THESIS BOOKLET

The Importance of Value Communication in Selling Processes of the Medical Device Market in Austria

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List of Abbreviations:

B2B	business-to-business
B2G	business-to-governmental
KPI	Key performance indicators

Abstract

Companies in the medical device market are faced with various business challenges. The market is influenced by a variety of non-market actors such as research institutions and governmental authorities, as well as being characterized by a high number of innovations. Moreover, the increasing clout of buying organizations combined with a growing number of competitors have increased the importance of further developing selling and communication processes. Value-based selling is an approach which helps organizations to operate in a more challenging market environment. It includes the identification, quantification, communication, and verification of value for customer organizations. Various scholars have investigated the conceptualization of value-based selling in industrial and B2B market segments. Unfortunately, the role and structure of this approach in the medical device market, characterized by B2B and a substantial amount of B2G customer segments, has been thus far neglected by the academic community. Hence, the objectives of this author are to identify the role and structure of a value-oriented selling process, as well as to analyze the importance of different practices. Conduction of a systematic literature analysis, ten in-depth interviews with experts, and a quantitative survey of 113 respondents served to investigate the objectives of this dissertation. The results reveal the high importance of this selling approach for this market area. It helps to tackle a growing number of challenges in the Austrian medical device market, which is also characterized by a high-value demandingness from customers. The selection of appropriate customers and the development of an in-depth understanding of medical workflows are essential elements of a pre-selling phase. The establishment of a positive relationship with the customer, the identification of potential problems, and a well-grounded presentation of a value proposition are key elements of direct selling activities. The development of value visualization tools such as reference cases, value calculators, and the individual calculation of customer value correlate with the success of selling entities. Furthermore, the paper reveals the great importance of operational value dimensions, which have a positive impact on processes in the customer organization.

Key words

medical device sales, value-based selling, B2B sales, B2G sales

1 Introduction.

Companies in medical device sector operate in an extremely complex business environment. Procurement processes in healthcare institutions are influenced by multiple stakeholders (Grundy, 2016, p. 4). The complexity of the target market is also increased by a national healthcare system's structure. Moreover, corporations in the medical device industry face a diverse market structure. They act in business-to-business (B2B) markets when they offer products to private healthcare institutions. Additionally, they operate in a large business-to-governmental (B2G) market setting when they offer products to publicly owned or controlled healthcare providers. Purchase, Goh, and Dooley (2009, pp. 4-5) have identified differences in procurement strategies from these market segments.. Buying processes in the public sector feature a higher degree of formalization and officialism compared with those of corporations. Additionally, integrity and transparency are required in order to prevent corruption. Yet the resulting strict guidelines give rise to longer, less flexible decision processes. Such an environment makes it more challenging to develop a competitive advantage. Scholars have identified a shift in the manner in which business relationships with suppliers are viewed by important institutional customers in the healthcare sector, such as hospitals. Grundy (2016, pp. 2, 4) has investigated the increasing importance of value in business relationships between hospitals and potential suppliers. Furthermore, an increasing number of value analysis processes in such institutions are focusing on the optimization of total expenditures incurred and quality of services provided by healthcare institutions. Also, Steward, Narus, Roehm, and Ritz (2019, p. 298) report an increasing importance of value-centered thinking in business relationships.

Nearly 25 years ago, Slater (1997, pp. 164-166) described an opportunity for companies to establish a competitive advantage by the establishment of processes which aim to deliver superior value to customers. This requires the development of intra-organizational market orientation, an in-depth understanding of customer needs and problems, and the development of an organization which has a clear focus on the development of customer value-oriented processes. Additionally, the development of innovative offerings with a high amount of customer value form the foundation for success in a fragmented and competitive market area. Slater (1997, p. 166) summarizes all of these views in the 'value-based theory of the firm'.

Marketing entities in an organization play an essential role with regards to the communication of this superior value to the customer. Jaakkola, Frösén, and Tikkanen (2015, p. 113) particularly highlight personal selling activities as a central element of a company's marketing strategy. Töytäri and Rajala (2015, p. 110) report an increasing demand for service components in the B2B area. Consultative elements in the selling process and a more holistic presentation of the offered value are gaining importance as well. All of these aspects are essential elements of a value-based selling (VBS) approach (Töytäri & Rajala, (2015, p. 101). Ultimately it may be concluded that VBS represents an essential element of a corporate value-oriented philosophy (Slater 1997, p. 166). Töytäri and Rajala (2015, p. 101) define VBS *"as a sales approach that builds on the identification, quantification, communication, and verification of customer value."* The main objective of VBS is to translate the benefit of products, services or solutions into quantitative numbers or monetary terms (Terho, Haas, Eggert, & Ulaga, 2012, p. 183). The perceived value of the customer is the basis for the development of a value proposition, which may entail the development of individual value propositions for different customers (Grönroos & Voima, 2013, pp. 147-148; Vargo & Lusch, 2004, pp. 12-13).

The author has identified special attention paid to VBS in a B2B context by the academic community. It can be concluded that studies concerned with VBS in a B2B context have neither dealt with the idiosyncrasies of national healthcare markets nor with markets featuring a substantial number of B2G market segments. A paper which develops a VBS approach for medical devices thus closes various research gaps in the areas of VBS and the medical device industry.

2 Research Objectives, Research Questions and Hypothesis

The aim of this dissertation is to describe the role of value-oriented selling processes for the medical device industry in Austria. Additionally, it seeks to refine value-oriented selling processes for an industry sector which is characterized by B2B and B2G market segments further.

