimize resource allocation in the organization's sales process.

The current state analysis is performed in four steps. First, the current sales process is described based on the researcher's personal experience and perspective. The outcome of the description is an understanding and visualization of the process.

Second, the analysis continues to explore the current sales process in detail, tools utilized, and visualize the connections and interdependencies of each stakeholders' roles within each specific step in the sales process.

Third, the analysis identifies the current pain points and inconveniences in the existing sales process. The focus is to identify how the existing sales process affects each stakeholder's possibility to work efficiently.

Lastly, the findings are summarized into the strengths and weaknesses of the existing sales process, and focus areas are selected for literature and best practice search in the next stage.

3.2 Description of the Current Sales Process

The case company of this thesis is a small Finnish audiovisual equipment provider located in the Helsinki metropolitan area. The case company's customers are primarily domestic and international organizations, which have specific needs for interpretation, meeting, and conference AV equipment for their events.

The company employs 5 employees full-time, with additional freelancers hired during high-demand peaks and seasons. The organizational structure of the company consists of one CEO, one fulltime project manager (and another part-time project manager), and four technicians (one employee acting part time as project manager and technician). The company's management promotes cooperation, meaning that all employees communicate and assist each other to accomplish the end objective – high service quality and customer satisfaction. Hence the company's employees work as an agile unit rather than as separate teams.

The author of this thesis works as the fulltime project manager in the case company. The role consists of directing the day-to-day operations of the company, planning and managing company resources, and primary responsibility for customer contacts and sales. Thus, the author is responsible for organizing the company's resources (employees, equipment, vehicles, schedules) in the most efficient and practical manner.

The current sales process includes all the employees in the company. Principally the project manager is in charge of the sales process and its progress. The project manager will communicate with customers, collect information and data, process internal company documents and databases, draft the quotations, and end the sales process. Although the project manager oversees the sales process, there are instances in the sales process in which technician's and management's inputs may be required to progress the process. The company's sales process includes many process steps, which include utilization of various tools: customers contacts are received through phone and email, resources are managed in three separate databases (paper binder, OneDrive, and Google Sheets), and auxiliary information or reminders written on sticky notes. All these tools are utilized to assist the workflow of the sales process.

In the case company, the sales process includes 4 stages. Figure 3 below summarizes the current sales process:

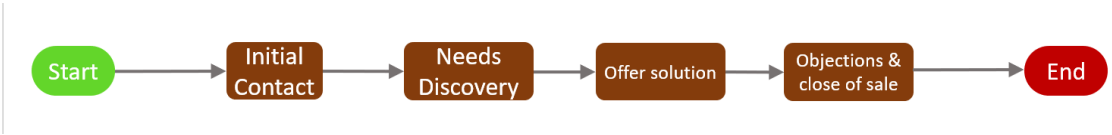

Figure 3. The current sales process.

Figure 3 demonstrates the general progression of a sales event from start to finish. First, initial contact is received through a customer. Second, the customer's problem and needs are thoroughly gathered. Third, an offer consisting the solution to the customer's problem is presented. Fourth, any arising objections to the offer are resolved and the sale may be closed.

Next, the sales process is analyzed step-by-step to understand the workflow of each stakeholder in the sales process from start to end. The process map is visualized by mapping out the flow of work and the steps and stakeholders involved in the process. Figure 4 below illustrates the meaning of each symbol in the workflow diagrams.

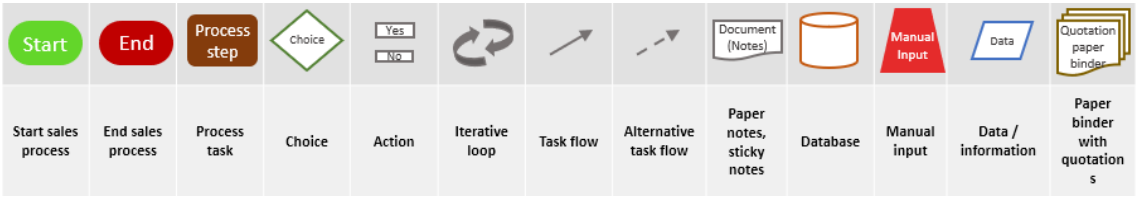

Figure 4. Process map legend.

Furthermore, each tool used in the process is also mapped in regard to specific process tasks within certain steps.

3.2.1 Initial contact

Initial contact is a step in which the project manager contacts or receives contact from the client. The contact may be received through multiple means of communication, but the usual methods are by phone call or email.

Phone calls are a typical way of receiving initial contact from the customers. On the phone, it is convenient to discuss and respond to the customers inquiries and issues. Follow-up questions and clarifications regarding any reservations the customer might have may be addressed right in the start of the whole sales process over the phone.

Emails are another method of initial contact. Emails are quick and usually concise. Emails are the best method of contacting when the communicated information includes lots of details such as schedules and numbers, which may be organized cleanly by bullet points or lists to communicate several points of interest. In addition, emails can include attachments and importantly the messages are stored in the recipients and sender's inbox for later reference.

In the initial contact phase, roles and responsibilities of the employees vary slightly. Normally, the initial contact is received by the project manager – either through phone call or email. The project manager will then move forward with communicating with the customer and prepare to move to the next phase of the sales process. This is shown in Figure 5.

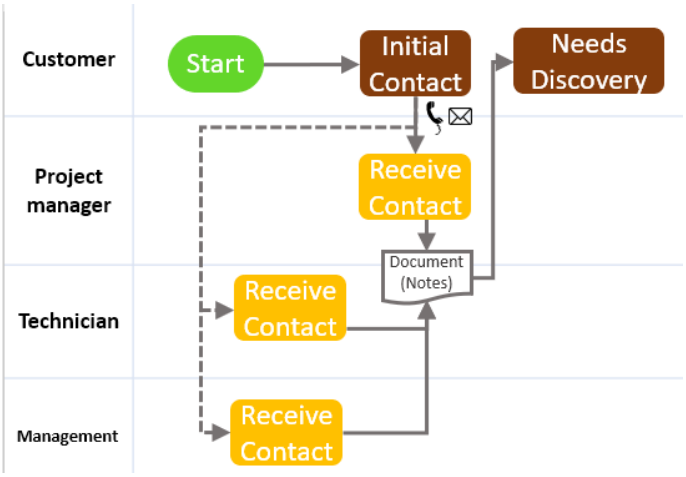

Figure 5. Process for initial contact.

However, as seen in Figure 5, sometimes the technicians or management will answer the company phoneline or general email inbox when the project manager is absent. In such cases, the technician will note down the contact information of the customer and advise to expect a callback from the project manager as soon as possible.

3.2.1.1 Tools utilized

Tools utilized in the initial contact step are the company's office phone, email inbox and notes. The company has a contact phone number, which is generally the project managers responsibility. If the project managers are not at the office, the contact phone is delegated to one employee present at the office.

The company has a common email address accessible by all employees. The common email address receives customer messages, and all responds to messages are sent from the common email address. Responding from the company's common email ensures all stakeholders have access and possibility to reference what has been communicated between the company and customer.

Notes are used for quickly collecting relevant information during a phone call. Writing down information on notes is relevant to assure information is not forgotten. Gathering notes is especially recommended if the customer relays information including numbers, such as schedules or phone numbers.

3.2.1.2 Connections and interdependencies in Initial contact

When the project manager is responsible for receiving initial contact from a customer, the project manager can personally collect information as he/she best sees fit. In most cases, the project manager will collect and store the information on sheets of paper or notes.

Should the project manager not answer the phone, the other stakeholders, namely technicians at the office, will answer and receive the initial contact (Figure 5). In these instances, the technicians will collect the minimum information needed for the project manager to later call back to the customer.

The interdependencies between the project manager and technicians are present when the technicians have answered to the initial contact. As described earlier, the project manager will need information collected by the technician to either call the customer back or relay the information forward in the sales process.

3.2.2 Needs discovery

The second step in the sales process is Needs discovery. This step generally includes collaborative conversations between the customer and seller to unravel challenges and finding solutions to business problems. Needs discovery can be broken down in to two subprocesses, which are 1) qualify leads, and 2) understand value points. The Needs discovery step is detailed in Figure 6 below.

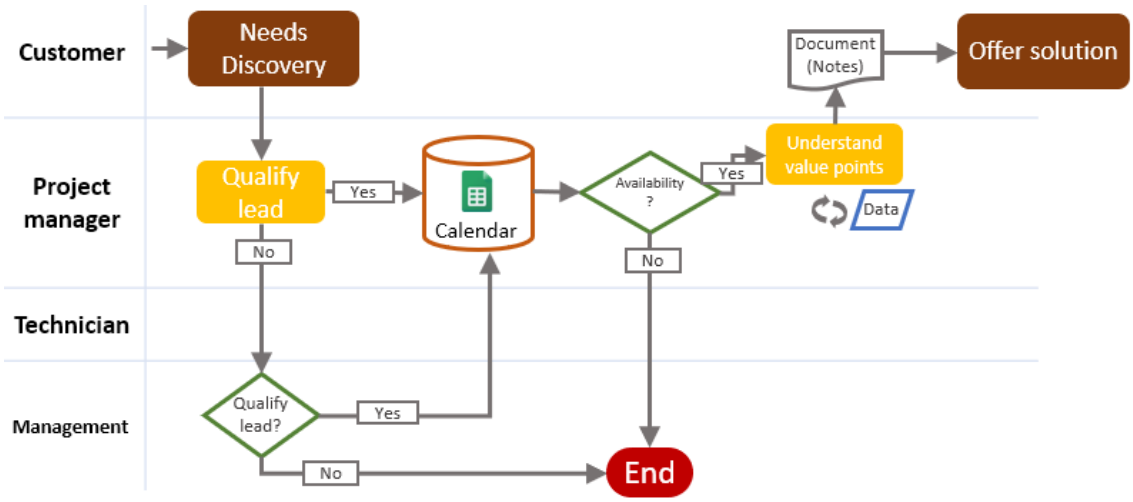

Figure 6. Process for needs discovery.

As seen in Figure 6, the first phase of the Needs discovery process qualifies the leads (1) to determine whether the sales organization should spend time on a particular deal - Qualify leads. The seconds phase of discovery uses an iterative insight or question loop, often across multiple meetings or conversations, to uncover the lead's underlying challenges and motivations, with the ultimate goal of constructing a highly relevant value message that ties the solution to the lead's business needs – (2) understand value points (Figure 6).

For the project manager, Needs discovery is the step in the process where the events or projects details are discussed thoroughly. The project manager will need to collect or reconfirm schedules, understand stakeholders tied to the project and attending the event, confirm the type of event the customer is planning and most importantly understand the customers' problems, fears, desires, and needs. It is the project managers responsibility to work with the customer to understand their specific needs and the outcomes they want to achieve with their event.

As seen in Figure 6, the project manager will initially assess the ratio between the value of the sale vs. time and effort used to generate the sale. If the sales lead is qualified, the project manager may move the process forward. However, if the project manager assesses not to qualify the lead, it is referred forward for management to decide. Management may continue to confirm the lead as a no-go, which means the sales process will end. In case management approves the lead, it returns to the project manager for further processing.

Once the lead has been qualified, the project manager will check the company's calendar database (Google Sheets) for availability of resources to serve the customer. If resources are not available, the project manager will kindly inform the customer to inquire services from another supplier and the sales process ends. In the case of resource availability, the process moves forward to understanding value points.

In understanding value points, the project manager collects critical information regarding the customer's event through an iterative question loop. The question loop allows the project manager to gauge the customers' expectations and values towards their event or project. The question loop will reveal important information regarding the customer's event and it is important for the project manager to take note of gathered data. The collected data gathered on notes will be needed later on in the sales process.

3.2.2.1 Tools utilized

In the earlier step, the primary tools used were connected to communication (phone, email) and taking notes. With needs discovery the company calendar will be introduced to the process.

The company calendar is maintained in Google Sheets and formatted as a calendar. The calendar represents the company's overview of upcoming projects and displays a general overview on the type of event, events' schedules and equipment reserved. The project manager's task in this phase with the calendar is to initially identify if critical resources (staff, transport, schedules, equipment resources) for the customer's event are vacant and may be reserved for the customer's event.

Once the project manager has confirmed vacancy of needed resources for the event, the data gathered through the question loop will need to be written down on a piece of paper, sticky notes or digital notes.

3.2.2.2 Connections and interdependencies in needs discovery

Communication between the project manager and customer plays a critical role in the sales process. This subprocess dictates strongly in what, how and which resources the project manager has available to him. All details – even minimal ones – will need to be noted for later referencing, as aspects that seem small may later prove to have a significant effect on the big picture should the event's details shift in the future.

The project manager and management are connected when the project manager assesses a sales lead as unqualified. Management has the last say on should the sales lead be pursued further or should the sales process end. In general sales leads are directed to management on unordinary requests or on projects requiring extensive resources. These events are identified by the project manager as either lucrative sales opportunities or projects requiring increased effort and commitment to generate revenue. In such cases, the interaction between the project manager and management will dictate if the investment results in either fruitful sales or wasted working hours combined with possible loss in sales due to resources being allocated towards the pursued project.

3.2.3 Offer solution

At this point in the selling process, the project manager has qualified the sales lead and understood the customer's value points. Next the project manager will tailor the company's product or service to best fulfill the customer's expectations. To complete this step effectively, the project manager needs to present the solution with expertise and focus on personalizing the solution through interaction with the company stakeholders.

The case company's sales process focuses on the customer and their needs. With the offer solution step, the case company focuses on selling the solution to the customer instead of selling the product. This approach has proven successful due to the multiple variables and options affecting the customer's event. Moreover, by selling the solution rather than the product, the solutions offered can be specifically tailored to meet the

event's specific needs and expectations. No event is the same and all events have unique characteristics, schedules, and stakeholders. Thus, any solutions offered are aimed to be tailor-made to meet the customer's event's specific characteristics and requirements.

The Offer solution step is detailed in Figure 7 below:

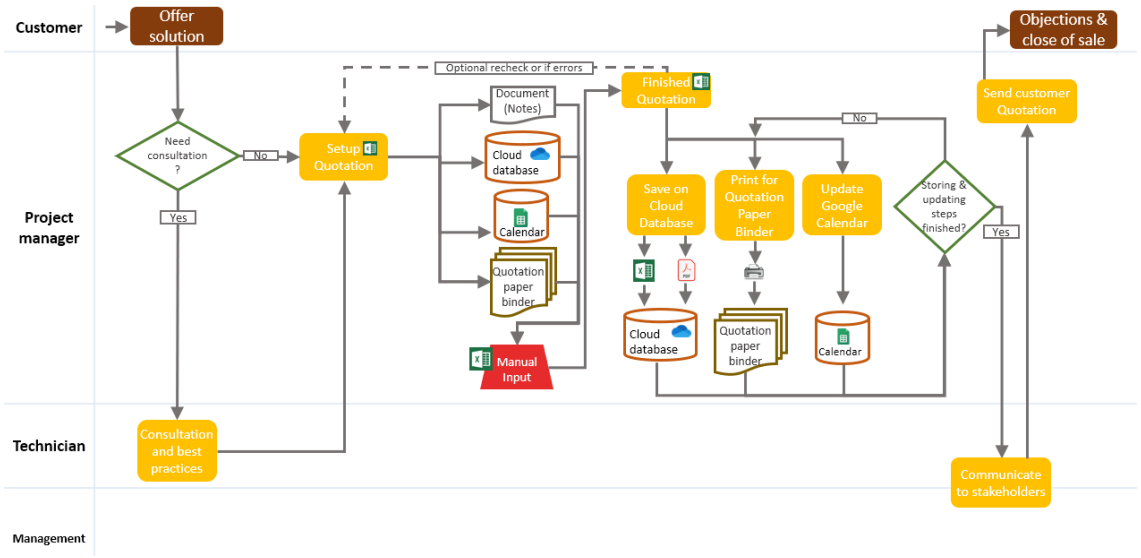

Figure 7. Process for offer solution.

As seen in Figure 7, structuring the solution starts with the project manager pondering if he/she needs consultation on the technical aspects of the solution. The project managers are well-equipped to understand the project's big picture, but small details such as details and solutions on technical setup should be consulted with the technicians, if the project manager has any doubts of the technical setup.

Following the project manager's understanding of the setup for the event, the process moves to setting up the quotation. The quotation is the single most important document in the sales process. The quotation guides the information of all the company's other documents and databases. The quotation outlines the customer's event's schedule, customer contact and venue information, resources allocated to the event, prices, terms and conditions of the solution, and any additional details specific to the offer.

As seen in Figure 7, Offer solution includes multiple manual and time-consuming operations relating to the quotation creation process. To elaborate, setting up the quotation includes multiple subprocesses, in which the project manager will utilize several sources for data. The input data for the quotation are found in several sources: Notes gathered earlier, cloud database (OneDrive), calendar (Google Sheets), and quotation paper binder. All the sources will be initially utilized to complete a finished quotation. In addition to finishing the quotation, the project manager may proactively return to recheck the quotation by returning to the setup task or is forced to return if he/she notices the quotation has errors.

Once the quotation is finished, the process moves forward to storing the quotation in the case company's systems. Furthermore, the newly drafted quotation's impact on available resources will be updated to each single database, as they together act as the resource management and planning tool (cloud database, quotation paper binder and calendar) of the case company. Next, the quotation is saved as a .xlsx and .pdf -file into the company cloud database for later referencing, a printed paper copy of the quotation will be stapled in the quotation paper binder, and lastly the company's calendar is updated with the latest information.

To move forward in the process, the project manager will need to determine if all the previous storing and updating steps are completed. Failing to complete them, might introduce issues later in the process, and thus it is vital to update new information to all tools when applicable.

Next, the project manager will communicate any changes or updates to existing resources to the stakeholders. In this step, the project manager can reconfirm any questions or inconveniences the stakeholders might raise concerning the specific resource planning period. To conclude and move forward with the sales process, the solution (quotation) is sent to the customer as the .pdf -file saved earlier.

3.2.3.1 Tools Utilized

Tools utilized in the offer solution phase are complex and time-consuming. Due to the case company's sales process being developed and updated over several decades, the process includes multiple analog and digital subprocesses, which require time-consuming manual effort to synchronize information on all required outputs of the step.

The quotation (Excel Sheet) needs to be setup firstly. The project manager will open the quotation related to the customer's project and input the quotation with the details regarding the customer's information, resources offered as the solution, any additional remarks, and the terms and conditions of the offer.

While drafting the quotation, the project manager will utilize any additional information needed for the drafting process. The quotation paper binder is diligently referenced to check any pen markings on the paper copies – as these updates might not have been updated in the electronic copies of the quotation.

The next tool used is the company's external calendar (Google Sheets), which needs to be updated with the new pending project. The project manager will update the event accordingly in the calendar with schedule details and a condensed list of resources reserved for the event. In addition, the number of technicians needed, and the vehicle planned for transport are input to the calendar.

Lastly, the project manager will use the company's general email address. An email is sent to the customer consisting of a foreword and attached .pdf -file of the quotation (offered solution). The email usually consists of additional details concerning the offered solution and/or requests for additional confirmations to details related to the offered solution. After the email is sent to the customer the sales process shifts forward to the next step – objections & close of sale.

3.2.3.2 Connections and interdependencies in offer solution

Offer solution includes added collaboration and communication between the stakeholders executing each individual project. As discussed earlier, this step of the sales process demands the most working hours from the project manager.

It is essential for the project manager to communicate with the company's technicians to ensure all parties are aligned with the event's schedule, as the schedule is the first point of interest the project manager to review concerning resource management and planning. Without a joint understanding between project manager and technician the company's resources cannot be fully planned correctly. Without the discussions of the event's details with the technicians, resource management and planning will be at risk of introducing inconveniences to either the specific event or other events planned for the

time period in question. In addition to discussing schedules, it is advisable for the project manager and technicians to review the project's information to ensure both agree all details have been covered. When the project manager and technician are aligned with the details of an event, it generally mitigates any nuisances relating to misunderstandings, miscommunication, and human error.

Moreover, the project manager does not always have the best approach to an event's technical setup and will need to consult the company's technicians. Consultation and think-thanking are relevant in projects, where the resources (namely equipment) will need to be planned to synergize with one another or the project manager needs the technician's practical expertise to offer the solution. In such cases, the project manager communicates with the technicians on suitable solutions and afterwards may adjust the project's resource management and planning accordingly. For the project manager, it is important to recognize the strengths of the technician's practical expertise, as the technicians are the representatives working with the customer on-site, and thus have the best experiences in practice.

3.2.4 Objections & close the sale

The Objections & close the sale step finishes up the mandatory steps to the sales process. This stage consists of any discussions, issues and worries between the customer and project manager in declaring a project pending, confirmed or cancelled.

To explain shortly, an objection is any matter a customer raises in connection with an issue obstructing their ability to confirm the sale. Usually, an objection indicates that the customer either seeks additional clarification or guidance, is limited on their budget or wants to update the solution. In essence, objections and closing the sale are intertwined together, as the goal of handling objections is to convert a hesitant customer into a decisive buying customer.

In the start of the Objections & close the sale process, the process workflow can branch in three directions: Objection handling, client confirmation, and sale cancelled. Let us first observe the process starting from objection handling.

