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Improving Application Support Process in Consultative Sales

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Like in any big project, the amount of work initially seems overwhelming. When given the correct tools and a gentle push once in a while, one can achieve great things. Looking back, I can take true pride in my endeavour. This thesis work has taught me research skills, argumentation, persistence, sociability, and a whole deal of process theory.

It has been a privilege to improve my own work as an application support engineer. Re-joining a company and immediately given such possibilities and responsibilities has felt extremely empowering. For this opportunity, I would like to thank Mr. Jukka Merisalo, HOS. I am thankful to the whole Festo Oy sales organization for effortless cooperation during this thesis work. For us, the project continues!

I would like to give my gratitude to Dr. Thomas Rohweder for providing me with insightful instructing during my thesis work. His professionalism and positive attitude are truly inspiring. I would also like to thank Mrs. Sonja Holappa, M.A. for giving guidance in writing. The whole faculty of Industrial Management department in Metropolia University of Applied Sciences has been very supportive throughout this whole project. Finally, I owe thanks to my peer students for creating an enthusiastic atmosphere in classes. Without you, this journey would not have been as pleasant.

Special thanks to Iiris for patience, and Frank for taking me outside for fresh air. The late nights spent in laptop glow are over, for now.

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The objective of this thesis was to enhance the consultative approach of the case company technical sales in the electric automation business unit by proposing an improved application support process. The research utilized an applied action research method, comprising of four stages: current state analysis, creation of a conceptual framework according to relevant literature, building an initial proposal, and finally validating the proposal. The mainly qualitative data gathered for this research consisted of interviews with key stakeholders, company documentation, group discussions and workshops.

In the current state analysis stage, it was realized that the application support was effectively a separable process in line with a sales process, with a desired focus on key account management needs. Discovered areas of improvement included an unclear workflow and desired characteristics of activities, misalignment of sales strategy with the support process, insufficient addressing of key account management needs, and unclear organizational roles, tasks and goals. From these premises, subjects were selected to be explored in relevant literature.

Findings in relevant literature addressed the importance of a process view in an organization for effective process management. Process improvement elements of strategic alignment, managerial support, problem resolution and a structural framework were suggested. Facilitating key account management was found critical in providing customer value and avoiding conflicts within the organization. Standardizing knowledge work and defining a support structure were suggested for enabling increased throughput in support processes.

The proposed improved application support process would address sales support needs in identification by coaching, selecting a suitable support structure according to accounts, utilizing standardized tools for knowledge creation during value-adding activities, and implementing a customer knowledge management approach in account development activities.

Consultative sales approach is the desired style in the case company business-to-business automation components sales. While being widely utilized in a competitive market, it is crucial to be effective in it. As technology and projects can be complex, application support can provide value to the customers in utilizing the offered products. When implemented, the improved application support process would increase the sales process throughput with clear activities, roles and standardized knowledge creation, while enabling further improvement. This would have a direct effect in sales performance.

Keywords	Process improvement, business-to-business sales, application support, key account management, knowledge work

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1 Introduction

In automation business, one of the greatest challenges is to efficiently communicate the core idea of an automation concept to a customer, and to make a product or service fit the customer needs in order to create customer value and make a deal. It is beneficial for automation companies to be integrally involved in their customers automation development in order to stay in touch with the latest trends and needs in automation across industries. Moreover, being technically credible in the eyes of the customer is vital for an automation company image. Because of these demands, automation companies sell their concepts in a consultative manner with a requirement of a strong technical knowledge in their sales front offices.

In the case company Festo there is a continuous need for the sales to keep up with new customer needs and new technical applications. This requires teams of professionals with both business knowledge and technical skills in working towards successful sales projects.

1.1 Business Context

An automation solution provider, such as the case company Festo, having a broad variety of products and an automation concept, initially benefits from increased amount of business opportunities with individual products in new customer interactions. Moving forward, these products can be built into complete systems by utilizing the automation concept and industrial standards. This enhances automation systems synergy by increasing the level of integration with products that easily fit into each other and contributes to more profitable business of both the customer and the automation company with a one-stop-shop approach. With benefits of variety in products including an automation concept and increasing needs from users, automation business in general has developed into a market of companies providing full automation platforms with integrated solutions from field level sensors and actuators up until gathering of data in the Internet of Things and cloud services. Additionally, customer automation systems usually include products from many different vendors. These factors contribute to a requirement of knowledge in industrial automation concepts, multivendor integration, applying standards and co-operating with other automation companies considered as competitors.

Every potential customer in an industrial market is different even inside industry segments. Therefore, an automation company must individually collaborate with every customer. However, for big global automation corporations this is not simply given. Sales companies spread around the world may not usually have the latest and best knowledge in products and solutions of the company but have a good insight to the local market. Respectively, a global product marketing management team may not have direct channels to communicate with all the potential customers. In order to make efficient business, an efficient flow of information from is required product development to the customer – moreover, an understanding of the customers' business and technology is critical.

1.2 Business Challenge, Objective and Outcome

The case company's business challenge is to find the best ways to utilize technical application support engineers in their sales organization and consultative sales.

The combination of customer and company products complexity have created a need for the automation companies to employ high skill technical application support engineers to work close to the customers as members of the sales teams. These application support engineers must have good connections both to corporate product management and customers. The case company Festo has a very solid technical support organization and have created processes to scale knowledge base in their business areas. However, a process of utilizing technical application engineer assets in the pre-sales phase especially within a specific product group seemed to need clarification and coordination. This product group of electric automation is usually in the very core of the customer automation system having special needs for technical support.

The sales engineers felt like they could use more technical support, knowledge and confidence especially in their first projects within this specific product group. On the other hand, also the customers require direct contacts to technical assets with established application knowledge - especially in the pre-sales phase which is an important stage in the sales process including marketing, consulting and training at both customers and the sales company.

The objective of this thesis was to propose improvements to the current sales process in its consultative approach by an increased contribution and effective utilization of technical application support, especially in the electric automation product group.

Respectively, the outcome of this thesis is a proposal for an improved application support process in consultative sales.

1.3 Thesis Outline

The scope of this thesis is the sales process and the application support process in the electric automation product group in the case company. Other aspects in the sales process and the company organization are discussed only when directly connected to the thesis objective. It presumes keeping the current organization in place, giving recommendations on actions for improving processes with existing resources.

The thesis work was conducted by utilizing an applied action research approach. The research information was collected by interviews of relevant stakeholders, extracting data from the case company customer relationship management system and investigating company documentation on sales, processes and strategy. Based on best practices found in existing literature, a proposal for improvements was proposed to the selected focus areas in the sales and application support processes.

The thesis is written in seven sections. Section 1 introduces the thesis subject and the business context. Section 2 describes the research method and design. In section 3, the current sales process and relevant information is presented. Section 4 establishes the process improvement methods based on literature, followed by a proposal developed for sales process improvement in section 5. The proposal is validated through suggestions of key stakeholders in section 6. The results and conclusions are discussed in section 7.

2 Method and Material

In this section, the research methods and materials are introduced. The research approach is described in subsection 2.1. The research design is presented in subsection 2.2, followed by the data plan in subsection 2.3.

2.1 Research Approach

The research approach for this thesis is Applied Action Research (Kananen, 2013:42). This applied research approach concentrates on producing practical and functional solutions by combining elements of both development and research in a limited cyclic process. Considering the project scheduling and the overall nature of this thesis, it was found that this approach was the most suitable. The main factors affecting this decision included the possibilities provided by this particular research approach structure, and the nature of the research problem with the desired outcome. On the other hand, limitations in possible improvement iterations within the project timeline ruled out some alternative approaches, such as utilizing an action research with multiple iteration rounds.

In consideration of the research approach it was concluded that traditional research approaches, concentrating on either expanding general knowledge or understanding of a process and resulting in universal principles in relation to the process, were less suitable for finding understanding and producing improvements for this specific business problem. According to Saunders et al. (2009:9), basic research approaches give relatively little attention to practical applications. As the objective of this thesis was to create understanding and improve a specific business problem on a narrow scope, the most suitable approach was the applied research approach. This research approach objective would have immediate relevance to company management, would address issues that are considered the most relevant and would produce concrete actions for improvements.

An action research approach combines development and research. It utilizes methodologies according to situations or objectives for development and is designed to be conducted in organizations to improve operations. These operations could be subjects to continuous development within the organizations. Essentially, the purpose of an action research is to change the existing practices by means of research with the researcher

being an active actor within the research object (Kananen, 2013:29). Documenting a predefined development process using scientific research methods and creating new general knowledge subjects the development process for research work. In the action research approach, multiple research methods could be employed. Action research is a cyclic improvement routine (Kananen, 2013:42). For time limitations, this thesis utilizes an applied action research with iteration rounds not included.

When selecting the most suitable research methods, it was crucial to select methods that would extract in-depth information from the current process in order to effectively produce findings and furthermore improvements to the process. The phenomenon affecting the current process were initially unknown and there were limited pools of information. It was concluded that qualitative research methods should primarily be used. Qualitative research methods provide information and understanding on unknown phenomenon in the process and provide more in-depth view on a phenomenon. Qualitative methods can on the other hand present information biased by the researcher and moreover generalization could be suffering from the in-depth information extracted from a narrow source. As the objective of this work was to create a specific solution for a business process, the need for generalization and objectivity were less of a factor since they would have little relevance to the utilization of the research outcome.

The effectiveness of the thesis outcomes could on the other hand be measured with quantitative methods to verify the known phenomenon. This methodology would provide more generalized and objective information, which are emphasized in quantitative approaches, regarding the effects of the qualitative research methods and their respective outcomes.

2.2 Research Design

This subsection describes the research design by steps. The research design is shown in figure 1, the steps including their respective actions, output and related data input.

The data 1, including interviews of stakeholders and findings in the case company documentation, was to be used to analyze the current state of the sales and the application support processes. The analysis would output a description of the current organization

related to the processes, the structure of the processes, and strengths and weaknesses within the processes. According to the findings in the current state analysis, a scope for examining of relevant literature was to be defined. The examination of literature would present theory in process improvement and problem resolution approaches, relevant to the findings in the current state analysis. The examination of literature would output a conceptual framework for this study.

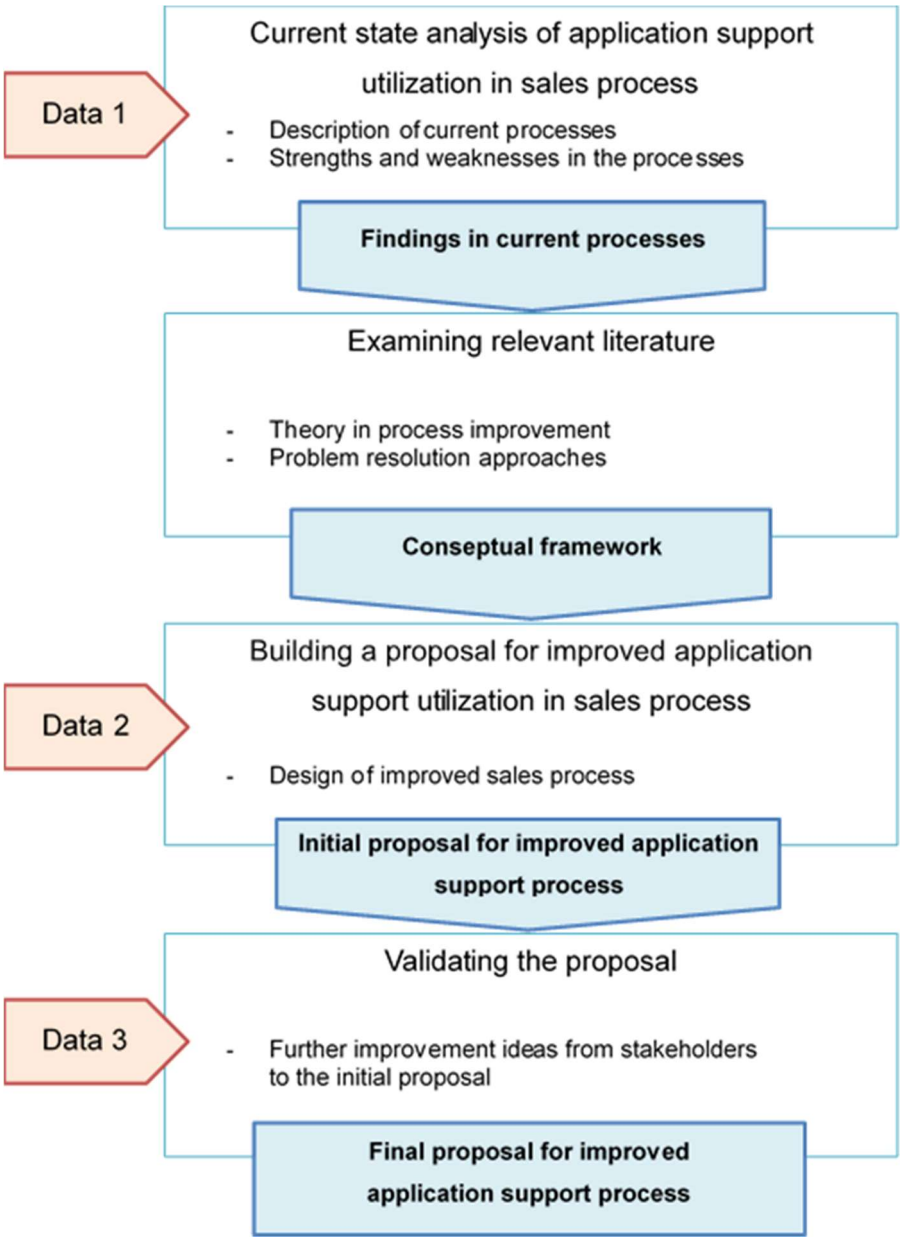

Figure 1. Research design of this study

After presenting the conceptual framework to the key stakeholders, the gathering of data 2, consisting of group discussion and interviews, an initial proposal would be built. This would constitute an initial proposal of an improved application support process. The data 3, consisting of improvement suggestions to the initial proposal, would be utilized to build the final proposal for an improved application support process.

2.3 Data Collection and Analysis

This study draws from a variety of data sources, including one-on-one interviews, group discussions, and the case company quality documentation, sales guidelines and sales data, collected in three consequent data collection rounds. Main sources of data were one-to-one interviews, workshops and a qualitative questionnaire which substituted a workshop in the proposal building phase. All interviews, workshops, group discussions and questionnaires were conducted in Finnish. The transcriptions and field notes were written in Finnish. Table 1 shows the interviews, group discussions and workshops conducted for this study.

Table 1. Details of interviews, workshops and discussions in Data 1 to 3

	Participants / role	**Data type**	**Topic, description**	**Date, length**	**Documented as**
	Data 1, Current state analysis				
1	Respondent 1: Sales Engineer	Face-to-face Interview	The current sales process and the application support process, strengths and weaknesses	Dec 2019, 40 min	Transcription and recording
2	Respondent 2: Sales Manager	Face-to-face Interview	Organizational roles, sales performance relation to competence, The current sales process and the application support process, focal points for improvements	Dec 2019, 65 min	Transcription and recording
3	Respondent 3: Sales Engineer	Face-to-face Interview	The current sales process and the application support process, strengths and weaknesses	Dec 2019, 65 min	Transcription and recording
4	Respondent 4: Technical support engineer	Face-to-face Interview	The current application support process and technical support, strengths and weaknesses	Dec 2019, 25 min	Field notes and recording
5	Respondent 5: Sales Engineer	Face-to-face Interview	The current sales process and the application support process, strengths and weaknesses	Dec 2019, 40 min	Transcription and recording

6	Respondent 6: Sales Engineer	Skype interview	The current sales process and the application support process, strengths and weaknesses	Jan 2020, 35 min	Field notes and recording
7	Respondent 7: Product Marketing manager	Face-to-face Interview	The current sales process, the application support process, the technical support process. strengths and weaknesses	Jan 2020, 50 min	Transcription and recording
8	Respondent 8: Sales Engineer	Face-to-face Interview	The current sales process and the application support process, strengths and weaknesses	Jan 2020, 35 min	Field notes and recording
9	Respondent 9: Quality Manager	Face-to-face Interview	The quality system, sales and application support processes	Jan 2020, 15 min	Transcription and recording
10	Respondent 10: Sales Engineer	Face-to-face Interview	The current sales process and the application support process, strengths and weaknesses	Jan 2020, 35 min	Transcription and recording
11	Respondent 11: Sales Engineer	Skype interview	The current sales process and the application support process, strengths and weaknesses	Jan 2020, 25 min	Field notes and recording
12	Respondent 12: Executive sales coach	Face-to-face workshop	The current sales process and the application support process workflow, strengths and weaknesses,	Jan 2020, 50 min	Process pictures, field notes and recording
13	Respondent 13: Sales Manager	Face-to-face Interview	The current sales process and the application support process, strengths and weaknesses	Jan 2020, 30 min	Field notes and recording
	Data 2, Proposal building				
14	Respondents 2, 7, 13	Skype group discussion for managers	Proposal building, suggestions for application support improvements	Mar 2020, 90 min	Transcription and recording
15	Respondents 1, 3, 5, 6, 8, 9	Workshop task for sales engineers	Suggestions for application support process improvements	Apr 2020	Written answers
	Data 3, Validation				
16	Respondents 2, 7, 13	Written questions to managers	Validation, evaluation of the Proposal. Correspondence to a video presentation of the proposal.	Apr 2020	Written answers
17	Respondents 2, 7, 13	Skype discussions	Validation, evaluation of the Proposal. Elaboration on written answers.	Apr 2020	Field notes and recording

Data 1 was collected for building the current state analysis. The main data collection method was a structured open discussion. The initial discussions were conducted to find

relevant internal documents for the sales process and application support. After establishing a view of the processes, the process flow of the sales process was used as a structure in face-to-face interviews where the real activities within the sales process, and their strengths and weaknesses were probed. In discussions with managers, also the competence profiles and organizational roles were under consideration. The process structure was further elaborated in a workshop with an executive sales coach. Additionally, the company quality manager was interviewed to gain a view of the sales process from the perspective of the quality system.

Data 2 was collected after a presentation of both findings in the current state analysis and the conceptual framework. The proposal building main session was conducted with the managers in electric automation business unit. Furthermore, a questionnaire with a process view was sent to the sales engineers with the purpose of collecting eligible to-be support methods for sales.

Data 3 was co llected after the presentation of the initial proposal for an improved application support process. The initial proposal was presented, and suggestions for improvements were given by the management in written form. These suggestions were then elaborated through discussions.

Table 2. Internal documents used in the current state analysis, Data 1

	Name of the document	**Number of pages**	**Description**
A	Content available only for evaluator		
B			
C			
D			
E			
F			

Table 2 presents the case company internal documents used in the current state analysis stage, Data 1. These documents were examined and compared to the activities and practices discovered in the interviews and a workshop.

Content available only for evaluator

3 Current State Analysis

This section describes current state analysis stage of the case company's electric automation sales and application support processes. First, an overview of the current state analysis stage is presented in subsection 3.1. The introduction is followed by descriptions of the current organization and processes of sales and application support in subsection 3.2. After a description of current processes, findings regarding strengths, weaknesses and opportunities within the processes are introduced in subsection 3.3. Finally, process strengths and weaknesses, and selected focus areas for application support process improvement work are presented in subsection 3.4.

3.1 Overview of the Current State Analysis Stage

The objective of the current state analysis phase was to acquire in-depth knowledge of the sales process in order to recognize focal points of strengths and weaknesses for process development work. The current state analysis was conducted in four phases.

In the first phase, initial discussions with stakeholders were conducted and company literature on the sales operating model and the organization was examined in order to build basic knowledge on the sales process management and to have a structured approach in the next analysis phases. Relevant stakeholders were then interviewed regarding the documentation and the current reality of the process. The first phase enabled creating an initial understanding on the current sales process and organization while focusing on application support. This phase confirmed relevant stakeholders around the process for further interviews and discussions.

In the second phase, one-on-one discussions were conducted mainly on managerial level in order to obtain insights and topics on the sales process, recognize the initial strengths and weaknesses, and to create a structure for in-depth stakeholder interviews. Plans for interviews were communicated within the organization.

In phase three, the process was reviewed step-by-step in interviews with the process stakeholders. The characteristics of the process itself and subjects related to the process

were discussed. The subjects were triangulated by selecting interviewees from all perspectives of the process. Strengths, weaknesses and opportunities related to the process were identified.

In the fourth and final phase, views on the sales process were further developed through discussions regarding the output of the interviews on managerial level. Process strengths and weaknesses were recognized and confirmed, followed by selection of focal points for the next development stage.

3.2 Description and Illustration of the Current Sales Process

In this subsection, the case company current sales and support organization and the electric automation sales process with focus on application support are described. The sales process at hand is not documented as such in the company literature. No process design or improvement methodologies have been previously implemented in the process. Respectively, the process presented is a collection of information from the case company quality handbook, documented in-house best practices in sales, training material for sales engineers, managerial organizational material and findings from the current state analysis interviews. Additionally, it was realized that the application support was effectively a separable process in line with a sales process, with a desired focus on key account management needs.

3.2.1 Technical Sales and Supporting Organization

The case company sales organization is divided into teams with each having a team manager. Each team has its individual assigned function, tasks and goals in line with the company strategy.

Figure 2 illustrates the organizational teams relevant to the sales process of electric automation in the case company - the most important players in the process under development being the Sales Engineer and Application Engineer, highlighted in blue. Other actors in the sales process include Sales Managers, a Product Marketing Manager for

electric automation, back office Technical Support and Project Engineers. On an exemplary customer side, different roles vary in different branches of technical expertise which alter the preferred style of communication within the sales process.