The following objectives have been defined for this paper:

1. Identification of the importance and the unique characteristics of VBS in contrast to other relevant selling approaches
2. Analysis of overlaps and differences among different scientific VBS models which have primarily been developed for B2B market segments
3. Analysis of the relevance of different elements of value-oriented selling approaches for the medical device market in Austria
4. Description of the impact of various value-oriented selling practices on sales success in the medical device market in Austria

A systematic analysis of the academic literature will be used to attend to research objectives one and two. A comparison of VBS with other relevant selling approaches will show the unique characteristics and the scope of this selling philosophy. It also includes an in-depth analysis of activities which can be applied in a VBS process, as well as a comparison of the most relevant VBS models. The research question for the literature review is: "What are the main elements and process steps of VBS models in the B2B area and how are VBS processes described and structured in academic publications?"

A mixed method research design following Creswell and Plano Clark (2018, pp. 85-86) will be employed to investigate research objectives three and four. To accomplish this, primary qualitative and quantitative data have been collected by the author. The objective of the first, qualitative data collection step is to identify the relative importance of elements of a VBS process in this market context. It also investigates how different elements of a VBS are applied in the medical device industry in Austria. These objectives are reflected in the following two qualitative research questions:

- Which elements of a B2B Value-Based Selling process are applied in the medical device market in Austria?
- How are various elements of a B2B Value-Based Selling process applied in the medical device market in Austria?

The objective of the second, quantitative data collection is to understand the importance of value-oriented selling activities in this industry. Additionally, it investigates elements of the VBS process which might impact the success of selling organizations.

The following quantitative research questions and related hypothesis have been defined for the quantitative section of the dissertation:

Quantitative research question 1: Which elements of a value-based selling process are applied by more successful sales representatives in the medical device industry in Austria?

- *H_1: Health care institutions have a high value demandingness towards medical device companies in Austria.*
- *H_2: There is a correlation between the prioritization of customers for specific selling approaches such as VBS and the performance of sales representatives in the medical device market in Austria.*
- *H_3: There is a correlation between the development of customer comprehension and the performance of sales representatives in the medical device market in Austria.*
- *H_4: There is a correlation between the 'customer networking abilities' and the performance of sales representatives in the medical device market in Austria.*
- *H_5: There is a correlation between the usage of customer references and the performance of sales representatives in the medical device market in Austria.*
- *H_6: There is a correlation between high value quantification capabilities and the performance of sales representatives in the medical device market in Austria.*

Quantitative research question 2: Which arguments and dimensions of a value proposition enjoy a higher or lower degree of importance for the medical industry in Austria?

- *H_7: Value arguments which are associated with the wellbeing of patients are significantly more important than other value arguments in the medical device industry.*
- *H_8: Value arguments which are associated with handling aspects of medical devices are significantly more important than those which address the customer organization's image.*

3 Methodology

Systematic literature review:

The author of this paper has conducted a systematic literature review in order to analyze the existing literature in this area in a clearly structured manner. Three scientific databases (sciencedirect.com, emeraldinsight.com, and scholar.google.com) were screened for the analysis of the academic literature. The following key words were used: "value-based selling" and "value selling". Practical screening was conducted in order to ensure a focus of the identified studies on the objective of the literature analysis. Doublettes were eliminated at the beginning of the process through an initial screening of the search results. Ultimately, 31 double-blind reviewed articles were selected. All 31 articles were read in detail.

Qualitative Research:

In-depth interviews with Experts were used in this part of the research. Hence, the following two selection criteria were defined:

1. Work experience: Participants have to have at least seven years of work experience in the medical device industry on the Austrian market.
2. Knowledge about value communication in the selling processes of the medical device market in Austria.

- *Sampling:* A generic purposive sampling method was used in this part of the study. Corporate websites in the Austrian medical device industry and business social media platforms such as Linkedin and Xing helped to identify potential respondents.
- *Sample Size:* Ten qualitative interviews were conducted and recorded in March and April of 2021. Due to COVID-19 restrictions in Austria at this time, all interviews were held via the online tool Microsoft teams or via telephone. The length of the interviews varied between 26 and 62 minutes. A total of 428 recorded minutes were analyzed.
- *Data collection:* In this study a semi-structured interview guideline was employed as the basis for the collection of qualitative data.
- *Interpretation of the Data:* Analysis of the information was supported by the IT software MaxQDA. The qualitative content analysis approach according to Kuckartz (2018, p. 100) builds the basis for the structure of findings in this part of the scholar.

Quantitative Research

- *Scales and measures:* Chiefly scales which are extensively used by researchers in a VBS context formed the basis for the development of the questionnaire.
- *Development of the questionnaire:* Döring, Bortz and Poschl (2016, p. 407) recommend translating existing scales from English into German, if necessary. Hence, the study's focus on the Austrian market required a translation of the questionnaire from English into German. Three experts evaluated the draft version of the questionnaire. Pre-defined criteria for experts ensured a high quality of the feedback. Following the qualitative pre-test, the questionnaire was tested in terms of its quantitative dimension by 20 additional respondents.
- *Population:* The target population for the survey consists of persons who possess professional experience in sales or sales-related positions such as product management, market management or business development.
- *Sampling*: Two types of non-probability sampling methods were employed in this paper. The first step of the sampling process aimed to identify areas in which potential respondents for the study could be found. AUSTROMED (2021) is considered to be the most important advocacy group of companies in the medical device sector in Austria. The institution's website includes a list of 86-member companies, providing a relatively complete overview of organizations employing potential respondents for this survey. Key contact people from these companies, such as sales managers, were identified by means of websites or social media business networks such as LinkedIn and Xing. Additionally, Döring et al (2016, p. 305) recommend using snowball sampling in order to identify target respondents who are difficult to reach easily, yet are well-connected to the target community. Thus such a procedure was employed in this paper as well. Respondents who were identified in the first step of the sampling process were asked whether or not they would be willing to disseminate the online survey among people in their organization. In total, N=138 respondents began the survey. 25 incomplete questionnaires were deleted in the dataset. This resulted in a data set of N=113 participants for all relevant analyses.
- *Survey:* The scope of the paper required the development of a web-based survey. The question items were transferred from MS Word format to an online format by the Qualtrics (2021) online tool. Response rates were increased by a questionnaire design which was optimized for desktop and mobile screens.

