

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

Johannes Reiterer

Prepared by the University of Sopron

Istvan Szechenyi Economic and Management Doctoral School

within the framework of the International Joint Cross-Border PhD Programme in
International Economic Relations and Management

Supervisor: Prof. Dr. Nicole Mau

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Dissertation to obtain a PhD degree

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List of Abbreviations:

B2B	business-to-business
B2G	business-to-governmental
EU	European Union
GDB	gross domestic product
KPI	Key performance indicators
NPV	Net Present Value
PBC	performance-based contracting
SME	small and medium sized companies
VBP	Value-Based Pricing
WHO	World Health Organization

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

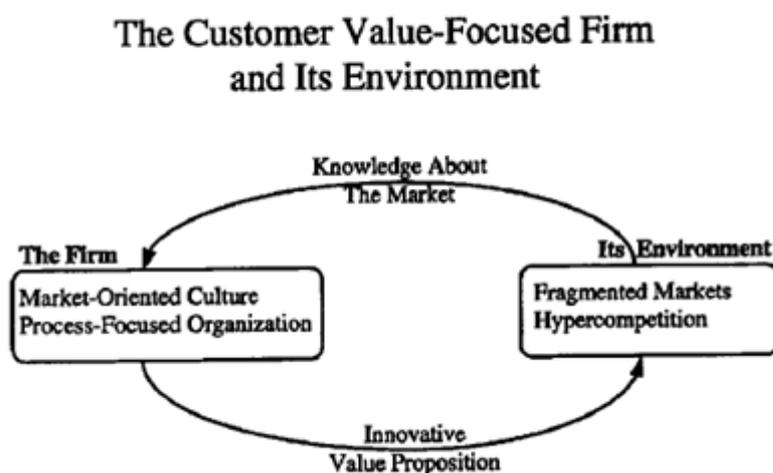
1 Introduction.

Companies which operate in the Austrian health-care market are faced with various business challenges. Examples include an increasingly competitive market and tight budgets in public institutions. A consequence of these developments is an increasing price pressure on the market (AUSTROMED, 2013, p. 4). Moreover, 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. Additionally, Laurell (2018, p. 137) explicitly states that various environmental factors substantially influence selling processes.

It may be concluded that 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 a market which consists of business, governmental, and institutional customers. Therefore, it may be concluded that companies 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. Though Kotler, Armstrong, and Opresnik (2018, p. 180) characterize business, institutional and government customer segments as organizational markets, Purchase, Goh, and Dooley (2009, pp. 4-5) have identified differences in procurement strategies. 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.

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’ (figure 1).



**Figure 1: ‘the value-based theory of the firm’,
Source: Slater, 1997, p. 166)**

Based on an analysis of current trends it can be concluded that Slater’s (1997, p. 166) theory continues to enjoy a high degree of relevance.

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. Furthermore, selling approaches and selling processes must be adapted more frequently, as well as refined and coordinated from a strategic perspective. Along these lines, 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 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).

Nevertheless, even if scholars have already developed VBS models for general B2B selling situations, Terho, Eggert, Ulaga, Haas, and Böhm. (2017, p. 49) continue to see difficulties in the implementation of VBS in selling organizations.

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. Additionally, the previously mentioned factors lead to the conclusion, that selling approaches such as VBS are expected to become more important for medical devices in Austria going forward. 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.

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

The research context of the dissertation will be elaborated on at the beginning of the paper. It will consist of an analysis of the national and international medical device markets. The second part of the thesis (Chapters 3 and 4) will focus on objectives one and two of the paper, containing an analysis of the relevance and importance of VBS. A comparison of VBS with other relevant selling approaches in Chapter 3 will serve to show the unique characteristics and scope of this selling philosophy.

Chapter 4 will be concerned with the conceptualization of VBS. It will comprise an in-depth analysis of activities which may be applied in a VBS process, as well as a comparison of the most relevant VBS models. Such a comparison will form the basis for the development of a holistic VBS framework presented at the close of this part.

The research design and central results will be stated in part three of the dissertation. 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, qualitative and quantitative data have been collected by the author. In such a research design, specific research questions and hypotheses are developed throughout the research process. Qualitative research questions will be presented in Chapter 5.1, while research questions and hypotheses for the quantitative survey will be related in Chapter 5.2.1. Chapter 6 includes central results of the qualitative and quantitative data collection process. The final section (Chapter 7) will summarize the main findings related to the four objectives of the dissertation. Additionally, it includes managerial implications, the scientific contribution of the dissertation and an academic outlook.