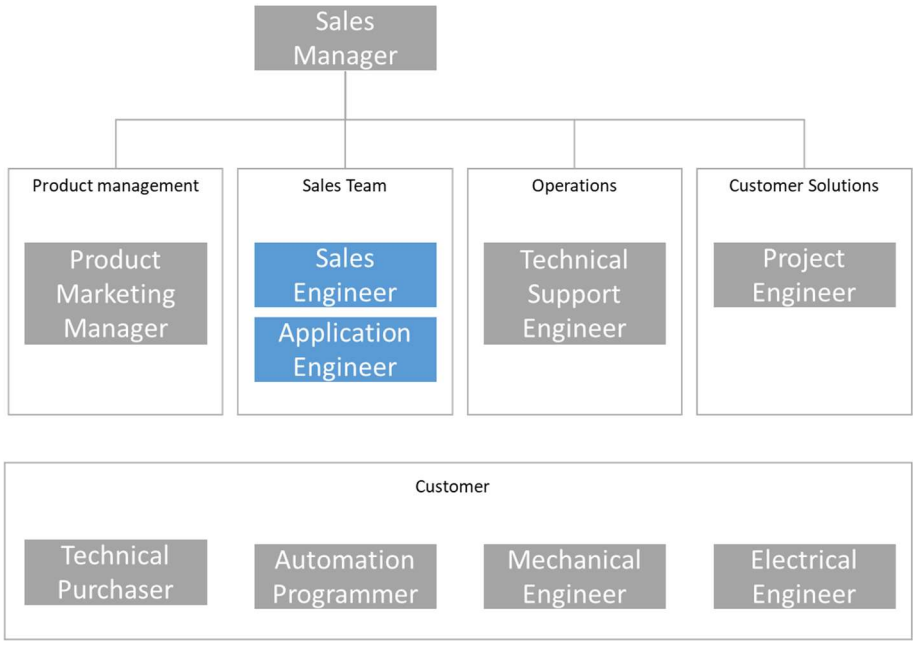

Figure 2. Case company organization on sales team members level and typical customer roles

According to the company quality documentation, the sales process owners are effectively the sales managers. The case company sales management assigns tasks and sets goals according to a strategy constructed on an annual basis and follows them through regularly in monthly meetings. The tools and materials to be used in the sales strategy planning and follow-up process are defined in a company quality handbook, which is audited regularly.

The sales day-to-day sales work is primarily run by Sales Engineers. Thus, they are the main actors in the sales process. A role of a Sales Engineer is to find new business and to achieve a sales quota by managing the relationships of designated customers throughout the sales process. Sales Engineers' tasks include identification of customers with growth potential and the selection of focus customers together with a sales manager, development of necessary knowledge regarding decision makers in the customer organization, developing of business propositions to their customers, planning of activi-

ties necessary to achieve sales objectives, and definition and execution of their respective account plans. A proficient sales engineer skillset consists of effective identification of customer needs, efficient sales project managing, knowhow of gaining acceptance of the suggested products and solutions, and winning projects based on competitive automation capabilities, all while ensuring customer satisfaction.

According to the company documentation, a team selling approach should improve the overall competence of the sales organization. Depending on the complexity of the project, the sales need for consultation work towards the customer may be significant. For many of the activities the Sales Engineers require support from other roles like an Application Engineer, the Product Marketing Manager or a Project Engineer. Gaining sales opportunities and developing them requires gathering as much knowledge as possible such as the project status, competitors, customer technical challenges or requirements, automation concepts, relevant stakeholders and the customer buying center. A sales project is approached by introducing an automation concept and it is realized through showing competence in consultative sales. Additionally, the business relationships between the case company and its customers tend to be long lasting. For an effective customer relationship, this requires a functional after-sales support.

Application Engineers are supporting the electric automation sales as high-level application experts, providing technical consulting and solutions within the sales teams' projects. Application Engineers are the process main actors in application support. They have turnover responsibilities for their respective expertise area but not on individual customers. The main function of an application engineer in the sales process is to act as a technical support to sales and designated customers on specific applications and production processes. The focus of an application engineer work is on commercial and technical feasibility of proposals based on their technical and application knowledge. The tasks include discussing machine concepts in the pre-sales phase, acting as an interface between the customer and the case company departments in coordination with the sales engineer, providing technical training for specific products and applications, and providing technical support in automation solutions design, commissioning and service.

The primary task of the product marketing manager is successful introduction of new products to the local sales companies. The product marketing manager works across all

customer groups, looking for new prospects, promotes technology and products and supports sales with high potential new and existing customers, identifies and develops business opportunities via an understanding of the target applications and solutions. The product marketing manager is also responsible for creating an applied product strategy for electric automation in the sales company together with the sales management.

Project engineers are responsible for the effective management and design of customer solutions projects from the sales engineer proposal inquiry to quotation. They ensure delivery of solutions according to the specification, manage delivery timetable and budgeting, from initial concepts to final acceptance. They also conduct and decide on technical feasibility studies. Project engineers do not have responsibilities directly in the sales process or the application support process.

Technical support engineers work in the case company customer care center as a back-office hotline support. They cover questions about technical details mainly related to after-sales business. However, since the customer relationships are long lasting and after-sales is an important part of customer development, the customer care center activity in the after-sales phase is included in the sales process.

The customer interface is presented with characteristic roles to which contacts are usually established and have differing modes of influence within the customer organization and so affect decisions throughout the sales process. The customer interface consisting of different roles and influences within the customer organization is referred to as the buying center.

3.2.2 Technical Sales and Application Support Process

The case company sales process and application support in electrical automation within the scope of this thesis involves the previously mentioned parts of the sales organization. As seen in figure 3 in an overview, the sales process as a flowchart consists of seven main steps. The application support in line with the sales process has a support functionality in accordance to each sales process step. Communication points between the processes are marked with yellow lines. Other organizational functions have operations parallel to application support. As the account timelines are long and every sales project

is different, weight and the actual implementation of each step varies from one customer sales project to another.

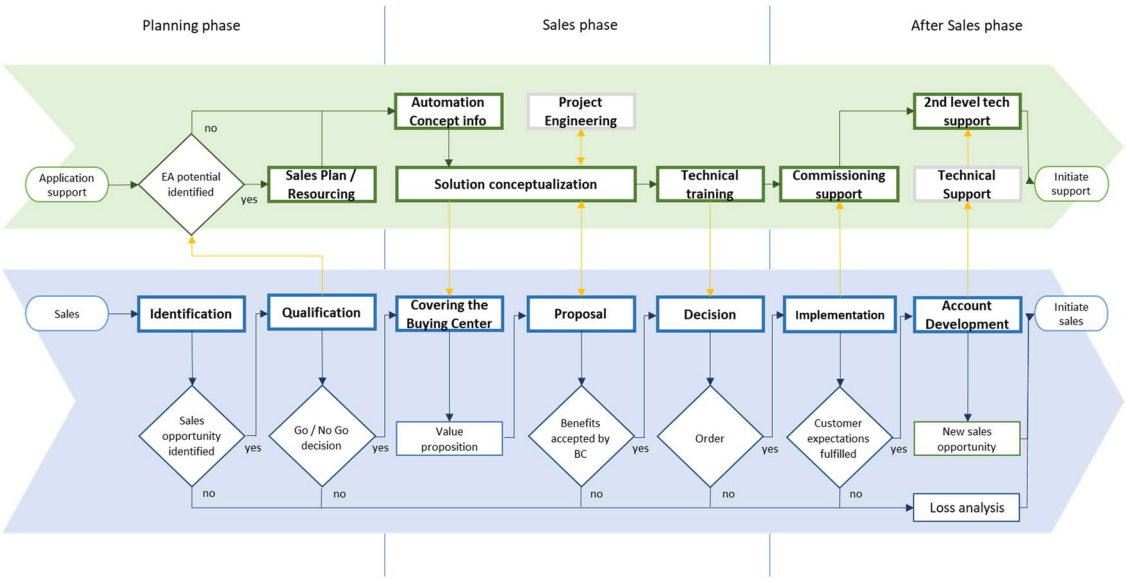

Figure 3. Overview of the case company sales and application support processes

The sales process begins with a planning phase, presented in figure 4. The first action is customer identification. The goal in this initial stage is to understand customer's strategic plan and business goals and to gather information about the customer's organization, their suppliers and their market. The outcome is identification of opportunities within the account or expansion of scope of supply in an existing account. If an opportunity is identified, the account is to be qualified. At the qualification stage the identified needs and expected results are mapped. For key accounts, a sales project qualification profile is conducted. This stage includes gathering an understanding of the customer buying center and gaining a thorough understanding of customer needs. Additionally, some conditions are to be met in order to proceed with the sales project. Initially, the case company offering has to offer substantial benefits over the existing customer supplier and that the opportunity matches the product and market strategy. Moving forward, it is a requirement for the customer to have a strong need to change a supplier or to embrace a new solution. From the sales organization point of view, the sales potential should justify the time and effort investment for the sales team and the necessary resources should be available for the sales project. It is also beneficial if the customer is operating in a growing market and has a strong competitive position.

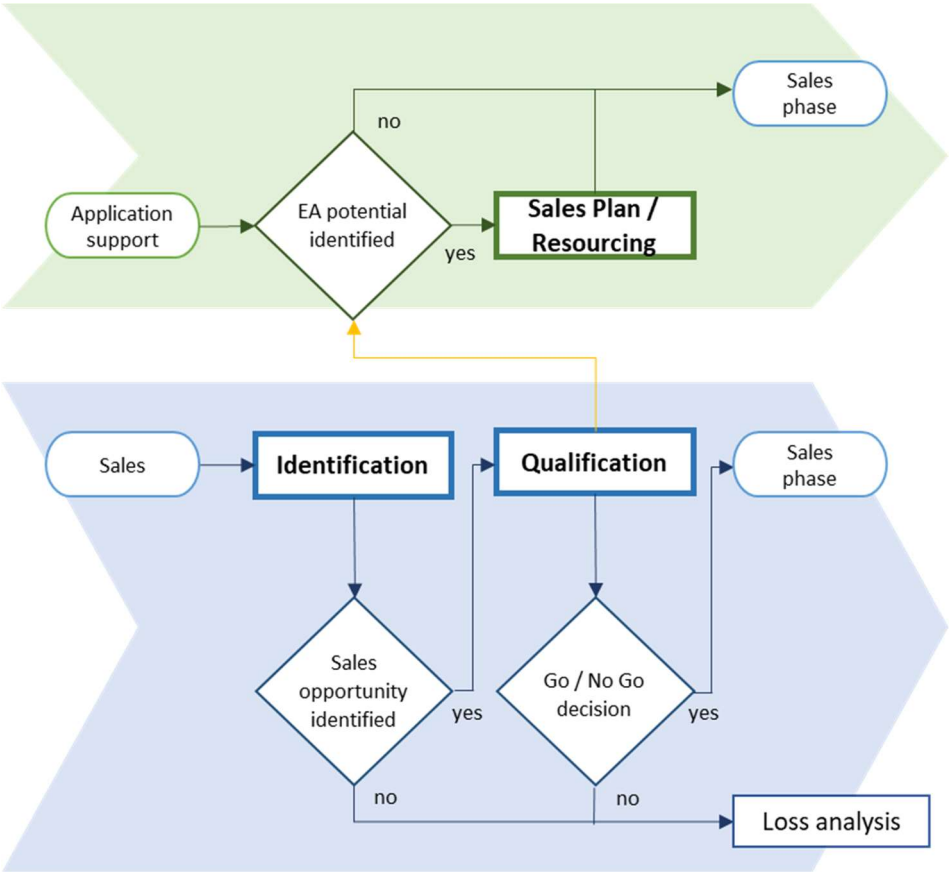

Figure 4. Planning phase of the sales process

As depicted in figure 4, the customer qualification outcome is then output to the application support process. If a customer has a large identified business potential for electric automation, it is moved forward to a process of prioritized application support with a resource allocation. The collection of customers with high potential is submitted to a priority customer list. Other accounts with a smaller business potential are handled through application support on a reactive basis and without a resource allocation. In these cases, the customer applications outside of the key customer list are to be handled when there is an application support resource available on a short notice and there is a business opportunity at hand with a support requirement. These activities are not followed through actively and so they do not include account development plans for the application support.

In the key account handling, the priority customer list is used in an annual planning session and continuous follow though for aligning the application support with sales for electric automation, as seen in figure 5. The cyclic activity is conducted to input information and to allocate resources to the sales and application support processes. The sales engineers involve the product marketing manager and an application engineer in a meeting for setting up an action plan for sales activities.

Figure 5. Sales plan process for application support

The objective of this stage is to guide the sales team contribution to priority customers in an efficient way. It should enable more precise focus on sales action planning and make time management more efficient. Responsibility for the functionality of the tool and planning lies on the whole sales team. This plan includes consideration of the current technology used at the customer, sharing knowledge about current buying center contacts, thinking of ways for preparing technical support in the pre-sales phase and selecting a best approach for next steps. The sales plan session decisions are updated to the priority customer list and a plan for monthly follow-through is set up. After a sales plan has been established with every sales engineer, the planned activities are developed into a contact plan in the case company customer relationship management system. This gives an estimate of responsibilities amongst application engineers for their key accounts. Thus, nominal sales teams are established for accounts.

The sales process then proceeds to a phase of active sales, shown in figure 6. This phase begins with covering the customer buying center. This means establishing relationships to all members in the buying center and involving the sales team in the process, understanding and developing the customer business and personal goals with decision criteria – leading to mapping benefits to the buying center members, investigating needs of the customer's customer and gathering competitive information. These activities lead to value proposition statements for each buying center member. In the application support process, this phase consists of customer visits with the sales engineer to map the current customer automation system, finding places of improvement and providing the customer with information about the case company offering. Possible propositions are discussed from technical and business point of view within the sales team. If there are signals of overall benefit acceptance from the customer, an automation concept is formed either in-house or with the customer. This stage in the process is in the center of an application engineer function in the sales team. Forming a competitive solution to address customer needs requires technical expertise of both the customer current technology and possibilities of the case company technology.

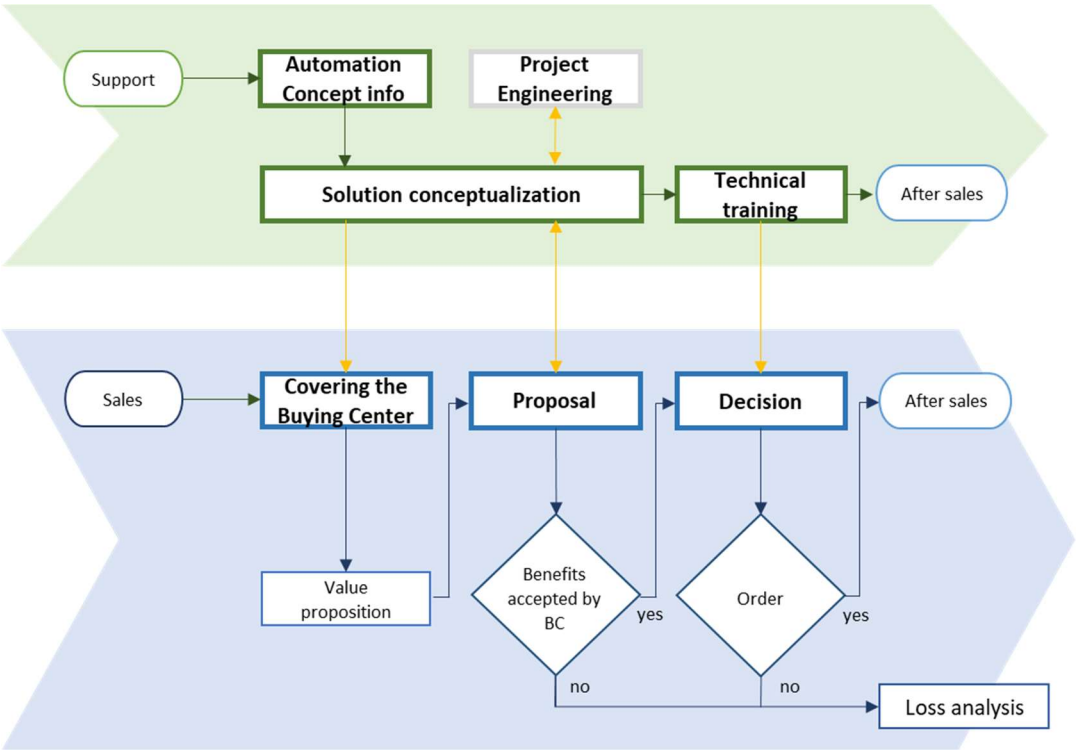

Figure 6. Sales phase of the sales process

After forming a solution to suit the customer needs, the solution is presented with benefits to each customer buying center member. If there is a need for project engineering for a customer solution, an inquiry for a project proposal is sent to the project engineering team at a stage of initial acceptance of the concept from the customer. After a lead time either in forming a component solution by the sales engineer with the help of an application engineer or an engineering solution by the engineering team, the sales engineer prepares a final proposal after an internal check with the sales team. The implementation team can be introduced to the customer at this stage. If the benefits are accepted by the buying center, the process enters the decision phase.

In the decision phase, the sales engineer is required to receive feedback from the customer about the proposed solution and adjust the offering if necessary. This may require support from the engineering team or the application support. Negotiations about the details of the proposal are held. In this phase, some technical training about the solution may be needed from the technical support in order to gain more commitment from the customer, also in preparation for the implementation phase. If the sales project is won, the decision phase will end at an order from the customer. A positive decision signal can be used as an advantage in grasping new opportunities within the customer.

After an order, an after sales phase of the sales process is initiated, shown in figure 7. Appropriate resources for implementation phase are allocated, such as application support for commissioning support. Usually for application support this means a hotline support in standby and actions if necessary, or a technical training at a time of components arrival. In the implementation phase, the direction of communication is usually from the customer to the case company. The phrase “no news is good news” is a commonly heard sentence in technical support during an implementation phase in the case company. If the customer expectations are fulfilled, the sales cycle will move on to the after-sales phase with account development.

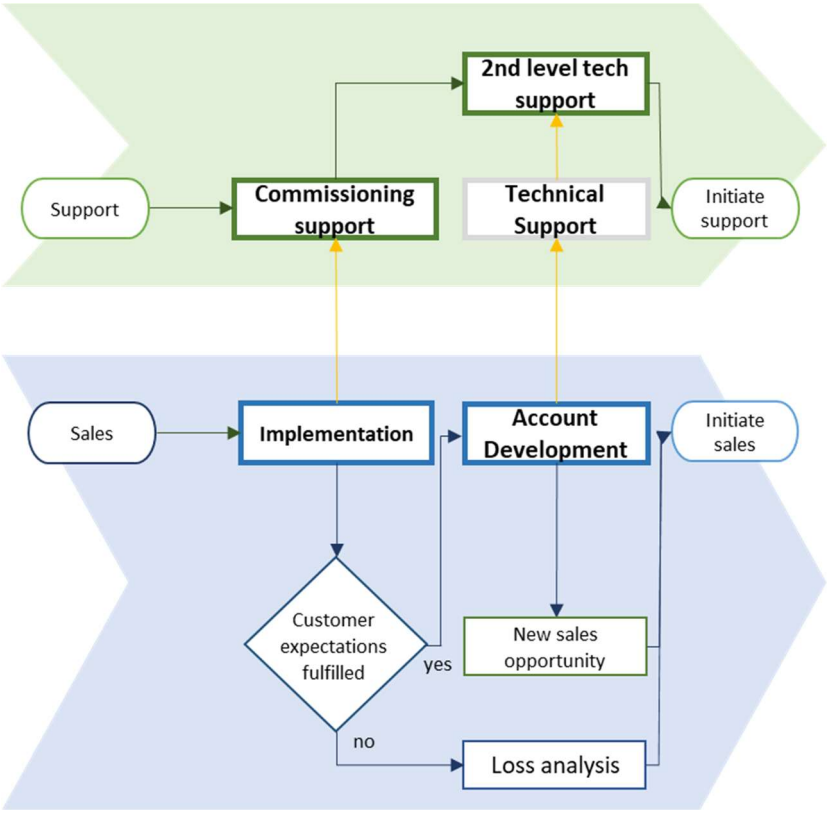

Figure 7. After Sales phase of the sales process

In the account development phase, the sales process main objective is to increase networking towards the customer. Activities include regular planning sessions and technical information sessions to add value to the already sold solutions and to keep the customer informed of new developments of the case company offering. These sessions are also utilized as discussions with the customer for identifying new sales opportunities in order to initiate a new sales project. Application support is in this stage acting as a second level support for the customer care center technical support. If there are matters that require high level expertise in electric automation or to an account specific matter and the technical support engineer requires assistance, an appointed application engineer will cover the question and provide support either to the technical support engineer or the customer directly. Usually the customers also have direct contacts to application support and can handle after-sales issues directly with an application engineer.

3.3 Identifying Current Points of Strengths, Weaknesses and Potentials

This section presents the key findings from the current state analysis of the case company sales and application support processes based on data 1.

3.3.1 Organizational Considerations

The case company sales data, electric automation competence profiles and stakeholder interviews indicate that *electric automation sales effectiveness is currently dependent on personal confidence in electric automation of the sales engineer*. The sales engineers have been actively trained in electric automation and some are very efficient in handling technical matters on their own. *The training process for sales and technical expertise is well received* and it has been improving over the last years. Keeping a hands-on approach in the training activities and linking the technical information to customer cases is widely considered the best way of gaining confidence and knowledge in electric automation.

The customer however uses a broad range of technology and *the case company product offering drives the sales engineer to focus on other product areas than electric automation* – products that are in the comfort zone of the sales engineer's own competence profile, such as pneumatics. An informant commented:

> "The premise is that our salespeople are mechanics-oriented people. And when it comes to automation and electricity, they're in the discomfort range - it shines through. They are pneumatic professionals in the customer's eyes, but customers do not see them as automation professionals."

This also shows in the buying center contacting. *The primary contact for many sales engineers is currently the mechanical engineer*. An informant stated:

> "Our salespeople are mechanics sales engineers and so comfortable with it that they contact the same people from year to year from the mechanics side… But they do not understand the power of that automation engineer."