4 Results

Results of the literature review:

The result of the systematic literature review is the development of a holistic VBS framework. The author has divided VBS practices into three discrete main phases: (A) 'pre-selling practices', (B) 'direct VBS practices', and (C) 'after sales practices. Additionally, he has differentiated between ten different process steps within a holistic VBS framework (see Figure 1).

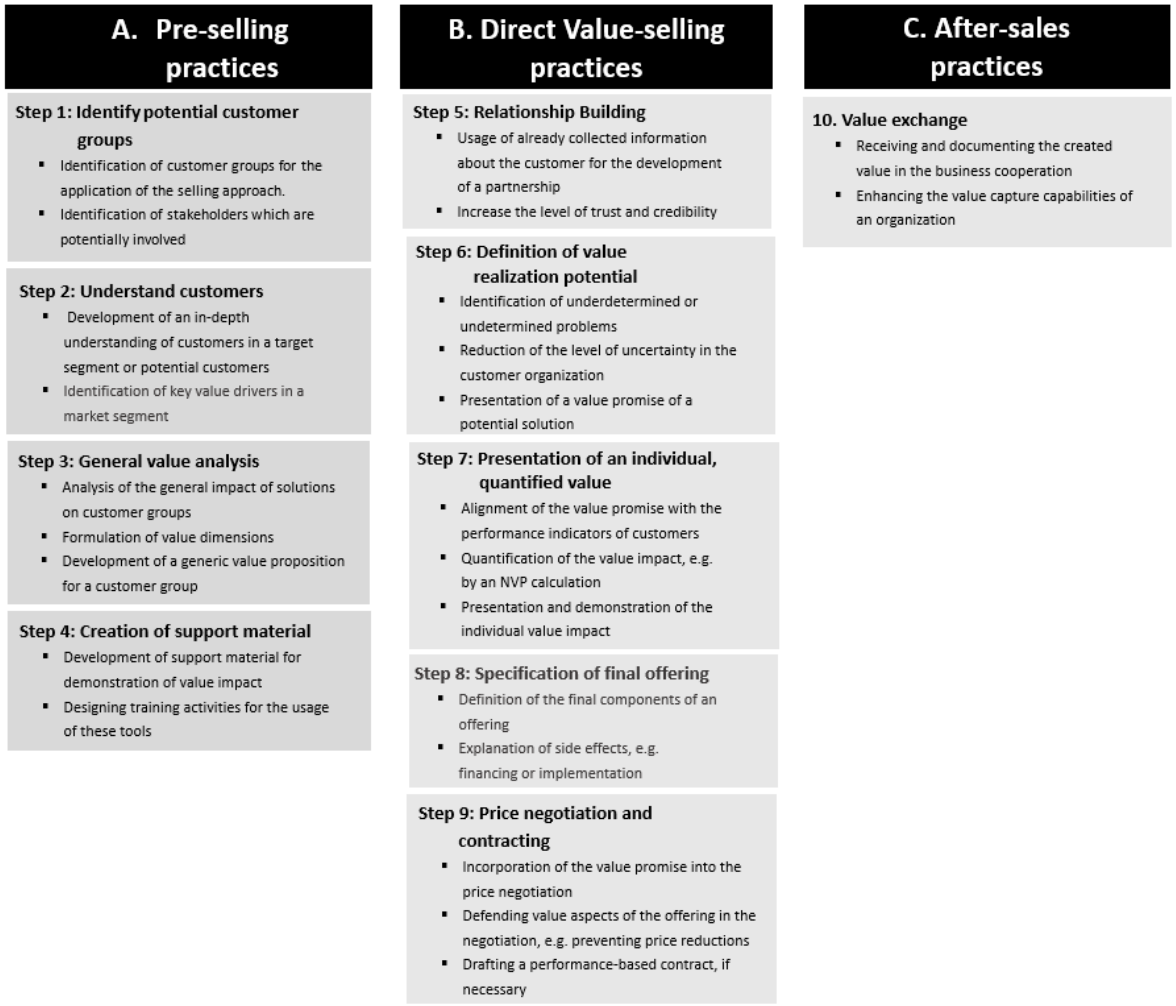

Figure 1: Overview of the holistic value-based selling framework
Source: own figure

The 'pre-selling practices' phase includes preparation activities prior to meetings and interactions with customers in a selling process. They involve taking strategic decisions such as the selection of customers for the application of VBS, performing analytical activities to develop and structure customer value elements, and practical elements such as the preparation of support material for a holistic communication of value.