2 Characteristics of the medical device market.

While the introduction has shown the complexity of the medical device market in broad strokes, further analysis is critical in order to understand both the uniqueness of the market and the business challenges which companies face.

In order to understand the scope of the research, it is important to clarify and define the term ‘medical device’. Afterwards, the author will present an analysis of market structures and an overview of international market developments. A description and overview of stakeholders, environmental factors, and the complexity of decision-making processes is provided in this section as well. The second part of this chapter deals with an analysis of the Austrian healthcare market, including an overview of the market development, legal aspects and the structure of the Austrian healthcare system. The final part of this chapter focuses on scholars in this research area

2.1 *Boundaries, trends and challenges*

Laurell (2018, p. 149) has identified three main parts of the industrial life science sector: the biotechnology sector, the pharmaceutical market and the medical technology market. The definition of medical devices shows the broad scope of the industry sector. The World Health Organization (2020) defines a medical device as follows:

“instrument, apparatus, implement, machine, appliance, implant, reagent for in vitro use, software, material or other similar or related article, intended by the manufacturer to be used, alone or in combination, for human beings, for one or more of the specific medical purposes” (World Health Organization, 2020).

This definition also includes a list of various medical purposes. Examples include diagnostic instruments, treatment of injuries, modification of physical processes or the disinfection of medical devices. The World Health Organization (WHO) explicitly states that disinfection substances and aids for people with disabilities are not considered to be medical devices. Additionally, WHO states that the intended action of medical devices in or on humans is not achieved through pharmacological and immunological elements. This aspect is the main differentiator between the medical device market and the other two market areas in the life science industry. (World Health Organization, 2020)

The worldwide medical device market has been characterized by a steady growth rate since 2005. Between 2005 and 2019 the total market volume grew from 219 to 405 billion USD. Statista assumes that this trend will continue in the upcoming years, forecasting an increase of the total market volume to 594.5 billion USD in 2024 (Statista, 2018a). The USA represents the largest national market with 38.9% of worldwide market volume, followed by Germany, Japan and China at 9.9, 8.9 and 8.1 percent, respectively (Spectaris, 2018, pp. 14 - 17). The European Union (EU) is the second largest market for companies in this industry. Medical devices are also an important factor for the European economy. Approximately 1% of the total gross domestic product (GDP) is expended on medical devices in Europe (MedTech Europe, 2020, p. 23).

Altenstetter (2003, p. 229) sees diverging market structures within the life science industry, detecting major differences between the structures of the pharmaceutical and medical device markets. The pharmaceutical market is driven by large multinational companies. In contrast to this, a number of small and medium-sized companies (SMEs) operate in the medical device market. The high number of SMEs is also driven by the appearance of numerous market niches. These niches are especially attractive for nationally operating micro companies. Vlckova and Thakur-Weigold (2018, p. 86) describe the medical device sector as an extremely appealing market for small export-oriented companies, which is supported by an analysis of the current market structure in Europe. In total, of the approximately 32,000 companies registered in the EU, 95% are classified as SMEs. The majority are small companies with fewer than 50 employees (MedTech Europe, 2020, p. 13).

The medical device sector also has a highly innovative nature. New diagnostic and therapeutic solutions are developed for national healthcare systems. Therefore, they contribute substantially to an enhancement of the public healthcare level in their respective country (AUSTROMED, 2013, p. 2). An indicator for this high innovation level is the number of patent applications. A total of 14,000 applications for patents were submitted to the European patent office by European MedTech companies in 2019. The medical technology sector has the second highest number of patent applications among all market areas in Europe. Digital communication, however, remains the leading technical field in this context (MedTech Europe, 2020, p. 13).

The structure and focus of medical device companies in Europe is quite heterogeneous (Vlckova & Thakur-Weigold, 2018, p. 88). The majority of Swiss companies, focus on high value-added elements in their value chain. This results in high investments in research and development in order to develop high-tech products and additional service elements. In contrast to Switzerland, Czech companies focus more on cost-related elements of the supply chain in order to produce products in lower price segments of the market. This shows the diversity of the market as well.