According to interviews, there is a clear indication of the effect of attitudes towards electric automation sales efficiency. Sales engineer confidence and competence in electric

automation, having been evaluated over the years, correlates with the individual electric automation sales figures. An informant commented on competence:

> "There was no technical support for something that was absolutely necessary. I couldn't even get the basics, I didn't have the skills I needed."

On the other hand, an informant with high confidence and high sales figures in electric automation commented:

> "I have had no issues with identifying opportunities and developing solutions. If I need help, I will contact the technical support."

An informant with prominent electric automation sales figures commented:

> "The lack of courage to get involved in what you don't know well is a weakness. It's scary because you can go so much more wrong with electric automation than with specifying a pneumatic cylinder. The opinions are divided about electric automation within the sales engineers. Some sales engineers seem not to have a real ability to sell electric automation because of their appointed customer base. Successful sales projects and references increase skills and confidence. A deeper technical knowledge would be beneficial."

Rolling in a new product area of electric automation has had its issues and some sales engineers have bad experiences with electric automation sales projects in the past. Persons who have previously worked for the company as application support may have had strong opinions on applications engineering and have caused conflicts inside the sales organization, perhaps causing some wariness towards application support. There is also a history of different sales teams being focused and successful on different product groups. This has had to do with key customer account technology profiles, the communication and management of product strategies, and even the sales team managerial attitudes towards electric automation. In the past year, *attitudes towards electric automation have improved significantly*, due to new competitive products launched and successes in selling them, engineering tools improvements, delivery and product quality improvements and organizational changes.

The application support engineer coverage in the sales teams is limited. Due to lack of application engineers, application support in electric automation is also done by other workers such as the product marketing manager, the technical support engineers and the marketing communication manager, all having from excellent to fair competence in

the work. However, the personnel having other responsibilities have limited resources for applications engineering within the sales teams. Sales guidelines for electric automation give instructions in utilizing application support actively but the scarcity of this resource is creating a challenge in following these guidelines. The general opinion stands that there should be more joint visits with application support.

Other functions having competence in electric automation have limited roles in the sales process. The activities are mostly passive or reactive. The operations team does not have tasks that would include proactive sales activities towards the customers. However, application support is partly done in the operations team, adding multiple channels of communication to the application support process. Project engineering team work is connected to the sales process by an inquiry system and there is an urge not to make needless inquiries.

Available electric automation tools for quick design are very effective in making initial propositions. They are primarily used by the application support. Additionally, the most technically competent sales engineers in the sales teams are capable of utilizing these tools. This has proved efficient in the sales process as preliminary propositions with a further requirement for project engineering have been produced for a customer acceptance before an actual inquiry to the project team.

3.3.2 Activities Outside the Key Account Sales Process

According to interviews and sales activity data, *a big portion of the application engineering falls into a reactive support process*. It seems that the amount of support required by the customer is quite constant independent of the scale of the business. An informant commented:

> “Most of the overall technical support goes to those single-axle drive situations, small customers who need support. Very often a smaller client case it is assigned to the operations team. There is a prioritizing effort so that the dedicated application support should not take care for the small potential cases. a Small case would be fed to the technical request system and from there if the operations team didn't resolve it would come back to the application support desk. Otherwise the operations team would not learn and will not have enough work in electric automation. It's a learning curve for them.”

Many of these *delegated projects are returned to the dedicated application support* in some form. This seems to primarily be caused by lack of contact to the customer by the operations team which leads to a disconnection to the application itself. Additionally, confidence is lacking in handling applications support in the operations team by the technical support engineers, who should be taking technical responsibility over the smaller accounts. This leads to a situation where *the application support resources are directed to small potential customers with an equal effort in relation to the key accounts*.

3.3.3 Customer Identification, Qualification and Sales Planning

Based on the process analysis, *the application support is currently not effectively involved in the first phases of the sales process*. It is up to the sales engineer and the sales team management to establish an initial relationship to the customer buying center and identify opportunities from the customer business environment. Application support is involved at the latest in the sales plan phase. According to an informant, application support is proactively utilized by only a few sales engineers after a recognized opportunity:

> "We have 12-13 sales engineers. 3 or 4 sales engineers are actively calling the application support. This is my feeling. That's when we get to a customer and identify potential. Then there is 70% of sales engineers who fall outside of this and do not proactively call application support to join, their electric automation sales I am skeptical towards - on how well they recognize opportunities"

This would lead to a situation where *in many cases a sales plan is set up without the best knowledge about the customer*. However, customer relationships tend to be long lasting especially for key accounts and the application support may have been in contact with the customers in previous occasions. This could lead into a situation where the application support presents the opportunity to a sales engineer. *New opportunities have nevertheless been identified in the sales plan sessions* which may have changed the sales approach and the identified potential. It is obvious that sales engineers with less competence in electric automation lack the knowledge or confidence in contacting customer personnel with an electric automation focused role. A managerial informant commented:

> "Quite often there is fear and a lack of competence in identifying opportunities. Especially in the beginning. Usually it is the sales engineer who needs to do it."

The sales plan reporting is utilized to a varying degree by the sales engineers. According to sales figures, the sales plan reports and interviews, for the most effective electric automation sales engineers the documentation is detailed in terms of account activities and the reporting is quite actively updated. However, the quality of reporting has also to do with the sales plan tool itself. Generally, the tool is not liked. Follow-through of the activities are inadequately reported. An informant commented:

> "It is good to have the key accounts planned every year. The analysis is however incomplete. The stuff has been quite individual and goes into detail. The customer's big picture is missing. We have no tools or a template for developing that."

According to an informant, the electric automation competence level of a sales engineer can be directly seen from the sales plan documentation quality. Additionally, there are sales engineers who are not using the tool properly:

> "The sales engineer competence level can be directly seen from the quality of documented sales plan activities. Unfortunately, we also have people who don't even use sales plan. They see it as a useless tool. It is not suitable for their daily work. It poses a challenge when the sales plan is a tool that guides our support function so if the sales plan is reviewed and there are only vague snippets, it will not guide the application support in any way."

3.3.4 Covering the Buying Center and Proposal

According to interviews, *joint visits with application support are in many cases not focused on customer issues* but may be more about providing information about the case company products. An informant stated:

> "More joint visits could be made if there is potential in the customer. There are not just joint visits to the customer, but more automation meetings. They were not focused on customer issues."

With automation meetings the informant refers to a more structured meeting agenda. The objective of an automation meeting is to get familiar with the customer organization with a broader group of people. Setting up an automation meeting and determining the agenda with a relation to products has however in some instances led to a heavy focus on product training and *sometimes the product-oriented presentations completely miss*

the customer needs. There are however cases of both successful and unsuccessful automation meetings. In their best cases the collaboration between the customer and the case company has increased significantly.

Since some sales engineers are mechanics-oriented, *issues in communication arise when handling customers with focus on electric automation*. An informant stated:

> "There's jargon coming from an automation buddy that I don't understand. I took notes of those things and studied afterwards. For the application support, it is so natural for them, and the situation develops. . . I do not want to learn that jargon."

A common opinion amongst the less confident sales engineers is that a joint visit with an application engineer is more effective in comparison to one without. In this sense, the problem seems to be *inadequate resourcing of application support for joint visits.*

Following through and updating the Sales Plan reporting by the application support while the sales project is developing is a concern. This is due to scarce resources in application support, unclear roles in the sales team and extensive reactive work. It was acknowledged that the *application support is passive in checking the activities in the sales plan documentation*. An informant wondered:

> "Who is the sales plan for? If I fill in something: Who takes the job, who starts to work on it? Now it's a notepad for myself."

Currently, *the roles for contacting the customer after a sales plan are unclear*. The application engineers are set as responsible for specific activities, but in principle the sales engineer is responsible for managing the customer relationship. Some sales engineers are hoping for more proactive contacting on the application support behalf, and on the other hand, some are quite happy with the current situation with rather passive support.

3.3.5 Implementation and Customer Development

The activities after an order are too much left at the responsibility of the application support. An informant stated:

> “Mostly what I do with salespeople is product information, project concepts and training. That's the biggest part, though last year changed the situation so I did a lot of the after sales support, which is basically not my job at all.”

A new customer is usually unacquainted with the delivered technology and providing with the necessary technical knowledge is done in the implementation phase. T*he technical support engineers in the operations team lack confidence in electric automation*. The cases of electric automation technical support are in a minority in the technical support workload. An informant stated:

> “There is certainly a state of fear for the knowledge level in the operations team. If I say this or that, will I make a fool of myself? It looks like an old mindset that the technical issue needs to be solved on the phone in 15 minutes. In electric automation, this does not apply. Then, it is felt that if something takes a long time, it is not up to the operations anymore. Then it goes into delegating back and forth.”

The implementation phase and technical support in general is however helped by excellent product documentation and application notes.

3.4 Summary of Sales Process Strengths and Weaknesses

In this subsection, the strengths and weaknesses identified in the sales process and the application support process are summarized and the selected topics for further development are introduced. Figure 8 describes the main strengths and weaknesses in the parallel processes. Characteristics perceived as strengths are highlighted as green, red are perceived as weaknesses. The sections surrounding the processes group the strength and weakness topics of the discovered process characteristics into input, output, control and enabler characteristics.

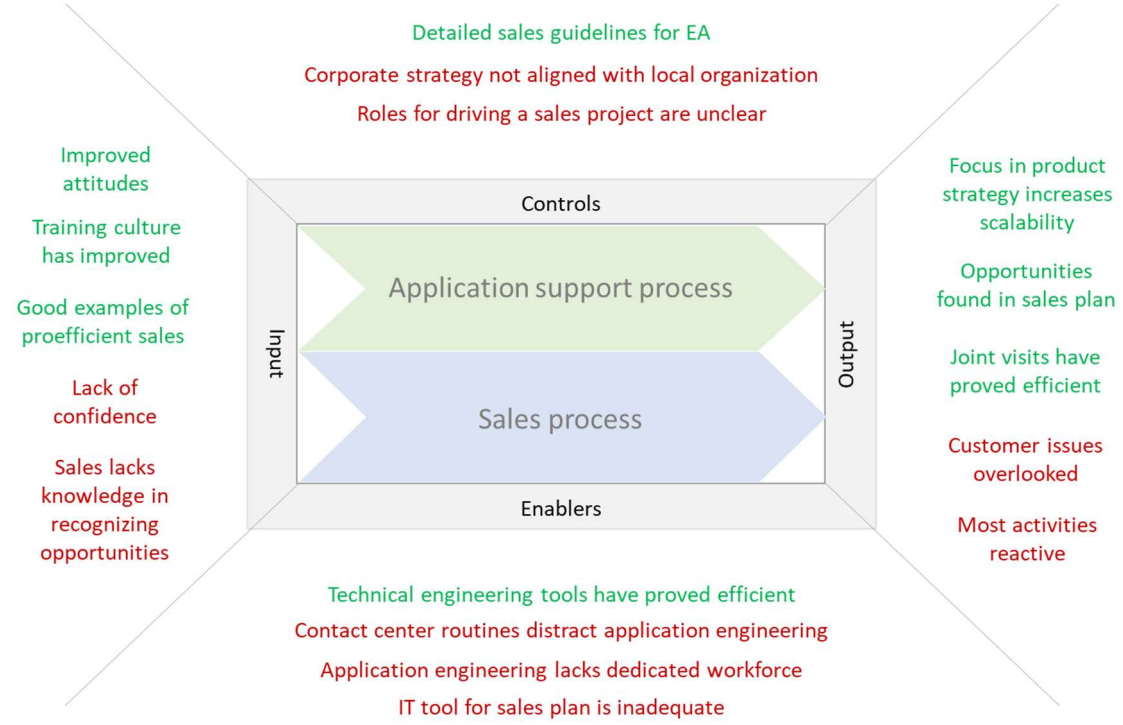

Figure 8. Main strengths and weaknesses in the sales and application support processes

3.4.1 Process Strengths and Opportunities

The main strengths in the process were improved attitudes towards electric automation due to changes in the products portfolio and organization, effective technical tools for applications engineering utilized by a wide group of users within the organization and good experiences from joint visits and automation meetings providing important knowledge on the best ways to make application engineering work. The sales plan process was already somewhat helping the sales organization identify opportunities and develop actions to develop the accounts.

It was evident that the overall attitude towards selling electric automation was good in the case company. There seemed to be a trusting environment, which helped finding pressing issues within the process. Further launches of new products and upcoming changes in the organization and IT tools increased the overall perception of an improving environment for sales. The technical engineering tools are at a high level, causing labor-intensive design to be efficient. Additionally, technical training towards the sales organization was perceived as useful.

3.4.2 Process Weaknesses

Amongst the first findings in the current stage analysis stage was that the sales and application support processes were not documented as processes per se in the company quality documentation, and that there were no methodologies utilized in improvement of these processes. The views, practices and workflows varied significantly amongst the stakeholders. A systemic view towards the processes had not been fully implemented. Additionally, the sales plan process for application support was not synchronous with the planning phase in the sales process itself. It could be that the planning phase in a sales process was neglected because the sales plan process was in a stage of follow through and active planning was not conducted to the extent it was required.

The main weaknesses in the inputs of the process were a lack of confidence in handling electric automation and a lack of knowledge in recognizing business potential. The outcomes showed excessive amount of reactive application support to low potential customers and overlooking of customer issues. Complicating the control of the process were unclear roles in the contacting phase for application support and sales, passive follow through after a sales plan and the after sales technical support which was taking too much resources from the application support. It was openly acknowledged that there were challenges in the process in terms of communication, roles and the process flow between the application support and sales.

It was stated that the role of a sales engineer is not to be an application expert in electric automation, but quite contradictory the workflow demands recognizing opportunities and giving initial estimates on opportunities' probability of success. This would imply a workflow issue in the application support process. Missed opportunities in the planning phase of the sales process were concluded to be caused by a lack of application support in the initial contacts with the customer.

In the sales plan process, roles for further actions after designing these actions were unclear. This was concluded to be a communication or management issue in the sales process and the application support process for sales plan utilization. Additionally, the IT tools were said to be inadequate. Nevertheless, insufficient reporting was concluded to be more related to culture and attitudes towards a structured sales process handling

rather than the tools themselves. It was acknowledged that the roles given to run the sales process by the corporate headquarters do not match the local organization, as some roles overlap, and some are even missing. However, a will to clarify roles exists. The roles in a key account sales process are also related to a team selling model which is not fully implemented

It was noticed that a significant amount of after sales and small customer application support supposed to be handled by the contact center was handled through workforce dedicated to handle key customers and high potential sales projects. It was realized that the operational culture or working methods in the contact center do not fit the nature of application engineering work. The free form applications engineering activities are disturbed by the time and place bound back-office work of hotline duties.

3.4.3 Selected Focus Areas for Improvement

After the strengths and weaknesses of the sales and application support processes were recognized, focus areas for further examination were selected. These areas were:

- Structured view towards processes
- Support workflow and work variation in relation to volume
- Alignment of sales strategy with the support process
- Key account management needs
- Organizational roles, tasks and goals
- Sales credibility and confidence
- Performance measurement

Next, the findings of the current state analysis stage are used to review existing knowledge in relevant literature for tackling the select themes.

4 Existing Knowledge and Best Practices in Process Development

In this section, existing knowledge relevant to the development work, according to findings in the current state analysis stage of sales and application support processes, are presented. Discovered areas of improvement included a lack of systemic view towards the processes, problematic support workflow and desired work variation in relation to volume, misalignment of sales strategy with the support process, neglected key account management needs, unclear organizational roles, tasks and goals, lacking sales confidence, and generic performance measurements. From these premises, subjects were selected to be explored.

In subsection 4.1, operations management fundamentals are examined. In subsection 4.2, aspects of process development methodologies and required organizational changes in relation to sales process improvements are covered. In subsection 4.3, suggested process improvement elements are elaborated. Subsection 4.4 presents topics in sales and knowledge work and their processes improvement methods. In the final subsection 4.5, a conceptual framework surrounding the topics related to the development work is presented.

4.1 Operations Management Principles

In this subsection, operations management principles, in the context of sales and support processes, according to relevant literature are presented. At first, the concept of an organization from a systemic view is introduced. Secondly, general principles of processes and operations management of processes and their application in a sales process context are explored. Finally, sales processes and key account management characteristics are presented.

4.1.1 Systemic View of an Organization

A business organization is a processing system converting various resource inputs into products or service (Rummler and Brache, 2013:8). Furthermore, a value chain is a collection of all the processes that an organization uses to generate a product or service

that is valued by a specific group of customers. Each step in the chain adds to the final value of the product or service (Harmon, 2019:4). Operations of a company are effectively translations of the firm strategy (Holweg et al., 2018:131). As an organization itself is an entity of people and is driven by feedback from its market, organizations are acting in a social, economic and political environment. A systemic view of an organization is the starting point for designing and managing effective organizations (Rummler and Brache, 2013:3).

Understanding performance requires documenting the inputs, outputs and customers that constitute a business. Success of an organization lies on the adaptiveness of its operations in a competitive environment. Making changes in a component of a system affects the whole system. Additionally, competent individuals do not perform well in a bad system and vice versa, individual lack of competence can be compensated with a functional system (Rummler and Brache, 2013:11).

4.1.2 Process Structure

A business process describes how things are done in a business organization, including a description of the process output resulting from execution of the process (Harmon, 2019:61). Thus, a process can be described: Creation and selling of automation solutions. All operations in an organization are composed of processes. Furthermore, processes have basic principles. The core of operations management is the activity of designing, measuring and improving processes in organizations. Processes as well as organizations are inherently sociotechnical in nature (Holweg et al., 2018:37). This means that whenever processes are studied, both the technical and the social aspects are to be considered, as each have their own dynamics, and combined they determine the performance of a process. Processes can be classified according to their scale and grouped by their respective inputs and outputs or objectives. Processes can intertwine and can have subprocesses. Since processes are merely means to ends, in business context processes require goals according to the company strategy (Rummler and Brache, 2013:64). Goals should be driven by the needs of the respective output, whether directed to a customer or an internal customer.

4.1.3 Process Volume and Variation

Variation is inherent in all process inputs, activities and outputs by quality, quantity and timing (Holweg et al., 2018:83). Variation in a process can be buffered by time, inventory or capacity. Economic processes usually have characteristics between high variation and low volume to low variation and high volume. In service processes, volume can be described as labour intensity and variety as degree of customer interaction. These characteristics are generally resulted from technical infeasibility of processes with both high volume and high variation, and economical unviability of processes with low volume and low variety. This is depicted in figure 9. Intangibles such as services in a business environment are hard to buffer primarily because as an immediate commodity, service shelf life is zero. Critical service processes require excess capacity and so generate extra cost of labour.

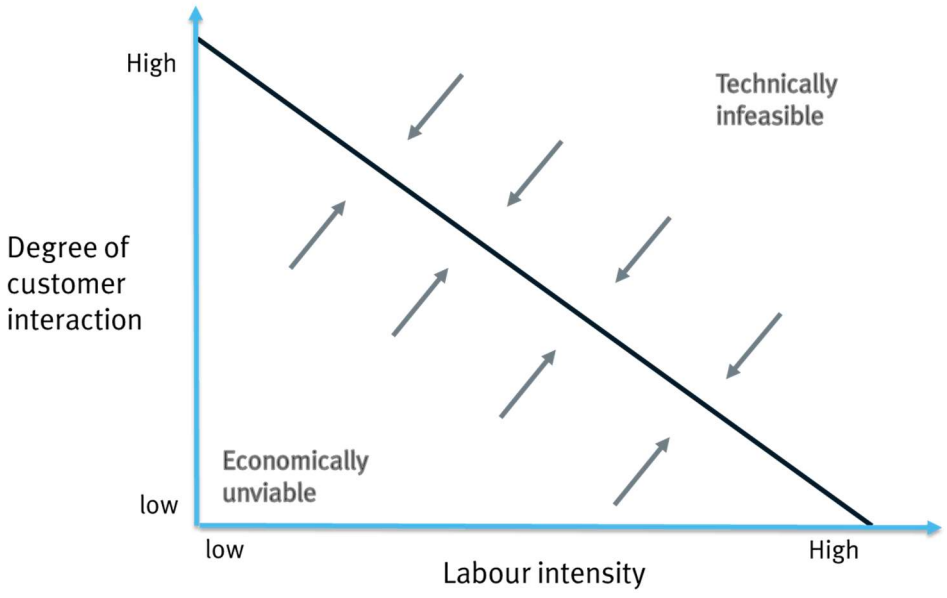

Figure 9. Economic pressure pulls processes to a centerline (Holweg et al., 2018:41)

Business organization key processes should consist of steps that enable to meet the process goals efficiently. Consequently, processes should be logical and streamlined paths to the achievement of the goals derived from a strategy (Rummler and Brache, 2013:20). Furthermore, complexity in process design amplifies managerial challenges. The number of elements in a process, their heterogenicity and connections between

other elements define complexity. Additionally, process complexity exists at static and dynamic levels. Static complexity is caused the elements in a process: inputs, outputs, process steps and inventories. Dynamic complexity is caused by interactions taking place between the elements in the process, for example, in a business context, customer interaction with the process, key account management motivations or technical variation in different automation solutions. A comparable, yet simpler solution outperforms a more complex one in the long term. (Holweg et al., 2018:129)

Work made in a process is determined by throughput rate and throughput time. The throughput of a process is governed by bottlenecks in the system. Thus, a bottleneck is a local limiter of a process throughput. Bottlenecks can be stationary or moving in nature. Generally, a stationary bottleneck results from a permanent capacity deficiency in a segment of a process. A moving bottleneck is an occurrence in time causing a deficiency in capacity. While stationary bottlenecks are capacity problems, moving bottlenecks are scheduling problems. Stationary bottlenecks are related to the capacity of the organization and should be neutralized with resources like labor. In service business, dynamic bottlenecks are managed through modulating capacity or managing demand, for example using reservation systems or pricing according to demand. (Holweg et al., 2018:96)

The theory of swift, even flow in the context of service operations suggests that the more swift and even the flow of information is through a service process, the more productive it is (Schmenner, 2004). These characteristics have been exploited in service models by creating a service with minimized variation and throughput time. The longer the throughput time is, the bigger is a risk of waste in the process. Theory suggest hunting for bottlenecks in the process from places where throughput time accumulates, or task throughput varies.