The commonality that all these practices share is that they can be conducted without interaction with the customer. Secondly, 'direct VBS practices' are carried out in selling processes for a specific prospect. The majority include interactions between members of a selling team and representatives of a buying center. The end of this phase is reached when the final contract between a seller and a supplier is signed. Thirdly, 'after sales practices' include activities performed after the termination of a contract. The objective of this phase is the establishment of a transactional long-term relationship with the customer. Activities of this phase can also influence the 'pre-selling practices' of other VBS selling approaches.

Qualitative research results:

Expert interviews in this paper have identified several trends in the medical device market in Austria (e.g. increasing competition level, increasingly similar products; the higher importance of service components in an offering; more complex buying processes). Experts predict an increasing need for establishing a number of strategic selling approaches in this industry sector. This can be seen as an indicator for an increasing need to implement VBS in the medical device industry.

A differentiation between pre-selling practices, direct value-selling practices, and after-sales practices which was used for the establishment of the holistic VBS framework in this thesis, can be applied to this industry sector as well. Moreover, major elements from the pre-selling phase of the holistic VBS framework for the B2B area are relevant for medical device market. The main elements of VBS in the medical device industry are summarized in Figure 2. An evaluation of whether the usage of VBS is viable for a specific customer segment or not, must be conducted at the beginning of this process. The development of an understanding about a customer segment (e.g. publicly financed hospitals) is a pre-requirement for taking the decision as to whether a product offers added value for the customer or not. Even if value visualization tools such as value calculators are infrequently used, it may be concluded that the usage of tools for the visualization and demonstration of value increases the effectivity of this selling approach.

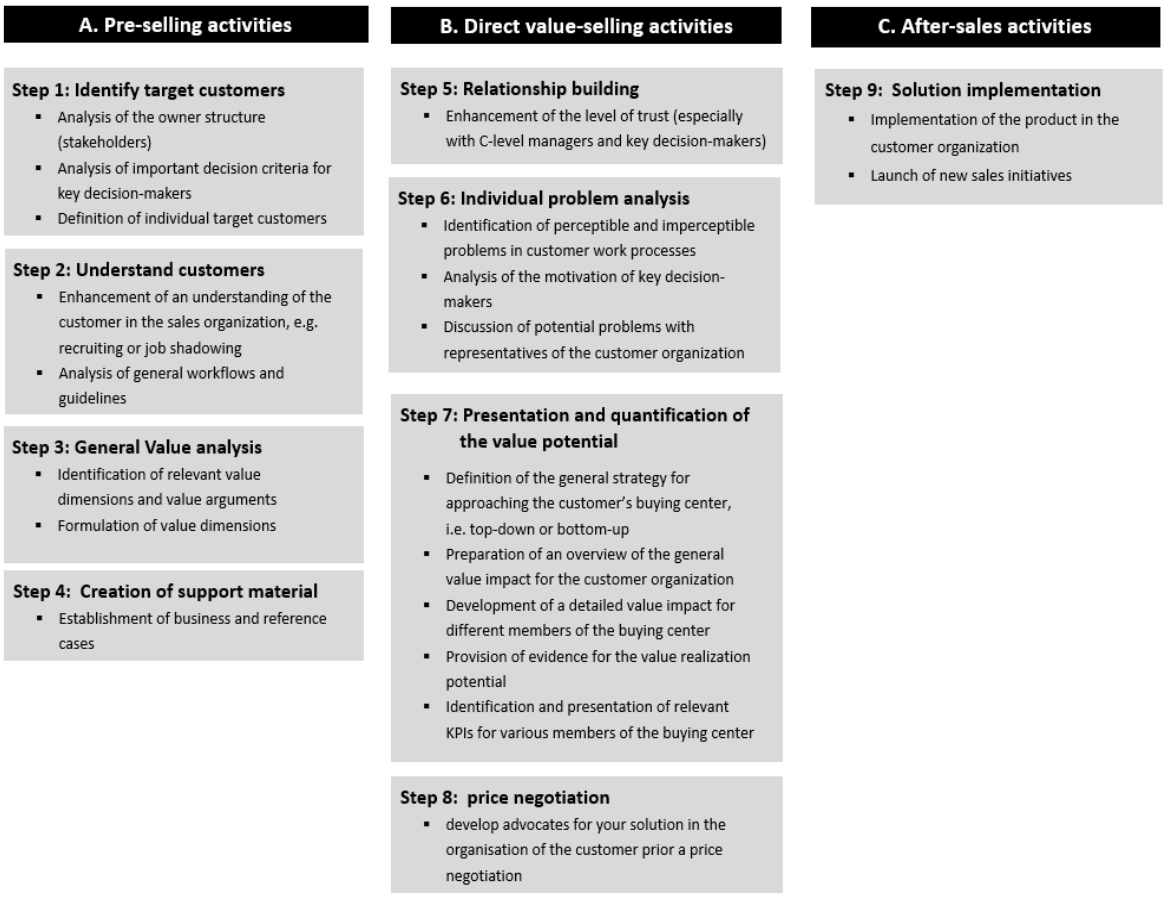

Figure 2: tentative model of a value based selling process for the medical devices Source: own figure

Nevertheless, differences in the manner in which value is quantified and presented were detected in the qualitative research could be detected between B2B VBS activities and practices in the medical device area. Interviewees recommend approaching top managers of healthcare providers in order to secure commitment for such a process analysis. Additionally, it is important to identify apparent or unapparent problems of healthcare providers on an individual basis. The identification of opportunities to improve processes in the customer organization is characterized as a potential success factor. Therefore, the tentative VBS model for the medical device area includes the 'individual problem analysis' process step. Usage of the SPIN selling problem identification technique is one potential tool for identifying such problems. The collection of information is viewed as the basis for the presentation and quantification of a value potential. When it comes to the quantification of the value, it is crucial to provide customer representatives with a holistic overview of a solution's value potential. Top managers in particular should be approached with an overview of the value realization potential. For such presentations, it is important to reduce the complexity of the value proposition. Results from the expert interview also indicate that

detailed discussions of individual value components need to be conducted with different representatives of the buying center as well. This requires the usage of different KPIs as well as a thorough understanding of the individual needs of the contact person.