As seen in the process map below (Figure 8), the foundation for the objections & close the sale step similarly revolve around processing the multiple functions and databases

connected to quotations. However, since the customer has expressed their issue(s) on confirming the sale, the process has been introduced with additional data. The project manager will analyze the data and consult the technicians on the objections. To update the offer, the project manager reprocesses the quotation through the case company's databases. Like earlier, the process includes utilizing the cloud database (OneDrive), calendar (Google Sheets), and the quotation paper binder to finish the updated offer. In addition, all the updating and storing steps must be redone to confirm all data sources have the latest updates.

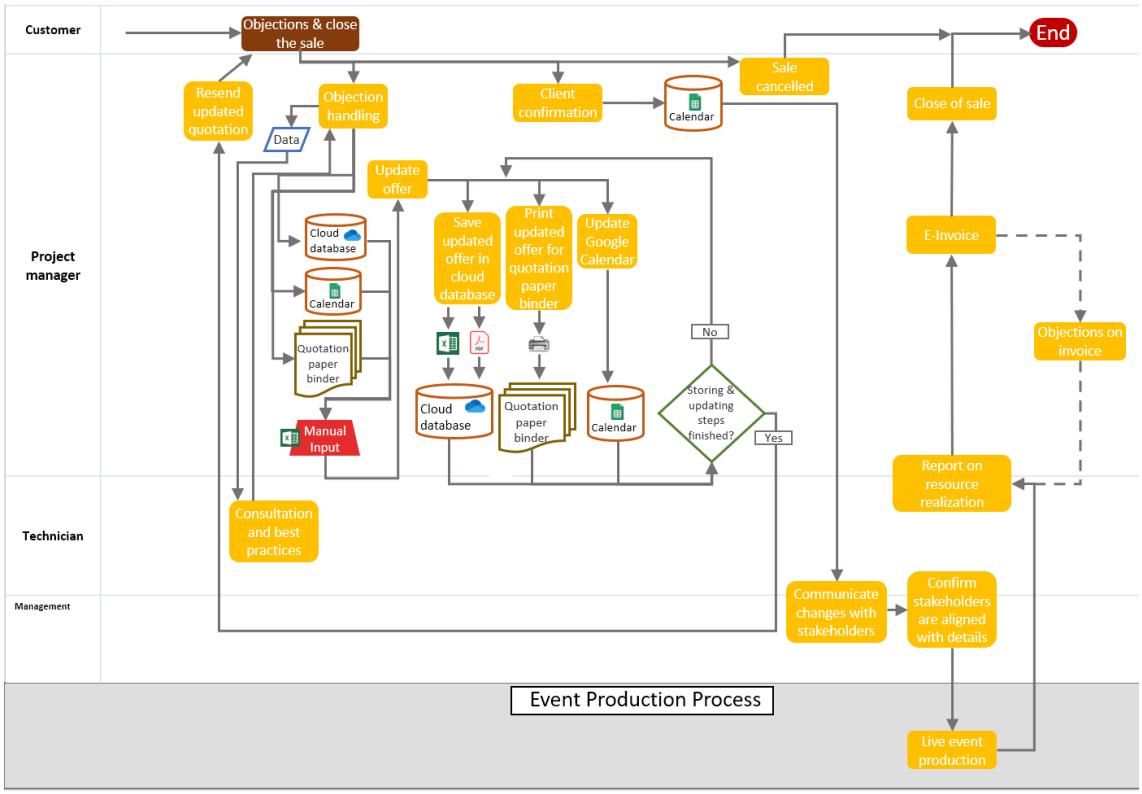

Figure 8. Process for objections & close the sale.

As shown in Figure 8, the objections handling workflow ends with the project manager resending the updated quotation to the client. After the process returns to its starting point the client can have additional objections on the updated quotation, which means the process restarts from objection handling. The customer may also cancel the sale leading to the end of the sales process. The third direction the updated quotation can progress is through customer confirmation.

Once the project manager has received confirmation on the quotation, the event may be confirmed in the company calendar. In addition, the project manager will update any

possible changes to resources planned for the event. Next the workflow connects stakeholders tied to the event, as the project manager will communicate, confirm, and align everyone on the changes and details pre-live event production.

Following the communication with stakeholders the sales process workflow exits and transfers to the event production process. In this period the sales process waits for input from the event production process to continue the workflow. After the event production process has ended, the sales process is continued by receiving input from the technicians reporting to the project manager on the execution of the event and realized resources utilized in the production. The realized resources allocated to the event will be processed by the project manager to draft and send the invoice to the customer. At times, the customer may raise objections on their invoice, if they disagree with the realization of resources used in the production. In such cases, the objections generally are misunderstandings by the customer of realized resources or miscommunication between the company stakeholders. Nonetheless, once the invoice has been successfully sent the project manager will close the sale and the sales process ends.

3.2.4.1 Tools utilized

The Objections & close the sale step, the tools utilized are similar to the previous step's tools – Quotation sheet, paper binder, inbox and Google sheets calendar. All the tools utilized as the company's resource management and planning.

Generally in this step the project manager will need to undergo one or multiple of the following subprocesses to handle the customer's objection:

A. Validate all new information regarding the objection is supplied by the customer. The project manager will utilize the company's common inbox and notes for validation.
B. Plan and confirm availability of the resources required for the updated solution. Requires cross-referencing quotations in the cloud database, quotation paper binder, and calendar for technician schedules.
C. Update all required documents and databases to reflect the amended offer – updating digital copies of the quotation, paper quotations, and calendar.
D. Recheck all new supplied information is updated in all parallel databases: Quotations, paper binder and Google sheets calendar.
E. Resave and store the updated quotation in the cloud and printed as a paper for the binder.
F. Respond to customer's objection by email with the updated offered solution.

As seen in this list, handling sales objections will introduce an additional round of maneuvering between software and databases, including both digital and manual inputs to finish the task.

3.2.4.2 Connections and interdependencies in objections & close the sale

Initially, the project manager will assess if the objection may be addressed by own accord. Should the objection's nature and new supplied data not consist of additional technical details to the event's production, it is likely the project manager can solve the issue. However, should the issue require technical knowledge, the project manager will connect with the technicians to consult their expertise with solving the objection through best practice.

In addition, communicating with the other stakeholders of the company is important in this step, as it is plausible that handling the objection and offering the updated solution will require flexibility from the company's stakeholders to offer the updated solution.

The interdependencies of the stakeholders affect the possibilities for solving the objection. As discussed earlier, the stakeholders (namely technicians) working hours could be planned and confirmed multiple weeks ahead, which influences the possible replacements or schedule reorganization opportunities to resolve the customer's objection.

Other resources connected to the sales process in this step are the material resources such as event equipment and vehicles. Any changes or updates to the original offer will have to be assessed by the project manager, as the technical staff have varying degree of expertise on AV-equipment. What this means is that the updated solution, and the possible reorganizations of resources, will additionally need to be assessed based on the know-how of the available technicians and how the restructuring would affect other projects scheduled for the period.

3.3 Analysis of the Current Sales Process

As shown in the above description, the sales process is rather straight-forward. However, the complexity of the tools and effort needed to create, maintain, and update information to all databases and documents adds an additional level of complexity and time-consuming effort to the process. Moreover, the project manager's responsibility in supervising the resource planning and planning tools (all the databases and documents) appends extra responsibility, as out-of-date databases and documents are tightly connected to the company's stakeholders' efficient working hours.

The following sub-sections analyze the current sales process based on the interviewee responses (Data 1), visualize the sales process steps in focus, and identify the inconveniences perceived by stakeholders connected to the process.

3.3.1 Holistic view on the current sales process

The foundation of the current sales process has been in the case company's use for the past 20 years. The foundation of the process has always revolved around the use of various paper documents dictating daily operations of the company. The utilization of paper quotations, notes, and binders has been further developed during the past 5 years to introduce digital elements to the sales process' foundation. The developments of the sales process include replacing the company's physical calendar with an electronic one (Google Sheets) and added redundancy to the paper quotations through the utilization of cloud storage (cloud database). The whole current sales process is presented in Figure 9 below.

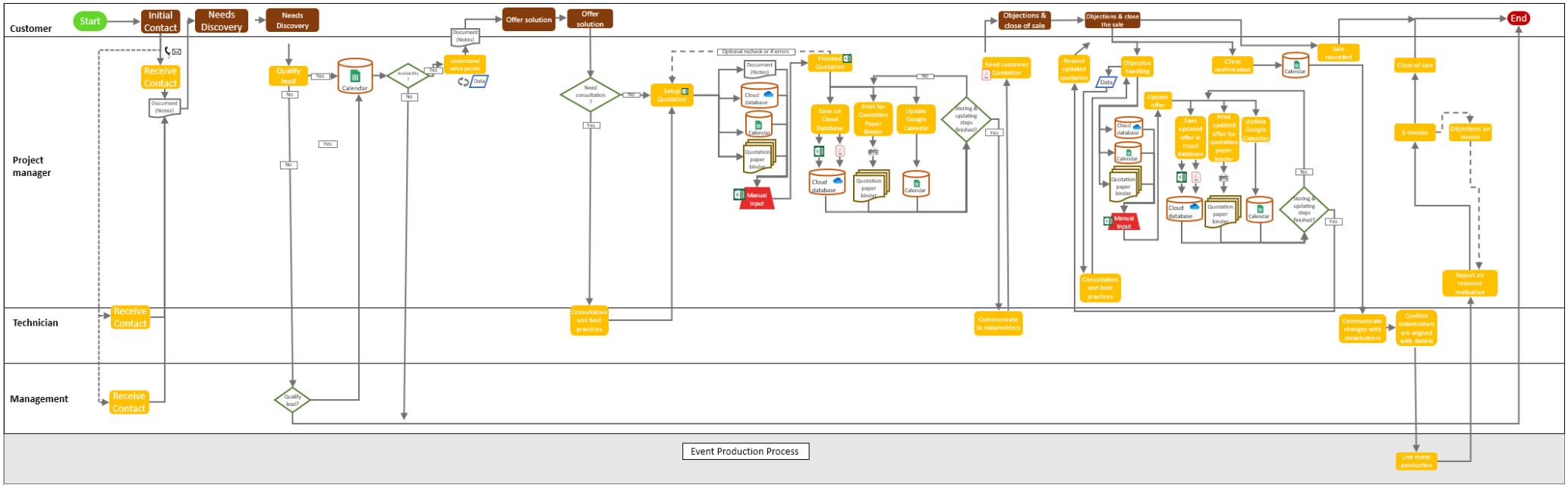

Figure 9. Full view of the current sales process steps and workflows.

Changes to the workflows in the sales process have been slowly adopted by the stakeholders. As it stands all stakeholders are familiar with the process. To address the strengths of the sales process, the below interviewee response reflects the comfortability in the process:

> I think the sales process works well on a case-by-case basis. (Respondent E)

As it turns out, the responses reflect comfortability in the current sales process. From the project managers perspective, the current sales process is rather swift to run through, when everything lines up and the customer has no objections to the offered solution.

However, while the case company employees are comfortable working with the current sales process, all responses lean towards being comfortable with the process, but not towards being satisfied or happy with the process. Further analysis on the interviewees remarks on the current sales process exposes weaknesses, which are discussed in the next section.

3.3.2 Needs discovery

The needs discovery step requires effort and patience from the project manager's perspective. Being proactive is an important aspect for the project manager to succeed in this step, as the project manager's lazy and neglectful interest to gather data through understanding the customer's value points introduces additional working hours and stress to the stakeholders:

> They have a significant increasing effect on working time, and on well-being at work and meaningfulness and endurance through it as well. (Respondent A)

Hence it is important for the project manager to focus on clearing as many open questions as possible, as it will save time later in the process by mitigating the need to ask follow-up question and/or wait for the customer to respond.

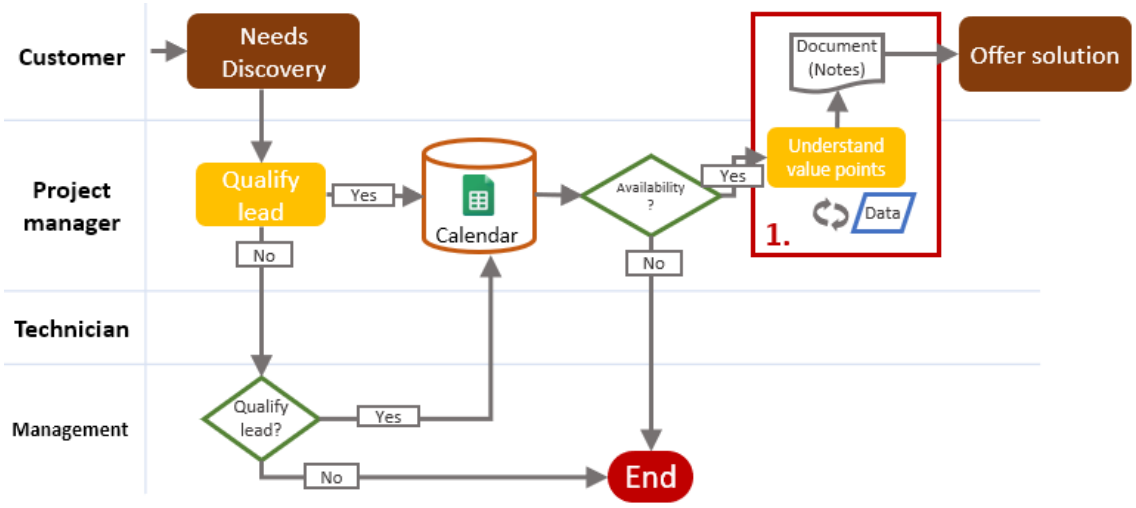

Figure 10. Weakness #1 in the current sales process.

As may be seen in Figure 10, the first weakness is in the understand value points task (#1). Without effective needs discovery, it is virtually impossible to ensure the most valuable solution recommendations to the customer, and additional working hours may be needed to clear misunderstandings or earlier neglected aspects of the project. Moreover, the project manager may easily neglect to assess the customer's value points in detail due to being in a hurry to deliver the solution, which in turn may add inconveniences later on in the sales process.

3.3.3 Offer solution

Setting up the quotation is the most important document of all. It acts as the foundation for all other resource management and planning functions. The importance of information gathered earlier (needs discovery) from the customer is highlighted by understanding the effect of mismanaging given information, as all the company's resource management and planning is done in multiple databases. The effect of incomplete information in the quotation can be realized through Respondent E's comment:

> There have been some shortcomings in the project data at fairly regular intervals. Deficiencies in data affect work efficiency and may take longer than expected. Awareness of the use of time reduces the formation of error estimates. (Respondent E)

If any critical information is mishandled the problem might stack on top of each other due to one inconvenience affecting another project's resources, which effectively can add layers of inconveniences on top of earlier issues. A small mishandling of information may

effectively cause a multifilament of resource management and planning inconveniences with unnecessary working hours spent solving these issues, as reported by Respondents C and D:

> There have often been shortcomings in the inventory list, contact information, etc. It takes time to determine the customer's actual need for equipment. (Respondent D)

> Deficiencies slow down your own work and prolong your working day. (Respondent C)

It is critical for the project manager to work meticulously, because any unadvised or hasty decisions will have an effect on all stakeholders efficient working hours.

Once the quotation sheet is setup, the project manager will continue forward to check availability of resources for the event. It is important to recheck the availability, as other project managers will have drafted their own quotations and reserve resources for their projects. If any needed items are reserved, the project manager will need to plan replacements. To check for the vacant resources, the only way for the project manager to find the information is to investigate the resource management and planning databases and documents.

Investigating vacant resources occupies most of the project managers time and effort, as the whole process includes multiple different sources of information with minimal synergy between each other:

> All information is scatted in different sources. (Respondent A)

The process takes time as each source has to be manually inspected and cross-referenced with one another to ensure all resources are planned accordingly.

There is an added layer to figuring out the available resources, as the other stakeholders (namely technicians) planned working hours are stored in the company's external calendar – the Google Sheets calendar. Hereby the project manager will additionally need to check yet another source to form a picture of availability for the technicians.

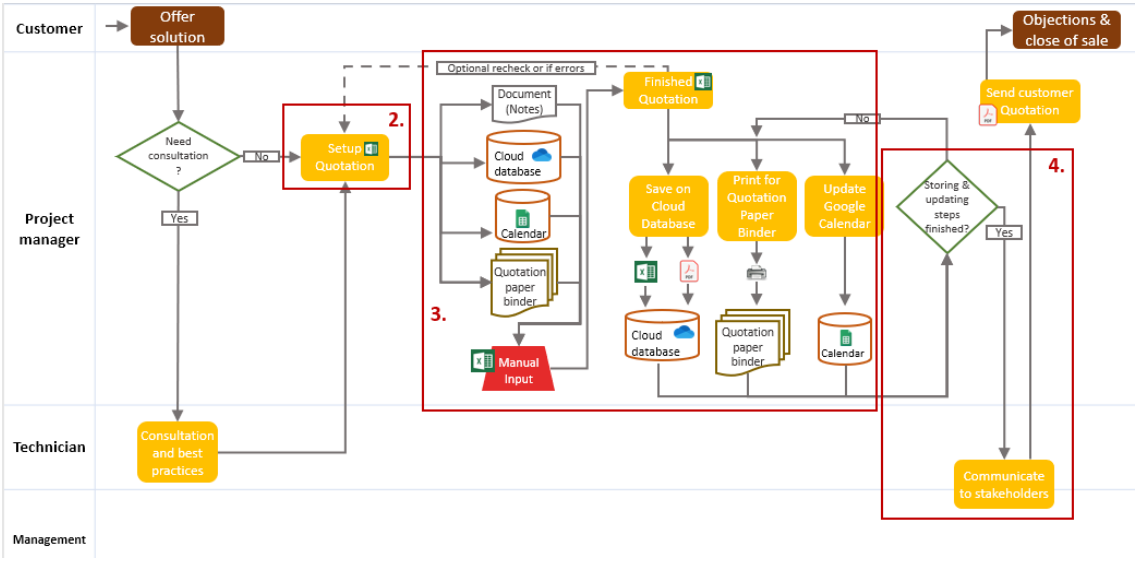

Figure 11. Weaknesses #2-4 in the current sales process.

Figure 11 introduces three additional pain points (highlighted in red) in the sales process illustration above. As may be seen, the third pain point (#3) connects to the utilization of all the company's databases and documents. The tedious task of gathering, inputting, storing, and updating all the information manually establishes a weak link in the sales process. The weakness of the unintegrated resource management and planning is the time-consuming multi-step process, which is challenging to keep up-to-date during busy periods. Typically, the inconveniences do not add additional working hours immediately, but rather later in the sales process. However, as this step is the first point of contact to the company's resource management and planning tools, it is important to recognize the possibility of inconvenient additions to all stakeholders working hours if managed poorly or neglected.

Lastly, it is the project manager's responsibility to manage the company's projects actively. As the interviewee working in upper-management commented:

> The data itself is not stored in the systems, so the careful operation of the project managers already has a big impact on the success of the project. (Respondent B)

Active monitoring ensures all projects progress in schedule and delays can be minimized. Additionally, the proactive approach includes ensuring all databases, documents, and stakeholders have relevant and up-to-date information available and communicated to have everyone informed on the big picture (Figure 11, #4).

The proactive approach to management is needed for the resource management plan to stay as intact as possible. Any unnecessary delays from either the customer or project manager risks the application of additional working hours for all stakeholders.

3.3.4 Objections & close of sale

Objection handling is a natural part of selling. However, the project manager may perceive an objection as a roadblock, which slows the sales process down. Effectively, the strenuous process of re-evaluating, rechecking, redrafting, resaving, and restoring the databases and documents may affect the project managers motivation to follow the workflow diligently.

In the below illustration the objection handling task (Figure 12, #5), the weakness is connected to the resource management and planning setup (Figure 11, #3; Figure 12, #6). Any objections introduced to the sales process will rightly draw the project manager back to the time-consuming process of working with the case company's complex database and document structure.