4.1.4 Process Improvement

Processes are improved by reductions in throughput time or undesired variation (Schmenner, 2004). This is done by recognizing and eliminating problems in a process by various tactics, such as timing, activities quality or resource capacities. In operations management, process improvement is one the key tasks alongside planning and resource allocation. External influences cause processes to require changes in order to

work effectively. In a business context, non-standard activities will make their way into processes, deteriorating the processes without active management. Any process improvement is a change project and should be handled as such. There are two basic ways in improving processes, one including subtle continuous improvement methods and the other implementing radical process changes (Holweg et al., 2018:168).

A stable process is the foundation of any process improvement. This means that the process needs to be capable in achieving its objective and deliver a somewhat constant quality. Operational problems in stable processes are buffered through excess capacity such as time. Regardless, problems lead to failure costs, such as lost sales. Removing operational problems are to be made sequentially by prioritizing quality, dependability and speed over cost-efficiency. Excess capacity covers underlying root causes of problems and will cause firefighting in a case of depleted capacity (Holweg et al., 2018:173). This can be visualized with a rock-boat analogy, as seen in figure 10.

When considering characteristics of a process, improvements in a process are subject to diminishing returns. Improvements in a process may suffer saturation in relation to the effort of improvement. On the other hand, an improvement in any single dimension may affect another dimension negatively. Therefore - additionally, trade-offs exist between aspects of process performance (Holweg et al., 2018:179).

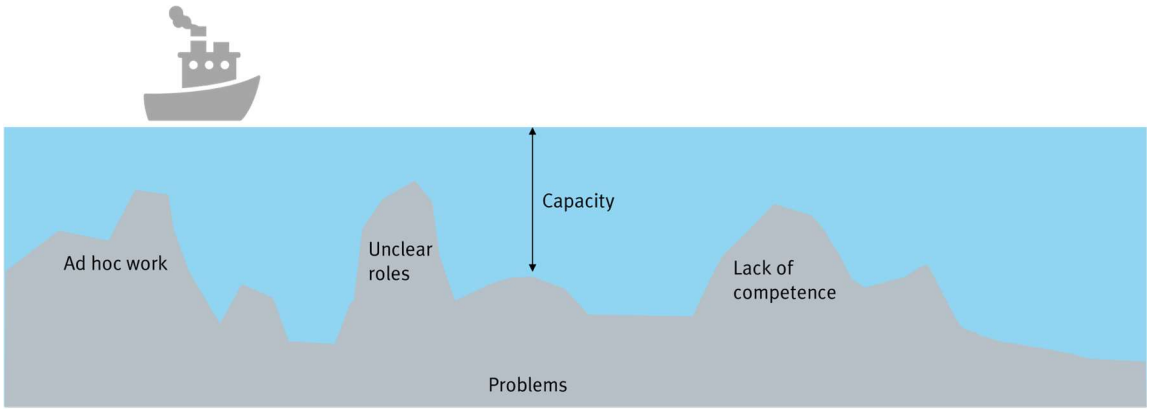

Figure 10. Rock-boat analogy (Holweg et al., 2018:174)

Literature suggests that the process improvement is to be done in a routine in order to be successful (Harmon,2019:304; Hammer and Stanton 1999; Holweg et al., 2018:172).

Holweg et al. (2018:176) suggest an improvement approach with elements of strategic alignment, gaining senior management support, Problem identification and resolution, and setting a structural framework. This approach is elaborated in section 4.3.

Approaches to process improvement under varying labels have been proposed and successfully implemented. Practically all process development methods share a common heritage stemming from fundamental ideas that formed the operations management scientific field and learned from successful practices exercised in companies, such as Taylor in the study of management and Ford in concepts of assembly lines (Holweg et al., 2018:175). Each methodology proposes a set of attributes fundamental for an effective implementation. These steps include top management commitment, cultural changes in the organization, good communication, new approaches to production and to servicing customers, and a higher degree of training and education of employees (Dahlgaard and Dahlgaard-Park, 2006).

Categorizing process development is related to the identity and credibility of an organization and enables assessing the impacts of standardized programs in different operational environments. The dominant exogenous view of processes as programmes constitute what is commonly referred to as formal organizations. Processes as programmes are standardized and categorized under labels such as ISO 9000, six sigma, lean, total quality management or process re-engineering, allowing them to include internally coherent sets of actions and adapted to many organizations (Hernes and Weik, 2007). Many industrial companies addressing continuous process improvement implement Lean, or a combination of Lean and other methodologies in process improvement. Lean is a name for a subset of methodologies derived from the Toyota Production System (Holweg et al., 2018:177). In the Lean methodology approach, activities are categorized as either value-adding or non-value-adding, and as many nonvalue-adding activities as possible are eliminated (Harmon, 2019:307). Generally, it has been notified that whenever quality methodologies are applied, there seems to be too much focus on training people in tools and techniques and at the same time too little focus on building the right company culture (Dahlgaard and Dahlgaard-Park, 2006). Additionally, concentrating on deploying too many lean concepts can result in negative feedback from employees in terms of utilization. This is because employees are required to internalize each concept.

The optimal number of Lean tools and methods should be enforced to realize the maximum benefits (Tyagi et al., 2015).

4.2 Sales Processes, Key Account Management and Sales Support

In this subsection, characteristics of sales processes, key account management and sales support roles, in business-to-business sales context are introduced.

4.2.1 Sales Processes Characteristics

Generic process principles and development methods can be utilized in a sales process. A sales process describes income from sales as the output of a series of events. A generic sales process in business-to-business environment consists of prospecting as input, analyzing customer needs and eventually offering a solution. A sales process is a cross-functional effort including sales, marketing and customer service, each having contacts with the customer during the process. In sales processes, low inputs or quality are the most frequent constraints for throughput. (Selden, 1998)

Consultative selling is the process of professionally providing information or helping customers take intelligent actions. It involves proactive communication with a customer to facilitate an identification and resolution of customer problem. As such, it adds value to the customer as a customized solution. The development of trust between the sales engineer and the customer and dependence in this process provides a barrier to switching of provider for the customer. (Liu and Leach, 2001)

Business-to-business sales is developing in three interrelated aspects: from a function to a process, from an isolated activity to an integrated one, and into being strategic rather than operational (Storbacka et al, 2009). A change can also be seen in the field of marketing as a paradigm shift from the dominant logic of focus on tangible resources with embedded value toward dynamic exchange relationships that involve performing processes and exchanging skills and services in which value is co-created with the customer (Vargo et al).

4.2.2 Key Account Management

Sales in business-to-business context is associated with account management and solution development, with increasing role in relationship management in forms of key account management (Storbacka et al, 2009). Key account management is an approach of building a portfolio of long-term accounts with a significant commitment to co-operation gained by offering a continuous product and service package tailored to their individual needs. This approach draws from the notion that a limited key account portfolio creates more revenue with the same resources when comparing to an unlimited customer portfolio. Other factors leading to utilizing key customer management include market maturity, increased customer power and globalization (McDonald et al, 1997).

Key account management drives integration with other functions, caused by the account manager needs of ensuring customer profitability, and therefore integrate and reconfigure resources from other functional departments to satisfy customer requirements (Storbacka et al., 2009). These factors imply that sales processes are integrating with service processes. From a sales process point of view, studies suggest that key account management creates conflicts, and furthermore complexity, to cross-functional collaboration within a sales organization because in order to meet the customer's needs, the key account manager, by employing various strategies, is required to influence internal groups in undertaking tasks potentially not being in line with the goals of these groups (Speakman and Ryals, 2012). According to case studies (Storbacka et al., 2009) in solution selling and key account management contexts, the marketing-sales interface is not the most important one. Instead, the documented cases reveal that the important cross-functionalities are with finance, manufacturing, supply, engineering, and servicing.

According to Guesalaga et al. (2018), as key account management becomes more embedded in business models, investment in cross-functional key account teams becomes more evident, creating a need to provide a more formalized operational network for key account managers. The responsibilities of key account management teams are constantly evolving. Key account management teams have the dual challenge of enabling customer access to the supplier resources and creating and capturing value for suppliers. The requirements for operational, technical, logistical, marketing, financial and legal expertise and resources and capabilities are broad, as seen in figure 11. Furthermore, complexity makes teams difficult to design and manage.

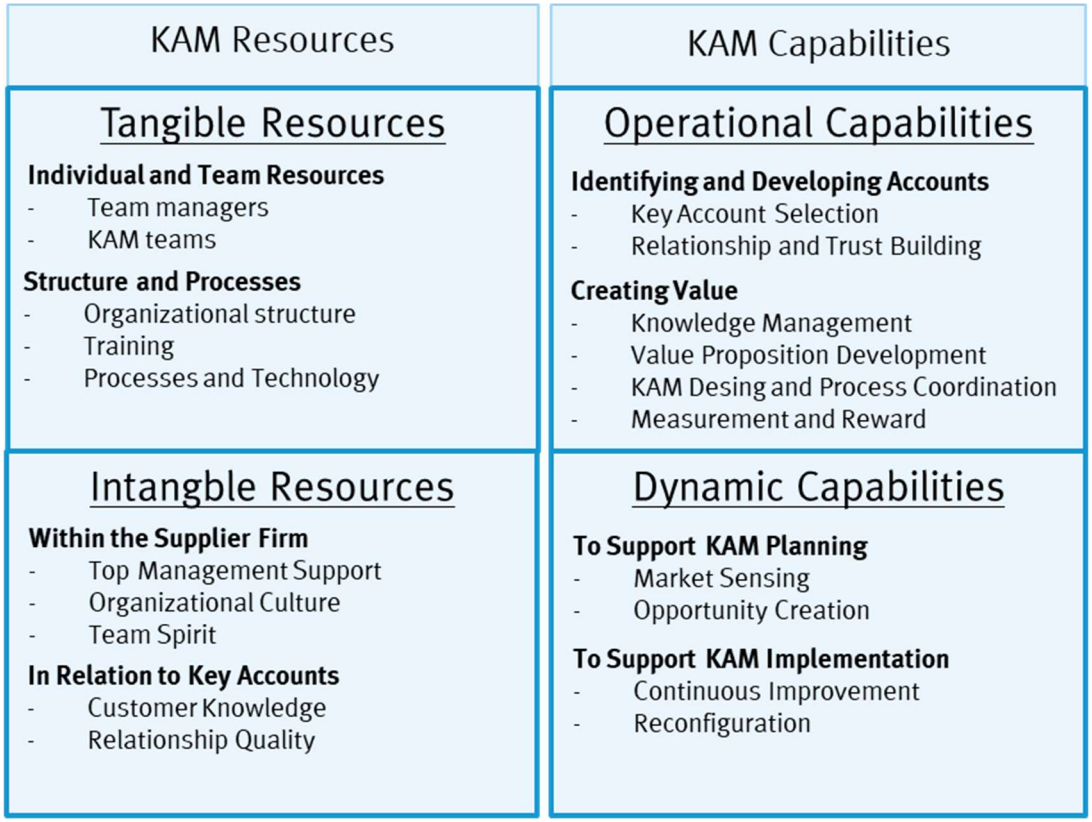

Figure 11. Resource-based key account management framework (Guesalaga et al., 2018)

A customer-centric culture based on cross-functional cooperation is closely associated with successful key account management. The key account management requires a culture based on internal interaction and cooperation. Executives from sales and marketing functional areas may perceive losses of power and resources, increased workloads, and greater tensions in the working environment, causing resistance to key account management implementation. (Guesalaga et al., 2018)

4.3 Process Improvement Elements

In this subsection, process improvement elements of strategic alignment, managerial support, problem identification and resolution, and structural framework suggested by Holweg et al. (2018:176) are elaborated.

4.3.1 Strategic alignment

Operational process improvement should be linked to the wider purpose and objectives of the firm. The metrics derived from the strategy are to be cascaded down to the process operative level organization so that the activities are aligned with the strategy (Holweg et al., 2018:131). Organizations that are not aligned with a strategy are less capable of implementing their strategy and furthermore reach their business goals as intended. The poor performance could be seen in poor customer attraction and retention, higher costs, organizational dysfunctions or financial underperformance (Trevor and Varcoe, 2016).

Processes require a fit between tasks and external requirements. Operational capabilities challenge the strategic decisions of a firm according to its external influences, such as the market position, as seen in figure 12. Strategic decisions about the nature of the operations also define whether its processes are of volume or variety. For example, high volume processes require dedicated assets with specialized tasks. (Holweg et al., 2018:132)

Figure 12. Two-way process of strategy formulation (Holweg et al., 2018:132)

When considering services creating value through an encounter with the customer, such as application support in line with a sales process, the company strategy formulates a service task. The service task states why the service exists in the marketplace and what kind of customer value is proposed within the service. The service task demands are

however defined by the customers. This is because a service itself is represents a product as well as an operative activity. In this sense, an effective service task should directly inform the strategy formulation. (Holweg et al., 2018:144)

Failures in a company's management system, the integrated set of processes and tools that a company uses to develop its strategy, translate it into operational actions, and monitor and improve the effectiveness of both, are what cause underperformance in companies. The failure to balance the tensions between strategy and operations is pervasive. A closed-loop management system could prevent such shortfalls by reacting to misalignment. (Kaplan and Norton., 2008)

Kaplan and Norton suggest utilizing a five-stage loop management system. The loop begins with strategy development. A strategy statement is then translated into specific objectives and initiatives, using other tools and processes, including strategy maps and balanced scorecards. Strategy implementation links strategy to operations with a third set of tools and processes, including quality and process management, reengineering and process dashboards. Moving further, managers continually review internal operational data and external data on the business environment. Finally, managers periodically assess the strategy, updating it when they learn that the assumptions underlying it are obsolete or faulty, which starts another loop around the system. (Kaplan and Norton, 2008)

As a part of a closed loop management system, Kaplan and Norton (1992) suggest utilizing a balanced scorecard in aligning processes to strategy. A balanced scorecard is a carefully selected set of metrics collected from the organization from different perspectives: The customer, the internal, the innovation and learning, and the financial perspective. The balanced scorecard enables managers to describe how they expect to translate quality improvements into increased revenues. The balanced scorecard process also guides organizations to redeploy their resources away from nonstrategic process improvements and toward those processes most critical for implementing the strategy to achieve the required customer and financial performance. (Kaplan and Norton, 2001).

Creating intrinsically motivating tasks aligned with the business strategy and measuring relevant and operations-based performance indicators empower the managers of processes, gives them the responsibility for their task outcomes, and enables the provision of strategic feedback. Extrinsic motivation is driven by balanced scorecard derived rewards aligned with the business strategy and should not be neglected as rewards also have an impact on intrinsic motivation. These motivators combined increase performance (Decoene and Bruggeman, 2015).

4.3.2 Management Support

Management is required to continuously pay attention to process improvement. This is built upon consistent communication, regular reviews and attention to problems (Holweg et al., 2018:176). Utilizing process improvement methodologies require fundamental organizational changes in organizational structure, culture and management processes. Failures in considering factors affecting to business process changes have attributed failures in development projects (Sikdar and Bayyazhi, 2013). In this regard, managerial roles come into consideration.

Middle and senior managers are critical of launching Lean adaptation processes. Studies show that the teams having leaders engaged in the initiative were more successful than teams whose leaders were not. Over time, a system of continual improvement can be put together. (Staats and Upton, 2011)

Process management is a responsibility over process actions. Process manager ensures that the process has the input and resources it needs to produce the product or service sufficient for the desired output. Functional organizational management is conflicted with the process view because processes work across functional borders and these two approaches in management may have differing interests and concerns. Combining roles of process and functional management is difficult for these same reasons. (Harmon, 2019:125-128)

A process view of organizations has been implemented in many companies partially but only few have fundamentally changed their operations. In most companies, power still resides in vertical units. As established previously, having a mix of vertical and horizontal

processes create conflicts of interest. Primarily, the conflicts in process overlaps are integrated by pooling the common resources and collaboration of process owners. All of the changes result in a change in manager's interaction with workers. There are fewer managerial levels and managing culture becomes more of coaching and process owners are acting more as speakers for the process as teams have taken more responsibility. Leading is done through negotiation and collaboration. (Hammer and Stanton, 1999)

The change to a process enterprise is usually a challenge for a company. The change should be connected to an overarching strategic initiative and the process owners should be high-profile, respected executives. Through prototype teams, organizational problems and benefits can be identified. Usually the biggest resistance for change comes from the management as the authority is changing. (Hammer and Stanton, 1999)

4.3.3 Problem Identification and Resolution

Problem identification and resolution is a routine at the process level where the underlying issues are recognized, and solutions are developed (Holweg et al., 2018:178). Topics in problem identification and resolution methods and tools related to sales processes and knowledge work are further discussed in section 4.4.

4.3.4 Structural Framework and Teamwork

A culture of continuous process improvement requires structured routines. These activities include regular team meetings, reviews of issues, quality circles and visual management. Because processes take place in sociotechnical systems, motivation, incentives and rewards are as important considerations as capacity, cycle times and defect rates. Humans have strong tendencies to slide back to old habits. Failure modes in process improvements include senior management lack of respect for the improvement culture, improvements not showing progress in concrete performance indicators, and initiative fatigue (Holweg et al., 2018:178,189).

Holland et al. (2000) recognized critical success factors for cross-functional teamwork, consisting of themes in task design, group composition, organizational context, internal and external processes, and group psychosocial traits. The ability of cross-functional

teams to work in an integrated fashion both reflects and affects the organizational culture. Effective teamwork drives cultural change, which itself enhances teamwork and furthermore reinforces a new culture for improved performance. Additionally, in sales, group consensus is an important attribute in team performance through both helping behavior and team effort behavior (Ahearne et al., 2010). Parker (1994) suggests the following guidelines in managing teams effectively: teams should have clear goals and plans for achieving them, managers should work persistently in gaining commitment of stakeholders, collaborative efforts and shared rewards should be emphasized, training in collaboration should be conducted, and policies and procedures that support a team-based environment should be established.

4.4 Sales and Knowledge Work Improvement Methods

In this subsection, topics in sales and knowledge work and their processes improvement methods are elaborated. Firstly, factors of sales confidence and sales perceived credibility are explored. Secondly, judgement-based work characteristics and views in standardization are presented. Thirdly, utilization of lean methods and tools in knowledge work is presented. Finally, a model for support structures' affect to sales performance is introduced.

4.4.1 Consultative Sales Confidence and Perceived Credibility

Studies indicate that executives with strong sales organizations in major companies, regardless of their performance, lack confidence in their sales organization. The differentiating factor in sales organizations with high performance is the sales functions' superior capabilities across the full spectrum of management, processes and skills. (Atkinson and Koprowski, 2006).

According to Liu and Leach (2001), the perceived credibility of a sales engineer, or a key account manager, in consultative sales consists of the perceived expertise and trust. Without these attributes, customers are hesitant in adopting the solutions presented by a sales engineer. In developing perceptions of expertise, perceptions of a sales engineer's power in the supply-firm and of the quality of interactions were found to be important.

Additionally, the perceived expertise also contributes to the perceived trust. Expertise is typically associated with technical knowledge. However, expertise can also be derived from specialized knowledge of facilitating, meaning that technical knowledge per se is not valued but the combination of knowledge and the power or influence in advocating customer matters within the supplier organization is valued. In this sense, the sales engineer's power in the sales company contributes significantly to the perceived expertise and furthermore credibility in the eyes of the customer. (Liu and Leach, 2001)

4.4.2 Judgement Based Work Characteristics and Standardization

Judgement-based knowledge work or artistic processes, such as customer service, account management, software development or industrial design, where the common thread is variability, are present when the desired customer value is a unique output to the process. When this is not the outcome wanted but variation is inherent, the desired process characteristic is a mass-customization process. The conditions that favor artistic processes are when the traditional scientific approach is not effective, for example when the same rules cannot be applied to all circumstances. Strict rules may passivate a creative process. Artistic processes are adapted where no consistent definition of quality exists. Uniqueness and variation must be created by artists who understand individual preferences. To do this successfully, it is required to identify where art or science will add value for customers. (Hall and Johnson, 2009)

In order to support artistic processes, an infrastructure supporting artistic freedom is required. Additionally, a continual exposure feedback from customers is needed to prevent construction of false notion of quality. Managers must evaluate whether the process needs both artistic and scientific processes. Artistic processes should be separated from support processes that could be standardized. The judgement-based worker should understand customer needs, act without perfect information, and be able to learn from the outcomes. (Hall and Johnson, 2009)

It is impossible to achieve perfect satisfaction due to the variations that are characteristic for artistic processes. Failures should be considered as learning opportunities and should be used for identifying which ones could be prevented or minimized in the future. If a point where failures are rare, it indicates that the process has become predictable and

can be turned into a science. Finally, the division between art and science should be periodically re-evaluated. Changing environment can alter the landscape in ways that make judgement-based work desirable. (Hall and Johnson, 2009)

4.4.3 Lean Methods in Knowledge Work

Attempts to implement Lean methods have proved to be difficult in knowledge work. The work is not repetitive and cannot be unambiguously defined. But even when creative knowledge is inherently tacit, applying Lean principles can lead to more effective collaboration and more effective knowledge creation. A substantial amount of knowledge does not have to be tacit and can be articulated and captured in writing if the organization strives to do so. Studies show that lean projects operations performed no better on measures of quality, but they produced results in terms of time and cost. (Staats and Upton, 2011)

In applying Lean methodology to knowledge work, continually rooting out waste should be an integral part of the work culture. This means identifying non-value-adding activities and replacing them with value-adding activities. The work-place should also strive to make tacit knowledge explicit. The key is to challenge the assumption of all knowledge being inherently tacit. The practice of writing down exactly how to perform a task, clearly defining the substance, order, timing, and desired result, has delivered significant value to manufacturers. Additionally, communication methods between workers should be clearly defined. (Staats and Upton, 2011)

According to Tyagi et al. (2015), one approach in utilizing Lean methods in knowledge work is in improving the knowledge creation process. Existing knowledge within an organization is exploited in dealing with problems by developing their solutions. During this problem-solving exercise, knowledge is being created through interactions between actors in the process. New developments requiring tacit knowledge is combined with existing explicit knowledge and generated into new explicit knowledge. Efficient knowledge creation decreases the magnitude of knowledge gaps, assists future projects to start from a higher level of knowledge, and helps in making the right decisions quickly for faster and improved quality outcomes. It also assists in reducing costly rework at the back end of the process by creating knowledge at the right time and right place. Lean

tools that support knowledge creation in all knowledge creation modes include Scrum, Plan-Do-Check-Act, and the 5 whys. Additionally, the A3 visual tool is effective in transforming tacit knowledge into explicit knowledge. Employee cross-training is effective when transferring tacit knowledge within an organization. (Tyagi et al., 2015)

4.4.4 Sales Support Structures

Team based sales is critical for high revenue business because a sales engineer does not necessarily possess all the required resources or capabilities for an effective sales activity. Dimensions in sales activity adding the requirements resources and capabilities in a sales process include workload, customization, complexity, and risk. Furthermore, roles in a sales activity include initiating, coordinating, acting as a resource, approving and implementing. For example, technical support provides information or expertise and therefore acts as a resource support. (Arndt and Harkins, 2012)

Arndt and Harkins (2012) suggest three types of sales support structures for achieving the best performance in sales: Self-support, where the sales engineer is personally for the activity and rely on personal expertise and resources, core team support, in which support activities are integrated into a cross-functional selling team with an appointed manager, and external support with a centralized department outside the sales chain of command with pooled sales support. Arndt and Harkins (2012) propose a conceptual model of the effects of sales activity dimensions, support structure to the sales activity performance and sales engineer role stress further affecting to sales performance. Consequently, correct selection of support structure according to the activity has an impact on sales performance. From this, a selection model for a most effective sales support structure is proposed, as seen in figure 13.