The qualitative interviews also provide valuable insights concerning the manner in which how different KPIs should be presented in VBS processes in the medical device industry. In particular a reduction of labor costs which can be associated with the usage of medical devices should not be presented in a case study. In such a case it is viewed as important to highlight the amount of time which may be saved through improved, streamlined processes. This can be linked in turn with an increased time budget for the performance of other activities in a more careful, less pressured manner. The performance of test runs is viewed as a reliable method for quantifying a potential time reduction compared with clinical processes. The availability of academic scholars who can confirm benefits such as a potential reduction of infections is also considered vital in this industry sector.

After-sales practices are also an essential element of VBS processes in the medical device industry. Activities in this phase are more focused on the implementation of the product rather than verification of the value impact. High reliability and accessibility of sales representatives is considered to be vital, especially in light of the limited number of Austrian health care providers, which is not expected to significantly increase.

Quantitative research results:

SPSS IT software was used for data analysis of the quantitative research. An examination of the respondents' professional experience shows that the answers to the questions were based on personal experience. This ensures a high validity of the results. The median professional experience within this sample is 16 to 20 years and shows an interquartile range of 11 to 25 years. Hypotheses H2 – H6 analyze the impact of various elements from a selling process with regards to work performance. The average sales performance was calculated using eight 7-point Likert scales (−3 = "much worse" and +3 = "much better.") capturing different aspects of individual performance in comparison to other salespersons prior to the COVID crisis as well as over the last year.

Hypothesis one investigates the value demandingness of health care providers in Austria, which may be viewed as an indicator for the importance of VBS in this market. Terho et al (2017, p. 52) measure this aspect using a scale consisting of four question items. The focus of this paper on the medical device industry requires modification of the wording from two questions. Average demandingness towards medical device companies was calculated using four 7-point Likert scales (1 = I don't agree; 7 = I totally agree) capturing different aspects of demandingness. The mean value of all scale items is 6.04. Cronbach's alpha $\alpha = 0.48$ is low, and thus does not correspond with corrected item-total correlations of between 0.21 and 0.39. Hence, overall demandingness and single items are compared with the cut-off value of 5. Both the mean and all the single items are rated significantly higher than the value of 5 (all ps<0.001), with medium to strong effects ranging from Cohens d=0.56 to 1.30. It may be concluded that the alternative hypotheses H_1 can be accepted. **This means that health care institutions have a high value demandingness towards medical device companies in Austria**. Multiple comparisons clearly indicate that expectations for service and support (mean value: 6.60) are rated as most important and significantly higher than all other aspects.

Hypothesis two is concerned with the importance of prioritizing specific customers for the application of selling processes which require the investment of additional resources, such as VBS. Terho et al (2015, p. 20) have adapted findings from Panagopoulos and Avlonitis (2010) in order to measure the construct of prioritization. The average prioritization of customers for specific selling approaches was calculated using four 7-point Likert scales (1 = not at all; 7 = to a great extent) capturing different aspects of the prioritization. The mean value of all scale items is 4.91. Cronbach's alpha $\alpha = 0.56$ is low and thus unsatisfactory, though featuring acceptable corrected item-total correlations of between 0.28 and 0.42. The overall prioritization and the single items are correlated with the performance of the salesperson. Only the relationship between „we allocate our resources relative to the attractiveness of the customer" and the performance of sales representatives is significant Hence, the null-hypotheses need to be maintained. **There is no correlation between sales success and the prioritization of customers for the application of VBS.**

Hypothesis three identifies the impact of "customer comprehension" on the performance of sales representatives. The measurement of "customer comprehension" is based on two parts. Part one includes a four-item scale developed by Kienzler et al (2018, p. 361) in a VBS context forms the basis for the measurement of the "customer comprehension" construct in

this dissertation. The focus of this paper on the medical device industry requires modification of the wording from two questions. The average development of such customer comprehension was calculated using four 7-point Likert scales (1 = does not apply; 7 = fully applies). Cronbach's alpha α=0.73 is sufficient and satisfactory featuring high corrected item-total correlations of between 0.29 and 0.66. The mean value of all scale items of customer comprehension is 5.23.