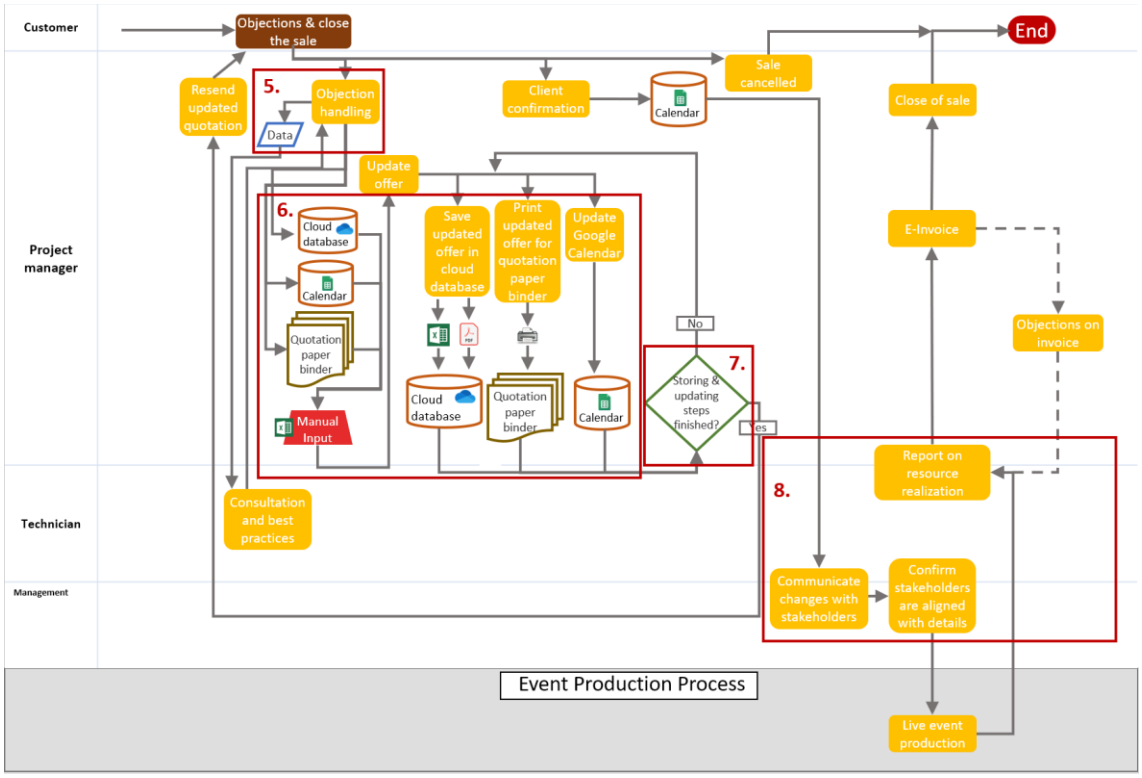

Figure 12. Weaknesses #5-8 in the sales process.

The above illustration (Figure 12) illustrates the 4 additional weaknesses in the sales process (highlighted in red). As may be seen, weaknesses #6 and #7 are reintroduced from the previous sales process step. This means there is a possibility for multiple reiterative and repetitive tasks to progress the sales process forward.

Repetitive and strenuous workflows within the sales process are further commented by interviewee B:

> At worst, they can confuse schedules, cause delays, overtime compensations, and credits to customers when scheduling shifts and updating your calendar based on data. Ad hoc responses to these issues may seem cumbersome. Of course, there are also errors. (Respondent B)

In effect, the weakness in the process can lower motivation to follow through with the required tasks, as repetitive workflows can feel very unmotivating to complete or perceived as additional working hours for a busy project manager. As described by Respondent B, a careless attitude towards maintaining and updating the case company's databases and documents increases the possibility for errors.

The current sales process additionally introduces another layer of weakness in case the employee's want to access information on-demand. As it stands currently, most of the data is accessible at the office. Information stored in the cloud and inbox are accessible remotely, but any cross-reference to physical paper quotations is inaccessible:

> For me as a technician, the most important thing is that all the information related to the event is easily accessible and correct. Also, that the information can be found somewhere easily when not in the office next to the paper binder. (Respondent C)

This inconvenience is especially relevant during busy periods. All of the interviewee respondents replied that any information gathering outside the office includes communicating with their colleague and contacting the customer directly. While contacting the customer is not irrelevant, it is unnecessary as the information should already be accessible for the stakeholders through supplied documentation (understand value points and gathered data).

In addition to the inaccessibility of information, the issue with not having data available on-demand adds additional responsibility for the project manager to communicate and update all stakeholders when new information has updated to the resource management plan (Figure 12, #8). As it is, all the information is only accessible at the office, which means that should the company's resources be effectively planned, the office is only

occupied with the management and sales team. Thus, no other stakeholders are present at the office and communicating changes and updates of the resource management plan to the stakeholders, at least in detail, is difficult. The interviewees voiced their concerns on not receiving up-to-date information on events planned:

> The details of the venue and the contact person should always be found, the time of installation where preferably also flexibility, the schedules of the event. There could also be more information for technicians directly to e-mail, eg. just scheduling / running. (Respondent A)

Furthermore, interviewee B added a personal view on the weakness of information inaccessibility:

> Gather all the information in one place. It also often happens that in your spare time you may be thinking about what's going to happen next week. In that case, it would be good to be able to check things online from home. It would be easier to plan your own life if you could see what the work situation looks like in 2 months. (Respondent C)

In addition to the above responses, the overall interviewee sentiment regarding gaps in accessible information promoted a need for providing additional information to the stakeholders. The interviews outlined weaknesses in the sales process through not having enough information to work with when proceeding to live event productions. The gaps in information added inconveniences to personal scheduling, fluidity of production functions, and overall quality of the productions.

3.3.5 Additional observations on the current sales process

In extension to the above analysis, observing the process presents additional inconveniences to the current structure of resource planning and management. As described earlier, all documents and information are updated and stored in individual documents with no integration between systems. Hence all possible referencing and guidance on previous projects will need to be dug up from various databases. Understandably when project documents are not integrated with the databases, any updates made in one source will not automatically update to the other sources. This inconvenience adds unnecessary working hours for a stakeholder needing added information. This issue was highlighted by Respondent B as follows:

> The biggest thing is the "loss" of information after the project. It remains in a form from which it is difficult to further process or use, for example, customer relationship management and aftermarket. In addition, the information is not included for the use of the organization, for example, information about the ready-

> to-use arrangements of the venues or the previous solutions offered. Or you can go through old offers, but retrieving information is not entirely reliable. (Respondent B)

The above quote further introduces the concept of “loss” of information, which currently makes any customer relationship management (CRM) and post-sales functions nonexistent due to the time-consuming steps required to gather, analyze, and process the data forward.

In addition, the case company produces events for its customers in various venues around Finland. All the venues are unique and require specific or special arrangements to satisfy the needs and values of customers. The weakness of not having information and data available from previous projects poses added effort in finding relevant references to assess best practices on setup and resources.

> Streamlining the preparation of tenders would be facilitated by the fact that old events, customer data and venue information could be found quickly and used as a basis. (Respondent B)

Lastly, having the resource management and planning tools scattered around in multiple sources introduces risk to mishandling the company’s resource inventory. As discussed earlier, resource management and planning consist of three separate databases, which have no integration between each other. Should any of the stakeholders make any changes to one of the databases, it will need to be manually updated to the other databases. Evidently this weakness brings on additional attention to any updating, as the whole plan of resources could fail or introduce added inconveniences in form of double-bookings, missed equipment or vehicle needs, and schedule overlaps. All the previously mentioned issues add unnecessary working hours to all stakeholders in clearing the issues, which usually includes multiple reiterative steps and rechecks to ensure the updated resource plan clears any overlap concerns.

3.4 Summary of the Analysis Results

Summing up, the case company’s sales process is not strictly enforced, but rather the workflow within each step can be flexibly changed if needed. Adjustments in the sales workflow depend on the sales lead and the company’s sales representative’s personal experiences on best practice to close the sale. The aim of the non-structured approach

in the sales process is to enable customers to be served flexibly, in which the customer can expect to receive personal and exceptional service.

On a more detailed level, the current state analysis above has revealed the following strengths and weaknesses, which are outlined in Table 2 below.

Table 2. Strengths and weaknesses identified in the current sales process.

Strengths	Weaknesses
Stakeholders used to the current sales process	Information "loss" - Information is tedious to process forward. No integration between documents / databases.
Stakeholders enjoy the possibility of "quick" review of resources	Manual inputs increase risk for human error - additional working hours needed to sort issues
The current sales process produces the needed documentation	No remote access. Bulk of information only accessible at the office.
Current sales process is quick to run trhough, when all steps line up	No CRM and best practice documentation stored and readily available.
	Information scattered in multiple documents / databases. Tedious effot required to form holistic view on a project(s)
	Lack of integrations means changes/updates requirea time-consuming reiterative process
	Nonexistent inventory management system adds unnecessary management risk

The table above (Table 2) illustrates the current sales processes identified strengths and weaknesses by the author and interviewees. As may be observed, the overall sentiment on the current sales process is rather weakness orientated.

Firstly, the bulk of the data (Data 1) suggests that the company's data management and information "loss" within the sales process makes utilization of efficient resource allocation demanding, as the information input into each database is not aggregated into a single database. Thus, any manual information inserted on either database or document cannot be retrieved later and will need to be reinserted again if needed. Additionally, any new data (customer information, venue information, or customer contact information) is not structured and transferred between databases. All data is printed on paper and inefficient to transfer into digital databases, which makes post-event follow-up and marketing efforts inefficient, as the lack of integration on inputs of customer and venue information to a CRM system is currently nonexistent. Furthermore, all information and data are only accessible at the office, making any external inquiries on-demand rather impossible.

Secondly, the lack of synergy between tools and databases challenges optimized resource allocation planning. Any updating and reorganization of the company resources demand an iterative process, which includes duplicate tasks within a single sales process step. Each added iteration to the present resource management plan introduces possibility for inconveniences and issues to the current plan. In addition, any updates and changes are needed to manually update to each database and document, which adds risk for human error. Also, the lack of synchronization between databases sets in motion tedious workflows for the stakeholder to check and secure resource availability.

Thirdly, the current resource planning and management systems have been used for multiple years in the company introducing barriers for adopting change. The current way of working with the sales process is familiar to all stakeholders in the company and the inconvenience of the process is well-known to the stakeholders. Hence the stakeholders have adopted an approach, in which the stakeholders will directly address their assigned project's project manager to receive all the information they need to progress their own workflow – ultimately decreasing their hours spent in solving missing information, but at the same time increasing the project manager's hours spent advising and aligning the stakeholder with relevant information. The driver for this approach stems from the lack of information available, which requires an additional layer of communicating, alignment, and confirmation internally between the project's stakeholders. Currently the stakeholders have no possibility to retrieve needed information on-demand, which adds additional working hours to discover and solve the need for information. The stakeholders are reliant on the project managers efforts in gathering, maintaining, and updating all project information to plan their working hours and available resources efficiently. Any inconveniences in the provided information adds stress to the stakeholders responsible in producing live events for the company's customers. Although the current sales process presents stress to the stakeholders, data 1 collected presents satisfaction in the current sales process, which introduces an added layer to change management challenges in onboarding stakeholders to a new digital tool and redesigned processes, which would potentially streamline employees' resources and availability to retrieve information independently.

To conclude, the interview data and current state analysis confirm the business challenge statement and reinforce the case company's need (to plan and) to implement a tool that enables optimized resource allocation in the sales process. The current sales process is two decades old, which includes manual intensive workflows combined with

digital tools. The current sales process is familiar to all stakeholders, but as one of the senior technicians' states:

> Quite functional, but a little in the past. (Respondent C)

The current sales process has its strengths, but the interviews affirmed the current sales process to include multiple weaknesses to enabling optimized and efficient resource allocation in the sales process.

3.4.1 Selected Focus Areas for developing the new tool

There is a need for developing a tool, which includes functionality to address the key challenges outlined in the current state analysis. Table 3 explains the three topics in focus to address the challenges, and their impacts, identified in the current state analysis.

Table 3. Key challenges and business impacts.

Topic	Challenge	Impact
Digital transformation	Information loss and accessibility	1. Readily unavailable information increases stakeholder effort and working hours retrieving needed information.
		2. Bulk of information only accessible at the office
		3. New data is not structured and transferred to databases. Lack of a CRM system makes any follow-up and marketing efforts unefficient.
Business process management	Lack of synergy between current tools and databases	1. Updating and reorganizing resources require an iterative process, which duplicates multiple times in a single sales process.
		2. Input of customer and venue information is present locally only on the offer sheet.
		3. Updates and changes are not synced between databases, which introduces added risk for human error affecting all resources planned.
		4. Lack of database sync and integration generates tedious workflows to check and secure resource availability.
Change Management	Stakeholder's interest to adopt new updated processes and procedures	1. Project information, changes, and updates require stakeholders to communicate, align and confirm all details through the project manager. Fastest way to retrieve information is via contacting the project manager of the project.
		2. Reliance on project manager's efforts in pregathering and structuring information. Lack of personally gathered information by the stakeholders.

As may be seen in Table 3, to develop the case company's new tool, the summarized challenges and their impact from the current state analysis have driven the selection of the thesis' selected focus areas. The focus areas for the implementation of a tool that enables optimized resource allocation in the sales process are: *Digital transformation*, *Business process management*, and *Change management*. In the following section, the thesis will delve into existing knowledge to research for best practices on the selected focus areas for the implementation of a tool that enables optimizations for resource

allocation in the sales process. Through existing knowledge and best practice developments, the thesis will gain insight to creating the conceptual framework for the implementation of a tool aimed to enable optimizations for resource allocation in the sales process.

4 Existing Knowledge for Developing a Digital Tool for Resource Allocation

This section of the thesis discusses existing knowledge on *Digital transformation*, *Business process management*, and *Change management*. Literature on digital transformation, business process management, and change management are essential themes for further examination, as they are the identified focus areas for the implementation of the new digital tool enabling optimizations for resource allocation in the sales process. The structure of this section will 1) offer introductions to the key themes, 2) describe key features, terminology, and applications, and 3) discuss best practices for use in the conceptual framework. The final part of the section is dedicated to presenting the conceptual framework synthesized from the findings of the literature review.

4.1 Digital transformation

It is important to understand the concept of digital transformation, as the term is rather multidimensional and consists of vast number of definitions, terms, and views about digital technology and its applications.

Digitization, digitalization, and digital transformation are generally mixed with each other and often misunderstood. According to Verhoef et al. (2021) the absence of a clear academic definition highlights how vague the phenomenom still is. According to Saarikko, Westergren, & Blomquist (2020), as digital technology melds into industry, economy, and society, the importance of distinguishing digital technology phenomena from one another becomes increasingly necessary, especially when addressing digitization, digitalization, and digital transformation, as they differ from one another in terms of scale, applications and scope. To form a general perception of digital technology, the digital domains of digital technology are visualized in Figure 13 below.

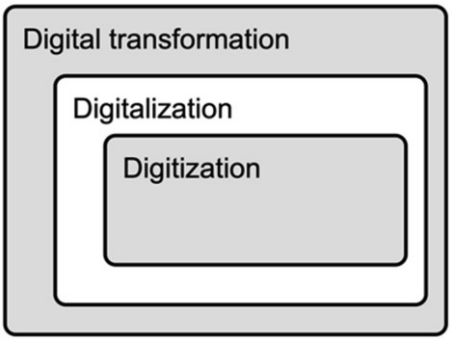

Figure 13. Digital domains (Saarikko et al., 2020).

As may be seen in Figure 13, digitization, digitalization, and digital transformation relate to one another: Digitization is an element of digitalization, which in turn is an element of digital transformation. Hereby it is important to highlight the dependencies of each element: digital transformation is dependent of digitalization, and digitalization cannot happen without digitized information. The following sections will dive deeper into each individual element of the digital domains (Figure 13) to examine the differences in scale, applications, and scope of the phenomena.

4.1.1 Digitization

Digitization is the first element of the digital domains. It is the foundation for digital transformation. Digitization is a generally used term with several definitions. There is not one common definition of digitization and thus multiple sources define the term in different ways. Gartner (2022) proposes its business-orientated definition of digitization as:

> "The use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business." (Gartner, 2022).

A technology-driven view of digitization is given by Merriam-Webster Dictionary (2022):

> "The process of converting something to digital form" (Merriam-Webster, 2022).

On the other hand, The Oxford Dictionary (2022) defines digitization as:

> "The conversion of text, pictures, or sound into a digital form that can be processed by a computer." (Oxford University Press, 2022). 41

All the above explanations imply digitization to include changing analog information to digital information.

For example, the following processes are examples of digitization:

- Scanning a paper document and saving it as a .PDF (digital document) on a computer's hard drive
- Written notes typed on computer in an Excel sheet
- Converting VHS or audio cassettes into DVD or CD -format.

Digitization may also be understood as transforming "paper-based" or analog data into digital format, which is readable by computers and easy to access (Yoo et al., 2012). Digitization raises a company's technological readiness and matureness, but it does not update its organizational processes or structures (Tilson, Lyytinen, & Sørensen, 2010). However, once the digitized information is applied to processing the transformed information, this is when digitalization happens (Bloomberg, 2018).

Digitization is an important element to the conceptual framework, as development of the new tool is designed to address the weaknesses described in the current state analysis, such as 'loss of information' and unconnected databases – inconveniences of the current presence of analog and digital information in the sales process. The next section will discuss the next layer of the digital technology domain – digitalization.

4.1.2 Digitalization

Digitalization started when first personal computers were invented. After that, digitalization has progressed in rapid pace yearly. While the roots of digitalization are established over four decades ago, the very first catalyst for digitalization came in the 1990s with the creation and public adoption of the Internet. Ever since, an increasing number of day-to-day tasks and business operations have been digitalized, with the focus shifting from the need to understand computing power to understanding digital innovation and new organizational structures (platform ecosystem). Thus, digitalization has established its presence in the core of many organizations' current products, services, offerings, and operations. The past couple of years have shifted digitalization interest to understanding the impact on business strategies and value creation (Yoo et al., 2012).

In essence, digitalization is the process of using digitization to improve business processes. Tilson et al. (2010, p. 749) state digitalization to being a social and technical process in which digitizing is applied in multidisciplinary social and institutional contexts. In other words, digitalization is digitized information being leveraged to improve an individuals, teams, departments, or organizations daily work. The term describes the use of digital technologies and data to generate revenue, improve overall business, and form a digital culture with digital information at its core. It makes processes more efficient, productive, and profitable (Hapon, 2020). Hence, digitalization differs from digitization in utility, as digitalization enables multiple stakeholders to take advantage of digitized information:

- Sharing PDF -files from a computer's hard drive to a cloud service, which is shared and accessible by multiple people,
- Uploading Excel sheets to collaborative workspaces such as Google Sheets, which allows multiple stakeholders to edit, modify, save, and present in- and on-demand,
- Uploading digital video content (CD, DVD, etc.) to online services, which are accessible and shareable to relevant stakeholders

As discussed above, digitalization can be leveraged to benefit an organization's daily operations. In fact, according to Parviainen et al. (2017, p. 64) digitalization introduces potentially high benefits, as digitizing information-intensive processes may reduce costs by up to 90%. In addition, digitizing information speeds tedious manual processes through utilization of a computers processing power, allowing businesses to automatically collect, analyze and mine data to improve a company's processes, cost drivers, and risks. Trittin-Ulbrich et al. (2020, p. 8) continue to elaborate that digitalization enables businesses to develop business models and new markets, assisting organizations to expand their service portfolio, and allows companies to internally be more efficient. Moreover, digitalized data may be organized to interactive dashboards and generate reports, which may be leveraged on-demand by management to address any potential arising problems before they occur (Parviainen et al., 2017, p. 64).

Digitalization is the phenomenon of leveraging digitized data to enable a company to provide its stakeholders with up-to-date and on-demand information, which is not bound to time and place. Best practices and use-cases of digitalization discussed in this section will be utilized in the development of the new tool, as it enables stakeholders to access

resource allocation information digitally when needed. The following section will open up the broadest digital domain – digital transformation.

4.1.3 Digital transformation

From today's perspective, digital transformation is such a modern and rapidly evolving concept that there is no established consensus agreed upon by experts and scholars. Verhoef et al. (2021) argue that digitalization is not the literal definition for describing a change process until the term *transformation* is accompanied with the term digital. Thus, in this view, digital transformation describes the holistic leveraging of digital technologies to provide added benefits beyond their design and use cases (Verhoef et al., 2021). In turn, while digital transformation is evolving and being applied in varied approaches by businesses, it is important to understand that digitization and digitalization are parts of digital transformation. Moreover, digitalization is applying information and data through technology to a company’s current business model, while digital transformation is a broader impression of evolving a business to operate in a new digital way (Hapon, 2020).

The consensus on digital transformation is the adoption of new digital technologies for improving and simplifying business operations, to innovate new business models, to improve customer experience, and generate new ways for creating value (Vial, 2019, p. 2). Verhoef et al. (2021, p. 121) continue to define digital transformation as “a change in how a firm employs digital technologies to develop a new digital business model that helps create and appropriate new value for the firm”. Digital transformation is an aim to diminish the impact of innovative digital technologies and consider the profound changes that are currently taking place in the industry and society (Vial, 2019, p. 28).

Digital transformation aims to emphasize agility and strive to continuously optimize, while responding swiftly to changes in the market (Gobble, 2018, p. 66).

Many digital transformation definitions outline the urge for new business model creation and organizational restructuring being part of digital transformation (Demirkan, Spohrer, & Welser, 2016). In context the important variable in question is "transformation". In recent years, companies from varying industries have piloted numerous initiatives to explore the potential and utility of digital technologies. Businesses have realized that key business operations as well as its products, processes and organizational structures

must be involved in the transformation. Strong management practices must be established for a successful transformation (Matt, Hess, & Benlian, 2015, p. 339).

Due to digital transformation affecting not simply a company's internal operations, but additionally its external operations (Matt et al., 2015, p. 339), it is critical to include digital transformation in the company's strategic planning. Thus, according to Matt et al. (2015) digital transformation should be addressed and planned in the following four categories: use of technologies, changes in value creation, structural changes, and financial aspects.