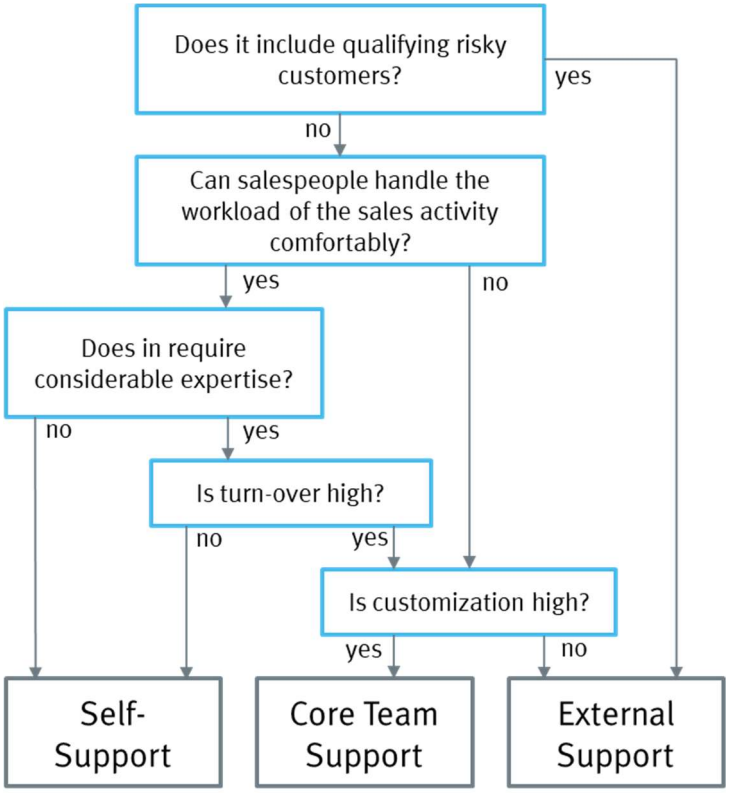

Figure 13. Sales support decision model for support activities (Arndt and Harkins, 2012)

4.5 Conceptual Framework of Application Support Process Improvement

In this subsection, the topics covered in the previous sections are summarized into a conceptual framework to which the development work for an improved sales and application support processes is grounded upon, enabling an establishment of systemic view to the processes and addressing the issues found in the current state analysis stage. Figure 14 presents the conceptual framework for building a proposal in this study. The framework consists of six main elements, constructing a routine for process improvement element.

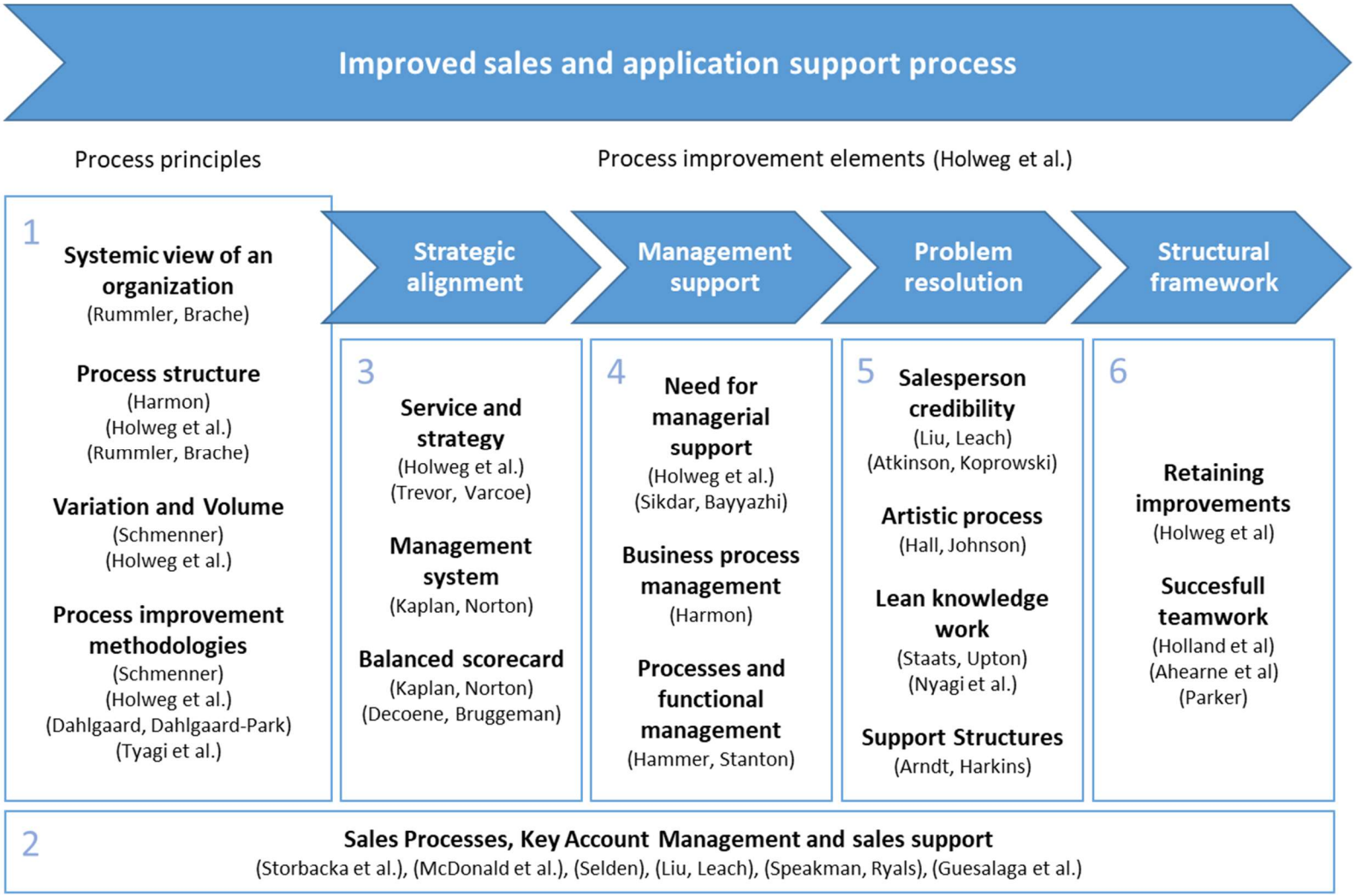

Figure 14. Conceptual framework of this stud

Metropolia

The first element describes the principles in operations management. This element addresses the process flow related issues found in the current state analysis stage and also addresses the importance of culture as a facilitator of improvement. As the systemic view of the sales and application support process was found vague, in order to ground decisions for the further improvement work, it was necessary to elaborate on the systemic view of the process at hand, define the desired basic characteristics and to examine the reactions of improvement actions for the process. Literature supports this view as a prerequisite for process improvement. Additionally, theory on process variation and volume defines the process improvement restrictions as well as opportunities in a business context. It is established that process improvement methodologies stem from the same heritage and have similarities to allow combinations. Lean is a dominant approach in industrial companies process improvement and has shown success. The primary objective in Lean process improvement is to eliminate non-value-adding activities.

The second element describes the current generic operational environment and precepts of a consultative sales processes and the increasing weight and demands of key account management especially in business-to-business sales context, according to literature. These dimensions are to be considered when developing solutions to improve an application support process for a sales process in a competitive business-to-business sales environment. It is established that key account management creates conflicts in rigid support processes because key account managers provide the customers with specialized solutions and require activities outside conventional roles from within the supplying organization. Providing the key account management with the required resources and capabilities will decrease conflict situations.

The elements through three to six construct a process improvement approach suggested by Holweg et al. (2018), recognized as a generic routine underpinning any process improvement methodology. These elements contain topics relevant to this study in line with the corresponding improvement elements and are to be addressed timely as the improvement routine progresses.

The third element includes topics under the theme of strategic alignment. It is established that the operations require alignment with the company strategy. Additionally, it was shown that a service process has characteristics of a product and additionally requires

alignment with customer needs. Tools and their intent for effective management and strategic alignment are proposed by Kaplan and Norton (1992, 2001, 2008).

The fourth element introduces requirements of management support for process improvement. It is presented that managerial support is critical for process improvement. Additionally, utilizing process improvement methodologies require fundamental organizational changes in organizational structure, culture and management processes. Having a mix of vertical and horizontal management creates conflicts and these concerns require consideration.

The fifth element contains themes in the study specific problem identification and resolution methods and tools. This is built by presenting methodologies and tools related to the topics found in the current state analysis stage of this study and considering the characteristics of the process at hand. However, it should be noted that topics addressing the findings of current state analysis are also found in other elements of the process improvement approach. In a sales process context, it was found that managerial confidence on sales organization does not necessarily correlate with the actual performance of the organization, implying that an effective operative system is a critical component to company performance. Additionally, sales engineer's perceived credibility, which consists of conceived expertise and trust, affects sales. However, expertise can also be regarded as a general ability to facilitate customer issues. It is established that the type of work, conducted in the sales and application support processes, involves judgement-based work or artistic processes. This is to be considered when standardizing activities as artistic processes require artistic freedom and the outcomes have high variability. Lean methods in knowledge work are concluded to be applicable. An approach in utilizing Lean tools is proposed by standardizing knowledge creation within the organization. The objective is to maximize the transfer of tacit knowledge onto explicit knowledge and furthermore increase the flow of information within the organization. Additionally, a model for correct selection of support structure is presented. Selection of the support structure has an impact on sales performance.

The sixth and final element describes the need for a structural framework for a continuous improvement culture and eliminating backsliding of the process improvements,

which happens for various reasons. In an organizational context, effective cross-functional teamwork including management establishes a working culture and so is critical for retaining improvements in processes.

Based on this conceptual framework and the findings in the current state analysis stage, an initial proposal was built with the objective of improving the application support process for electric automation sales. This is described in Section 5.

5 Building Proposal for an Improved Application Support Process

This section merges the findings of the current state analysis stage and the conceptual framework towards building an initial proposal for an improved application support process with the information acquired through Data 2. Subsection 5.1 gives an overview of the proposal building stage. In subsection 5.2, findings in Data 2 collection are presented. Subsections through 5.3 to 5.7 elaborate on suggested improvements according to the conceptual framework. Finally, in subsection 5.8 a proposal draft is presented.

5.1 Overview of the Proposal Building Stage

The objective of this thesis was to propose improvements to the current sales process in its consultative approach by an increased contribution and effective utilization of technical application support, in the electric automation product group.

In the current state analysis stage, it was realized that the application support was effectively a separable process in line with a sales process, with a desired focus on key account management needs. Discovered areas of improvement included a lack of clarity in the support workflow and desired characteristic of work variation in relation to volume, misalignment of sales strategy with the support process, insufficient addressing of key account management needs, unclear organizational roles, tasks and goals, lack of sales engineer confidence, overlooking customer issues and unclear performance measurement. From these premises, subjects were selected to be explored in relevant literature.

An approach for process improvement was selected with elements of strategic alignment, gaining management support, problem identification and resolution, and setting a structural framework. Additionally, process principles were established. The focus areas found in the current state analysis stage were explored, classified and placed within the relevant elements to form a conceptual framework. The environment of sales and key account management was to be considered in terms of required capabilities and resources. Sales engineer confidence would be addressed from the point of customer perceived expertise and the judgement-based work characteristics and requirements were acknowledged. Tools from the Lean methodology could be utilized for knowledge creation for a more effective handling of knowledge.

Based on acquired knowledge, an initial proposal was built both in co-development and collecting direct input. The initial proposal consisted of three phases: First, the findings of the current state analysis stage were elaborated in a managerial group discussion. In the same instance, a discussion followed around the topics of the conceptual framework. This working method was selected to establish a constructive process improvement atmosphere by involving the management and to utilize co-development. Secondly, a free form questionnaire was distributed in the company, mainly to sales engineers, for collecting views for a desired application support process. This was because the application support process could be considered as an internal service targeted towards the sales engineers, the internal customership being under development. It was therefore important to comprehend and realize a desired service task of a sales engineer. Finally, the output of the managerial group discussions and the questionnaire were compiled into an initial proposal.

5.2 Findings of Data Collection 2

For building an initial proposal for an improved application support process, improvement proposals from the stakeholders in the proposal building stage (data 2) were collected. Table 3 shows the suggestions in correlation with the found areas of improvement according to the current stage analysis stage (data 1).

Table 3. Improvement ideas (data 2) grouped according to the key focus areas (data 1)

	Key focus area from CSA *(Data 1)*	*Suggestions from stakeholders* *(Data 2)*	*Description of the suggestions*
1	Lack of structured view to application support	a) Internal customer service approach to application support – sales interface b) Tool for following sales project progress	a) It could be concluded from the current state analysis that the internal customer relationship between application support and sales requires improvement. A service task approach could improve answering to this demand. b) The current tool is difficult for finding information. A more visual tool could improve the situation.
2	Support workflow does not support opportunity identification	a) Involvement of application support earlier in the sales process b) Tool for making the customer technical information explicit c) Sales plan process aligned with the sales process	a) The potential is currently not recognized or even misrecognized by the sales engineers. By involving an application support in the process from the beginning potential could be recognized. b) Sales plan tool is not used correctly and so customer knowledge is mostly tacit. Improving the tool could improve knowledge utilization. c) Sales plan utilization varies. Alignment of sales plan sessions with sales projects could make the sales plan process timely and more accurate.
3	Misalignment of sales strategy with the support process	a) Align support activities to a focused strategy	a) Focusing on the most standard solutions and the most prominent opportunities could decrease variation and the requirements for specialized knowledge. Setting the application support task boundaries according to the strategy could improve effectiveness.
4	Insufficient addressing of key account management needs	a) Knowledge management of key customers in after sales phase b) Communication of limited resources c) Utilization of team selling concept	a) A training plan and follow-up for key customers could decrease unplanned activities of technical support and keep communication active and increase contacts towards the key accounts. b) Sales engineers could be guided towards being more self-efficient or utilizing external support in smaller accounts. This could free resources to key account needs. c) Application support should take a more active role in team selling. This could improve the key account approach. Accepting flexible roles in key account management could improve performance and decrease conflicts.

5	Unclear organizational roles and tasks	a) Clear communication roles b) Clear definition of roles c) Guidelines to application support service	a) Clear communication of sales engineer and application support role within the sales process aligned with the sales operating model could improve effectiveness as role clarity would increase. b) Clarifying roles to fit to the sales operating model could increase alignment with the sales strategy and guidelines. Adding a feedback of the application support utilization to the management could improve the management of sales in application support utilization and vice versa. c) Guidelines for could make application support service activities easier to approach for the operations team.
6	Desired characteristic process variation in relation to volume	a) Increased throughput with decreased variation b) Guidelines for technical sales approach for sales engineers	a) Decreasing variation in the application support process could increase application support process throughput. This could be realized through role specialization and knowledge creation standardization. b) Creating guidelines to sales engineer for approaching technical matters could make offering a solution standardized.
7	Unclear performance measurement	a) Measurement of opportunities instead of just revenue and visits	a) Quality and quantity of business opportunities could improve as opportunities would be a key performance indicator together with visits and revenue.
8	Lack of sales engineer confidence	a) Increase involvement of application support in sales activities b) Building trust within the work team	a) Increasing the involvement of application support throughout the sales process, especially in the cases where sales engineer confidence is low, could increase knowledge and confidence of the sales engineer. b) Improving the work team critical success factors could lead to increased trust and effectiveness.
9	Overlooking of customer issues	a) Visit agenda defined by the sales engineer b) Customer orientation in every activity	a) Making sure that the sales engineer defines a value-adding agenda with the best knowledge of the customer could decrease misfits in solution offering and meeting subjects b) Culture of eliminating non-value adding activities could be implemented to improve customer orientation

As shown in table 3, improvement suggestions were plentiful. The main themes in the discussions around the application support process were attitudes and culture towards

a structured approach to a sales process, involvement of application support in qualification stage of the sales process and sales confidence in electric automation. A quote from a company manager enlightens a will to build a functional support process according to the sales engineers' needs:

> A sales engineer is not and will not be "a technical jargon speaker"…. We have to accept this and build the organization accordingly.

Next, the suggestions and discourse around them are presented, grouped according to their respective theme into the elements of the constructed conceptual framework for process improvement.

5.3 Process Principles

In this subsection, improvement suggestions under the theme of process principles are elaborated and discussed. The following suggestions would affect the process flow and hence the whole process structure and so they should be considered from a process perspective.

5.3.1 Increased Volume with Decreased Variation

A clear wish from the management team is an increased revenue in electric automation. A conclusion therefore is a wish of increased application support process throughput. When considering the theory of processes, trade-off in increased throughput is a demand to decrease variation. Therefore, decreasing variation in the application support process could increase application support process throughput.

According to literature, increased throughput could be realized without increasing the application support capacity. The means would include role specialization, even flow of information and knowledge creation standardization for a more efficient initial knowledge input for the knowledge work process. Role specialization could mean technological specialization so that support roles would be divided according to different products groups, or the nature of application support need. This could be achieved by an initial selection of both support structure and product group. However, this would require similar tech-

nical knowledge base in every support structure. It was realized in the current state analysis that this is merely under development in the current organization. Additionally, specialization would make a small sized organization dependent on individual workers.

Another approach is knowledge creation standardization. This would mean tools for explicit knowledge creation and utilizing this knowledge in new activities. Furthermore, explicit knowledge creation realization would mean a structured way of reporting application support activities. Furthermore, this would support the development of knowledge base in different support structures.

5.3.2 Earlier Involvement of Application Support

As found in the current state analysis, business opportunities are currently not recognized to the expected extent or even misrecognized by the sales engineers in the identification phase of the sales process. By involving an application support in the process from the beginning, potential could be recognized. The current process of customer information creates a bottleneck of information as the information is primarily held by the sales engineer until a sales plan meeting. The information at this stage might even be wrong and so create a wrong outcome.

Involving the application engineer in an early phase would increase the information value especially with less capable sales engineers and bring the information to the application support process earlier. A downside in this procedure would be an increased workload for the application engineer. However, preparations for opportunity identification activities could be done with a low threshold. Additionally, an improved flow of information could contribute to an increased throughput in the application support process. A sales engineer described an activity that would fulfil his needs for providing information to the application support process and deciding on moving forward:

> First, brainstorming between the sales engineer and application support of what kind of case it is. Secondly, questioning whether the sales engineer has an understanding, of what the customer is looking for. Finally, thinking of a technical solution with a big brush to see, if there really is an opportunity with the case.

5.3.3 Increasing Involvement of Application Support in Sales Activities

It was found in the current state analysis that some sales engineers lacked confidence for electric automation sales. It was also found that a certain confidence or competence level would increase self-sufficiency. Literature suggests that the perceived credibility and additionally the perceived trust of a sales engineer would increase if the facilitating power in the eyes of the customer would increase. This would also apply for the lack of competence. Increasing the involvement of application support throughout the sales process, especially in the cases where sales engineer confidence is low, could increase knowledge and confidence of the sales engineer, showing a growing performance and an increased self-sufficiency. A manager commented:

> We may also have to accept that some guys will never become electric automation sales engineers. Let's focus on those guys where we see potential.

The required involvement could be estimated by the perceived potential of the sales engineer confidence and competence.

5.3.4 Sales Plan Process Alignment with the Sales Process

A finding in the current state analysis was that the sales plan utilization varies. Alignment of sales plan, meaning a change in the whole sales plan routine, sessions with sales projects could make the sales plan process timely and more accurate. This would improve the process flow as the information would be more recent, attributing to improved reactions to sales opportunities and again, an improved flow in the process.