The second part of "customer comprehension" is concerned with the importance of identifying problems in the organization of the customer and the usage of the SPIN selling questioning techniques on the performance of sales representatives. Hinterhuber (2017, p. 169) has developed a scale which is based on four question items. These items represent all four different types of questions of this model. Additionally, he added examples of each question type to the scale. In this study, these examples have been adapted to the needs of the medical device sector. Therefore, the average usage of questions was calculated using four 7-point Likert scales (1 = does not apply; 7 = fully applies). Cronbach's alpha α= 0.90 is very high and satisfying and with excellent corrected item-total correlations between 0.73 and 0.83. The mean value of all scale items is 5.72. Since no significant correlations from both parts can be identified, the null hypothesis must be maintained. Therefore, it may be concluded that **there is no correlation between the development of customer comprehension and the performance of sales representatives in the medical device market in Austria.**

Hypothesis four identifies the impact of the networking abilities of sales representatives on their performance. Terho et al (2017, pp. 45, 53) use a four-item scale to measure this impact in a VBS context. They refined their scale in a VBS context based on findings by Palmatier (2008, pp. 82 – 88). This dissertation requires an adaption of the wording. The average customer networking ability was calculated using four 7-point Likert scales (1 = does not apply; 7 = fully applies). The mean value of all scale items is 5.91. Cronbach's alpha α= 0.67 is mediocre yet sufficient featuring acceptable corrected item-total correlations of between 0.37 and 0.60. Hence, the overall customer networking ability and the single items are correlated with the performance of the salesperson. Since no significant correlations can be identified, the null hypothesis must be maintained. **It may be concluded that no correlation exists between 'customer networking ability' and the performance of sales representatives in the medical device market in Austria.**

Hypothesis five investigates the role of customer references as a value visualization tool for the medical device industry in Austria. Terho et al (2017, p. 50) have developed a scale in order to measure the importance of this value visualization tool in a VBS context. This scale is based on findings by Terho and Jalkala (2017, pp. 180 – 185). The focus of this paper, however, requires an adaption of the scale. The average usage of customer references was calculated using four 7-point Likert scales (1 = does not apply; 7 = fully applies). The mean value of all scale items is 4.97. Cronbach's alpha $\alpha = 0.93$ is very high featuring excellent corrected item-total correlations of between 0.79 and 0.88. Hence, the overall usage of customer references and the single items are correlated with the performance of the salesperson. The relationship between „ I employ customer references to describe the customer benefits of our products/ services in concrete terms"and performance is significant, showing a small to medium effect size. The overall mean is also positively and significantly related to performance. Therefore, the alternative hypothesis can be accepted**. It may be concluded that there is a correlation between the usage of customer references and the performance of sales representatives in the medical device market in Austria**

Hypothesis six investigates the role of value quantification in the medical device market in Austria and its potential impact on sales success. Kienzler et al (2018, pp. 365-367) measure value quantification capabilities of sales representatives in a VBS context using a three-item scale. They label activities which are needed to help customers become familiar with the value impact of an offering as 'crafting'. The value quantification capabilities were calculated using three 7-point Likert scales (1 = does not apply; 7 = fully applies) capturing different aspects of the capabilities. The mean value of all scale items is 5.28. Cronbach's alpha $\alpha = 0.93$ is very high and features excellent corrected item-total correlations of between 0.79 and 0.88. Hence, the overall usage of customer references and the single items are correlated with the performance of the salesperson. The relationship between „for each offering made to the customer, I calculate the value that we can provide to the customer "and performance is highly significant, showing a small to medium effect size. The overall mean is also positively and significantly related to performance, exhibiting a small to medium effect. All other correlations fail to show significances and display small to no effect sizes. **Hence the alternative hypothesis may be partially accepted.**

Hypotheses seven and eight examine the importance of value arguments in greater detail. The qualitative expert interviews projected very specific results for the medical device

industry in Austria. Both the dearth of research in the area of personal selling in this market coupled with the lack of predefined scales necessitated the development of a new scale. Based on the qualitative findings from the qualitative section of this paper, the new scale measures the importance of specific value arguments.

Hypothesis seven attempts to determine whether value arguments of medical devices with a focus on the well-being of patients are more or less important than other value arguments. The average value dimensions associated with patients' wellbeing was calculated using two 7-point Likert scales (1 = not important; 7 = very important) and the average of the other dimensions in the medical device industry was calculated using eight 7-point Likert scales capturing different arguments. Cronbach's alpha $\alpha = 0.75$ is sufficient and satisfactory featuring good item-total correlations of between 0.36 and 0.62. Hence the comparison between the two dimensions is feasible. Descriptive statistics show that value arguments which focus on the wellbeing of patients have a mean value of 5.72 (SD 1.377), while the mean value of other value dimensions is 6.00 (SD 0.722). Based on these overall comparisons the null hypothesis needs to be maintained. **Value arguments which are associated with the wellbeing of patients are not significant more important than other value arguments in the medical device industry.**

Hypothesis eight compares the importance of value arguments which involve the handling of medical devices as well as value arguments which focus on the enhancement of the customer's image. The mean value arguments which are associated with the handling aspects of medical devices is significantly more important than the mean value arguments which concern customer image. Furthermore, the mean comparisons of procurement processes, handling, process optimization and image are highly significant. Based on these overall comparisons the alternative hypothesis needs to be maintained. **Value arguments which are associated with handling aspects of medical devices are significantly more important than those which address the customer organization's image.**

5 Conclusion.

The ultimate objective of this paper is to conduct an in-depth analysis of the relevance of value-oriented selling activities approaches for the Austrian medical device industry.

Objective one of this dissertation is to identify the importance and characteristics of VBS in contrast to other relevant selling approaches. An analysis of the academic literature in this paper leads to the conclusion that VBS goes far beyond other selling approaches in cases involving the analysis of customers and the challenges which they face (Haas et al, 2012, p. 99; Kaario et al, 2003, p. 17). Additionally, the quantification and visualization of the value impact (Terho et al, 2012, p. 182) which a solution offers to the customer is a further differentiation point compared with other selling approaches. Ultimately, it may be concluded that VBS helps companies to deal with complex market environments and business challenges which are associated with organizational markets, especially B2B market segments.