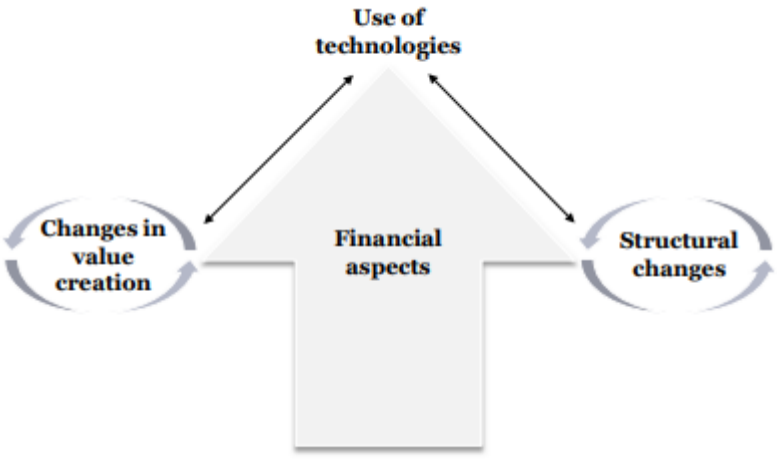

Figure 14. Digital transformation framework: balancing four transformational dimensions (Matt et al., 2015).

As may be seen in Figure 14, the digital transformation framework is strongly driven by the *financial aspect dimension*, which according to Matt et al. (2015) is the primary force driving and restrain for digital transformation. Understandably a company's consideration to pursue digital transformation process is limited by the finances and resources available, which enforces the importance to research options and availability in good time (Matt et al., 2015, pp. 340-341).

The dimension of *Use of technologies* consists of a company's ability to leverage new technologies and its employees ability to adopt new technologies. A company can decide to become the market leader in new technology adoption to create its own standars and competitive edge through leveraging early adopters advantage, while on the other hand a company may choose to apply new technologies to fulfill current business operations (Matt et al., 2015, pp. 340-341).

The *use of technologies* usually implies that the company's value chains are affected by the new digital activities, which introduce the *changes in value creation* dimension to the framework. In essence, *changes in value creation* usually affect an classical (often still analog) aspect of the company's core business. These updates offer a company with opportunities to expand its service and product portfolio through for example digitalization of products or services. These new avenues introduce the ability to address alternative and new ways of generating revenue, or even opportunities to entering additional markets or new customer segments (Matt et al., 2015, pp. 340-341).

Through utilization of different technologies and schemes of value creation a thorough assessment of *structural changes* are required for new operations. This dimension affects the company's organizational setup and in specific the structures directly affected by the new digital activities. With limited changes, it might be reasonable to integrate new digital operations into existing structures, while bigger changes require addittional restructuring (Matt et al., 2015, pp. 340-341).

Academic literature reviewed highlights digital transformation to consist of an organization's strategical approach towards creating value through leveraging digital technology to develop new business models and possible opportunities for new market entries and customers. While value-creation by leveraging digital technology is part of the thesis, the holistic concept of digital transformation steers outside the thesis' objective and scope, and hereby will not be included and considered as part of the proposal for the new digital tool.

4.1.4 Summary of digital domains

In summary, digitization, digitalization, and digital transformation are terms used to describe changes originating from digital technologies. However, it is important to be clear and precise in using the correct term, as the terms describe digital change processes in varying degrees of complexity and depth. Thus, fundamentally the extent of the impact of digital changes may be misunderstood if not applied appropriately. The table below (Table 4) summarizes the definitions and use cases for changes originating from digital technologies, also referred to as the digital domains.

Table 4. Definitions for changes originating from digital technologies.

	Digitization	Digitalization	Digital Transformation
Viewpoint	Improving technology	Collaborative and efficient use of digitized information	Improving digital technolog, efficiencies, relationships, and business models
Definition	Digitization can be understood as transforming analog data into digital format, which is readable by computers and easy to access, but it does not update its organizational processes or structures.	A sociotechnical process in which digitizing is applied in multidisclipanary social and institutional contexts. Digitized information being leveraged to improve individuals, teams, departments, or organizations daily work.	Adoption of new digital technologies to improve and simplify business operations, create new business models, improve customer experience, and create new ways of creating value.
Author	Yoo et al. (2012), Tilson et al. (2010)	Tilson et al. (2010)	Vial (2019

As described in Table 4 and discussed in earlier paragraphs, the three digital domains can easily be mixed with each other, but they all hide layers of uniqueness and complexity to their effects in value creation, technological management, business strategy, and organizational culture (Saarikko et al., 2020).

The relevance of digital transformation as a hypernym in the digital domains (Figure 13) has been recognized and presented. As discussed, the depth of scale and scope of digital transformation exceeds the objectives of this thesis, hereby digitization and digitalization are selected as the key phenomena fitted to serve the business problem from this focus area for developing the conceptual framework. Next the thesis will investigate how digitized data and digitalization may be leveraged to improve the sales process by *Business process management*.

4.2 Business process management

Considering digitization and digitalization allow an organization to shift its dependency from paper-based and analog information to digital data, it can simultaneously leverage and improve its external and internal processes by utilizing digitalization through Business process management.

Business process management is a management idea, in which businesses paying attention to their business processes - from start to end - perform better than businesses not paying attention to their processes (Reijers, 2021). Business process management (BPM) focuses on improving processes that are permanent, continuous, and occur in cycles, whereas project management is ultimately a one-time occurring endeavor aimed at achieving a specific outcome (Varadharajan, 2020). Although some processes are permanent, they are also dynamic and can evolve over time, thus BPM is a continuous practice - prompting the firm view the process as an improvement endeavor.

According to Maciel et al. (2018) BPM has the potential to support organizational changes by shifting focus from managing departments to business processes. Moreover, observing from a technical viewpoint, BPM practices allow managers to reorganize efforts and workflows around tasks, which enables BPM to serve as a tool to adjust an organization towards its managerial strategy (Maciel et al., 2018, p. 163).

For BPM to benefit a business, it is important to understand the *steps* of a business process, the *people* involved, the *information* that is processed and handled in the process, and the *technologies* involved in executing the process (Reijers, 2021). According to Rubens & Olavsrud (2021), many companies develop their business processes in isolation from other connected business processes, which deteriorates their ability to do business as flexibly, efficiently, and agilely as possible, due to the constraints of unconnected designs of their business processes. Hereby organizations seeking to take control of their business processes through BPM will shift from vertical to horizontal hierarchies to streamline their business processes between their various business functions (Maciel et al., 2018, p. 163). By employing BPM, a business can reduce operational costs by decreasing unnecessary workhours, increasing operational efficiency and productivity, and improve company culture (Smartsheet Inc., 2022). In fact, Rubens & Olavsrud (2021) state business process management to being a holistic approach to optimizing business processes.

The life-cycle of BPM aims for continuous improvement. To emphasize, the model strives to highlight that management of business processes is not a single event, but a continued exercise among multiple stakeholders (Wurm et al., 2020). The BPM lifecycle according to Dumas et al. (2018, p. 23) is presented below in Figure 15:

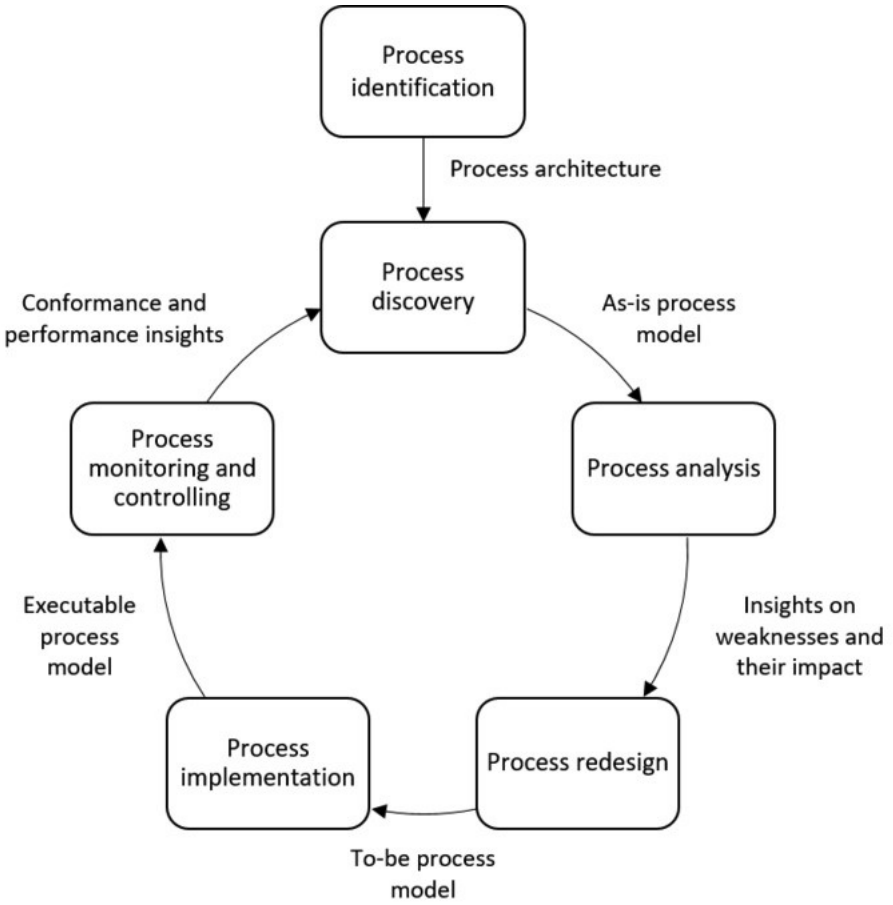

Figure 15. The Business Process Management Lifecycle (Dumas et al., 2018, p. 23).

The BPM lifecycle presented above in Figure 15 has six phases. The cycle starts by *process identification*, which manages the set of business processes and boundaries in question. This phase results in the visualization of business processes and their connections with one another. To prioritize which processes require intervention, the assigned BPM team defines key performance indicators (KPI) and objectives, which generally are cost, time, quality, and flexibility (Wurm et al., 2020, p. 5).

Secondly, the lifecycle proceeds to *process discovery*, which entails gaining common understanding among stakeholders involved on how the business process is carried out. This is also referred to as an ‘as-is’ state, or in other words the process in its current state. In this phase, insight and information is gathered through document analysis, interviews, and observations to fully understand the process’ big picture (Wurm et al., 2020, p. 5).

Third phase in the cycle is *process analysis*. In this step the process is examined in depth to identify issues, root causes for inconveniences, and their impact. To analyze the process, the BPM team can utilize qualitative and quantitative methods to gain added insight to their analysis. Qualitative methods may compromise of value-added analysis, waste analysis, and root-cause analysis. On the other hand, quantitative tecniques utilize simulations, flow time analysis, and queing theory (Wurm et al., 2020, p. 6).

Fourthly, opportunities for process improvements are considered in the *process redesign* phase. The objective in this phase is to model the 'to-be' state of the process. Hence the output of this phase is an updated corresponding 'to-be' visualization of the 'as-is' business process, which aims to present the future solution of the process. The redesign stage in the lifecycle contains transactional, transformational, inward and outward viewing, in addition to creative and analytical methods for producing the new 'to-be' model. In conjuction with redesigning the process, it is important to benchmark the general target metrics (cost, time, quality, and flexibility) of the updated model to the previous model (Wurm et al., 2020, p. 6).

Fifth, the newly designed business process ('to-be' state) is implemented in a phase called *process implementation*. Primarily it is advisable to trial the implementation with a smaller group of stakeholders to ensure functionality (Malak, 2022). To carry out a successful implementation the company requires support from change management and stakeholders responsible for securing adequate onboarding of the new process (Wurm et al., 2020, p. 6).

Finally, the lifecycle enters *process monitoring and controlling* phase, which aims to understand the execution of the 'to-be' process and correct any arising inconveniences if necessary. Process data may be visualized through performance dashboards adding insight into KPIs and issues of the process. Data collected can further be leveraged to compare the 'as-is' process to its preceding 'to-be' process to capture additional insight and confirmation to key value-adding targets (cost, time, quality, and flexibility). Furthermore, the action of process monitoring provides added value, which can be utilized in future reiterations of the process lifecycle (Wurm et al., 2020, p. 6).

Businesses employing BPM enjoy multiple benefits. By integrating business processes with targeted dashboards and workflows, BPM can streamline operations, minimize human error and miscommunication, and further clarify the strategical choices of the

business. Fundamentally, a business can expect to gain three advantages through utilizing BPM:

1. Agility – Having process steps visualized allows the company to adapt quickly to changes, enjoy the clarity of clear workflows, and can forecast possible inconvenient effects faced when planning to modify a business process (Smartsheet Inc., 2022).

2. Visibility – BPM allows management to see and understand the business processes in effect, which mitigates the need to monitor its employees and their work effort through alternative methods. Moreover, having access to company business process maps allows management to have insight into the process flow through dashboards, which enables management to receive quick overviews of process performances (Smartsheet Inc., 2022).

3. Efficiency – BPM allows stakeholders the ability to achieve optimal performance through eliminating redundancies and manual tasks. Effectively this enables the company to minimize errors, shorten process timelines, and introduction of updated process designs (Smartsheet Inc., 2022).

The value of business process management is obvious and the advantages of utilizing BPM are valuable, measurable, and transparent to all stakeholders. The Business Process Management Lifecycle model by Dumas et al. (2018, p. 23) provides the case company with a structured method for continued business process improvement, potential reduction of operational costs, increased operational efficiency and productivity, and improved company culture. In addition, BPM offers benefits to individual stakeholder's business process improvement proposals or collectively as a company-wide effort. The best practices and key takeaways of this section's literature review add an additional layer of conceptual foundation to the framework and shall be included to the proposal. The following section discusses the mapping and design of the business processes.

4.2.1 Business process mapping and design

Process maps are a key concept for providing the observer with an overview a company's business processes. Process maps visualize and identifies a company's

business processes relationships, outlines roles and responsibilities, and forms a view on how the company operates (Malinova, Leopold, & Mendling, 2015).

Organizations operate in processes which include tasks performed in specific order. A sequence of such processes is performed to create value to the company (cost, time, or resource minimization, or generate additional revenue for example). To manage all the company's processes and systematically document the whole operations of a company, organizations utilize the BPM approach and start modelling their processes through process models. These process models may also be called process maps (Malinova et al., 2015).

The distinction between process mapping and design is rather fine, but there is a notable difference. While process maps capture and visualize the design of the process, fundamentally business process design includes the organization of a process, which technologies are involved, and who are assigned responsibilities within the specific process. These decisions are guided by the objectives and restrictive forces affecting an organization designing its business processes (Reijers, 2021). In turn, once the business process design has been approved, the actual business process map may be specified.

Process design has always been included in BPM. By influencing business processes and how they are executed, it is possible to change the performance and outcomes of specific or all business processes (Reijers, 2021).

While BPM covers the concept for developing business processes, process mapping and design constitute of the preplanning considerations prior to development. In essence, process design and mapping are the building blocks required for successful business process development, and thus suits the case company's need for developing its resource allocation processes.

For the implementation of the new tool to be successful, the company's stakeholders' perceptions, expectations, and possible barriers to accustom towards the transformative new tool will need to be assessed thoroughly. Thus, existing knowledge and best practices regarding change management will be explored next to ensure a successful change process may be executed.

4.3 Change management

“Change management is a systematic approach to manage transition or transformation of an organization's goals, processes, or technologies. The purpose of change management is to implement strategies for effecting change, controlling change and assist people accustom to change. The change should focus to help the organization to remain competitive in its market and reduce risks" (Murthy, 2007, p. 22).

In the past, the bulk of organizations were created for stability instead of change. Moreover, the focus was on creating a precise outcome, result, or product, whereas these days, organizations aim to develop their processes. One of the ideal development approaches to improving a business’ processes through the rapid change in technology, communication, and information is through change management. Thus, from an organizational viewpoint, change management is a crucial process in transforming how a business wants to evolve its new values and strategies from its current state (Peltonen, 2008, p. 132).

4.3.1 Change management frameworks

There are multiple views, frameworks, and theories about change management and how an organization should implement its change processes. However, these different theories mostly share the same general ideas and approaches. While academic literature consists of various models for change management, it is important to understand the models form the foundation for an organization’s change process. Thus, it is advisable for organizations to apply these frameworks to benefit their own process for change management (Erämetsä, 2003, p. 151).

Essentially every change management process requires five key elements to succeed (Valpola, 2004, p. 29). The table below (Table 5) illustrates the five key elements affecting change.

Table 5. Five elements for successful change management (Valpola, 2004, p. 29).

Element 1	Element 2	Element 3	Element 4	Element 5		Impact
Defining need for change	Forming common vision	Managing ability to change	First actions	Implement change	=	Successful change

As seen in the table above (Table 5), successful change requires all five elements to be delivered to implement change in organizations. The impact of all elements being delivered is successful change (Valpola, 2004, pp. 29-35).

Table 6. Failure to deliver an element and its impact on change (Valpola, 2004, p. 29).

Element 1	Element 2	Element 3	Element 4	Element 5		Impact
Failure	Forming common vision	Managing ability to change	First actions	Implement change	=	**Last on the agenda**
Defining need for change	**Failure**	Managing ability to change	First actions	Implement change	=	**Quick start - slow finish**
Defining need for change	Forming common vision	**Failure**	First actions	Implement change	=	**Fear & dissatisfaction**
Defining need for change	Forming common vision	Managing ability to change	**Failure**	Implement change	=	**False starts and irrational efforts**
Defining need for change	Forming common vision	Managing ability to change	First actions	**Failure**	=	**Disappointment & negativity**

In turn, considerable difficulty and complexity are introduced to the change process if one the key elements fails. The last column in Table 6 describes the impact and nature of the change process should one of the key elements fail to deliver (Valpola, 2004, pp. 29-35).

First, the need for change requires defining. Defining the need for change is essential to address why the change is needed, what can be achieved through the change, and how the organizational structure and conditions may be improved through the proposed change. Second, the common vision guides the company on how the needed change(s)

are planned to be achieved by. Additionally, common vision acts as guidance to the change process, which ensures change is being implemented in a structured way and goals of the change are being completed. Essentially these two elements ensure the process continues to progress as planned (Valpola, 2004, pp. 29-35).

The process of changing an organization's present state always affects its people, essentially the company's main asset, and thus it is vital to receive their support for change. As discussed earlier, people are creatures of habit and generally cautious towards change due to the uncertainty affected by change (Iberdola, S. A., 2022). Hence the fourth element relates to managing the company's employees' ability to change, as it beneficially decreases the resistance to change and promotes the individuals' beliefs towards better working conditions and work input. First actions are the first changes the personnel experience firsthand, therefore it is important to systematically proceed with the change to avoid any unnecessary efforts or false starts within the organization. Should the first actions fail, it may halt any progress or stop the change process completely (Valpola, 2004, pp. 29-35).

Lastly, the last element of successful change is to implement the change. By implementing change, the change process creates the disconnect from the old to the new normal. Understandably this element may take multiple months to complete, but success to implement the change is measured by having the employees realize that the change is good and needed (Valpola, 2004, pp. 29-35).

As discussed earlier, there are multiple frameworks designed for change management. This thesis will describe and analyze three academically well-recognized change management theories: Kurt Lewin's change management model (in 1951), McKinsey 7S model (in 1980s), and Kotter's 8 steps of successful change management (in 1996) to build further understanding on change management fundamentals. These models are described in detail in the following sections.

4.3.2 Kurt Lewin's 'Unfreeze-Change-Refreeze' -model

One of the pillar theories on change management is Kurt Lewin's theory (in 1951) commonly understood as the 'Unfreeze-Change-Refreeze' model, which introduces a three-stage procedure to change (Lee, 2006). Kurt Lewin's change management model is illustrated below (Figure 16).

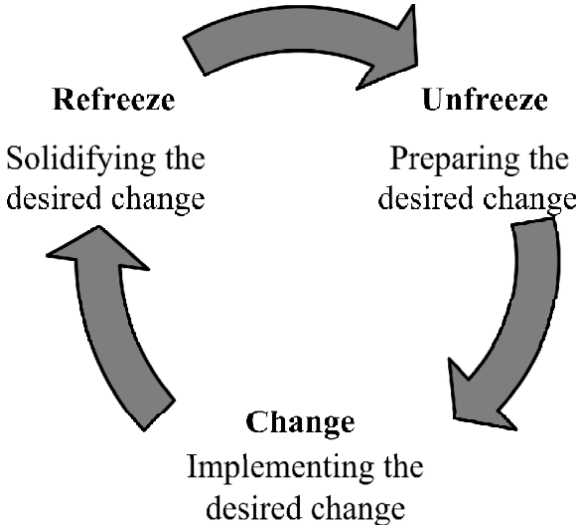

Figure 16. Kurt Lewin's change management model.

As illustrated in the figure 16 above, Kurt Lewin's change management model is a loop consisting of three stages: Unfreeze, Change, and Refreeze.

Firstly, *unfreezing* is the procedure of preparing the organization and its employees to any necessary changes. In essence, the organization and its employees are primed to being ready and responsive to changes in the status quo. This requires the change team to identify and recognize the means to disrupt the ways of conducting business to convince the organization to commit to change. In addition, the *unfreeze* stage includes a change roadmap and communications plan to lead the change management teams' efforts to introduce organizational change (Airiodion & Crolley, 2022).

Second, the loop continues to *change*, which implements the desired change. Vital for *change* to succeed, is communicating consistently. Consistent communication alleviates any surfacing of misinformation regarding the change, and further aids in keeping the process on its tracks. Having leadership onboard and pushing to drive the change is important, as it keeps the employees engaged in the process (Airiodion & Crolley, 2022).