5.4 Key Account Management and Sales Support Structure

In this subsection, improvement suggestions under the theme of key account management and the sales support structure are elaborated and discussed. Although these suggestions might affect the process structure, the subjects are primarily considered in the context of sales support and key account management needs.

5.4.1 Knowledge Management of Key Customers

It was found in the current state analysis that the implementation phase in the sales process creates a lot of unplanned work. In most cases, this was concluded to be because of insufficient technical knowledge of the customer. Key accounts could generate further projects, while bringing in majority of the revenue to begin with, and more contacts could create more opportunities. Additionally, the customer relationship is improved. Communication between the customer and the application support in the after sales phase was considered important by the organization. A sales engineer commented:

> The customer must have a safe feeling to have chosen Festo and a part of it is post-delivery training, support and assurance.

A training plan and follow-up for key accounts could decrease unplanned activities of technical support and keep communication active and increase contacts towards the key accounts.

5.4.2 Utilization of the Team Selling Concept

The case company has a program for team selling. Currently, the team selling concept is not effectively applied. Application support could take an active role in team selling and apply these guidelines in key accounts. This could primarily improve the key account management approach. A sales engineer commented:

> The work would make more sense if application support is not called as “last minute emergency”. Application support can also create "own" contacts from the customer's point of view before the application is delivered to the customer. It is also a good idea to show the customer as early as possible that we also offer application support. This should also make it easier to win the trade.

Accepting flexible roles in key account management could improve performance from a support structure point of view and decrease conflicts as the sales team would have mutual interests in driving the sales process under a key account manager.

5.4.3 Clear Definition of Roles

It was found in the current state analysis that the organization roles were not aligned with the corporate sales operating model roles. Furthermore, this would imply that following the sales guidelines in terms of activities could be hard to accomplish. Clarifying roles to fit to the sales operating model roles could increase alignment with the corporate sales strategy and guidelines. Modifications in the corporate guidelines could then be reacted to with less effort. Clarifying support roles would also make managing the support structures as breaking the role boundaries would be more evident, clearly articulating conflict situations and making handling them constructive. A manager commented:

> We don't have any role that would be 100% in line with the guideline because we are such a small organization. We have local adaptations and combination roles. It does not eliminate the fact that we have the will to go for clearer roles.

5.5 Strategic Alignment

In this subsection, improvement suggestions under the theme of strategic alignment are elaborated and discussed. The alignment of strategy could be applied to internal customer relations between the support and sales, performance measurements and

5.5.1 Internal Customer Service Approach

It could be concluded from the current state analysis that the internal customer relationship between application support and sales requires improvement. This would furthermore imply that the service strategy towards the internal customer is not aligned either with the capabilities or with the needs for a service. A manager commented:

> We must accept that our internal customer satisfaction is not the highest possible. If it doesn't go up, then nothing will change

A service encounter approach could improve answering to this demand. Establishing a structured service model would require mapping the internal customer values and creating a service delivery system with facilities and operating policies.

5.5.2 Measurement of Opportunities Instead of Revenue and Visits

Changing performance measurements to support the chosen strategy could improve alignment of operations with the strategy. Quality and quantity of business opportunities could improve as opportunities would be the key performance indicator together with visits and revenue.

5.5.3 Alignment of Support Activities to a Focused Sales Strategy

It was established in the current state analysis that a focused strategy had been implemented recently. Focusing on the most standard solutions and the most prominent opportunities could decrease variation and the requirements for specialized knowledge. Setting the application support task boundaries according to the strategy could improve effectiveness.

5.6 Management Support

In this subsection, improvement suggestions under the theme of management support are elaborated and discussed. These topics are related to managerial communication of desired practices and culture. It was established from literature, that management is the critical factor in implementing a culture for process improvement.

5.6.1 Customer Orientation in Every Activity

It was suggested that the customer value creation should be in the center of all operations. In this sense, a process view with an outcome of customer value could be embraced. A culture of eliminating non-value-adding activities could be implemented to improve customer orientation. According to literature, a process view for customer value creation should be initiated by the management. A manager commented:

> We should focus more on the customer's agenda. Once the products are familiar to yourself then everything easily goes with that company hat on.

5.6.2 Clear Communication of Roles

In addition to clarifying the support roles, clear communication of sales engineer and application support roles within the sales process, aligned with the sales operating model, could improve effectiveness as role clarity would increase.

Adding a feedback loop of the application support utilization to the sales management could improve management of sales in application support utilization and vice versa. A manager commented:

> These should also be communication from the support function to the sales management so that they know how to train salespeople in the right direction. Because technical support sees a different perspective.

In the matter of overlooking customer issues, making sure that the sales engineer defines a value-adding agenda with the best knowledge of the customer could decrease misfits in solution offering and meeting subjects. A manager commented:

> Preparing for customer visits together establishes a common direction. The sales engineer is responsible for that. When a sales engineer arranges a customer visits, he or she defines the agenda. Another thing is to keep what is agreed. The sales engineer will expect activity, but also assign specific roles.

5.6.3 Communication of Limited Resources

It was found in the current state analysis that majority of application support cases were in small accounts which would take resources from larger business opportunities. According to literature, a correct selection of support structure improves sales performance. In order to guide small account application support to the operations team, or as described in literature - external support, sales engineers could be guided towards being more self-efficient in small business potential or utilizing the operations team. This could free resources to key account needs and furthermore guide sales engineer in directing sales efforts to large potential customers.

5.7 Problem Resolution with Tools and Guidelines

Tools and guidelines for transforming tacit knowledge into explicit and for visual management were suggested for addressing a number of issues. These included a tool for following sales project progress, a tool for making the customer technical information explicit, guidelines for application support services for the operations team, and guidelines for technical sales approaches for sales engineers. According to literature, tools from different methodologies can be utilized. From the Lean methodology tools, the A3 can be utilized for process progress visualization and for drawing the customer technical information overview. This would support collecting tacit information into explicit information and sharing the explicit information within the organization. Additionally, a platform where the tools are easily available should be established.

5.8 Proposal Draft

The proposed improved process for application support in line with the sales process is presented in figure 15. The main principles of the proposal for an improved application support process are an earlier involvement of the application support to allow a more efficient customer opportunity identification, structuring of the support activities in terms of standardizing knowledge work and classifying activities to accommodate better performance in sales, establishing a sales team in a case of both identified potential and an additional expertise demand, and applying a customer knowledge management approach in the implementation and after sales phase of the process. Additionally, a premise for efficient process implementation and management is the establishment of process view for the application support.

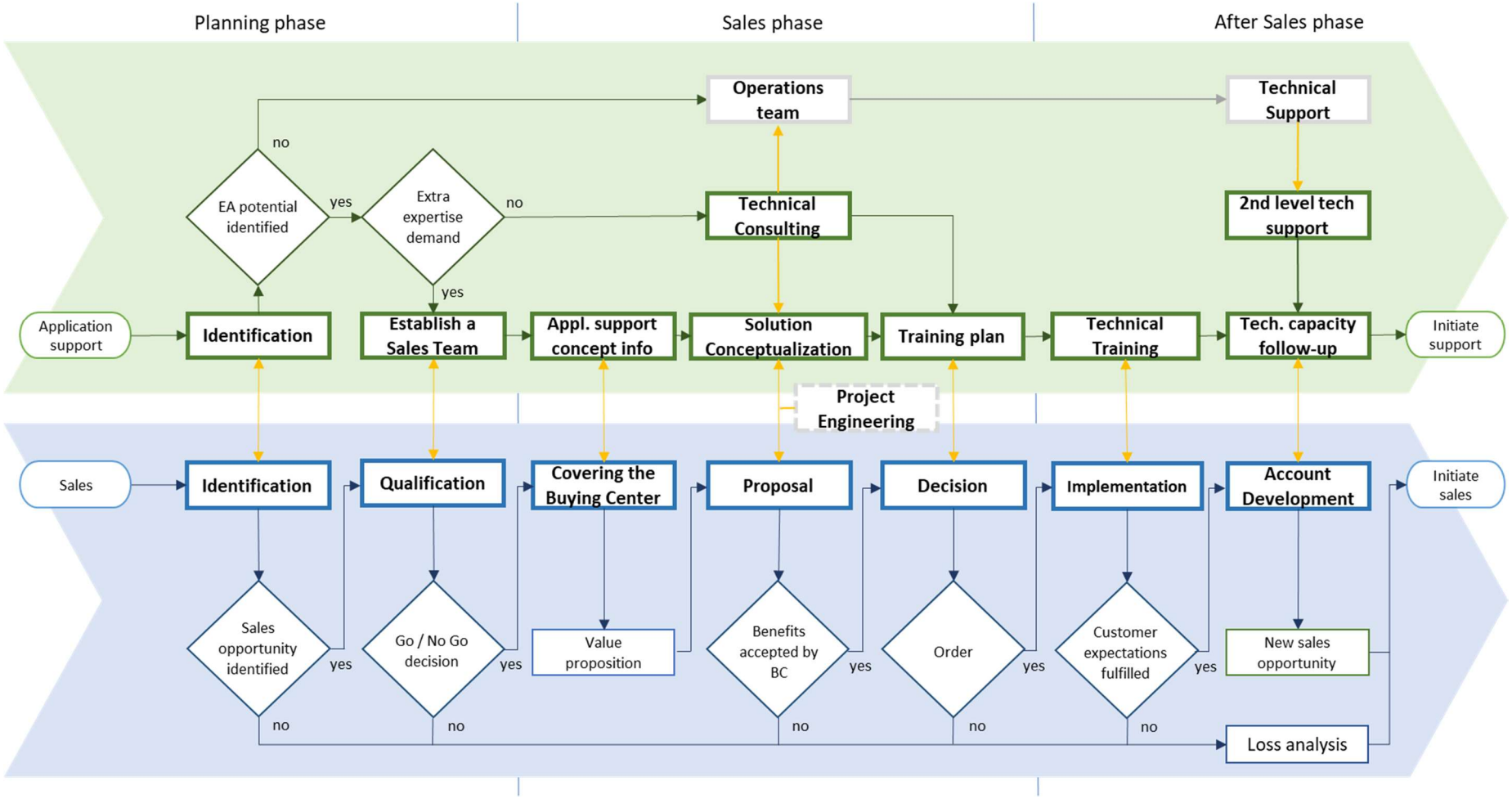

Figure 15. Flowchart of the proposed improved application support process in line with the sales process

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The main activities in the application support process would include, in the order of prioritization, key account sales team application support by utilizing an A3 report, knowledge management of realized projects with the customer, identification of opportunities in the early sales process with the sales engineers, technical consulting to high potential, low expertise requirement sales projects, and technical consulting to operations team for low potential application support.

The improved application support begins with an activity in which the application support engineer is taking part in the customer identification activity with the sales engineer. This means joint customer visits and discussions with the sales engineer to map customer technology and qualify opportunities. This would improve the quality of information input to the application support process.

The next activity is to determine whether the identified electric automation business potential exceeds a threshold worthwhile for providing application support. The threshold may be differing according to accounts if a customer has tactical importance, for instance, influence in the automation market. If the threshold is met, the process continues to determine the structure of application support in the dedicated team. If not, the application support is to be provided by the operations team, acting as an external support structure to the sales force. The application support would provide technical assistance to the operations team if needed. All separate application support activities should be documented to a knowledge pool in a standardized format.

The next activity is considering the demand of expertise and added manpower. If it is found that the sales engineer is in continuous need of help in application support, the sales project includes complicated technology, or the business projected turn-over is high, a sales team is to be set up. If not, the application support will provide technical consulting if needed. Again, all separate application support activities should be documented to a knowledge pool in a standardized format.

If the demand consideration results in a need for extra expertise, a sales team set up activity should take place. This routine activity would be conducted according to the case company team selling concept with the sales engineer as the team manager. A dedicated

A3 tool should be established for following the development of application support for each sales process.

The next activity towards the customer should be the presenting and establishing of the application support service structure to the customer. This would be realized through customer visits. Additionally, the application support engineer should map the customer organization, the customer technical and commercial needs and competitor information. The findings should be presented to the sales team. All application support activities should be documented to a knowledge pool in a standardized format. After confirmation, the findings should be included in the A3 report in terms of application support related matters.

Followed by the customer value mapping, a solution conceptualization should be conducted in co-operation with the customer. This can include the project engineering department, which should then be included in the sales team. After a concept has been realized, the product should be included in the A3 report in terms of application support related matters.

When the sales proceeds to the stage of an order, a customer knowledge management plan should be established. This requires mapping of the customer knowledge profile, mapping of the required knowledge for the realized product, and creating of a training plan for narrowing the gap between the customer current knowledge and the required knowledge. In this instance, the support structures with the external support and the sales team combine, forming a similar policy for knowledge management in major accounts. Knowledge management should be a continuous routine of mapping the customer knowledge profile and narrowing the knowledge gap. Simultaneously, application support is to proceed as a second level technical support for the operations team primary support structure. During the technical capacity follow up activity, the outcome of the A3 report should be reported and concluded for estimating the performance of the application support in the sales process. The positive outcomes of sales opportunities and the overall amount of sales opportunities flowing through the application support process should be the primary performance measurement for application support engineers.

This proposal was presented to the key stakeholders, from where discussions were conducted for validation and further improvement ideas. This is presented in Section 6.

6 Validation of the Proposal

This section reports on the results of the validation stage. Subsection 6.1 describes the overview of this stage. In subsection 6.2, improvement suggestions from Data 3 are presented. Subsection 6.3 further elaborates these suggestions. In subsection 6.4, the final proposal for an improved application support process is presented.

6.1 Overview of the Validation Stage

This section validates the proposal developed in Section 5. The initial proposal was built by finding improvement ideas through examination of relevant literature based on findings made in the current state analysis stage, presenting them to the key stakeholders, and discussing possible improvement methods. After an initial proposal was built, a validation stage was conducted.

In the current state analysis stage, it was realized that the application support was effectively a separable process in line with a sales process, with a desired focus on key account management needs. Discovered areas of improvement included a lack of clarity in the support workflow and desired characteristic of work variation in relation to volume, misalignment of sales strategy with the support process, insufficient addressing of key account management needs, unclear organizational roles, tasks and goals, lack of sales engineer confidence, overlooking customer issues and unclear performance measurement. As an outcome of the proposal building stage, improvement suggestions included an earlier involvement of the application support, structuring of the support, establishing a sales team in a case of both identified potential and an additional expertise demand, and applying a customer knowledge management approach in the implementation and after sales phase of the process. Additionally, establishment of a process view for the application support was proposed.

The validation stage goal was to align the made proposals with the managerial views of the case company and gain commitment for implementation from the managerial level.

The stage was carried out through a presentation of the initial proposal, collecting feedback of the key stakeholders by written answers, and finally elaborative discussions face-to-face with the informants. Discussion at this stage were conducted on the management level, as it was established that management support is fundamental for the success of a process improvement project.

6.2 Findings of Data Collection 3

Table 4 describes the main suggestions from the validation stage.

Table 4. Improvement ideas (data 3) grouped according to the key proposal topics

	Key focus area from the proposal	*Suggestions from stakeholders (Data 3)*	*Description of the suggestions*
1	Establishment of a process view for the application support	a) AE and PM roles separation	a) For alignment with the corporate strategy, product marketing could be more separated from application engineering, with roles and processes clearly described
2	Earlier involvement of the application support to the sales process.	a) PM activities in the early sales process b) AE customer technical qualification	a) Product marketing process brings in potential and could be the predominant support in the early sales process b) Application support could be utilized for qualifying customer technical information in the identification phase for potential
3	Structuring of the support to external and sales team activities	a) A limiter for sales team accounts b) Description of sales required knowledge	a) Capacity for application engineering would not be sufficient to support current amount of priority customer in a sales team model, so a limit for accounts could be set b) Sales required knowledge and training could guide sales towards a self-help structure
4	Knowledge management	a) apply this only to key customers	a) This model could only be applicable for key customers because of support capacity
5	Standardization of knowledge work with tools	a) Hold new tools for a new CRM b) Application support needs mapping for sales project knowledge	a) The case company is introducing a new CRM system, this would enable better sales process information management b) A map of application support needs for sales process knowledge could be built regardless of the new CRM system

The validation stage suggested changes to the initial proposal. These suggestions varied both in scale and means of realization. An overview of the suggestions would propose further roles and activities alignment with corporate guidelines, conservative approach to tools application because of pending changes in the sales IT tools, and minor changes in the support structure. These topics are further discussed in section 6.3.

6.3 Developments to the Proposal Based on Findings of Data 3

In this section, the suggestions from the validation stage (Data 3) are elaborated. The topics under discussion were product management and application support roles separation, structuring of the support process to accommodate the support capacity, and tools implementation. The initial proposal was generally well received, and it was acknowledged that changes in the application support process would increase the effectiveness and strategic alignment of the application support. However, the suggested improvements would improve the applicability of the improvement process and clarify activity responsibilities. The suggestions were then utilized in building a final proposal.

6.3.1 Product management and application support roles

The suggested improvements in the validation stage regarding the roles in the application support process included product marketing separation from application engineering, with roles and processes clearly described according to the sales guidelines for electric automation. Generally, this would mean emphasizing product marketing communication in the initial sales process, shifting to application engineering in a case of found potential and a clear indication of customer needs. It was acknowledged that the roles of marketing and application engineering were somewhat blurred. Furthermore, it was quite difficult to come up with viable activities for application engineering per se towards customers in the early sales process. A clear description of activities with clear marketing communication agenda especially in the identification stage leading to qualification would generate sales leads. Additionally, this method would be more aligned with sales guidelines. It was concluded that individuals have dual roles in the sales process. Therefore, marketing activities would be conducted by the application support engineers and vice versa, marketing personnel would take part in application engineering in later sales process stages. When considering a requirement of improved application knowledge in

the identification stage, it was concluded that the sales engineers could be coached and trained in technology to improve opportunity recognition by the sales engineers.

6.3.2 Support structure

It was concluded that the proposed application support process would require additional capacity in the activities of sales team work and customer knowledge management if the scope of key customers would be sustained at current level. Therefore, it was suggested that the number of key customers run through the sales team activity and knowledge management would have a limit. The criteria for a customer to be included in the sales team activity and knowledge management would be output from a sales project qualification profile activity, with the most prominent business opportunities entered.

6.3.3 Tools implementation

Suggestions from the management implied that a very conservative approach to tools utilization was necessary, because a new customer relationship management (CRM) system was in to be introduced later the same year. This would drastically change the working methods in the sales process. Therefore, it was crucial for application support tools to be aligned with the new CRM. It was acknowledged that the CRM system may not answer directly to application support documentation needs. For this reason, it was suggested that the needs for effective application support knowledge creation and sharing would be mapped. These fit of these needs to the new system would then be evaluated and tools to fit application engineering would be built.

6.4 Final Proposal

The final proposal for an improved application support process is presented in figure 16, with an aim of enhancing the consultative approach in the case company sales process.

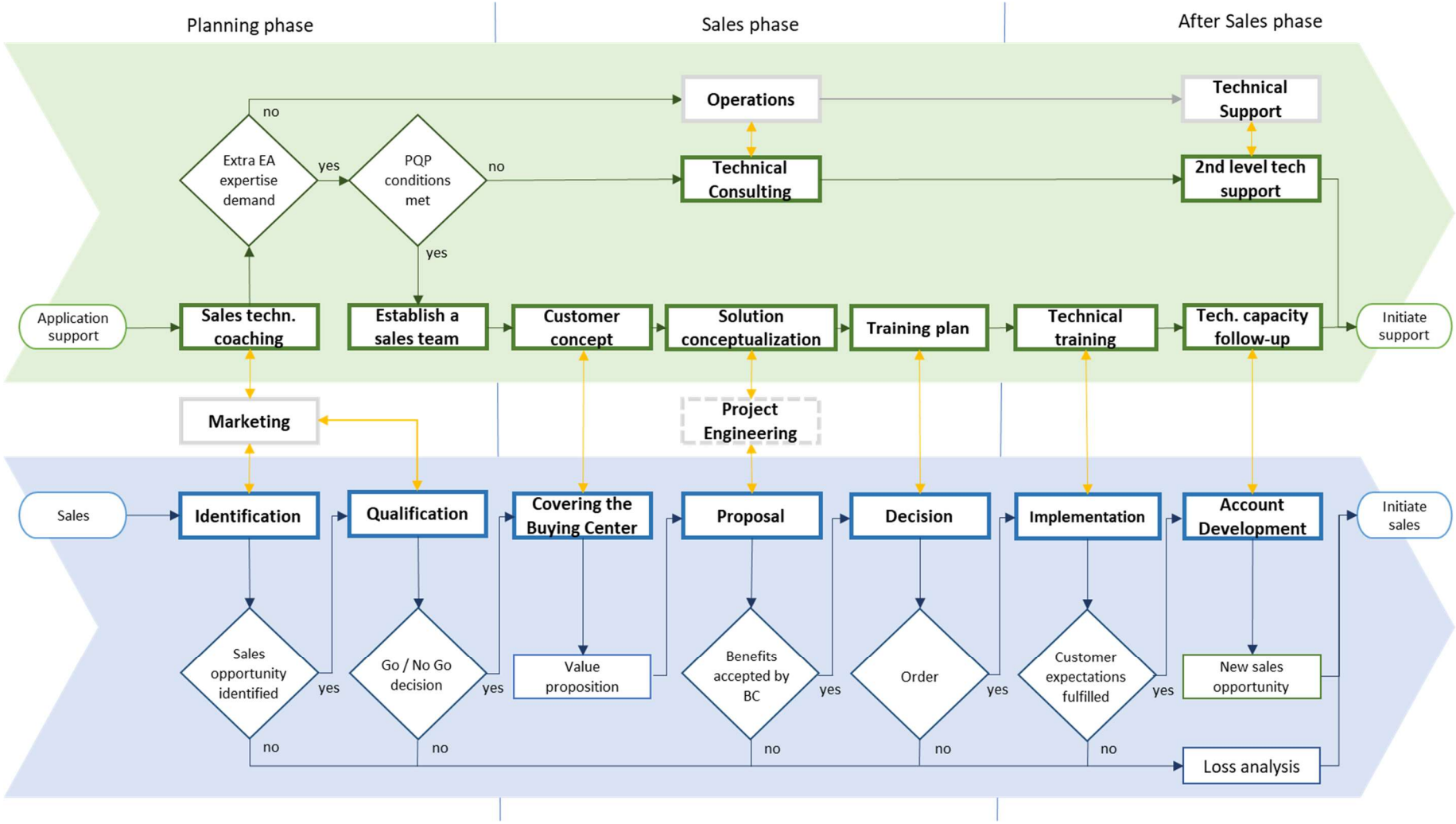

Figure 16. Flowchart of the final proposal for an improved application support process in line with the sales process

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The final proposal follows the main principles of the initial proposal with some changes in process structure and activities. The main differences are the adding of marketing activities in the identification and qualification phase, clarifying the application support activities, restructuring of the sales team and knowledge management activities to suit the support capacity, and changing the classification conditions in the support structures.