Objective two of this dissertation is the development of an overview of potential practices which may be applied in the VBS process. This is grounded in the necessity for an analysis and comparison of different models and process descriptions in order to provide the basis for establishing a VBS framework. The benefit of this framework is to provide an overview of potential activities which may be applied in such a selling process. .

Objective three of this dissertation is to identify the relevance of various VBS activities for the Austrian medical device market. Additionally, it is concerned with an investigation of how elements of the VBS process are applied in this market. The structure of the holistic value-based framework forms the basis for ten qualitative in-depth interviews with experts from this market segment. An analysis of the in-depth interviews reveals that central elements of the value-based selling framework for B2B market segments are employed in the medical device market as well. Differences were detected with regard to the extent and focus of activities within this process. Examples include:

- The identification of potential customers for the application of VBS in the medical device industry is characterized as an individual decision rather than a strategic segmentation approach.

- The development of an understanding of customers and their challenges is a central element of the VBS process. In the medical device market, such an understanding from a sales department is developed by sales representatives in the healthcare sector bringing their individual professional experience to bear. Potential problems and challenges in the customer organization may be detected by job shadowing initiatives.
- In cases involving the importance of different value dimensions, experts regard operational value dimensions above all as important elements of the value proposition. Compared with other research in industrial or B2B contexts, important value dimensions seem to be less versatile in the medical device industry.
- Experts regard reference cases as the most prominent value visualization and presentation tools in this industry sector. In contrast, tools for the individual presentation of customer value (e.g. value calculators) are very rarely used.
- Statements by the expert interviews have revealed that KPIs of a different nature are employed for the development of a value proposition in the medical device industry. Research in B2B or industrial markets chiefly mention financial measures.
- After-sales practices are a crucial component of selling activities for medical devices. They serve to ensure the smooth introduction of a product or solution to the customer organization

Objective four of the dissertation deals with the detection of the impact of various value-oriented selling practices on sales success in the medical device market in Austria. A correlation analysis shows the impact of the various elements of a value-oriented selling process on sales success in the medical device industry. A combination of the results of the qualitative and quantitative data collection in this study form a solid basis for the for the final value-oriented selling model for this industry (see figure 3). In the pre-selling phase, sales organizations need to cultivate an in-depth understanding of the customer (step 2). This is particularly true for cases involving an analysis of medical and decision-making processes in the customer organization. A general value analysis of different products at the outset of this selling process aids in the development of a strong value proposition. In particular, value arguments which are concerned with procurement processes and a smooth handling of medical enjoy a significantly higher importance than other value arguments for providers of healthcare services. However, though the development of support material such as reference cases has a lower mean value than the other elements of a pre-selling phase, it may be concluded that this activity serves to separate the more successful sales representatives from

those that are less so. Direct selling activities such as relationship building with key decision-makers (MW = 5.91) and an individual problem analysis (MW 5.72) have a medium-high importance for VBS processes in the medical device industry. The relatively high importance of specific selling activities in combination with the absence of a correlation with success leads to the conclusion that these activities are basic requirements of personal selling activities for medical devices. The calculation of individual customer value is another opportunity for selling organizations to differentiate themselves on the market from their competitors. A statistical analysis shows a correlation between the performance of an individual value calculation and sales success in the Austrian medical device market. A value-oriented price negotiation (step 8) with the procurement department requires strong support from key medical personnel in healthcare institutions. Finally, after-sales practices form the basis for all subsequent sales activities.

Ultimately, it may be concluded that value-oriented selling processes are highly relevant for selling organizations in the Austrian medical device market. This conclusion is based on an analysis of the academic literature, which describes the unique, complex characteristics of the medical device market and business challenges companies are faced with in organizational markets

Figure 3: final value-oriented selling model for the medical-devices
Source: own figure

6 Outlook and future research

An analysis of various existing research in the area of VBS shows that in particular, models and process descriptions are chiefly developed for use in a general B2B context or for industrial markets. Unfortunately, the consideration of both micro and macro-environmental forces which may affect corporate marketing and sales strategies has been largely neglected. In other words, differences in selling strategies between complex IT solutions and commodity products, for instance, have been disregarded. Yet this paper does not describe entirely new practices and activities applicable to the VBS process, rather it specifies how various elements of a value-oriented selling approach are applicable to a sector which consists of both B2B and significant B2G customer segments.

Based on the findings of this study and an analysis of the academic literature, further research opportunities have been identified. Though this paper is concerned with a complex, specific market environment, it has failed to take into account differences in selling strategies which are based on the characteristics of different product categories, surgical instruments and x-ray equipment, for instance. A further research path might involve the impact of the COVID-19 crisis on the relative importance of various elements of a value-oriented selling process in this market. A comparison of the correlation of sales success with selling practices in the time span before and during, or following the pandemic could help to understand exactly how such a severe crisis impacts selling processes. An additional recommendation is to investigate the relevance of digitalization for value-oriented selling process in such markets.. While this paper managed to identify the importance of value-oriented selling process of B2B market segments in the medical device industry, it is nonetheless imperative to investigate the role of such a selling process for other B2G market segments going forward.