Furthermore, Denis, Langley, and Rouleau (2007, p. 179) describe how companies in the medical device sector are faced with managing a complex, pluralistic market context. This context was established through the existence of multiple governmental stakeholders, resulting in a high number of different decision-making processes which are occasionally rather opaque for external organizations. The decision-making powers of participants and stakeholders in these processes are difficult to identify. Moreover, the high number of people involved leads to differing knowledge levels within the decision-making unit and a nontransparent distribution of information. Finally differing objectives from various stakeholders and participants of a decision-making unit serve to further increase the complexity. Hence an understanding of needs and views from different people in such a decision-making process is essential for the success level of every company in this market (Laurell, 2018, p. 149). Different guidelines and working routines in health care institutions influence the complexity of decision-making process as well.

The pluralistic context of the medical device market is also represented by the importance of non-market actors such as researchers, who also help further develop the sector. These non-market actors have different views on health care. Researchers, for example, do not primarily concern themselves with the efficiency of their activities. In contrast, it can be concluded that the main objective of commercial organizations is to generate long-term profit, which might be driven by increased efficiency of processes (Laurell, 2018, p. 139). Nevertheless, cooperation between corporate organizations and such non-market actors are important for the development of innovations.

As regards the implementation of new clinical approaches in a market, Scott (2014, p. 102) points out that the effect a product exerts on the patent and the impact it creates on the cost structure of a healthcare institution must be supported by scientific evidence.

Especially the impact of medical devices on financial metrics is an indicator that this market requires more holistic selling approaches. In this context, Scott (2014, p. 101) adds that working routines are substantially influenced by the knowledge level and beliefs of participants in these processes as well as intra-organizational cultural aspects. This results in a heterogeneous implementation of new academic realizations and achievements into clinical routines.

An environmental analysis is also crucial in order to identify the idiosyncrasies of this market. Laurell (2018, pp. 137, 139, 155) suggests describing the characteristics of the healthcare market based on regulative, normative and cultural-cognitive dimensions. The regulative dimension includes juridical aspects such as European directives and national legislation. It monitors how societal elements (e.g. inhabitants, governmental and non-governmental organizations, and for-profit corporations) act in a specific field. Normative elements describe requisite behaviors and standards in the business community. This aspect includes treatment patterns, clinical approaches and the role of different professionals in these processes. It also takes a country's economic standards into consideration (e.g. reimbursement processes, technological standards). Cultural-cognitive elements include culturally shaped common beliefs.

Ultimately it may be concluded that various factors increase the number of challenges for the development of marketing and selling strategies in this industry sector. Examples include high innovation pressure, high competition level, the pluralistic context of the market, and the significance of non-market actors and complex decision-making processes in healthcare institutions. The complexity of healthcare systems in Austria is illustrated in the following sub-chapter.

2.2 *The Austrian health-care market*

This section of the dissertation describes the healthcare and medical device market in Austria in greater depth. It includes an overview of key stakeholders and market trends. The description of the Austrian healthcare system is based on the three market dimensions developed by Laurell (2018, p. 137) and explained in the previous chapter.

Development of the Austrian medical device market has gone hand in hand with the worldwide market evolution. Domestic turnover increased from 7.4 billion EUR in 2012 to 8.44 billion EUR in 2017 (Statista, 2018b). Life Science Austria (2017) documented 554 companies on the Austrian market in 2017. AUSTROMED (2013, p. 3) reported, that the majority of their members are small companies with fewer than 50 employees (70.4%). Just 9.3% of their member companies had more than 250 employees at the time of the study. Even if MedTech Europe (2020, p. 13) has identified a high innovation level in the European medical device sector, AUSTROMED (2013, p. 2) has reported innovation inhibitors in Austria. Two examples of such inhibitors are the structure of reimbursement processes and accreditation requirements for new products. Measurable and objective criteria for both processes are needed. A high level of customer service and the development of service offerings in addition to products are seen as important national trends as well (AUSTROMED, 2013, p. 2).