The identification and qualification stage were changed so that the input of the application engineering is effectively generated by marketing activities. These should be conducted mainly by the sales engineers with marketing support but could also include application support engineers, however conducting marketing activities. Application engineers' role in the identification stage should also include technical coaching and training of sales engineers in recognizing customer used technology. Marketing and sales should be responsible in generating the necessary information for the application support structure selection in the qualification stage.

The structure selection criteria were changed so that the amount of required technical expertise would define the support structure, and a complete sales project qualification profile (PQP) would define the customers selected to a sales team activity. This would bring the most prominent customers under key account resources. Additionally, the number of customers in the sales team effort should be limited to ensure functional capacity.

The sales team activity selection should also define the knowledge management activity. The key customers should be provided with a training plan and follow-up of technical capacity. This would ensure a proactive approach to after sales activities and potentially generate new leads within the key customers while ensuring sufficient capacity for application support.

Technical tools used in the sales team application engineering should be considered in line with the CRM use. The technical support tools should meet the knowledge creation needs of the application engineering. In the activities of application engineering consulting the operations team, a clear documentation should be generated for each activity. This would ensure knowledge creation and distribution within the organization.

7 Conclusions

In this section, an executive summary presents an overview of this thesis in subsection 7.1, managerial implications are provided for an effective implementation of the proposal in subsection 7.2, and evaluation on the accomplishments of this thesis are discussed in subsection 7.3. Finally in subsection 7.4, closing words will conclude this thesis.

7.1 Executive Summary

The objective of this thesis was to enhance the consultative approach of the case company Festo technical sales under the electric automation business unit by proposing an improved application support process. As a consultative sales approach is the desired style for the case company business-to-business automation components sales, while also widely utilized in a competitive market, it is crucial to be effective in it. As technology and projects can be complex, application support can provide value to the customers in utilizing the offered products.

The research utilized an applied action research approach, comprising of four stages: current state analysis, creation of a conceptual framework according to relevant literature, building an initial proposal, and finally validating the proposal. The mainly qualitative data gathered for the research consisted of interviews with key stakeholders, company documentation, group discussions and questionnaires.

In the current state analysis stage, it was realized that the application support was effectively a separable process in line with a sales process, with a desired focus on key account management needs. Discovered areas of improvement included a lack of clarity in the support workflow and desired characteristic of work variation in relation to volume, misalignment of sales strategy with the support process, insufficient addressing of key account management needs, unclear organizational roles, tasks and goals, lack of sales engineer confidence, overlooking customer issues and unclear performance measurement. From these premises, subjects were selected to be explored in relevant literature.

Findings in relevant literature addressed the importance of a process view in an organization for effective process management. Process improvement elements of strategic alignment, managerial support, problem resolution and a structural framework were suggested. In business-to-business sales, facilitating key account management was found

critical in providing customer value and avoiding conflicts within the organization. Suggested improvement methods in literature included standardization of knowledge work, aligning operations and services with corporate strategy and guidelines, gaining management support by stressing a process view instead of functional management, defining a support structure based on sales needs, and implementing a structure enabling continuous process improvement.

After presenting findings of previous stages to the hey stakeholders, an initial proposal was built as a synthesis of stakeholder suggestions. It was concluded that the application support technical knowledge was required in identifying opportunities amongst the customers. Therefore, application support would be included in the sales process early on. As an increased throughput was required while still answering key account needs, the application support process would include key account sales team application support, utilizing standardized tools. For managing the after sales workload and recognizing new potential in the buying customers, knowledge management of realized projects with the customer was suggested. Additionally, since other accounts would also be requiring high-level application support, a structure of external support to high potential, low expertise requirement sales projects and for low potential accounts was proposed.

After building and presenting an initial proposal, a validation round was conducted on managerial level. Consequently, a final proposal was built. The final proposal followed the main principles of the initial proposal with some changes in process structure and activities. It was noticed that the effect of marketing activities to application support would make an earlier introduction of application support somewhat difficult for the sales process. Additionally, this was not aligned with the corporate guidelines. It was so decided, that the application support should provide coaching support to sales engineers and marketing activities would handle the identification and qualification phase. A limitation in capacity would require restructuring of the sales team and knowledge management activities to suit the support capacity, by limiting the amount of key accounts and changing the classification conditions in the support structures. Additionally, tool utilization would be considered at a later instant since the case company was implementing a new CRM system, changing the knowledge creation structure of the sales projects.

When implemented, the improved application support process would increase the sales process throughput with clear activities, roles and standardized knowledge creation, while enabling further improvement. This would have a direct effect in sales performance.

7.2 Managerial Implications

In this section, considerations for an effective implementation of the improved application support process are presented.

First, application support is - as its name implies, a support process. Therefore, it is dependent on the effectiveness of its primary process. In this thesis, it was very well established that many of the found weaknesses had to do with activities in the sales process itself. In this sense, a holistic view to the sales process and its support processes would provide with the best premise for sales process improvement with its support processes. Similar methods of process improvement can also be applied to other processes around the sales process.

Secondly, it should be acknowledged that functional management causes conflicts with process management. A culture for effective process management consists of coaching and process owners acting as speakers for the process as teams take more responsibility. Leading should be done through negotiation and collaboration.

Thirdly, a structure enabling a continuous improvement of processes is critical for effective process management. A structural framework includes routines of regular team meetings, reviews of problems and their resolution, utilizing tools or knowledge creation, and facilitating teams for their processes. Standardizing knowledge creation with a structural framework will increase knowledge flow and furthermore improve expertise growth in an organization.

Fourthly, it has been established that a service process strategy requires alignment with operations. In a case of application support for sales, a successful internal customership requires active mapping of sales engineers' needs and used as a primary input for the application support activity design.

Finally, acknowledging characteristics of artistic processes and thus leaving room for innovation, accepting varying outputs, and facilitating this in every functional team is important. Neglecting artistic processes' needs might impair customer value creation.

7.3 Thesis Evaluation

In this section, credibility, validity, logic and transparency of this thesis are evaluated.

Research credibility is effectively the perceived believability of all working and argumentation methods. Trustworthiness - providing of credibility, is established through informing of research processes. For example, utilizing analytical methods, referring to well established literature correctly, demonstrating integrity and being transparent increase credibility in research (Saldana et al., 2011:136). Research validity is achieved through utilizing multiple data sources establishing a chain of evidence, addressing generalizable matters and effectively answering the research objective. Reliability is demonstrated by replicability, meaning that the outcome is independent of the researcher (Kananen, 2013:189). Making claims require logical warrants - principles in claims reasoning (Booth et al. 2016:155). This ensures claims validity and relevance.

The objective of this thesis was to enhance the consultative approach of the case company technical sales under the electric automation business unit by proposing an improved application support process. An applied action research was conducted, with qualitative research methods utilized. As a result, a proposition for an improved application support process was introduced. Therefore, the initial objective of this thesis was fulfilled.

The coverage of process stakeholders as informants was high, and so the matters could be viewed from many perspectives - in other words, the research included triangulation. Additionally, data was collected with various methods, and was made in a uniform manner between informants in different stages to ensure information comparability and transparency. The research data collection reached points of information saturation, indicating that the data collection was consistent and returned key issues. Initially, an understanding of the sales process, its interfaces and research scope were somewhat vague. The beginning of probing weaknesses and strengths in the current state analysis was somewhat unstructured, with some of the informants impairing the initial objective. In this stage, discussions were less structured. As the overall structure of the application support process and the initial objective of the research work were perceived, more deliberate and targeted questions could be raised. In this sense, research validity varied especially in the beginning.

The sales organization being de-centralized and divided to functional sales teams somewhat affected data gathering as some of the informants were less informed on the thesis progress and were less available for face-to-face meetings. Additionally, a virus pandemic affected meeting policies in later work, limiting possibilities in interaction. This could have contributed to some informants being more influential in proposing focal points, perhaps even biasing views. However, an apparent motivation for improving the application support process created an accessible environment for process improvement. The importance of this research was also well communicated within the organization. This, combined with high inclusion of process stakeholders, contributed to the overall validity of this thesis.

Examining relevant literature presented structured ways in viewing information collected in the current state analysis stage, retroactively affecting the findings from data 1. Consequently, the initial stages of the research work were partly overlapped. Overall, the current stage analysis returned useful information from many perspectives and in varying formats, confirming the key findings, but a lack of initial structure for process improvement had a negative effect on the data validity as discussions in some cases may have turned to subjects outside relevant focus areas or technicalities.

During literature review, the scope was shifted slightly from the initial objective, perhaps because the initial visions of improvements being somewhat mechanistic. Suggestions in literature emphasized the importance of managerial and strategical perspectives. From this premise, the initial view of resolving problems related to certain activities shifted towards a process view and a framework on a wider scope. The relevance of this thesis was therefore raised also to management level, applicable to other types of processes, adding relevance in generic process improvement. From a logical perspective, this also added to the validity of the research, indicating challenges or even errors in the initial scoping of the research and therefore adjusting, according to relevant literature.

The proposed improvements were synthesized from suggestions of stakeholders, supported by highly regarded literature, therefore contributing to the work relevance. Additionally, the built proposal was validated by the key stakeholders. The initial proposal building phase started off slowly. A managerial discussion returned quite little concrete suggestions. This may have been caused by inefficient communication of the current state analysis findings. Substantive information was however received by other means

of collection, such as sales engineer workshop tasks. The input was however significantly improved in the validation stage in managerial discussions. This was due to a different method of conveying information in the initial proposal stage.

It is to be noted that the researcher was a key actor within the process under scrutiny. Research reliability might have suffered without acknowledging the researchers position and possible motives during the process improvement proposal build. Other informants may have also been politicizing the improvement work. These risks were mitigated by aligning improvement suggestions with corporate guidelines and relevant literature for which argumentation is less subjective and more general.

7.4 Closing Words

Technical support processes in sales are growing ever important as the weight of key account management and value co-creation increases in the automation business. A competitive market requires sustained effectiveness and business scalability. Therefore, developing a culture of continuous process improvement is an all-important trait of any high-performance technical sales company.

Functional management and key account management causes conflicts in application support process management. Being aware of these complications helps in identifying and rectifying process weaknesses in the future.

This thesis establishes the necessary setting for effective process improvement and presents tools for effective knowledge work. The proposal has been made in cooperation with the case company organization, for the organization, ensuring an aligned process with necessary improvements. When implemented, the improved application support process could increase the sales process throughput with clear activities, roles and standardized knowledge creation, while enabling further improvement. This would have a direct effect in sales performance.

At the time of returning this thesis, no concrete changes have been implemented in the case company application support process. Activities suggested in the thesis conceptual framework elements would be required to kickstart an improvement process. These shall be the next steps.

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Data 1: Sales Process interview template

(translated to English)

The sales engineers, managers and technical support engineers were interviewed using this template for ensuring that the whole sales process would be covered for organizational roles, process strengths and weaknesses. While conducting an open discussion, the subjects could deviate from a strict structure in forms of elaborative questions, dependent on informant views and perspective.

Informant number: _____

Date: _____

Duration: _____

Description to the interviewee:

- You will act as an informant in an analysis of the current state of EA sales and application support processes

- The aim is to get an idea of the current challenges and opportunities, solutions have not yet been considered, please stick to the current state of this process and do not try to think for improvement suggestions

- I (the interviewer) will ask open questions about the parts of our sales process that can be answered in our own words

The goal of this interview is to map the current state of the sales process for my thesis. Based on these interviews, potential areas for development will be explored.

I will record the discussion for my own use, transcribe the interview for my own use and translate main findings into English for the final documentation. I will not save or pass on personal information.

Organization

1. Could you tell me about your role in selling EA?

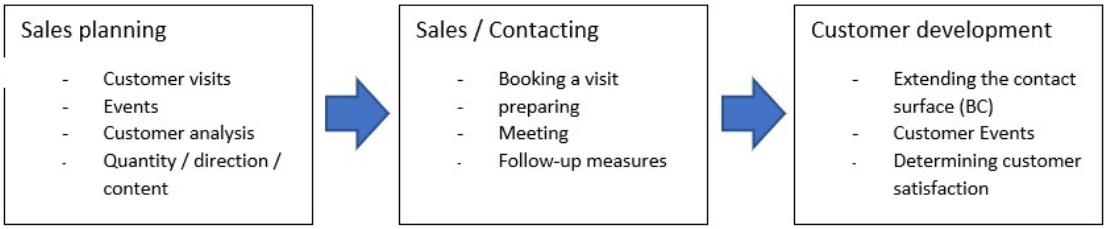
2. Who is currently relied on for EA application support matters?

Sales Process

I will show you a picture of a sales process that includes the sections for which the sales engineer is responsible according to the quality handbook, which may also include the need for application support.

1. How well does this picture describe the main activities in your:

   sales work / support work / managerial work?



Let's go through the process, step-by-step

2. Sales Planning

How application support shows in this instance?

What are the current weaknesses?

What are the current strengths?

3. Sales

How application support shows in this instance?

What are the current weaknesses?

What are the current strengths?

4. Customer development

How application support shows in this instance?

What are the current weaknesses?

What are the current strengths?

Data 1: Sales Process examination

(translated to English)

Prior to drawing the sales process, an interview took place with the case company quality manager about the sales process documented in the quality manual. Then, A workshop with an executive sales coach was conducted, where the current sales process was depicted. Current state of the process and its challenges were considered.

Q: Could you tell me about the sales process?

The owners of the sales process are the sales managers. Currently Country Manager and Executive Sales Coach + Team Leaders. A rough description of the process is that sales management sets goals and they are monitored regularly at monthly meetings. The fact that they are determined on an annual basis is another matter that what is the focus area but is always the sales target of what is sought. Here we have unpacked what it can be, it can be new customer acquisition and now we have new customer knowledge as a new one and it is there as one big one. That is known and known to customers. What area do they operate in and what are their products where can you go to provide solutions and at what stage is the customer base. They are the kind of thing a sales manager could open better. The sales process is with the sales managers. I know that Executive Sales Coach has a version that has not yet been updated in the quality manual, the workpiece. An update of the sales process for auditing with County Manager is scheduled for the spring. This is the present.

Q: Has the process been audited?

Now for the last time. It is in three-year cycles. The sales process, then the quotation-order process and then the CS + didactics. Last time there was just a sale.

Q: What is being audited?

The audit report is opened. There was such an interview section. There were two auditors. Another interviewed sales management. The auditors went through our sales process, that is, how our sales management goes from top management to sales. Throughout the organization. Based on those comments, an audit has been conducted.

Q: Is there anything related to the use of technical support in the sales process itself?

Merely sales management. It is not there and sales technical support auditors do not intervene. Below CS is CC technical support. It is described elsewhere. We have such an organization here that technical support is an auxiliary process and it is there in the customer communication interface. They are not directly in the sales process. How it is taken to the upgrade is important when the organization has changed.

Q: Product Managers. Have their activities been described?

Described in Product Management. It's administrative stuff related to standard products. Sales according to personal profiles are described separately. It has been talked about for a couple of years that needs to be updated. It used to be much more detailed but now it has been pruned. The quality manual contains the materials to be used, such as BSC.

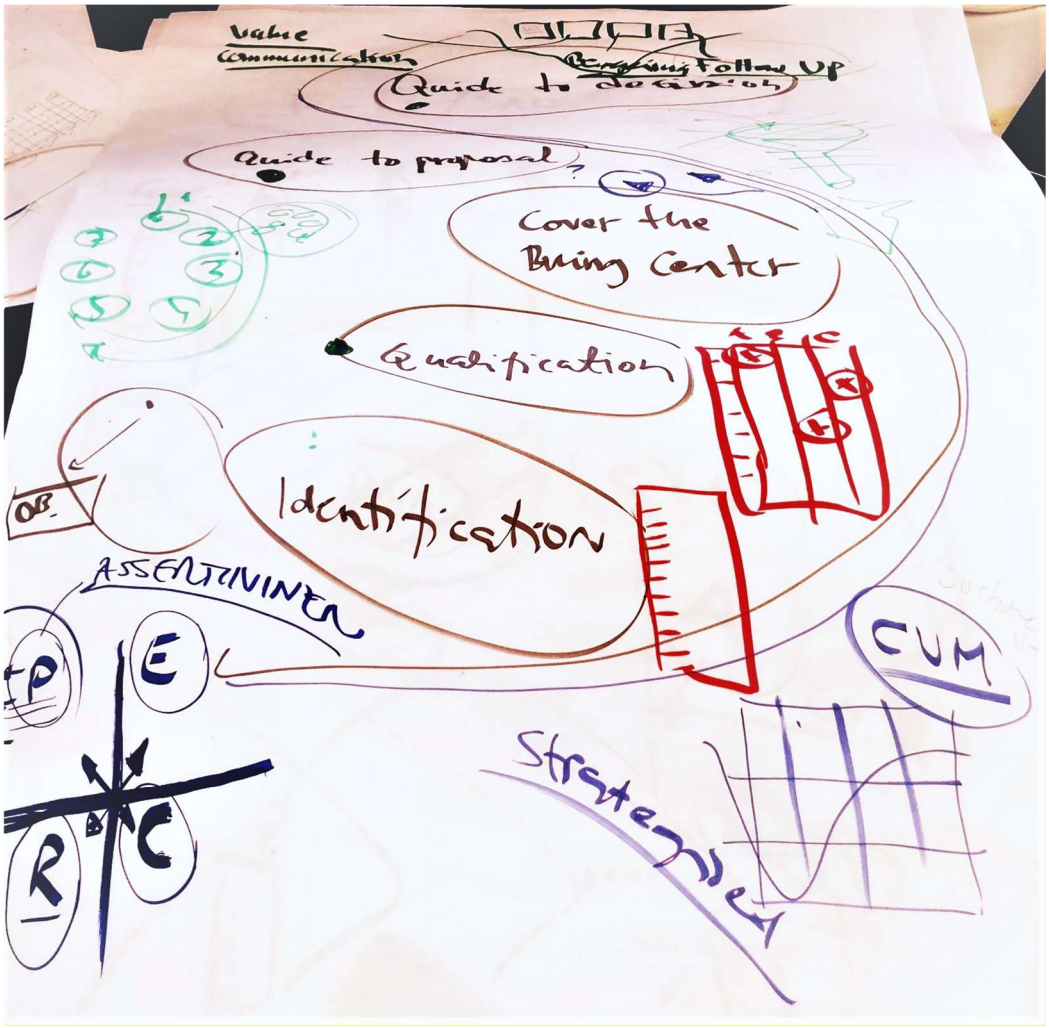


Figure 1: Structure of case company consultative sales process.