Lastly, once the change has been implemented it is solidified by *refreeze*. In short, the implemented changes are established as the new state in the organization's procedures, processes, and employees (Burnes & Cooke, 2013). A change process is not finished after implementation and requires reinforcing, because otherwise the organization will slowly return to its old ways of operating. Thus, it is imperative the whole organization

continues to champion the change – leaders are expected to lead by example and feedback is welcomed to correct any unplanned inconveniences (Airiodion & Crolley, 2022).

As discussed above, Kurt Lewin's change management model includes three simple stages. This makes the model very easy to understand and straightforward. However, according to Burnes (2007) the three step model is overly simplistic for organizations planning change in the modern era. As it stands, the model is too stiff for current times where technology plays a central part in any organizations daily operations. Changes in technology may happen quickly, which would introduce multiple iterations of *freezing* and *refreezing* (Figure 16), causing companies to being constantly in a state of change (Airiodion & Crolley, 2022).

The next model introduced observes multiple elements of a business affected by change and hereby introduces an expanded view on managing change.

4.3.3 McKinsey 7S' model

The McKinsey 7S model is a framework that was invented in the 1980's by Tom Peters and Robert Waterman. The 7S' in the model have been utilized to study and examine and organizations internal changes. The model comprises of structure, strategy, systems, skills, style, staff, and shared values. For an organization to function effectively, all the 7 S' should share mutual understanding and interconnections between one another. Due to the elements being interrelated, notable progress cannot be achieved in one element unless significant progress is made in the other elements (Baishya, 2015, p. 166). The 7 S' framework is applicable to any changes planned or pending in an organization (Waterman Jr., Peters, & Phillips, 1980). The illustration (Figure 17) below represents McKinsey 7S' model and its interconnected nature of each individual S:

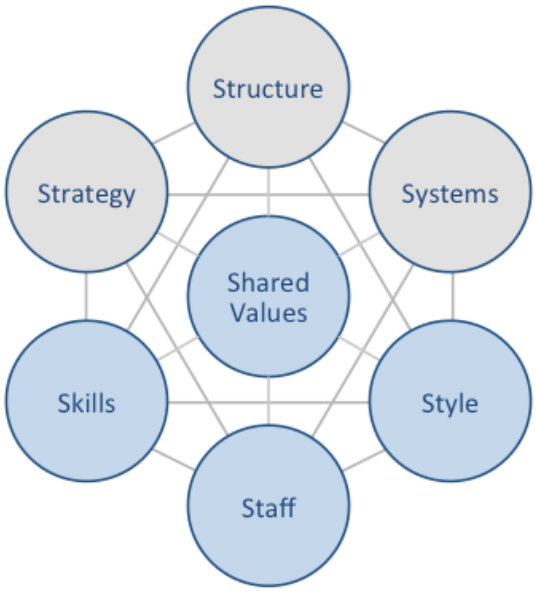

Figure 17. McKinsey 7S Model.

As may be seen in Figure 17, the framework is divided into two classes – the 'Hard S' elements (in grey) and the 'Soft S' elements (in blue). In short, the 'Hard S' elements are easy to identify, and management can influence them directly. On the other hand, the four 'Soft S' elements are less tangible, harder to describe, and tend to being more influenced by the organization's culture.

As discussed earlier, the McKinsey 7 S' framework consist of seven S's. The first, and the core element of the model is *Shared Values*, which refers to the desired set of values and objectives going beyond the business' fundamental main values (Baishya, 2015, p. 166). In a nutshell *shared values* include the norms and behavior that are expected from its employees, meaning that internal values (guidelines for employees) aim to fulfill the business fundamental values (perceived by customers) beyond expectation.

Second element, and first of the 'Hard S's, is *strategy*. *Strategy* consists of the means to reach its long-term goals, competitive advantage, and organizational purpose (Baishya, 2015, p. 166). A great strategy incorporates the business values, its vision and mission statement.

Third element is called *structure*. *Structure* refers to the roles and responsibilities of the business, and how the individuals can execute their roles and responsibilities. Without a clear and robust organizational structure, the daily operations of the business would be

difficult to conduct, as the chain of command could introduce confusion and lack of credibility (Baishya, 2015).

The fourth element of the McKinsey 7S framework is *System*, which includes the regulations, procedures, and rules of the organizational structure. These can be both formal and informal. In essence, the *system* element determines how business is done and includes all functions from production to distribution of goods and services (Baishya, 2015).

Fifth element in the framework is *style*. The *style* of business defines how an organization brings about change, and the format and steps undertaken by top management to implement change. Hence *style* is tightly connected to the management's way of leading the business (Baishya, 2015).

Continuing to the sixth element of the framework, which is *staff*. This element includes the hiring, training, and the retaining practices of the business (Baishya, 2015).

The last element of the framework is called *skills*, which is one of the most crucial elements of a business. In short, this element refers to the competence level in the business (Baishya, 2015).

Unlike Kurt Lewin's model, the McKinsey 7S' model includes 7 interconnected elements, which are designed to unravel the organizational design of an organization, adding complexity and length to the change process. The benefit of examining each element individually allows the change process to being effectively applied to specific departments, teams, or projects (Juneja, 2021). While it may be argued that addressing elements specifically allows the organization to target changes in a coherent and efficient manner (Corporate Finance Institute, 2022), it meanwhile fails to consider any external forces influencing the organization (Juneja, 2021), which may wreck any progress achieved and negatively affecting the effort and length of the change process.

4.3.4 Kotter's 8-step process for leading change

The 8-step process for leading change is the result of Kotter's examination and monitoring of numerous business leaders and organizations undergoing organizational change and transformation over a 40-year period. These observations formed the

success factors for leading change in organizations (Kotter Inc., 2020). Hereby from extensive research and studies, Kotter (1996, pp. 31-137) argues that change management processes can be separated into eight steps. The 8-step process for leading change is fully illustrated below in Figure 18.

Figure 18. Kotter's 8 step process for leading change (Splunk, 2019).

As may be seen above (Figure 18), in addition to the 8 steps, the change process is divided into three themes: Creating a climate for change (blue), engaging and enabling the whole organization (green), and implement and sustaining change (red). To clarify Kotter's model, each step must be described further to understand the model.

First, to *increase urgency* Kotter suggests organizations to emphasize its personnel to step out of their comfort zone and record immediate observations and results of the experiment. This exercise promotes an organization's employees to discover inconveniences, unoptimized workflows, and lacking productivity procedures (Kotter, ,1996).

Second, *build the guiding team* underlines the importance of assembling a competent team to lead the change process. Understandably an experienced change team results in an efficient unit, which understands and undertakes change management tasks and strategies together in a timely manner. In addition, an experienced change team will likely possess specific traits needed to lead the change, such as leadership (guiding the

process), credibility (changes are respected and followed) in the organization, flexibility (ability to adapt), and communication skills between top management, managers, and employees (Kotter, 1996).

Third, *get the right vision* step underlines the importance of justifying the values, strategies, and plans of the organization. On top of justifying the vision, the means to reach the vision need to be clear and realistic. Hence an important attribute to harness when designing the vision is to maintain focus (Kotter, 1996).

Fourth, *communicate for buy-in* is all about communicating an understandable and clear vision. In other words, steering the organization's stakeholders in the desired direction. In effect this means to being true to the vision and repeatedly communicate relevant information regarding the change process in various internal platforms (emails and meetings for example). In addition to prompt communication practice, the change team's behavior plays a key role in acting as role models in leading the change (Kotter, 1996).

Fifth, *empower action* instills the process of allowing individuals to shine in their work by eliminating any barriers hindering performance. In essence, these processes include any structural and pressurized supervisor oversight. To explain further, structural barriers may include any lack in resources available or company bureaucracy effecting and individual's efficient work, while supervisory oversight may unnecessarily introduce friction to the change process adding resistance and reluctance for teams to drive change forward themselves (Kotter, 1996).

Sixth, *create short term wins*. Short-term goals motivate teams to progress and achieve measurable milestones, or achievements. Kotter (1996) suggests that short-term (and long-term) goals must be visible and align with the efforts of change. Visible goals encourage individuals to appreciate and recognize their efforts to being attainable. Furthermore, short-term wins build momentum that has the effect of transforming non-followers into followers and passive individuals into active supports of the change effort (Kotter, 1996).

Seventh, *Don't let up* emphasizes the strong momentum carried from step six, *create short term wins*, to building integrity and confidence to accelerate the ambition to adopt change even further. To ride the momentum even further, leaders should focus on

scaling to larger and even demanding change initiatives, which is possible by continued support and celebrations of success along the change process (Kotter, 1996).

Eight and the last step of the model, *Make it stick*, is all about sticking to the new state of transformed change, sustain the newly created behavior, and embed the changed culture to the organization. Kotter (1996) advises the best way to achieve this is by demonstrating the link between new behaviors and success. The leaders should encourage their teams to think, feel, and believe the newly changed state of the organization is accomplished by their efforts, it is much more likely the change will stick and be maintained as the new normal (Kotter, 1996).

4.3.5 Mistakes in change management

Valpola (2004, p. 53) describes leaders in change management to being positive, energetic, and present in the process. These traits enhance the change to form a positive image and distinct direction. In context, management figures whom actively engage and communicate with top management and teams, empower and strengthen the change to keep its momentum moving forward. Conversely, leaders failing to influence the change process positively and communicate the strategy with its relevant stakeholders risks the probability of successful change (Valpola, 2004).

According to Kotter (1998, p.1) there are four specific sources for mistakes in change management, which amount to most failures to accomplish change:

First*, leaders fail to create the sense of urgency for need of change*. In context, leaders identify and communicate the need, but fail to follow-up on the initiative to build the necessary momentum and united effort to progress the change (Kotter,1998, p. 1).

Second, *undercommunicating the change vision*. Most leaders generally utilize the easiest, but least effective, ways of communicating their vision through speeches and memos. Kotter (1998, p.1) suggests leaders to lead by example, as employees tend to watch their bosses very closely. Aligning senior management’s behavior and actions towards the change alleviates any cynicism and frustration among their subordinates in the change process, which in turn passively communicates the change vision to the whole organization.

Third, *celebrating too early*. While celebrating success initially met goals is important, declaring a change project finished while the process is ongoing can be catastrophic. Even though a change process sees encouraging results from the start, it is vital to look at the big picture. Celebrating too early may risk the positive momentum created and halt the initial progression gained (Kotter, 1998, p. 1).

Fourth, *looking for resistance in the wrong place.* The general perception is that middle managers are the likely group to resistance any proposed changes. This is not true according to Kotter (1998, p. 2). In fact, middle managers are the ones bringing up issues to the attention of senior managers. Kotter continues to state (1998, p. 2) that change resistance is generally found a few tiers below the CEO from managers striving to reach "the top", and thus also having the most to lose in a change. Hereby it is critical to form a change team consisting of members from all levels of the organization – employees to top management (Kotter, 1998, p. 2).

4.3.6 Resistance to change

People are creatures of habit and like to be in control of their surroundings and actions. Thus, any changes introduced to an organization's values, and to its employees, are bound to experience change resistance. In essence, resistance to change is an individual's attitude, reaction, or behavior towards an organization's plans for change (Azizah & Damawan, 2020, p. 49). Importantly Regar et al. (1994) highlight that one of the biggest failures to succeed in change is an organization's employees' resistance to change. In addition, an online survey published by McKinsey Quarterly (Isern & Pung, 2007) reports that 38% of managers felt that their change processes had a desired effect on their employees' performance. Hereby effective change management strategies and best practices are vital to mitigate any negative effects of the planned changes (Peltonen, 2008, p. 131).

Key drivers for increased resistance are employees' perceptions of decreased authority, competence, and job stability (Erwin & Garman, 2010, pp. 39-56). Naturally as change is introduced, employees grow concerned to how the changes will affect their current work. Feelings regarding job security can be crippling (Erämetsä, 2003, p. 194). Hence, it is vital to prepare and consider factors affecting change resistance beforehand, as resistance is inevitable. Active communication regarding the vision of the change, conveying the benefits, leading by example, and individual development plans for

employees' competencies are effective tools to address any potential resistance to change (Erwin & Garman, 2010, pp. 39-56). Erämetsä (2003, p. 196) continues to highlight that organizations should strive to convey a message, where all stakeholders understand the change is made together – not as individuals.

In addition, the relationship between managers and subordinates plays a crucial part in managing resistance to change. A committed, consistent, empathetic, and logical manager encourages trust, which allows employees to voice their concerns relating to change on a low threshold. On the other hand, any actions to brute forcing changes in an organization will most likely increase resistance to change. Consequently, an organizational culture emphasizing openness allows managers to receive feedback on negative side effects of change before it occurs, which adds to the subordinates' sense of involvement in developing the change, and likely increased chances for successful change (Erwin & Garman, 2010, pp. 39-56).

It is evident that people are in the core of *change management*. Organizations need to invest time and effort to managing its people to successfully implement change. All of the introduced frameworks in this section have emphasized the importance of communicating the vision, leading by example, and importantly investing the required time to prepare and plan in advance for a change. This summarizes the best practices raised regarding *change management*, which in effect will be valuable to consider when building the initial proposal in Section 5.

Next the conceptual framework and the logic behind combining all the selected focus areas is discussed.

4.4 Conceptual Framework of This Thesis

This sub-section contains the conceptual framework for the plan of the implementation of a tool enabling resource allocation in the sales process. The framework is built around best practices and concepts of the three focus areas of Section 4: *Digitizing & Digitalization*, *business process management* and *change management*. The illustration of the conceptual framework is shown in Figure 19 below:

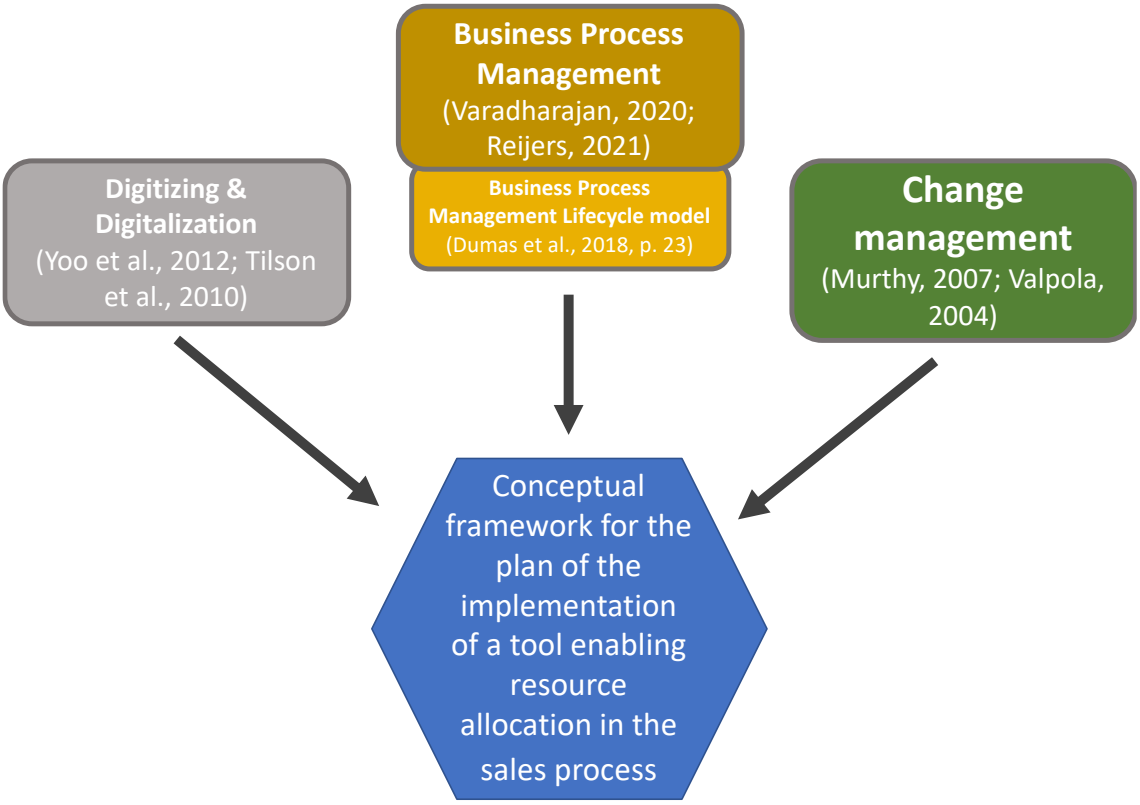

Figure 19. Conceptual framework of the thesis.

As seen above (Figure 19), the conceptual framework incorporates the three selected focus areas for addressing weaknesses identified in the current state analysis: *Digitizing & Digitalization*, *Business Process Management*, and *Change management*. A summary of the findings from Section 4 and the details for building the proposed plan for the new tool are discussed below.

The first components of the conceptual framework are elements of digital transformation – *digitization* and *digitalization*. As discussed earlier, digital transformation acts as the hypernym to the digital domains of digital technology (Figure 13) and describes the process of leveraging digital technologies beyond their design and use cases (Verhoef et al., 2021). However, regarding the thesis objective, digital transformation skews outside the scope of the thesis, thus existing knowledge of *digitization* and *digitalization* are considered for developing the tool.

To elaborate, *digitizing* enables a business to convert analog information into digital format (Yoo et al., 2012), which when applied to update an organization's processes and structures, is when *digitalization* happens (Tilson et al., 2010, p. 749). *Digitization*

addresses the weaknesses of having to retrieve information manually and reiteratively from analog databases. Furthermore, all new information input and gathered for databases will be stored as digital information. Through *digitalization* the *digitized* information allows the stakeholders in the sales process to access information on-demand – regardless of time and place. Evidently the availability to access, store, and update information through a digital tool would allow the case company to design optimized workflows for resource allocation in the sales process.

The second component is *business process management*, which is a management idea focused on reorganizing and improving business processes that are permanent, continuous, and occur in cycles (Varadharajan, 2020). In addition, many processes are considered to being dynamic, which allows redesigning the processes to improve over time (Rubens & Olavsrud, 2021). As such, the conceptual framework will utilize the business process management lifecycle model proposed by Dumas et al (2018, p. 23) for designing the proposal for the deployment of a new resource allocation tool. Utilizing the model (Dumas et al., 2018, p. 23) the proposal has the foundation to allow optimizations in the sales process – now and in future update cycles.

Moreover, the main sub-themes of *business process management* add value to the selected component through:

1. *Business process design* - allowing the case company to connect all stakeholders of the sales process to designing and assigning responsibilities relating to the sales process, which adds an added layer for specific value-creation and performance improvements through cocreated designs for optimizations (Reijers, 2021).

2. *Business process mapping* – Visualizes and identifies tasks and stakeholder responsibilities within the sales process. Furthermore, allows the observers to compare the ‘as-is’ sales process with the optimized ‘to-be’ process (Malinova et al., 2015).

The third component to the conceptual framework is *change management*. As the current sales process is being updated to digital format, and through a new tool, it is important to systematically have an approach to managing the transition of processes, stakeholders, and technology (Murthy, 2007, p. 22). Theory and models for change

management has been reviewed by three renowned authors (Kurt Lewin, McKinsey, and Kotter) to form an understanding on best practices and elements to consider for the deployment of the new tool and processes incorporated to the possible change. *Change management* frameworks introduced in Section 4 have varying steps to accomplish successful change, yet they all share and include five distinct elements: Defining the need for change, forming common vision, managing ability to change, first actions, and implementing the change (Valpola, 2004, p. 29). These distinct elements will be carried forward to the proposal, as they address the common aspects for all introduced change processes discussed in Section 4.

In summary, the logic behind the conceptual framework for building the proposal has three elements: 1) Ensure digital information is available to apply opportunities in *digitalization* for resource allocation optimizations in the sales process, 2) apply Dumas et al.'s (2018, p. 23) *business process management* lifecycle model (Figure 15) to add value to the current sales process, and 3) *change management* best practices by understanding the impacts and drivers of elements for successful change (Table 5) (Valpola, 2004, p. 29). In Section 5 the conceptual framework will be applied to build the proposal of a plan for the implementation of a digital tool enabling optimized resource allocation in the sales process.

5 Building Proposal for a New Digital Tool and Redesigned Sales Process

This chapter of the thesis merges the findings of the current state analysis and the conceptual framework towards building the initial proposal using input from Data 2.

5.1 Overview of the Proposal Building Stage

This section presents the steps of the proposal building for this thesis. As presented in Section 1, the business challenge is that the case company's resource allocation tools and databases are divided into analog and digital information, complicating and consuming valuable resources in the sales process. The aim is to transform the current sales process with a new digital tool, which enables all information (Notes, Calendar, Cloud databases, Paper documents) to be digitally connected and retrievable – allowing enhanced optimization in resource allocation for all stakeholders connected to the sales process.

The proposal building is supported through the weaknesses identified in the current state analysis in Section 3. The main weaknesses recognized related to lack of synchrony of collected data, which present inconveniences through "information loss" between unconnected databases and absence of synergy between resource allocation tools. Moreover, a possible resistance towards adopting change was noted, as the sales and resource allocation processes have been unchanged for multiple years among the stakeholders. In addition, the proposal will utilize the existing knowledge and best practices presented in Section 4. As discussed, by *digitizing* and *digitalization* data is transformed from analog to digital data. Digital data enables databases to interconnect, allowing the company's sales process to be dynamically improved through the *business process management lifecycle model* (Dumas et al., 2018, p. 23). Lastly, how should change be introduced to the organization and what are the key drivers to implement successful change in transitioning business processes and technology (Murthy, 2007, p. 22; Valpola, 2004, p. 29)?