From a regulative point of view, the most important law for medical device companies in Austria is the 1996 Austrian Medical Device Law (Medizinproduktegesetz). This law serves to translate regulatory aspects which have been established by the EU into domestic law, a central element of which is the definition of medical devices. In this regard it can be concluded that all the central elements of the WHO definition have been adapted by Austrian legislation. The definition of medical devices is stated in § 2 (1) of the Medizinproduktegesetz. Demands regarding the standardization of products are included in this legislation as well. It regulates quality aspects and pre-requirements for the authorization of new products on the market. § 5 (1) of the legislation states that a CE certificate is needed to sell products on the market, thus ensuring the delivery of standardized, safe products to customers. The legislation also regulates trading and selling aspects of medical devices. Required competencies and knowledge levels of people who offer products to a potential customer are defined. § 79 (1-5) of the Medizinproduktegesetz explicit mentions that company representatives have to

inform customers about side effects, interrelations with other devices, dysfunctions, technical defects and other product-related risks. Furthermore, companies have to ensure that representatives are regularly trained. They also have to inform governmental organizations about the competencies and training activities of their employees. § 80 (1-2) defines how medical devices are to be introduced in an organization's healthcare providers. Lastly, selling organizations have to guarantee that users of the product in the customer organization are trained during the implementation of the product and afterwards on a regular basis (Medizinproduktegesetz, 1996). All of these elements serve as additional indicators that medical devices represent a sensitive product area.

The manner in which the Austrian healthcare system is structured influences regulative and normative dimensions according to Laurell (2018, p. 137). An analysis shows the pluralistic context which is described by Denis et al (2007, p. 179) in detail. Different hierarchical governmental levels and organizations are in charge of different sectors of the system. On the whole, the Austrian healthcare system is based on three pillars. Pillar one represents the federal government. The federal government is in charge of legislation which is applicable to the whole country. One example is the previously mentioned Medizinproduktegesetz. The federal government also defines basic laws for the hospital sector. Pillar two of the Austrian healthcare system represents the nine federal states of the Austrian republic. Federal states are in charge of the care sector and the development of implementation laws for hospitals. These implementation laws are based on basic laws enacted by the federal government. Pillar three represents public social insurance. In total, five different Austrian insurance agencies are in charge of medical care outside hospitals and rehabilitation centers. (Bundesministerium für Arbeit, Soziales, Gesundheit und Konsumentenschutz, 2019, p. 8).

The Austrian healthcare system is divided into three elements (Bundesministerium für Arbeit, Soziales, Gesundheit und Konsumentenschutz, 2019, pp. 19-24).

- Preclinical emergency care
- Outpatient care
- Inpatient care
- Drug supply

Provision of patient transport (e.g. by emergency ambulance) is the primary function of the preclinical emergency care system, which is coordinated by various non-governmental organizations. The outpatient market consists of approximately 45,000 registered doctors, 900 private outpatient clinics, and outpatient departments of hospitals. (Bundesministerium für Arbeit, Soziales, Gesundheit und Konsumentenschutz, 2019, pp. 19-20)

The inpatient stationary care market, which primarily consists of hospitals, are the main purchasers of medical devices worldwide (Wernz, Zhang & Phusavat, 2014). Therefore, hospitals and other publicly funded healthcare facilities represent the most important customer group in Austria as well. 271 hospitals with 64,800 hospital beds are located in the country. The majority of these hospitals are operated by state or municipal governments (38.4%), while 32.8% of the hospitals are operated by private organizations, 12.9% by religious communities and 15.9% by public social insurance agencies. In total, rehabilitation centers provide 11,400 patient beds (Bundesministerium für Arbeit, Soziales, Gesundheit und Konsumentenschutz, 2019, pp. 22-23). A consequence of this high amount of publicly financed customers in the healthcare sector is the high importance of tenders. The Austrian Federal Procurement Act allows direct awards below a purchasing volume of 100,000 EUR (Wirtschaftskammer Österreich, 2015, p. 16).

The drug supply in the country is coordinated by approximately 2,350 pharmacies. It can be assumed that, for companies in the medical device sector, this element of the Austrian healthcare system is less relevant than others. (Bundesministerium für Arbeit, Soziales, Gesundheit und Konsumentenschutz, 2019, p. 24)

The financing structure of the Austrian healthcare system is complex as well. 52.4% of the total healthcare expenditures are financed by public social insurance agencies, whereas 23.9% are funded by various governmental entities at the national, state, and municipal level. 16.8% are covered by patient deductibles and finally 1.4% by non-profit organizations. The financing structure also reveals that the majority of the costs are funded by public and governmental institutions, with just 5.5% of total expenditures covered by private insurance. (Hofmarcher, 2013, p. 93)

This fractured structure of the Austrian healthcare market gives rise to the conclusion that normative elements of the market such as treatment patterns and cultural-cognitive elements may significantly differ among diverse public healthcare institutions. This increases the necessity for developing additional individual selling processes for this market sector as well. Moreover, the healthcare provider structure in Austria provides a detailed illustration of which challenges companies are faced with in the B2B and B2G market settings.