- The sales process can be divided to 7 segments (brown)
  - *Drawn from down-up, some drawn segments are merged*
- *The sales process is a cycle (green)*
- *The sales process is a funnel, lost cases flow out (green)*
- The drawn sales process is based on guideline “winning complex sales”
- Value Communication, follow-up added to top (**black**)
- The current sales process is unstructured and fragmented
  - Upcoming CRM tools will further force the drawn process structure
- Tools and competences are utilized throughout the process
  - Customer analysis improved lately
  - Competences need to be utilized in every phase
    - Competence may be insufficient to talk about EA
- Customer Value Map (blue)
  - Strategic customers have a lifecycle
    - Identifying opportunities requires EA competence
    - Offering value requires EA competence
- Sales Engineer sales styles can be divided to four classes (bottom-left)
  - Projective or assertive, expertise based, consultative, relationship based
    - Sales Engineers should be able to choose most effective style

        - Consultative selling requires team selling to add value
    - Dominant current sales style is relationship based
        - Risk of stagnant relationships
    - Personal competence or lack of it forces a style

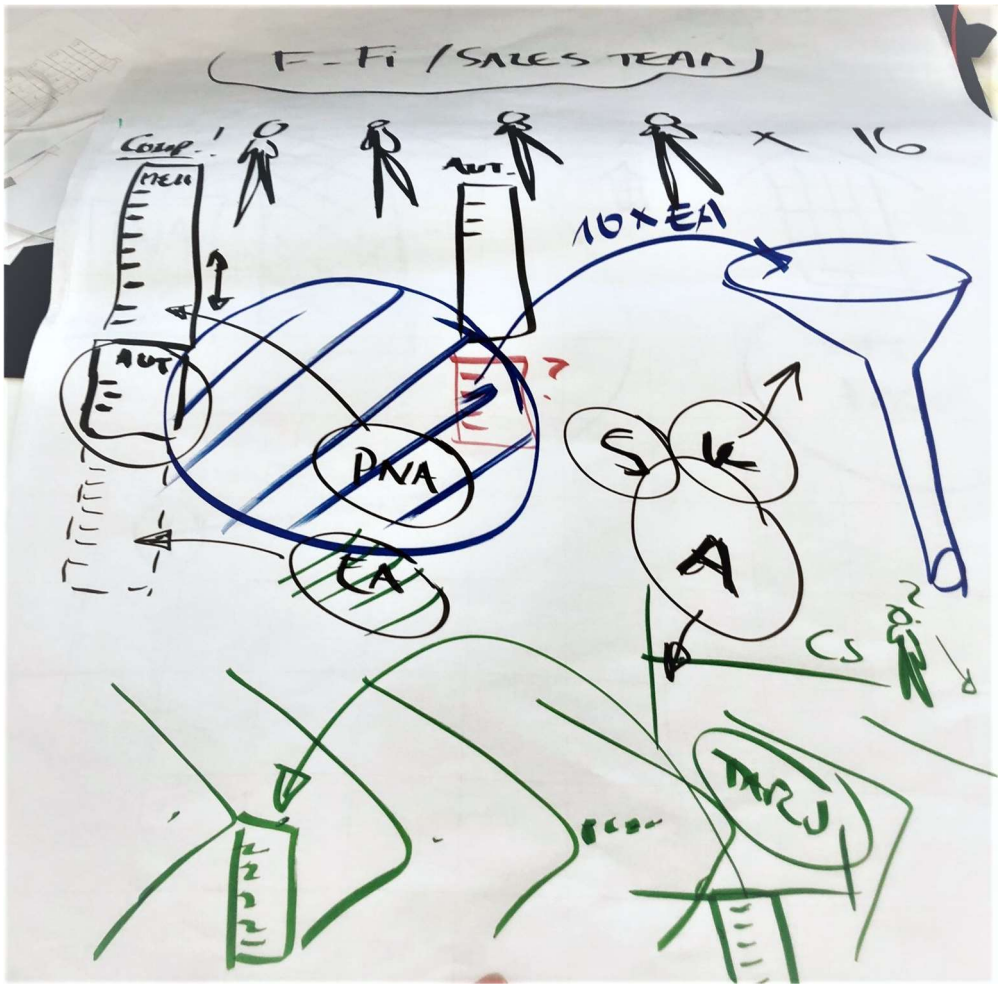


Figure 2: Competence profiles of sales engineers

- The sales team competence is mainly in mechanics (**black**)
    - Product training may have added skills (S) and knowledge (K) but decreased attitude (A)
- Competence profile brings in opportunities (blue)
- It is unclear whether the opportunity directly drives a quotation without customer value development (green)
- Team selling members such as application support or project engineering may be excluded from the early process
    - Information collection may be one-sided
    - Especially in key accounts, team selling members should be included early on

Data 2: Initial proposal suggestions from sales engineers

(translated to English)

Excerpts from Sales Engineers suggestions for the best application support process. Workshop type task with the case company sales process diagram and a blank application support process. Written answers and drawing of process structure.

Sales Engineer 1:

Planning:

-brainstorming between the vendor and application support what kind of case it is

- Does the sales engineer have an understanding of what the customer is looking for and needs, its confirmation

-thinking a technical solution with a big brush to see if we really have a chance at the case

Sales:

Bidding with the help of a strong application engineer, especially in larger and more demanding cases

-confirming from the customer's software head whether the understood thing is correct in case of uncertainty factors. Review of solution proposals so that the sales engineer is on the map. Often the sales engineer has to twist the iron wire, but it is mandatory if he really wants to understand more precisely the content of the proposed solution.

presentation of the offer to the customer. In the case of a simple case that may need support, the vendor can handle it, but if a larger and more special package is presented, then application support would be out of the question. In this case, they should strive to client-side software at the same table with people

-locking a proposal for a solution, securing, securing.

Implementation:

- various support measures: training, ramp-up assistance, telephone support and other channels. Especially in the case of a new customer where leads can be found, the trigger finger must be sensitive to support.

between the vendor and the app support, how the conversation went

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Sales Engineer 2:

Qualification:

During planning, throwing ideas how the project could be implemented.

Covering BC:

If the customer has doubts about the implementation, does any technical solution work, what benefits, etc.

Proposal:

Reviewing the solution with the customer. Possible changes, technical issues…

Implementation:

Application support, customer assurance.

Loss analysis:

Challenging the customer.

Sales Engineer 3:

Planning:

I think it would be important for "application support" to be included from the earliest possible stage. As an example, when a direct salesperson has “found” a new R&D project and found it to be a sensible project, then application support would be included after that.

Sales:

The know-how of application support can be utilized from an early stage when the concept is being designed. I would also believe the work would make more sense if application support is not called “last minute emergency”. Application support can also create "own" contacts from the customer's point of view before the application is delivered to the customer. It is

also a good idea to show the customer as early as possible that we also offer application support. This should also make it easier to win the trade.

After Sales:

Direct contact of application support with the customer is especially important. It is a good idea to have a discussion inside the house about contacting, that everyone is on the map on how to act.

Sales Engineer 4:

These steps, of course, more or less together with the sales engineer. I think proactivity is important for both parties.

The design phase:

Getting to know the customer's needs (getting to know the project, who decides what is important to the customer, etc.) Presentation of possible Festo ways and how to develop an existing solution (so-called future plan) Preparing and presenting the right solution in a customer / application specific way (not necessarily for everyone)

Sales Stage:

Ensuring the right kind of solution (technically and costly) and thus securing trade. Customer contact if necessary, in addition to the sales engineer-> ie. insuring the buying center (is the buying center known?)

After Sales:

Ensuring deployment and necessary support

Finding new items and evaluating the sold solution (were there the right solutions)

Sales Engineer 5:

The design phase:

The availability of technical support is important in order to look at the meaningfulness / suitability / profitability of the project together. For example, within a week of the stimulus

Sales Stage:

The people who support the vendor need to find time for a “hot” project and directly influence, for example, the automation / mechanics decision group. I need much more prioritization (the two-week plan partially prevents this). The role of support must be clear to the customer.

After sales:

The customer must have a safe feeling to choose Festo and part of it is post-delivery training / support and assurance. This is first and foremost part of the technical support, the sales engineer must already be in other business at this stage

Sales Engineer 6:

IMPORTANT AT ALL STAGES: As a general rule, application support should work by supporting vendors to be as proactive and self-directed as possible and to be concretely involved only in key customers and, of course, in training as needed.

Planning phase:

For salespeople, a unified view of what to consider when selling apps

Finished productized training packages

If necessary, consultation in a go / no go decision

Preliminary plan already at this stage, what kind of application support is needed in the further stages of sales

Sales phase:

If necessary, support in building the value proposition and arguing it

At the latest at this stage, the necessary training and familiarization will be identified and included in the proposal (Added value!), Including an indicative timetable for them.

could there be some guidelines on what to know when considering which system to sell. That is, if you sell servos, then you have to remember to do this, if you sell a remote I / I, so if logic, then so, etc ...

After sales:

Holding planned trainings and orientations

If necessary, a training plan for the clientele (when new clients come to the client, their orientation is ensured)

Data 2: Initial proposal group discussion on managerial level

(translated to English)

The CSA findings were presented on managerial level. Afterwards, a group discussion took place in Skype (due to virus pandemic) where suggestions for improvements were developed.

Comments of informants: 2 in yellow, 7 in green and 13 in blue

A recap of current state analysis….

INF. 2: At this point, I'm wondering if we're really recognizing the potential of EA. Are we recognizing false potentials. What is the role of application support in that?

Input to EA potential comes from the sales once the customer relationships have been selected and the potentials have been defined. Input into the sales Plan. Of course, the Sales Plan stage discusses whether there is potential or not. The sales plan session looks through priority customers through vendor-by-vendor and potential sales projects. Support resources are then planned in contact planning. This year, the customers were split between me and INF. 7. The measure of what you get from the yard is the number of visits per customer. After that, start the Sales Plan follow through.

INF. 2: Turnover is also a measure. That is far more important. But if there is no activity then there is no turnover.

Turnover is a measure whose drivers are really hard to disassemble. In terms of application support, traffic is something that can be influenced and planned and is planned a lot. Excerpts from interviews: I interviewed salespeople, managers of the CC team. First angle: Some vendors have self-esteem problems due to the fact that they are mechanically oriented. In the sales process, however, their role is to be automation vendors. Sales engineer Comments: We have sales engineers who are efficient and from their comments you will notice that they use technical support as a pool of information. They are able to handle conceptualization and consulting sales independently. If technical support, then speculation is already done. Then there are other types of vendors who have not even been able to discuss automation with the customer. Then there are the intermediate guys who are afraid to talk about EA things but have had good experiences and have gained increased self-confidence. They feel that their own level of competence is not yet such that they would be able to do it themselves.

INF. 2: Where our sales are distributed as a percentage - 30-30-30

INF. 13: At times, I agree

INF. 7: Yes

The good thing was that the sales engineers were able to talk about this openly. Then about the customer visits: The joint visits have been mainly good but there are examples of meetings where the focus has not been on the customer's affairs but the style has been pushing for Festo's solution. Another angle to this is that those with less EA expertise do not even have the will to discuss a technical issue. These comments would support the notion that grassroots visits would be helpful. At the point where you start carefully planning your agenda then it either hits or it doesn't. Sales engineers may have the will to profile themselves as a business expert. Those who are able to effectively discuss technical issues do not even have carefully planned agendas. Guys with less skill level rely heavily on big and precise agendas.

INF. 2: This is very strongly related to the fact that we have no misconceptions about the role of the sales engineer. The role of the sales engineer in the future is not that he speaks that technical jargon either. Then the salesperson should be able to speak the jargons of all business units. There is no such person. Must internally accept that situation and build the organization accordingly.

About the design process: There are no tools to draw the big picture of the client. Sales plan Excel got quite a lot of feedback that didn't work. In the sales plan itself, the role is unclear.

INF. 2: For me, these comments tell me that team leader skills are really flawed. Can't use organization. This is a bit like our email culture. Suppose things happen if "I sent you an email"

When the role of an application engineer is not precisely defined, work is delegated that there is no certainty that this belongs to the application engineer.

INF. 2: The communication of the role has been left perhaps deficient also because of the thesis.

I made a strengths and weaknesses breakdown. In terms of guidance, the strength is that we have good guidelines for selling EA. The weakness, on the other hand, is that our organization is not in line with the guideline. We do not have any purely application engineers. However, we have more people doing it in a supportive role for salespeople. They mix technical support with the main job.

INF. 2: We don't have any role that would be 100% in line with the guideline because we are such a small organization. We have local adaptations and combination roles. It does not eliminate the fact that we have the will to go for clearer roles. Significantly more volume is needed.

INF. 7: One point is that that EA guideline will be updated. The roles need to be defined more precisely.

INF. 2: Still we need to clarify.

It does not remove the importance of that role. While we have resources to help sales engineers technically, they should be aware of their current role.

INF. 2: This is where the topic of team selling should come up

CC received a message that their way of working was not suitable for application support. There will be a lot of interference all the time. It can be a cultural thing, or it can be a work-related thing when you have to sit in front of the phone. It interferes with long-term concentration.

INF. 2: culture is a real word in itself that they once had a guide that 15min off the table. It is not suitable for EA technical support. That's what we need to shake. These reds need to be witnessed behind.

The IT tool is bad. The information inside people's heads should be put into visual form.

INF. 7: A session was held on Sales Plan entries. A sales manager now noticed in his role as coach that nothing was clear about the things he recorded himself. Pretty many have pretty circular reports and something isn't taken there at all. The use of its tool varies.

INF. 2: What if you start measuring those opportunites and not visits?

INF. 7: Then it will definitely improve that situation. A lot of people go behind the fact that that tool is shit

INF. 13: Will we get to that attitude again. A misused tool does not serve a purpose. Be it excel or new CRM or whatever. I emphasize attitude.

Inputs and outputs may have been processed. Lack of self-confidence and lack of knowledge in identifying opportunities are weaknesses. Activities are reactive. When looking at the application support process, an ainf. 13mpt has been made to make it a push process specifically with that Sales Plan. Resources are pre-allocated and it pushes application support to look for jobs in prio clients. However, most of the work is of the pull type.

INF. 2: So, in what direction should this be taken?

It depends, in my opinion, on what kind of technical support process is desired.

Which of your key themes comes to mind. What are the themes that should be developed?

INF. 13: Yes, that self-confidence is important

INF. 2: How to develop it

INF. 13: I've probably talked about this before. I don't have any ready ideas. Maybe the fact that the earlier the support is included, the more it gradually develops.

INF. 7: Should focus more on the customer's agenda. Once the products are familiar to yourself then it easily goes with that Festo hat on. Should that self-confidence grow so much that not to say a word about Festo-jargon. It needs to be trimmed.

INF. 13: However, we have a consulting sales style

INF. 7: But those with that lower self-confidence ask for information about the products and then it turns into Festo jargon. Those with lower self-confidence ask for product information.

INF. 13: No more product information is needed. Even more sales training.

Separation of the roles of INF. 2s and Js. We don't have enough revenue to make it stand out. We need to communicate those differences. I like the strategy of the moment. It focuses.

INF. 13: This is one topic that will be on the table at the sales meeting.

INF. 2: What we focus on is reducing variation.

That is, here as tools for communication. Role and strategy communication. Clarifying it.

INF. 2: It has been in my ears to ask for two support for a visit. I see the support function as responsible for telling the sales engineer that resources are not giving up.

That is, the rules of the game for the vendor and technical support on the design of the joint.

INF. 2: That's one thing. On the other hand, what has been ignored: we need to forget our agenda and jargon. We must accept that our internal customer satisfaction is not the highest possible. If it doesn't go up then nothing will change.

INF. 13: It doesn't change in an instant. It requires humility and witness.

INF. 2: We can communicate though and what but if it doesn't go up then nothing will change.

INF. 13: We may also have to state that some guys will never become EA vendors. Let's focus on those guys where we see potential.

INF. 2: Our sales would include application support earlier. Then if somewhere you smell the potential.

.....

Do we think that the resource of the support function is now that bottleneck? That application support spends all its time and focusing would bring the support function to more important tasks?

INF. 2: Is that about it

It would seem that we have both a static and a dynamic bottleneck. The needs for technical support do not come evenly. Should application support be involved throughout the process:

INF. 13: I don't think you need to rock it. The most important thing is to be involved from the beginning.

INF. 2: Agree. It is communicated that application support would be included from the beginning.

INF. 13: You don't have to take them to the grave. I may need support in the beginning. Probably that thirst shortens as the experience accumulates. Internal customer service needs to be put in order first.

Input from internal customer

INF. 2: Preparing for customer visits. Common direction. The sales engineer is responsible for that. When a salesperson arranges customer visits, he or she defines the agenda. Another thing is to keep what is agreed. The sales engineer will definitely expect something and play a role.

Should the roles be defined in macro size so that variance is eliminated?

INF. 2: We have very different customer visits.

Dynamic role-playing can confuse the pack in that respect, so it is not known what anyone should do.

INF. 2: The sales engineer is responsible for that customer. The support function supports the development of its customer base.

INF. 13: After all, agreeing roles is not like agreeing on boundary conditions. It does not happen that the support function attracts customers. Then the sales engineer pulls the pea into his nose.

INF. 2: Communication also from the support function to the management so that they know how to train salespeople in the right direction. Because technical support sees a different tip.

INF. 7: When there have been whimsies that have been included in the past, there is a much beinf. 13r chance of influencing the customer to tell what they are going to do rather than having a half-drawn plan on the table and stating that the products will not fit in.

INF. 2: We've made progress with just the right kind of application support that supports the vendor to know the right things.

what about CC's contribution to this process?

INF. 2: There has to be technical support. But there will be really few of those calls. Here is the service sales job alongside evolving.

What about the rest of the sales process? Will more responsibility be transferred to CC?

INF. 2: It's already coming

INF. 2: Improving internal customer relationships is also important. Listening and finding common ground. I also challenge the technical support that you must not humble yourself but also bring your own opinions. Knowing those competencies can lead to the wrong project.

INF. 7: Exactly so that the sales engineer doesn't feel silly

Data 3: Validation correspondence on managerial level

(translated to English)

A video presentation of the final proposal was sent on managerial level. First, managers commented in written correspondence.

Inf.2

This is not a very easy thing to solve because the themes and customer relationships are very different.
This does not mean that we should not try!
Personally, I believe that new CRM Opportunity Management will address this transparency of information to some extent.
According to current information, there is a fairly visual project funnel that should tell us better about the different phases of projects.
This, of course, does not solve the initial challenge of getting projects into that funnel!
Because of the implementation of that tool, I would not start developing any new interface at this point, but first look at what the tool will bring when it comes.

Inf.7

- a concrete proposal on the sales engineer's EA know-how, what level and what tasks should the sales engineer be able to perform himself?
- Customer Knowledge Manager ==> how to sell an idea to a customer to whom the Festo EA side is completely unfamiliar, ie their own potential, but has never used Festo servos or controls?
- How do you link those levels of support and use to your EA strategy?
- Potential levels that trigger different support levels?

I especially like the fact that TP / AE is included already in the mapping phase, especially in situations where BC customers have automation that speaks to a mechanically backed salesman a language that feels like a Finn trying to explain to China where Alko is .... As well as targeting new potential finding it is a good idea.

Inf. 13

Sure, as Inf. 2 says, we're getting a new tool that we need to study first before we make any major changes to it, so let's wait for it first and see what can be brought into it from this valuable work of yours.
I really like that things have been thought through and there are really new good ideas and models involved. Already here, Inf 7 and I have been thinking about and putting sales engineers in "baskets" from the perspective of competence, which is partly the same as the "customer knowledge / skill management" you mentioned, where the need is assessed and a plan is made for it. Here is a place where we can think together about how we can move this forward, because this is essentially about raising competence and how it is handled.
It is also very important to get the internal customer base in order, because that is our cornerstone for all cooperation.

Data 3: Validation round discussion excerpts on managerial level

(translated to English)

A video presentation of the final proposal was sent on managerial level. After a written correspondence, one-on-one discussions took place (Skype due to virus pandemic).

MM. Informant 2 4/20/2020 90 min Skype conversation

Discussion from a marketing perspective before the actual topic:

Marketing did its best, did not align with sales managers about activities

- Marketing alone does not help, eg webinars, no aligned themes, no sales told
    - o The lead rate was very low
    - o Marketing was disappointing
    - o The sales think the marketer didn't do the right things
- We have such a small organization that the roles get mixed up
- No traditional marketing in KAM treatment
    - o Also visit product managers, eg flagship products where no market is detected
- If I looked at Resource Management then the flagship products would be a disaster
    - o Flagships as an image booster

.....

Recalled the current status and preliminary proposal

Comments by Inf. 2:

- Improving the aftermarket may not be the focus
- It shows here that sales engineers are different
- The sales engineers' comments also show the need for coaching and the need for a clear process
- The future CRM would solve the application support for the sales project monitoring needs
- Defining a service model is important: but how?
- The biggest challenge is to get application support on time
    - o How?
    - o With which vendor to circumvent prio customers?
- It would be extremely important to know the customer's technology
    - o Data is lost to tools

Proposed structure of the process: If, for example, 2 prio customers / sales engineer = 26 customers

- Sales have identified potential
    - o Then application support and outline the automation concept
    - o What are the challenges in the current concept / motive to change
    - o Then start the application engineer from the clutter and make the concept
- Has it been shot in the ankle that a lot of prio customers have been selected?
- Is application engineering used in too many things?
    - o When reactive and when proactive?
- The number of team selling customers will be reduced
    - o Proactive sales function
- Team working is reactive
- Standardization of data processing:
    - o In what form and where?
- New CRM is implemented shortly, I would not like to spend time brainstorming new tools
- We need tools, customers, not everyone
- Whose decision is it to set up a team?

o If it is that the team is not formed then it can be assumed that the support is not so fast

- The framework is right, how to put into practice, resourcing, a clearer division of roles
- If you think about the role of PMM, EA sales development and promotion
  o Very strongly product-oriented
- Prior to identification, there must be a marketing process (PMM)
  o Automation meeting sinne
- In line with the principal instructions, prospecting, marketing
- According to the application support, some interest has already aroused in the customer base
- It would sound more like the role of PMM would be Push and Application Support Pull

The subject moves into the aftermarket

- Cannot be done for all prio customers, can be divided, e.g., the 20 largest
  o Limit how many customers can be managed
- Can spark a whole new kind of debate

Summary:

- Those customers who have enough capacity will be taken into a more specific loophole
  o Limiter according to capacity
  o Building a service model
  Emphasizing the difference between PMM and AE
  o Establish a unified model for creating information for application engineering needs
- Clarity is needed at the beginning: How
  o Technical communication is marketing
- Competence model and training plan for the aftermarket
- Leadership, communication, how to implement
- Potential determines priority
  o "Delivery terms" clear to the sales engineer

MM. Inf. 7 20.4.2020 25 min Skype conversation

Commenting on written feedback

- Should a competency description be required
  o What level should the sales engineer go to and at what stage should AE be included
- Will a process be included in the prio customer relationships?
  o It is not possible to run the same process for all customers
- Limit to sales that includes teamwork
- PMM marketing role, according to AE when the customer's application is already beginning to develop
- How to make such a small organization so that the roles are not mixed
  o Description of roles, description of processes
- Documentation was tried in one note before, stayed
  o Good for follow-up
- Documentation for teams?
- According to AE, admission is difficult at the beginning, it varies a lot from sales engineer to sales engineer

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MM. Inf. 13 Tue 21.4.2020 20 min Skype conversation

- Roles can live but roles need to be defined
  o The main thing is that things need to be done
  o It would be important for AE to be involved in the deployment
- Agree broadly with the ideas of other informants
- Breakdown of customer priority according to potential
- The need for development for a wider entity than just application support
- New CRM coming
- Roles and processes are key

Sales engineer categorization:

- Can categorizing vendors into more efficient / less effective make support more effective?
- The starting point was to invest in those with the greatest potential for growth
    - o Sufficient competence for the sales engineer
- Impact on application support communication with the vendor
- Cross training