The initial proposal was performed in 4 steps. First, several options as the new digital tool were evaluated to replace the legacy process. The evaluation was performed during a one month period in conjuction with the legacy process. The logic with running two sales processes simultaneously was to ensure that the old process (legacy) and the

alternative process (option) could be compared side by side. There were 3 options as the new digital tool in this phase, which were given a 3-7 day testing period. After each option's testing period there were discussions and stakeholder meetings discussing the perceptions of each option. As a result, one option was selected for the initial proposal.

Second, all the relevant data needed in the current sales process were imported to the new digital tool. This step included *digitizing* all analog data (Paper quotations, notes, customer and venue information), exctracting and importing unconnected databases data to the new tool (Cloud database & Calendar), and configuring the backend of the tool to support and connect imported data (HR, CRM, Business Resources). Importing all relevant data and information to the tool allows the various data sources to interact with each other. Interconnected data allows actions of planning and managing workflow optimizations to resource allocation in the sales process.

Third**,** a cocreation workshop was organized including all stakeholders to redesign the sales process. The workshop structure included reviewing the findings of the current state analysis, the current sales process workflows, and their recognized weaknesses. Next the workshop was presented how the weaknesses of the current sales process can be addressed through the conceptual framework developed in Section 4. The conceptual framework laid the foundation for feedback, input and recognizion for the need of a new redesigned sales process, which would be powered by the new digital tool enabling optimized resource allocation in the sales process.

Fourth, the new redesigned sales process was adopted and started a testing phase.

5.2 Initial Proposal

This section focuses on the proposal for the plan and implementation of a new tool that enables optimized resource allocation in the sales process. As described the proposal draft is built through connecting the business objective, current state analysis and the findings from the literature review. In addition, another round of data collection (Data 2) introduced additional input from key stakeholders to the proposal.

Table 7. Data collection plan of the proposal building stage.

Data 2. Proposal building			
Respondent A	Face to face discussions	*Discussions of the 3 new digital tool options*	02.-26.8.2022 Field notes
Respondent B	Face to face discussions	*Discussions of the 3 new digital tool options*	02.-26.8.2022 Field notes
Respondent C	Face to face discussions	*Discussions of the 3 new digital tool options*	02.-26.8.2022 Field notes
Respondent D	Face to face discussions	*Discussions of the 3 new digital tool options*	02.-26.8.2022 Field notes
Respondent E	Face to face discussions	*Discussions of the 3 new digital tool options*	02.-26.8.2022 Field notes
Employee A-E	Stakeholder meetings	*Evaluations of the 3 new digital tool options*	02.-26.8.2022 Field notes
Employee A-E	Workshop	*Current State analysis review*	07.9.2022 Field notes
	Workshop	*Current sales process workflow & weaknesses*	07.9.2022 Field notes
	Workshop	*Conceptual framework*	07.9.2022 Field notes
Employee A-E	Workshop	*Feedback & input*	07.9.2022 Field notes
Employee A-E	Workshop	*Sales process redesign*	07.9.2022 Field notes
Employee A-E	Workshop	*Review of processes and next steps*	07.9.2022 Field notes
Employee A-E	Workshop / Documentation	*Redesigned sales process map*	07.9.2022 Field notes / Illustration (Figure 23)

As seen in Table 7, data collection of Data 2 included testing and reviewing the options for the proposal. After the testing had been concluded a cocreation workshop was organized consisting of all the stakeholders in the case company to evaluate the 3 tested options, review of the current state analysis and the current sales process' workflows and weaknesses. Also, the conceptual framework was presented to the stakeholders to introduce best practices from existing literature. Next, feedback and input were collected from testing and the analysis (Data 1), which was further utilized in selecting the best fitting option as the new digital tool, redesigning the sales process, and the initial proposal.

Next the initial proposal will be disassembled into smaller elements and described in detail.

5.2.1 The new digital tool

The new digital tool is based on the findings of the evaluation of the 3 options tested and assessed prior to selecting the new tool. In addition, the current state analysis and the business objective of this thesis were critical components in narrowing down the selected option for the proposal. As described earlier, after testing and evaluations of the proposed options were discussed with the stakeholders, feedback and input were collected for the proposal. The testing phase for Data 2 proved valuable, as the stakeholders were introduced with various solutions for digitally managing resources, which led to valuable information about which processes, features, and functions were beneficial to their work, and which they would rather not adopt. These experiences brought valuable input to the proposal. Table 8 below shows the summary of feedback and input collected relating to the new digital tool:

Table 8. Findings and input of Data 2 relating to the new digital tool.

Key focus area from CSA (From Data 1	Input from literature (CF)	Suggestions from stakeholders for the proposal, summary	Description of their suggestions (in detail)
Digital Transformation	Digitizing & Digitalization (Yoo et al., 2012; Tilson et al., 2010)	- Easy to input manual data and import large datasets - Information available on-demand - Mobile app / interface - Remote access out of the office - Information and databases interconnected	The stakeholders input was to select a tool which allows easy inputs of single data. Furthermore, as there was digitizing needed from the legacy system, an importation method for large datasets was a requirement for the tool. Also, the tool was hoped to include an app or mobile interface for easy access on the go and remotely.
Business Process Management	Business Process Management (Varadharajan, 2020; Reijers, 2021) Business Process Management Lifecycle model (Dumas et al., 2018, p. 23)	- Dynamic tool allowing specified modifications - Custom workflows suiting the company and individual st - Tool should include warehouse, equipment, crew, transportation, and schedules to allow adequate resource planning and management	The stakeholders voiced their input on having dynamic designs in the tool, which would allow the company to tailor features to its needs. Moreover, it was evident through testing various options that the customizability of workflows was appreciated, as the suggested workflows on some options were rigid and annoying. The tool was hoped to include flexibility and robustness to allow workflows to be improved upon if needed.
Change Management	Change Management (Murthy, 2007; Valpola, 2004)	-Easy to use and operate - Tasks and other communication tools - Onboarding and training	The stakeholders were wishing the new tool to be easy to use and operate. Addittionally if individual tasks (to do) features were available, it would greatly benefit crew's resource allocation.

As seen in Table 8, the stakeholders learned through testing that it is important for the new tool to be easy to use and operate. Furthermore, the stakeholders shared the sentiment of the tool being fully digital, which enables individuals to access information remotely and on-demand, and that the information input into the tool is aggregated within its database(s) to allow interconnectedness of information between multiple resource allocation features.

Through the evaluation and testing phase, a new tool was selected as the most prominent option. The new digital tool selected for the proposal is a cloud-based resource management and planning software that helps AV & Event companies in managing their day-to-day operations and improve their workflows. The selected tool solves this problem by providing multiple functionalities, which provides opportunities to the sales process for time-saving and optimized planning of company resources in one platform. An illustration of the new tool's provided features is displayed in Figure 20 below:

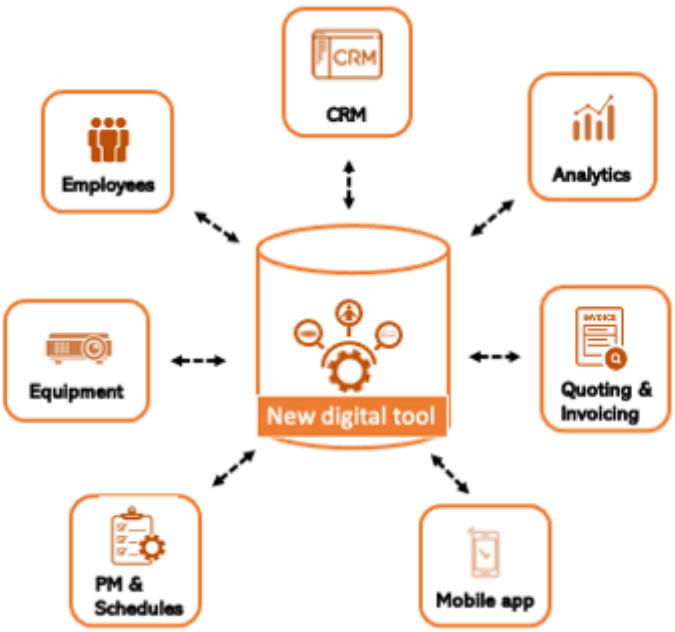

Figure 20. Features of the new tool.

As illustrated in Figure 20, the new digital tool provides multiple beneficial features for efficient resource allocation in the sales process. Not only does it allow valuable features for resource planning and management, but all the features are also interconnected with each other meaning any modifications, updates, and inputs given to one of the features is updated real-time to all features (database). The tool provides its users with project management and scheduling, equipment database and tracking (availability and shortages), employee working hours and schedules, and quoting and invoicing directly from the tool. All the described features enable the users of the tool to plan efficient and optimized utilization of available resources and their allocation in the sales process. Section 5.2.2 will describe the timesaving and optimizations of resource allocation in the sales process in more detail.

Table 9 below summarizes the key features and their impact regarding the sales process:

Table 9. New digital tool functionalities.

New digital tool functionalities			
Resource	Function	Solution	Impact
Equipment	Warehouse	Equipment database	All equipment metadata stored digitally (price, size, volume, warehouse location)
	Stock levels	Timeline	Visually track equipment stock levels and their location (packed, on location, late, returned)
	Availability	Timeline	Quick visual reference on equipment availabilities and book accordingly
	Shortages	Equipment database / Timeline	Visual warnings on shortages and option to book alternatives directly
Crew	Crew planner	Crew timeline	Manage and schedule crew
	Crew planner	Crew timeline	Automated sending of job invitations
	Crew planner	Project roles	Share files, documents and tasks directly in the platform
	Crew planner	Timeline	View available crew members and assign jobs accordingly
	Crew planner	Backend	Manage working hours, holidays and overview crew costs
Transport	Transport planner	Transport timeline	Plan transportation, vehicles, and schedules

Table 9 above shows the time-saving features and functions of the new digital tool. The tool includes multiple critical elements for resource allocation in the sales process. All the equipment data is stored in the platform's database. This allows the project managers to access equipment information and availability directly in the platform when needed. This enables the project manager to have real-time information on the equipment resources available for each individual event or sales process. Equipment resource planning and management is presented below in Figure 21:

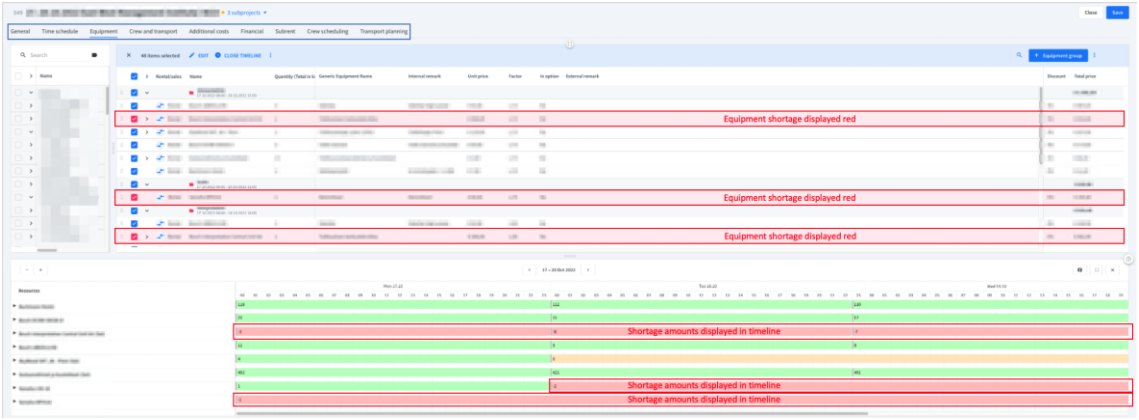

Figure 21. Equipment resource planning, management, and shortages.

As illustrated above in Figure 21, the project managers have real-time information on equipment availability in the 'Resource availability' -timeline. Moreover, Figure 21 displays a critically important feature - the shortage warning. The shortage warning highlights (shown in red) any unavailable but planned equipment for projects. This single feature alone automates one resource allocation workflow for any shortage(s) or double bookings being pursued. The importance of this feature was raised as a critical component to their perception of the tool:

> Having the tool warn the project manager of overlapping or unavailable planned equipment is a lifesaver, as it saves a lot of personal and collective time solving the issue compared to the legacy process. Effectively this feature automatically performs one process step from the previous sales process. (Respondent C)

As described by the stakeholder, this feature alone saves multiple collective hours from the stakeholders in the sales process by allowing the project manager to solely react to the shortage as it occurs in the planning phase. Furthermore, each individual equipment can be supplied with added metadata to support optimized resource allocation, such as:

- Store technical specifications and drawings for on-demand use-cases,
- Calculating the total size and volume of planned equipment needed for transportation -> Synergy with transportation planning,
- Display the equipment's warehouse location -> time-saving information for packing or reshelving equipment
- Store alternative equipment options for out-of-stock / unavailability situations

Secondly, the tool includes crew scheduling and managing functionalities. Having access to real-time information on crew schedules and availabilities enables project managers to effectively book best available crew resources for each event. Furthermore, not only the project manager is benefitted with the scheduling, but also the stakeholders:

> The crew scheduling feature allows individuals to see their assigned jobs and responsibilities in real-time and on-demand. As predetermined schedules hardly ever play out as planned, it is valuable for the individual to receive real-time updates and have the option to check their planned schedules on-demand. (Respondent E).

All the crew members have their own timelines in the tool, which visualizes their availability and vacancies for each individual event. Having all available crew resources visualized in a timeline streamlines the project manager's process of evaluating and booking crew members for each planned function in an event. In addition, all crew information may be input into the backend for managing working and resting periods, revenue and cost projections.

Thirdly, all transportation resources can be allocated through the tool, which have time-saving implications through synergies available of having the various databases connected with one another.

Fourthly, the tool creates all projects individually. Having all project digitally stored lets the stakeholders to easily search and find specific projects quickly by using search in the new tool. Having all projects in one tool in itself saves time, as all relevant and needed information (customer contact information, venue information, addresses, schedules, meeting minutes or notes) can be found included in the stored data/information of the project. The tool eliminates any need for storing information in additional databases, as everything needed for information gathering, communication and resource allocation are already present in the tool. Furthermore, each project is given a status, which informs the stakeholders in which phase of the sales process the project is in. The tool also generates documentation automatically through inputs of the project details. Effectively all information planned can be automatically transferred to various types of documentation, such as packing lists, call sheets, quotations and invoices.

The new tool introduced in this section leverages *digitized* information and *digitalization*. By design, the tool connects various sources of information given by the project managers in the sales process, which dynamically updates the whole backbone of projects' resource allocation. Operating the new tool's resource planning and management features enables the stakeholders to receive real-time and up-to-date information on resources allocated to present and future projects, which acts as the basis for optimizing resource allocation and the sales process. This foundation allows the next phase of the proposal building to start – redesigning the sales process – discussed in the following section.

5.2.2 Redesigned sales process

The current sales process of the case company has been illustrated in this thesis to have multiple weaknesses. These weaknesses were presented earlier in Section 3. As illustrated, there are multiple steps in the sales process which require iterative and time-consuming subprocesses delaying the progress of the sales process. These inconveniences consume unnecessary working hours of the stakeholders to clarify and correct these issues. For example, as it stands all documents and information are updated and stored to individual documents with no integration between systems, thus any updates made in one source will not automatically update to the other sources. This inconvenience adds unnecessary working hours for a stakeholder updating or needing necessary information.

To tackle the issue of unnecessary resource spent in the sales process a cocreation workshop was organized to redesign the sales process. In the table below (Table 10) are summarized the key findings of data 2 regarding redesign of the sales process:

Table 10. Findings and input of Data 2 relating to redesign of the sales process.

Key focus area from CSA (From Data 1)	Input from literature (CF)	Suggestions from stakeholders for the proposal, summary	Description of their suggestions (in detail)
Digital Transformation	Digitizing & Digitalization (Yoo et al., 2012; Tilson et al., 2010)	- Notes should be gathered digitally direclty into the tool - On-demand and up-to-date accessible data when needed - All information aggregated in one tool and updated throughout the tool	The stakeholders felt that inputting notes under each project in the tool was beneficial for knowing what has been discussed with the client by the PM's. This additionally allows the stakeholders to catch-up to any communication with the customers at the office or on-the-go. Furthermore, it was noted that all stakeholders can input information / opinions under each project and it is better to go overboard rather than minimize the information on each individual project.
Business Process Management	Business Process Management (Varadharajan, 2020; Reijers, 2021) Business Process Management Lifecycle model (Dumas et al., 2018, p. 23)	- All information and data need to be updated to the tool - Utilizing tasks in the tool distributes workload and resources among the shareholders - Utilization of the tools full feature-set - Updates received outside of the office can be updated to the tool - Communication on possible optimizations and overall feedback	The stakeholders stongly advocated for more information and data to the new tool. This allows each individual to select the best possible and optimized workflows for their responsibilities in the sales process. Additionally, a clear emphasize on using the 'Tasks' tool to delegate "Uncompleted" checks/steps regarding resources in the sales process. Also, the stakeholders gave input that they themselves can update the projects notes and tasks, not only the PMs. Lastly, it was discussed that all the stakeholders to report on any suggestions for improved or optimized workflows and give overall feedback on what is working and what is not to improve the sales process.
Change Management	Change Management (Murthy, 2007; Valpola, 2004)	- Stakeholders responsibility to check available information - Added focus to tasks - Project manager responsible to supply needed information - Project managers leading the change and sticking to the process - Post-event reporting	The stakeholders noted that the new tool 'obligates' themselves to be responsbile in checking all available information, and not rely only on the PMs collected information. They concurred that also they need to change their ways of working, as the tool allows them to streamline their own workflows if wanted. The PMs agreed to follow the new redesigned sales process and leading the change by example. Lastly, the stakeholders agreed to implement post-event reporting to the tool, which relieves resources from the PMs.

As may be seen in Table 10, stakeholders realized the value of the new digital tool as it brings many functions to the sales process and their daily work which were earlier non-existent. In the workshop there were many suggestions on how the sales process may be redesigned for improved resource allocation. The new digital tool and its features created lively and outside-the-box thinking during the workshop on how the company can optimize the sales process by utilizing the new digital tool.

To improve the sales process' workflows and efficient use of resources the proposal has introduced the new digital tool. For the new digital tool to fully utilize the potential of *digitized* information, the proposal needs the sales process to evolve. Thus, the redesign of the sales process will be guided by the best practices found in *Business Process Management (BPM)*. As presented earlier, BPM has the capability to support organizational changes by emphasizing the focus from managing departments to business processes (Maciel et al., 2018). Moreover, as BPM is considered a continuous

improvement endeavor, it aligns perfectly with identifying advantageous actions towards optimizing the case company's resources in the sales process.

The main theme of the organized workshop was the redesign of the sales process. By cocreating the redesign of the sales process, all stakeholders are involved in contributing and supplying input to a process affecting their daily work. Co-creation helps generate insight, better objectives, better solutions to problems and higher levels of engagement. As presented earlier in the conceptual framework, the *Business Process Management Lifecycle model* (Dumas et al., 2018, p. 23) is one of the foundations to redesigning the sales process. In the figure below (Figure 22) is shown the phases of the sales process' lifecycle:

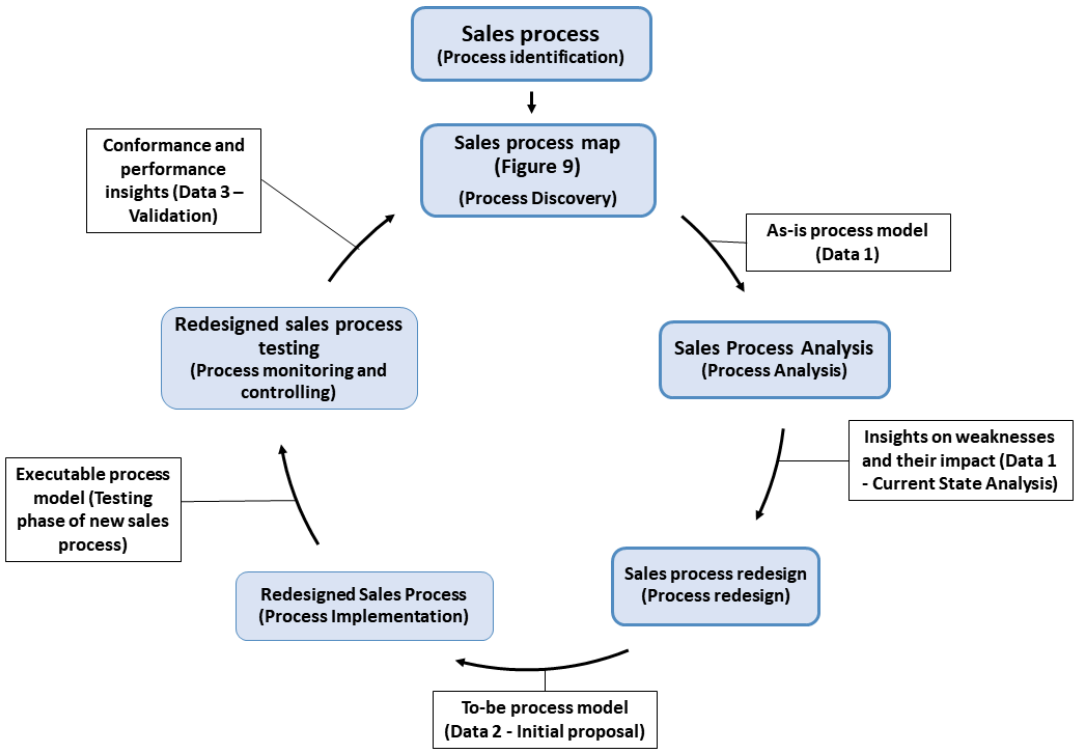

Figure 22. Sales process lifecyle.