7 Bibliography

AUSTROMED (2013). Studie zur wirtschaftlichen Bedeutung von Medizinprodukte-Unternehmen in Österreich. Industriewissenschaftliches Institut (IWI). Retrieved from https://www.austromed.org/wp-content/uploads/2020/10/Austromed_Studie_wiss_Bedeut_MP_Oesterreich.pdf

Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (Third). Thousand Oaks, California: SAGE

D'Andrea, R. (2005). Executing profitable sales negotiations: selling value, not price. *Industrial and Commercial Training*, *37*(1), 18–24. https://doi.org/10.1108/00197850510576448

Döring N., Bortz, J., & Poschl, S. (2016). *Forschungsmethoden und evaluation in den sozial- und humanwissenschaften: mit 167 tabellen* (5. vollständig überarbeitete, aktualisierte und erweiterte Auflage). Berlin, Heidelberg: Springer. ISBN: 9783642410888

Grönroos, C., & Voima, P. (2013). Critical Service Logic: Making Sense of Value Creation and Co-Creation. *Journal of the Academy of Marketing Science*, *41. 133 - 150* https://doi.org/10.1007/s11747-012-0308-3

Grundy Q. (2016). "Whether something cool is good enough": The role of evidence, sales representatives and nurses' expertise in hospital purchasing decisions. *Social science & medicine (1982)*, *165*, 82–91. https://doi.org/10.1016/j.socscimed.2016.07.042

Haas, A., Snehota, I., & Corsaro, D. (2012). Creating value in business relationships: The role of sales. *Industrial Marketing Management*, *41*, *94 – 105.* https://doi.org/10.1016/j.indmarman.2011.11.004

Hinterhuber, A. (2017). Value quantification capabilities in industrial markets. *Journal of Business Research*, *76*, 163–178. https://doi.org/10.1016/j.jbusres.2016.11.019

Jaakkola, M., Frösén, J., & Tikkanen, H. (2015). Various forms of value-based selling capability — Commentary on “Value-Based Selling: An Organizational Capability Perspective”. *Industrial Marketing Management*, *45*, 113–114. https://doi.org/10.1016/j.indmarman.2015.02.022

Kaario, K., Pennanen, R., Storbacka, K., & Mäkinen, H., L. (2003). *Selling value: Maximize growth by helping customers succeed*. Helsinki. WSOY.

Kienzler, M., Kindström, D., & Brashear, T. (2018). Value-based selling: a multi-component exploration. *Journal of Business & Industrial Marketing.* Advance online publication.34(2), 360-373 https://doi.org/10.1108/JBIM-02-2017-0037

Kotler, P., Armstrong, G., & Opresnik, M. O. (2018). *Principles of marketing* (17th global ed). Harlow: Pearson

Kuckartz, U. (2018). *Qualitative inhaltsanalyse: methoden, praxis, computerunterstützung* (4. Auflage, Ser. Grundlagentexte methoden). Weinheim und **Basel:** Beltz Juventa. ISBN: ISBN 9783779946830

Palmatier, R. (2008). Interfirm Relational Drivers of Customer Value. *Journal of Marketing*, *72*(4), 76–89. https://doi.org/10.1509/jmkg.72.4.76

Panagopoulos, N., & Avlonitis, G. J. (2010). Performance implications of sales strategy: The moderating effects of leadership and environment. *International Journal of Research in Marketing*, *27*(1), 46–57. https://doi.org/10.1016/j.ijresmar.2009.11.001

Purchase, S., Goh, T., & Dooley, K. (2009). Supplier perceived value: Differences between business-to-business and business-to-government relationships. *Journal of Purchasing and Supply Management*, *15*(1), 3–11. https://doi.org/10.1016/j.pursup.2008.11.003

Schmäh, M. (2008). Spitzenverkäufer und Value-Selling. *Marketing Review St. Gallen*, *25*(3), 38–43. https://doi.org/10.1365/s11621-008-0163-2

Slater, S. F. (1997). Developing a customer value-based theory of the firm. *Journal of the Academy of Marketing Science*, *25*(2), 162-167. https://doi.org/10.1007/BF02894352

Steward, M. D., Narus, J. A., Roehm, M. L., & Ritz, W. (2019). From transactions to journeys and beyond: The evolution of B2B buying process modeling. *Industrial Marketing Management*, *83*, 288–300. https://doi.org/10.1016/j.indmarman.2019.05.002

Terho, H., Eggert, A., Haas, A., & Ulaga, W. (2015). How sales strategy translates into performance: The role of salesperson customer orientation and value-based selling. *Industrial Marketing Management*, *45*, 12–21. https://doi.org/10.1016/j.indmarman.2015.02.017

Terho, H., Eggert, A., Ulaga, W., Haas, A., & Boehm, E. (2017). Selling Value in Business Markets: Individual and Organizational Factors for Turning the Idea into Action. *Industrial Marketing Management*. (66), 42–55. https://doi.org/10.1016/j.indmarman.2017.06.015

Terho, H., Haas, A., Eggert, A., & Ulaga, W. (2012). ‘It's almost like taking the sales out of selling’—Towards a conceptualization of value-based selling in business markets. *Industrial Marketing Management*, *41*(1), 174–185. https://doi.org/10.1016/j.indmarman.2011.11.011

Terho, H., & Jalkala, A. (2017). Customer reference marketing: Conceptualization, measurement and link to selling performance. *Industrial Marketing Management*, *64*, 175–186. https://doi.org/10.1016/j.indmarman.2017.01.005

Töytäri, P., & Rajala, R. (2015). Value-based selling: An organizational capability perspective. *Industrial Marketing Management*, *45*, 101–112. https://doi.org/10.1016/j.indmarman.2015.02.009

Vargo, S., & Lusch, R. (2004). Evolving to a New Dominant Logic. *Journal of Marketing*, *68(1), 1-17.*. https://doi.org/10.1509/jmkg.68.1.1.24036