As may be seen in the illustration above (Figure 22), the *Business Process Management lifecycle model* (Dumas et al., 2018, p. 23) has been applied to the case company's sales process as shown. The first three phases of the cycle have already been presented in the thesis, 1) *Process identification*, The objective of this thesis is to optimize resource allocation in the sales process, thus the sales process has been identified as the target, 2) *Process discovery,* the sales process' ('as-is state') current state's common

understanding has been collected through interviews (Data 1) with stakeholders of the process, and 3) *Process analysis, t*he third phase of the lifecycle has been performed in the Current State Analysis of this thesis. Furthermore, the whole sales process map has been illustrated in Figure 9.

In the fourth phase of the lifecycle, 4) *process redesign*, the information and analysis gathered from the previous phases are collected to design and model the 'to-be' state of the sales process. The workshop observed the sales processes 'as-is' process map and quickly identified that the main issue for efficient resource allocation funnels to the inefficient data and information storage practices (several unconnected databases). This inconvenience was also highlighted in the Current state analysis and Figures 11 and 12.

Understanding and utilizing the new digital tool's full feature set, the workshop identified the weaknesses of the sales process' 'as-is' state and aimed to address the inconveniences by mapping out the 'to-be' state of the sales process. Consequently, as the new digital tool required all information to be *digitized*, the new tool became the primary source for all data and information. This allows the sales process and resource allocation to be managed directly within the tool that eliminates any need for external sources of data. In essence, all information linked to resource allocation is present in the new tool, which greatly decreases time spent planning, organizing, and confirming resources for each customer's event. Moreover, the planning and management of resources synergies with other process in the sales process, such as automatically generated quotations, work orders, and packing lists based on the resources allocated – all valuable time-saving features of the new tool.

Figure 23 presents the workshop's co-created redesigned sales process:

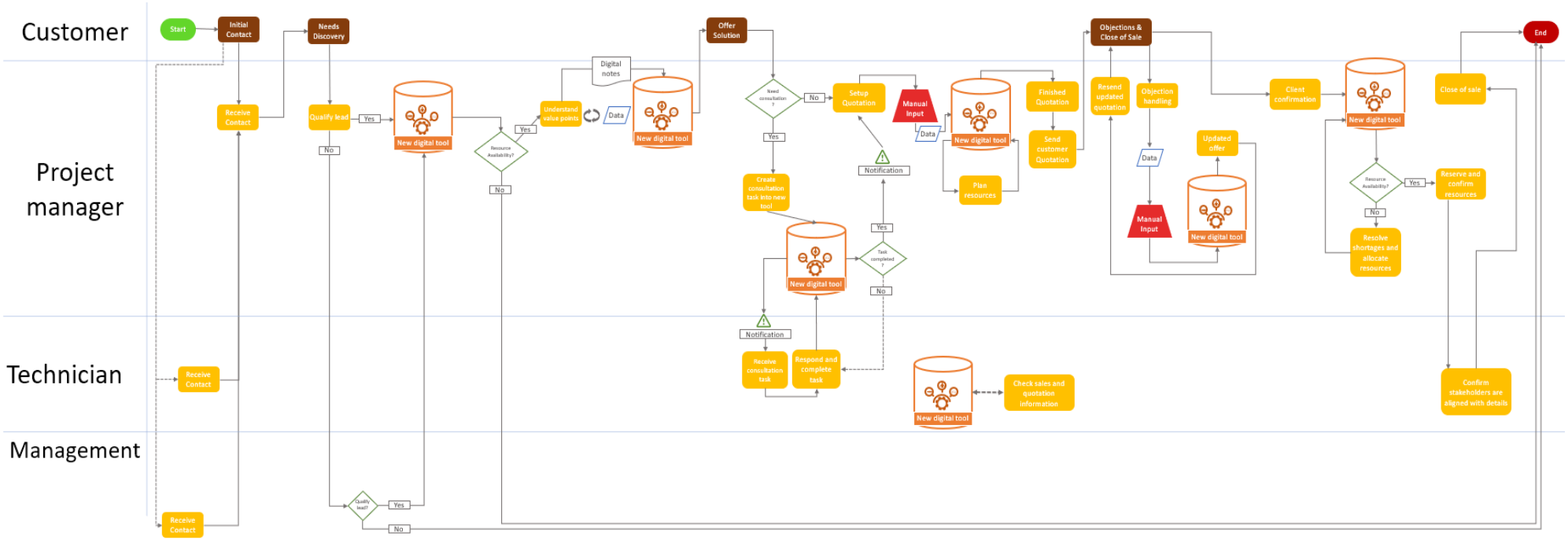

Figure 23. Full view of the redesigned ‘To-be’ sales process steps and workflows.

As may be seen in Figure 23, the redesigned sales process has multiple process steps melded into one primarily through utilization of the new digital tool. The new digital tool encloses all tools needed for processing resource allocation steps within the process, hence many workflows have been simplified. Notably the ’to-be’ sales process has eliminated all needs for accessing unconnected databases, which was the main element forcing tedious and iterative workflows for the stakeholders.

In addition, the new tool facilitates digital notes and tasks, which streamlines many resource allocation workflows between various stakeholder roles in the sales process. The workshop agreed that digital notes should be used under each individual project. These notes should be made visible to all stakeholders and include all relevant information discussed with the customers, as mentioned by one the stakeholders:

> I would much rather have too much information than minimal information. (Respondent E)

In addition, the workshop agreed that all stakeholders had the option to input information to project’s notes, which was seen as a proactive approach by all stakeholders to rather supply too much information than minimal information. Moreover, having all the information accessible in the tool it is likely to minimize human error and miscommunication.

Furthermore, allowing the stakeholders to have access to project information on-demand and on-the-go was seen as a possibility to optimize one’s resources. During the cocreation workshop a suggestion how this feature could be utilized in practice by the stakeholders was brought up:

> In my daily work I am out of the office quite a bit, which makes familiarizing myself to upcoming projects beforehand harder due not having access to information while out of office. If we had information available out of office, I could acquaint myself beforehand on any issues requiring resolving, and could optimize my resources to solving these issues for example when I am commuting to various meetings and events, which are the timeslots I am not being productive. (Respondent C)

There was also input on the use of the ‘Task’ feature of the new tool. The task feature allows any user of the tool to assign tasks for either oneself, group of people, or the entire userbase of the tool. Moreover, the tasks may be generic day-to-day operations, but they may also be assigned to individual projects in the database. The option to pin the task to individual projects was seen as an excellent feature to utilize in the redesigned sales

process by the stakeholders. The task feature is an excellent medium for storing ‘To-do’ -actions that do not require immediate attention, but should not be forgotten to complete. By assigning the task in the system, all stakeholders assigned the task can see the uncompleted task on their dashboard. In addition, the tool notifies the users if a task is about to expire, which adds an additional reminder to the user(s) to complete the task. The task tool was seen as extra source for information on projects:

> The task tool seems like an excellent medium for delivering information to stakeholders. On top of notifying the user, it is also clearly visible on the dashboard. Should this tool be utilized in an efficient manner, it allows myself to better organize and optimize my daily workflows, as it acts as an ‘To-do’ list for me, not only per each individual project, but also for future projects. This feature also allows me to send out tasks to other stakeholders if I am pressed for time to solve issues on my own. (Respondent B)

While the cocreation workshop was very productive, it also introduced some apprehension towards adopting new ways of working. The stakeholders were concerned that their workload would increase while learning the new tool and proposed redesigned sales process:

> I am concerned how much more time I will spend learning and following the new proposal. I can understand many of the proposed features, and I am ready to give it a try, but currently I feel like this will add time spent performing my daily work while I learn to operate the new tool. (Respondent D)

The element of introducing change and what barriers it might raise was highlighted in the existing literature presented in the thesis. The stakeholders can be concerned of their potentially increased workload due to change, hence it was important to address the concerns immediately during the workshop. The project managers and upper-management assured all stakeholders that the new tool and redesigned sales process were proposals. Furthermore, it was conveyed that it is evident there will be a period of learning expected getting accustomed with the new processes. However, the discussion continued to stress that this is planned to be an ongoing process, valuing all stakeholders input to improve the process, and improving the process over time. As emphasized by Reijers (2021), *BPM* is most beneficial when the process being improved includes 3 steps: 1) the *people* involved, 2) the *information* being processed and handled in the process, and 3) the *technologies* involved in executing the process.

5.3 Summary of the Initial Proposal

The logic and structure of the proposal building can be seen in Figure 24. As may be seen from Figure 24, the proposal for the plan and implementation of a tool that enables optimized resource allocation in the sales process is structured by two data collection rounds (Data 1 & Data 2), Section 3's current state analysis and identified weaknesses, and furthermore from the selected focus areas of *Digital Transformation's, Business Process Management's,* and *Change management's* literature review and best practices.

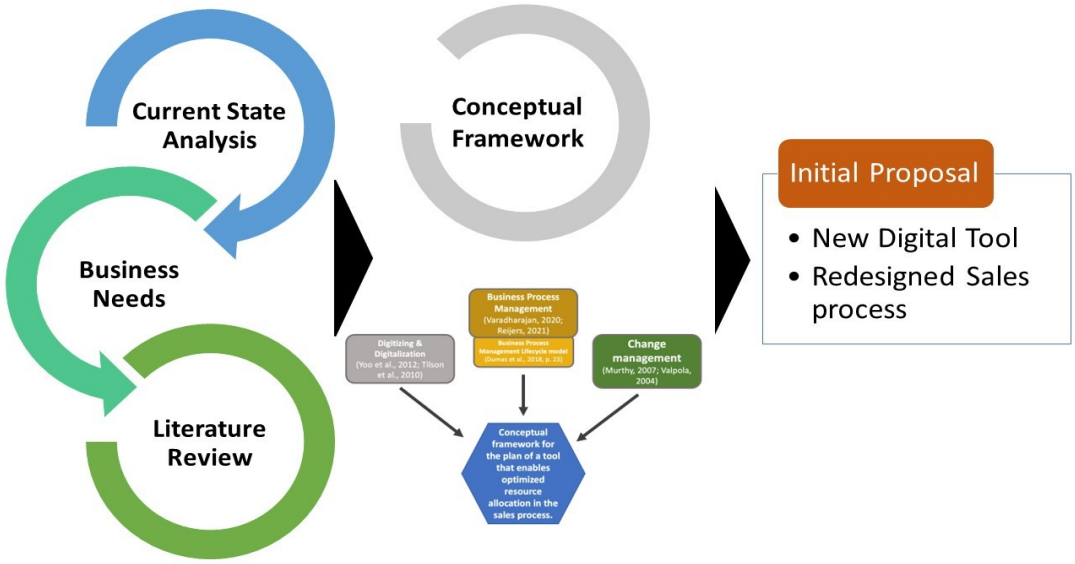

Figure 24. Logic and structure of the proposal.

As seen in Figure 24, the current state analysis brought context to understanding the business problem and the 'as-is' state of the sales process. Through understanding the weaknesses and inconveniences of the current sales process, three focus areas were identified and selected for gaining additional knowledge and best practices through existing literature. These three elements synthesized the conceptual framework, which acted as the foundation for building the proposal. By understanding the digital domains of digital transformation, it was learned that for any business to leverage *digitalization*, all data and information needed to be *digitized* to utilize the full potential of a *digitalized* tool enabling optimized resource allocation in the sales process. Moreover, to build a foundation for continued improvements and optimization of the sales process, the *Business Process Management lifecycle model* (Dumas et al., 2018) was used to

redesign the sales process powered with the new digital tool. Furthermore, existing literature on *change management* was studied to understand how change affects a company's processes and its stakeholders, and what elements are crucial in succeeding in change. As a result, the initial proposal plan for the implementation of a digital tool and redesigned sales process to fulfill the business objective was built.

Next this proposal plan was presented and launched for the stakeholders to test and evaluate the benefits. The next section describes the findings of testing the new digital tool, redesigned sales process, and validation of the proposal.

6 Validation of the Proposal

This section reports on the results of the validation stage and points to the discovered additional developments to the initial Proposal. At the end of this section, the Final proposal of the thesis is presented.

6.1 Overview of the Validation Stage

The validation of the proposal for the implementation of the tool that enables optimized resource allocation in the sales process was a cooperative task for all the key stakeholders. The aim of the validation process was to verify the reliability and utility of the proposal for day-to-day resource allocation processes in the sales process. The validation stage included three steps: Firstly, the company's resources were fully populated into the new tool's databases and the imported data was validated. Secondly, the tool's various functions were tested to ensure all needed resource allocation functionalities update dynamically and in real-time. Lastly, all the automatically generatable documentation templates (quotation, invoice, packing slips, crew call sheets in specific) were modified and confirmed to collect and display the correct data.

To ensure the proposal meets the requirements of the case company, the validation process included technical and practical testing, and key stakeholder's feedback and input. For the daily resource allocation processes to be optimized and efficient in the sales process, all the imported data of the company's resources required due diligence to verify the authenticity of the data. Furthermore, the imported data required testing to validate all dynamic and automatic functions of the new tool delivered the expected efficiency. From a practical viewpoint the legacy sales process was replaced with the redesigned sales process and daily operations were run with the new tool and redesigned sales process. Moreover, the stakeholders committed to working according to the planned proposal, which provided valuable insights, feedback, and input to the validation process.

All the testing in the validation phase was decided among the stakeholders to be launched shortly after the proposal had been presented to the company. The rationale for this proposition was to promote a fast-paced rollout of the proposal, as the initial proposal was perceived to be well thought-out and developing the proposal could be

carried out in an agile manner. Furthermore, the stakeholders preferred to learn through trial and error, as it promotes development ideas in a practical way.

6.1.1 Validation of the new digital tool

The new digital tool was validated to ensure the reliability and utility in enabling optimized resource allocation in the sales process. This process consisted of additional testing of the key functionalities of the new tool tied to elements of resource planning and management. The approach to validating the new digital tool included three steps: 1) Populate all relevant resources and data to the tool, 2) test resource allocation functionalities for utility and reliability, and 3) test, modify, and confirm the automatically generatable documents to display correct information.

As discussed earlier, the overall logic behind replacing the legacy sales process was to eliminate tedious and reiterative workflows when executing resource allocation with unintegrated databases. Thus, testing the new tools dynamic and integrated databases was logical to validate its utility as the replacement for the old system.

In the first phase of the validation all the company's resource data was fully populated into the tool's databases. During the evaluation period only a small portion of the company's resources and data was imported to the new tool. Hence to fully utilize the functionalities, all data was required to be imported to its databases. The importance of supplying the databases with verified data cannot be understated, as the tool and workflow improvements in the resource allocation processes are dependable on the provided data. Hereby notable due diligence was exercised in this phase, because having accurate data eliminates multiple inconveniences in the sales process. All the imported data was validated with the key stakeholders, which allowed the validation process to move to the next phase.

The second phase consisted of testing the newly validated data's utility and reliability in the resource allocation processes with the new tool. In essence this meant testing individual resource management and planning elements of the tool. In addition, the testing included understanding each individual elements functionalities and their interconnectedness to the whole resource allocation and sales process. To elaborate further, this stage consisted of the stakeholders gaining deepened comprehension on the logic and architecture of the new tool, which adds value to each stakeholder's ability

to firstly understand the tool and interactions of its elements, and secondly to promote opportunities for optimizing individual workflows through grasping the intricacies of the tool. Additionally, this phase introduced the stakeholders of the tool's ability to present real-time data and information. By understanding the logic of the tool, it is easier to follow why the displayed information is presented in each resource allocation and sales process step. This aspect furthermore promotes the reliability of the new tool, due to the dynamic and real-time updating of its databases, which in turn can be logically processed backwards if there are errors or information requires updating. The utility and reliability of the tool was validated once the stakeholders had familiarized themselves with the resource allocation tools and confirmed the reliability of the tool.

In the third phase of the validation the automatically generatable documents were configured. The new tool has a functionality of automatically generating specific documents from a project's resource management plan. The tool can for example generate quotations based on the inputs to a project's schedule, crew functions, equipment planned, prices, and notes written to the project. The tool collects these inputs and generates a quotation for the solution, which can be forwarded to the end-customer.

The tool has a handful of these templates preconfigured for the customer, but they need to be modified to suit the customer's needs. In specific to the validation process, the document templates were cocreated with the key stakeholders to fully meet the requirements and needs of the case company. Furthermore, the design of the templates included special focus on assuring the data generated to the templates was correct and it met the business needs of optimizing workflows regarding resource allocation in the sales process. Once the data generation for the newly configured templates was validated, the resource allocation in the sales process had been substantially optimized for efficiency.

6.2 Developments to the Proposal

The validation phase included improvements and developments to the initial proposal through documented discussions and interviews with the key stakeholders. This data collection round (Data 3) concentrated on developing the proposal further and finalizing the implementation of the tool that enables optimized resource allocation in the sales process.

As discussed earlier, the stakeholders perceived the initial proposal to be well justifiable and planned, hence the list of development ideas during the validation phase for the proposal was not extensive. However, initially there were difficulties adjusting to the new tool and redesigned sales process, which led the stakeholders to present their development ideas to both elements of the proposal.

The stakeholders had six specific addressable issues given feedback and development ideas. The stakeholders' input to the initial proposal are outlined in Table 11 below. As may be seen, the core of the suggestions revolved around the newly adopted way of working with resource allocation and information gathering in the redesigned sales process. Although the new tool and redesigned sales process were introduced and onboarded to the stakeholders, there was difficulty in internalizing the changes, which prompted the stakeholders to give feedback, input and suggest additional developments for the proposal to ease getting adjusted with the changes to their day-to-day working.

Table 11. Stakeholders' input (Data 3) to the initial proposal.

Element of the initial proposal	Parts commented in Validation	Description of the comment/feedback from stakeholders	Development to the initial proposal
New Digital Tool	Visibility of resource allocation elements	Inability to view full details of customer project's	Upgraded subscriptions for all stakeholders to view all details of customer projects.
	The tool's calendar unreadable	Difficulty in reading/understanding the tool's integrated calendar/scheduling	Configured preset templates for optimized calendar view in the tool.
	Packing lists	Stakeholders had trouble difficulty knowing what resources and what schedules are planned for each project.	Introduced where packing lists may be generated from and how it collects information to the document.
Redesigned sales process	Workflows within sales process	Stakeholders had difficulty internalizing the redesign sales process, which cumulatively added working hours to the stakeholders. No external documentation was available.	A digital copy of the redesigned sales process and its workflows was sent to stakeholders as a resource. Additional onboarding was organized to strenghten the proposal.
	Status reports	The redesigned sales process introduced new ways of reporting for optimized workflows in the sales process. These reports were not being produced.	Highlighted the importance of adopting the new sales process' status reports as part of optimizing stakeholders' workflows.
	Key information missing	Stakeholders reported that key information was lacking or missing from generated documents.	Investigated and modified automatically generated templates to collect relevant data from correct sources and display the information on generated documents.

Firstly, the initial subscription model of the tool allowed only two moderators in the tool, whom had full access to all features. This was seen as an inconvenience to stakeholders with limited access, as their access to information was presented as need to know basis, and all information limited from their access required additional communication with the two moderators. This process does not promote optimized workflows. Thus, the

development was to upgrade all stakeholders with moderator rights to access all given information and for promoting optimizable workflows.

Secondly, the tool's built-in default calendar view was messy and hard to read. Having the calendar hard to read inconveniently made resource planning harder than the legacy system, thus it was suggested that additional development to the built-in calendar was required. Research in to filters and presets of the tool's calendar opened added functionality and customizability to the layout, which could be saved as a custom preset for all stakeholders use. The result was a minimalistic view of assigned crew functions as a GANTT -chart, allowing for quick glancing of resources and possibility to reorganize resources efficiently if needed.

Thirdly, the stakeholders had trouble accustoming to the single database of the tool. In the legacy system, packing lists and project information were collectable from multiple databases. The development idea presented by the stakeholders was to explore if there was a way of generating printable packing lists and project information from the tool. Stakeholders had not internalized that the tool had an option for this through automatically generatable packing list and project information documents. To resolve the misunderstanding, the stakeholders were guided on where they can generate the relevant documents from and where the generated document's information is gathered from.

Fourthly, while it was recognized the proposal was well founded and the redesigned sales process had been collaboratively built, there were difficulties in accustoming to the proposal, because no supportive documentation was made available. To solve this issue, a digital copy of the redesigned sales process and its workflows was distributed to stakeholders and one printout was made visible at the office.

Fifthly, the goal of the proposal was to optimize workflows of resource allocation in sales process. To achieve this goal, the sales process workflows require regular status updates within the new tool. The tool's internal notification functionality allows the responsible stakeholder (in that process step) to receive real-time updated information on progress of sales process steps. Updates received in real-time introduce time-saving workflows to the sales process, thus it is important to adhere to updating specific process statuses, as it greatly influences optimized workflows for all stakeholders. It was noted that these status updates were not regularly been produced, which decreased work

efficiency. The input to address the issue was to highlight the importance of updating statuses, as it cumulatively could add unnecessary resources spent among all stakeholders.

Sixthly, stakeholders reported that key information was missing from specific documents. This issue was investigated and pinpointed to stem from the document templates setup on where the information to the documents is generated from. The inconvenience was resolved by modifying the data gathering path to the tool's generatable documents and updating the template accordingly.

Lastly, the stakeholders noted that additional development ideas will likely emerge during day-to-day activities, as the development ideas above had been uncovered while working with the new tool and redesigned sales proposal. Furthermore, the stakeholders noted that the new tool allows for any additional development ideas to be agilely advanced later together as a team. Overall, the stakeholders were positive on the project managers' and upper-management's quickness and agility in addressing their development ideas already to the proposal.

After discussing the developments to the Initial proposal and addressing the raised issues, this section ends with the Final proposal presented in one overview.

6.3 Final Proposal

The final proposal for the implementation of a tool that enables optimized resource allocation in the sales process has been presented in Section 5 and the validation process has been discussed in this section. As discussed, minor adjustments and modifications to the proposal were implemented during the validation phase of the proposal, but overall the proposal was well received among the stakeholders and no major rethinking or designing to the proposal were needed.

The final proposal's plan was carried out and implemented after the validation process' minor developments had been finished. The implementation for the tool that enables optimized resource allocation in the sales process delivered the outcome the case company needed and is considered a success by the stakeholders.

7 Conclusion

In this section the business challenge and proposal development are tied to together and summarized. Moreover, this section includes the thesis evaluation and evaluation of research quality.

7.1 Executive Summary

The case company of this thesis is a small Finnish audiovisual equipment provider that, for the past 40 years, has offered primarily the domestic market with conference, meeting and interpretation equipment rental, production, and planning services. For an audiovisual company to succeed in its day-to-day operations, it is essential to manage the business' resources as effectively as possible to ensure the business operates effectively and customers receive the best possible value. As it stands, the case company utilizes unconnected tools and databases (analog and digital) for its resource management and planning processes, which introduces tedious and time-consuming workflows in its sales process due to the tools and databases not being in sync with each other. To address this issue the thesis focuses on the case company's digital transformation in resource management and planning in the sales process. The objective of the thesis is the implementation of a tool that enables optimized resource allocation in the sales process.

The thesis started with analyzing the current state of the sales process. The goal of analyzing the current state of resource allocation in the sales process was to gain insight into the strengths and weaknesses of the current process in place. The research method utilized for gaining insight was qualitative face-to-face interviews of stakeholders, participant observations and internal documentation reviews. The outcome of the analysis of the current state produced valuable input to the strengths and weaknesses in the current sales process. In addition, the current sales process was visualized in a process map, and stakeholder interdependencies were identified. Moreover, by producing the sales process map, critical insights on inconveniences in the current sales process' workflows were pinpointed and how they affect resource allocation efficiency in the sales process. The current state analysis revealed issues regarding three main summarized themes: information loss and accessibility, lack of database synergy and stakeholders' interests to adopt new procedures. The thesis tackled these issues by

investigating existing knowledge and collecting best practices to offer a solution to the issues recognized in the current state analysis in the next stage.

The inputs used to achieve the thesis objective were collected during three (3) data collection rounds (Data 1-3). The first round of data (Data 1) was collected by interviewing stakeholders in the company, reviewing internal documentation of the existing sales process, and through participant observations. The inputs of Data 1 recognized that the existing sales process workflows rely on unconnected databases, stakeholder's memory, and moreover any unintentional mistakes in the process require reiterative and tedious workflows to remedy the issue. The second round of data (Data 2) consisted of collecting information by evaluating and testing multiple various options as the new digital tool for resource allocation, selecting the best fitting option for the proposal, and organizing a workshop with key stakeholders to cocreate a redesigned sales process. The purpose of Data 2 was to ensure all stakeholder feedback and input were gathered. Moreover, Data 2 consisted of all the stakeholder's participation in cocreating the redesigned sales process and participation in the proposal building. Third round of data (Data 3) was collected to gain additional information on the proposal and to validate the proposal. The aim of the validation stage was to verify the reliability and utility of the proposal for day-to-day resource allocation processes in the sales process. To ensure the proposal meets the requirements of the case company, the validation process included an additional round of data collection (Data 3), which consisted of stakeholder's technical and practical testing, and direct feedback and input on their practical experiences.

The outcome of the thesis is the implementation of a tool that enables optimized resource allocation in the sales process. The key elements included in the proposal are to ensure digital information is available to apply opportunities in *digitalization* for resource allocation optimizations in the sales process, to apply Dumas et al.'s (2018, p. 23) *business process management* lifecycle model (Figure 15) to add value to the current sales process, and *change management* best practices in understanding the impacts and drivers of elements for successful change. The outcome addresses the case company's problem, which is unoptimized and complicated workflows in allocating resources in the sales process. To solve the issue, the current sales process was transformed with a new digital tool enabling information to be digitally connected and retrieved – allowing enhanced optimizations in resource allocation for all stakeholders connected to the sales process.

The proposal for the plan and implementation of a tool enabling optimized resource allocation in the sales process was built based on two data collection rounds (Data 1-2), the results of the current state analysis, the business problem and addressable need, and existing knowledge and best practices suggested by literature. The two main components of the proposal were the new digital tool and the redesigned sales process. First, the new digital tool selected was a digital resource management and planning software that helps companies to manage their day-to-day operations and improve their process' workflows. The selected tool solved this problem by providing multiple functionalities to the sales process enabling optimized planning of the case company's resources in one platform. Effectively the tool allowed resource allocation workflows to interconnect with each other enabling any modifications, updates, and inputs to simultaneously update real-time to all databases. Second, the existing sales process was replaced with a redesigned sales process. To fully leverage the new digital tool's ability to enable optimization in resource allocation, the sales process needed to evolve. Thus, the redesign of the sales process was strongly guided by best practices found on *digitizing, digitalization,* and *Business Process Management*. As a result, the proposal for the plan and implementation of a tool that enables optimized resource allocation in the sales process to fulfill the business objective was built.

To verify the applicability of the proposal, an additional phase of validation was included to secure the reliability and utility of the proposal. The validation phase was done agilely, as the proposal was hard launched for practical testing after completion. The validation stage included three steps: 1) populate and validate the company's resources data and information to the new tool, 2) validate the tool's functions to perform as expected, and 3) validate automatically created documentation from the tool. Additional development input and feedback was received from stakeholders during validation, and all the developments were addressed prior to the final proposal.

As a conclusion, a clear plan and implementation of a tool that enables optimized resource allocation in the sales process was required to transform an analog sales process into a fully digital purpose-built digital sales process. The plan and implementation of the tool enables the organization to optimize its resources efficiently and allows stakeholders to rely on updated and real-time information. After the implementation of the plan, the case company has leveraged the ability to optimize resource allocation through digital information.

7.2 Thesis Evaluation

The objective of the thesis was to implement a tool that enabled optimized resource allocation in the sales process for the case company. The outcome of the thesis was the implementation of a tool that enables optimized resource allocation in the sales process. The objective and the outcome of the thesis were met, thus it can be concluded that the outcome is the result of the objective of the thesis.

The research design of this thesis was reiterated a few times, as there was minor uncertainty in assessing the direction of the thesis objective. While the objective was all along to plan the deployment of a tool that enables optimized resource allocation in the sales process, the implementation of the tool was uncertain. The objective for the thesis stuck to only being a plan (and possible implementation) until midway of conceptualizing the framework. During the building of the conceptualized framework the case company had identified the benefits of transforming its resource allocation and sales processes from analog to digital format, which adjusted the objective from only a plan (and possible implementation) to the final form of implementation of a tool that enables optimized resource allocation in the sales process. Thankfully the current state analysis and the selected focus areas for research of existing knowledge and best practices held up without needing major adjustments.

While the thesis objective can be deemed a success, there was one notable limitation to the analysis and results of the thesis.

The current state analysis and initial proposal of the thesis do not include any hard measurable numerical data. Hence the analysis, proposal and results of the thesis are strictly based on qualitative information. The thesis author requested the thesis sponsor to allow access to the company's financials and stakeholders realized working hours to analyze the existing sales processes' ('as-is' process) tedious workflows against the redesigned sales process' ('To-be' process) workflows. With access, the thesis and analysis performed would have had an additional quantitative dimension to include concrete and measurable numerical data on realized improvements to resource allocation in the sales process, but unfortunately access was denied from the author and hereby the thesis is lacking any numerical metrics for comparing the 'as-is' and 'to-be' sales processes. Thus, the thesis has not presented and concluded any hard numerical KPI's or improvements of the 'to-be' sales process compared to the 'as-is' sales process.

When conducting scientific research, research quality needs to be assessed to ensure that the findings are accurate and that the research is credible (Kananen, 2013, p. 176). In qualitative research, interpretation is not as easy as in quantitative research because the research method is designed to be more centered around people. This quality plan considers credibility, transferability, and reliability (Kananen, 2013, pp. 188-189). The basis for the evaluation criteria of the thesis' research quality is described in the following sections.

7.2.1 Credibility

Careful attention to the analysis of the data and proper documentation can increase the credibility of the study. Analysis and documentation need to be timely and acknowledge all phases of the study and all study-related activities. The more complete the analytical and factual data available, the more credible it is (Kananen, 2013, pp. 188-189). Saunders, Lewis, & Thornhill (2019, p. 206) continue to agree that techniques such as reviewing the data with study participants and utilizing reflections with various people enhance the credibility of the study.

The thesis' credibility was established through three distinct elements. First, all analysis and documentation presented in the thesis are based on data collected. Second, the collected data and improvement propositions were presented, revised, and evaluated with all the stakeholders in each stage. Third, the stakeholders of the thesis are employees in the case company and can be considered experts in regards to the practicality of the thesis objective, and moreover their direct input and participation in the development has tangible effects on their, and the company's, day-to-day operations through supporting this research.

7.2.2 Transferability

Transferability of research refers to how research findings, methods and approaches can be applied in similar settings (Kananen, 2013, pp. 190-191). The study's portability provides other researchers with an accurate starting point. However, qualitative research is flexible, thus the transferability of its results is limited (Kananen, 2013, p. 192).

This study noted the transferability by offering an in-depth description of the research process in terms of interview questions, mapping the sales process in detail, and documenting the results with the high-level of detail. Moreover, from a technical viewpoint, the study is not strictly detail oriented. The thesis is detailed enough to be informative, but careful consideration on not using industry specific technical terminology was conducted to ensure the thesis' transferability to other industries and research. The key concepts of the study have been appropriately described and a specific holistic approach ensures that the study design can be used for similar developmental initiatives.

7.2.3 Dependability

The studies dependability was ensured. As dependability can also be described as reliability, utilizing high-level of reliability can thus be seen as a high-quality criterion for the study's dependability (Saunders et al., 2016 p. 206). Thus, dependability of the study stands for the consistency of the result and consequently the results of the research may be replicated with identical results (Kananen, 2013 p. 189).

In this thesis, reliability was supported through the consistency and transparency of the data collection process. The interviews were designed as an open structure to attain direct and honest data to the research, which were later summarized as the inputs to the proposals of the thesis. Moreover, the dependability of the data collected was additionally reinforced in the cocreation workshops, where stakeholders had the ability to collectively receive each stages feedback and development propositions. Moreover, as the thesis does not introduce any hard numerical data, all presented results and conclusions are transparent and honest realizations of facts and data collected.

7.3 Closing Words

The implemented solution enables the case company's sales process to have the ability to optimize its resource allocation. In short, the company's resources can be utilized more efficiently, which saves time, resources, and money not only to the case company, but also its stakeholders and customers. Furthermore, the approach presented in this thesis builds a foundation for future improvements through business process management and outlines a general procedure for conducting additional implementation initiatives aiming to develop business operations and processes further. In essence, the

thesis improves the case company's digital readiness and matureness, ultimately enabling new opportunities for scaling the business and introducing opportunities in leveraging digitalization to create value to the business and its customers.

This thesis has supplied valuable understanding and expertise on modern digital tools, possibilities of leveraging digitalization, and its potential to transform and optimize business processes to gain value. Furthermore, the thesis has taught the case company about how digital tools can enhance internal and external processes, and why replacing legacy systems with modern digital tools should be encouraged moving forward. In the end, this thesis provides the case company with an excellent starting point for developing more digitalization powered solutions to evolve the business now and in the future.

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Interview questions

DATA COLLECTION 1

1. How does the current sales process work in your opinion?

2. What information do you need to implement an event and where do you collect the information from?

3. What effect on your efficient working hours does it have, that you have all the required information available to you regarding an event's production?

4. How often have there been gaps in project information and you have had to do extra work to figure out the information you needed? How do these gaps affect your working hours?

5. What measures and tools would you use if there were gaps in the data?

6. How do you get information if you are not at the warehouse or office?

7. In what areas do you think there is room for improvement in the sales process?

8. In what areas could your work be streamlined in terms of optimizing the sales process?

Interview Answers

DATA COLLECTION 1 – Respondents A-E

Respondent A

How does the current sales process work in your opinion?

It varies. The needs of the equipment are clear, the location, the customer contact and the contact information of the venue are often uncompleted.

What information do you need to implement an event and where do you collect the information from?

Equipment list, customer information and venue address and contact information, event scheduling. It would be desirable for all of these are present in the offer, but if not, with the help of colleagues, digging into emails, calling the customer.

What effect on your efficient working hours does it have, that you have all the required information available to you regarding an event's production?

Extremely large. In addition, extra stress and uncertainty are eliminated.

How often have there been gaps in project information and you have had to do extra work to figure out the information you needed? How do these gaps affect your working hours?

On average, almost every other time. They have a significant increasing effect on working time, and on well-being at work and meaningfulness and endurance through it as well.

What measures and tools would you use if there were gaps in the data?

Chats with colleagues, for example, contact information about the gig venue via google, phone calls about installation times, etc.

How do you get information if you are not at the warehouse or office?
Google, email, and calling colleagues. All information is scatted in different sources.

In what areas do you think there is room for improvement in the sales process?
The details of the venue and the contact person should always be found, the time of installation where preferably also flexibility, the schedules of the event. There could also be more information for technicians directly to e-mail, eg just scheduling / running.

In what areas could your work be streamlined in terms of optimizing the sales process?
I cannot think of anything.

Respondent B

How does the current sales process work in your opinion?

The sales process is quite complex. On the other hand, it produces the desired type of documentation, such as quotations and invoices, also for archiving purposes. The process does not support the sharing, aggregation, further use, analysis or use of information in the control and processing of operations.

What information do you need to implement an event and where do you collect the information from?
The information required is customer information, venue information, information about the equipment offered and schedules. Event schedule information is often obtained and agreed directly with the customer or venue (e.g., installation times, etc.). This information can be obtained from emails and their attachments, the paper binder, or the Google Sheets calendar. So this is from a technician's perspective.

What effect on your efficient working hours does it have, that you have all the required information available to you regarding an event's production?
Aggregated data would certainly speed up the process when everyone has access to the information they need.

How often have there been gaps in project information and you have had to do extra work to figure out the information you needed? How do these gaps affect your working hours?
There are regular shortcomings in the project information, but this is partly due to the nature of the activity or the fact that the information has not been recorded in the quotation. At worst, they can confuse schedules, cause delays, overtime compensations, and credits to customers when scheduling shifts and updating your calendar based on data. Ad hoc responses to these issues may seem cumbersome. Of course, there are also errors.

What measures and tools would you use if there were gaps in the data?
Information is dug up from colleagues, emails, the calendar, and even directly from the customer, depending on how accurately things are recorded in the quotation. The data itself is not stored in the systems, so the careful operation of the project managers already has a big impact on the success of the project.

How do you get information if you are not at the warehouse or office?
Usually by asking or going through the sources listed above. In this situation, the quotations have also been accessed remotely or via OneDrive via a common mailbox.

In what areas do you think there is room for improvement in the sales process?
The biggest thing is the “loss” of information after the project. It remains in a form from which it is difficult to further process or use, for example, customer relationship management and aftermarket. In addition, the information is not included for the use of the organization, for example, information about the ready-to-use arrangements of the venues or the previous solutions offered. Or you can go through old offers, but retrieving information is not entirely reliable.

Another big thing is product and inventory management, there should be an up-to-date inventory in production: in a hurry, this can come as a surprise when there are not enough products in stock.

In what areas could your work be streamlined in terms of optimizing the sales process?
At the very least, streamlining the preparation of tenders would be facilitated by the fact that old events, customer data and venue information could be found quickly and used as a basis. The system should support the company's financial management as a whole and also facilitate the preparation of documents for invoicing and accounting.

Respondent C

How does the current sales process work in your opinion?
Quite functional, but a little in the past. You have to search for information in many places. The plus is the ease of perceiving the work situation in the near future quickly.

What information do you need to implement an event and where do you collect the information from?
Information is collected from the map, the Internet, by calling the subscriber, old offers and from one's / colleagues' memories.

What effect on your efficient working hours does it have, that you have all the required information available to you regarding an event's production?
a vital condition for the meeting with its installations and traction to run smoothly

How often have there been gaps in project information and you have had to do extra work to figure out the information you needed? How do these gaps affect your working hours?
Sometimes, but often events / meetings are already familiar so you remember what was needed last time. Deficiencies slow down your own work and prolong your working day

What measures and tools would you use if there were gaps in the data?
Old offers, email, online, co-workers, bidder. It is best to find the missing information usually by email and possibly by calling the customer

How do you get information if you are not at the warehouse or office?
The customer's e-mails, by calling the customer / venue and contacting the bidder / office. From many places in the worst case

In what areas do you think there is room for improvement in the sales process?
Gather all the information in one place. It also often happens that in your spare time you may be thinking about what's going to happen next week. In that case, it would be good to be able to check things online from home. It would be easier to plan your own life if you could see what the work situation looks like in 2 months.

In what areas could your work be streamlined in terms of optimizing the sales process?

For me as a technician, the most important thing is that all the information related to the event is easily accessible and correct. Also that the information can be found somewhere easily when not in the office next to the paper binder.

Respondent D

How does the current sales process work in your opinion?
On a scale of 1-10 a 7

What information do you need to implement an event and where do you collect the information from?
Necessary equipment, contact information, transport connections, timetables, etc. E-mail, handset and contacts of partners on-site will help ... a note made for the customer is for guidance only.

What effect on your efficient working hours does it have, that you have all the required information available to you regarding an event's production?
Of course it affects. But sales must also be on the map of what is needed to run a project smoothly.

How often have there been gaps in project information and you have had to do extra work to figure out the information you needed? How do these gaps affect your working hours?
There have often been shortcomings in the inventory list, contact information, etc. It takes time to determine the customer's actual need for equipment. My own experience helped here too. The situation has recently improved.

What measures and tools would you use if there were gaps in the data?
Email, phone. Nowadays, it's harder when you don't see all the email conversation.

How do you get information if you are not at the warehouse or office?
PC and phone.

In what areas do you think there is room for improvement in the sales process?
Do not have an answer, I do not do these anymore.

In what areas could your work be streamlined in terms of optimizing the sales process?
Currently I am happy how things work.

Respondent E

How does the current sales process work in your opinion?
I think the sales process works well on a case-by-case basis, but the challenges it brings in data collection and data updates regarding the execution of an event can affect its outcome.

What information do you need to implement an event and where do you collect the information from?

In order to carry out the event, a clear picture of the technology of the event and the number of pieces of equipment required is required. Information related to the location of the event is also important. I collect information about the offer, the calendar, and possibly through sales from the customer.

What effect on your efficient working hours does it have, that you have all the required information available to you regarding an event's production?
This has a really big impact, because the installation based on the sold technology without any changes directly affects the installation time and thus often the length of the day. In addition, the technical production of the event and its customization from the technician's point of view becomes easier.

How often have there been gaps in project information and you have had to do extra work to figure out the information you needed? How do these gaps affect your working hours?
There have been some shortcomings in the project data at fairly regular intervals. Deficiencies in data affect work efficiency and may take longer than expected. Awareness of the use of time reduces the formation of error estimates.

What measures and tools would you use if there were gaps in the data?
I am in contact by telephone or other means of communication between sales and the customer. Direct action, ie adding or modifying technology, is usually done in the most sensible way possible without taking too much time.

How do you get information if you are not at the warehouse or office?
I am in contact with sales or directly with the customer.

In what areas do you think there is room for improvement in the sales process?
In my opinion, it is the importance of the technical information of the events / venues and the customer's correct contact information that is emphasized when starting the gig for the performance. Their development increases fluidity and facilitates logistics and event construction.

In what areas could your work be streamlined in terms of optimizing the sales process?
Optimizing the sales process would potentially increase efficiency in gig packaging, and the perception of technical production for that gig performance would increase the certainty of creating a good overall result.