2.3 Status quo of research in the medical device sector

An analysis of various research databases (Sciencedirect, Emerald Insights) appears to warrant the conclusion that scholars in the area of sales of medical devices are an exceedingly rare breed. This is despite the fact that Bowers, Powers, and Spencer (1994, p. 46) concluded 15 years ago that personal selling could be expected to gain a more important role in the marketing mix for healthcare services in the future. This was especially expected to be the case in product areas with intense competition and high purchasing volumes. Bowers et al (1994, pp. 42-44) described demographic variables of the workforce from sales departments in the medical advice sector of the United States. They also compared the structure of the workforce with that of other sectors. Compared with an average of all other industries, more women than men work in the medical device sales sector. Furthermore, the average age of employees is lower and the percentage of people with a college degree is higher. Additionally, they determined that the average compensation is higher compared with that of other industries. On the other hand, they concluded that sales representatives remain in a specific position for a significantly shorter period of time compared with salespeople elsewhere. Apart from the above-mentioned study, however, previous research has either been concerned with very general sales management aspects or very specific behaviors in selling situations.

A more recent study by Jaeger and Kopf (2014, p. 425) deals with selling strategies for biomedical devices for hospitals in the United States. They recommend aligning sales territories in order to achieve higher sales force effectivity. Conclusions regarding the structure of selling processes are quite general in these scholars' work. They determined that the size of the customer organization substantially influences the structure of the individual selling approach.

Detailed recommendations regarding how such selling process should be applied in this market area, however, are not described by these authors. Chatterji, Cunningham, and Joseph (2019, p. 55) also discuss management-related aspects in sales departments. They particularly focus on the importance of out- and insourcing by selling entities in the medical device industry in the United States. They identify that companies benefit considerably from existing relationships between customers and external sales people provided that they are selling products from the same area. A further development of the product portfolio by adding innovations which go beyond the scope of the existing product portfolio increases the likelihood of operating with internal representatives (Chatterji et al, 2019, p. 55). Laurell (2018, p. 136) analyses the structure of different national medical device markets and its impact on international market expansions. This researcher identifies three different general approaches in order to enter a new market with innovative products. In the end, the selling approaches described are rather general, at least from a marketing perspective. Specific selling steps have not been developed by this researcher.

Other scholars deal with behaviors and competencies of sales representatives and their impact on success. Lai, Chou, and Cheung (2013, p. 137) analyze the impact of selling behaviors on the development of long-term relationships with customers in the medical device sector in Taiwan. A positive relationship between relational behaviors and the trust and loyalty level of customers was identified. Similarly, Harris, Mirabella, and Murphy (2012, p. 72) discuss the importance of specific traits of sales representatives in the medical device sector. They have detected a positive relationship between the emotional intelligence of sales representatives and their success on the market. This study includes medical devices and pharmacological products in the United States.

A more detailed description of selling approaches in the medical device industry has been established by Provines (2014). This book can be seen as a practical guideline for members of marketing and sales entities in the healthcare sector in order to present and communicate the value of an offered solution to an institutional customer. Country-specific differences, especially for the European market, are not taken into consideration in this work.

A further research path which is related to selling processes in the medical device sector investigates important factors in decision-making processes. Jackson (2011, p. 46) reports that expectations of key decision-makers in hospitals regarding offerings from MedTech companies are becoming more diverse. Products of a high quality and efficiency are demanded by healthcare institutions.

Additionally, they expect offers which help to enhance both the efficiency of internal processes and the outcome for their patients. In this context, Grundy (2016, pp. 21-22) reveals the high importance of providing scientific evidence for product benefits in the decision-making processes of hospitals. This scholar also identifies a lack of just such scientific evidence for product benefits in this market area.

Ultimately it may be concluded that a dearth of research definitely exists concerning the development of value-oriented selling processes for medical devices.

3 Selling in market areas with organizational buying structures

The previous chapter has shown the complexity of the Austrian healthcare system. Companies in this market area are involved with B2B and B2G market segments. However, the author did not find relevant academic literature in the area of personal selling for B2G market segments. This finding corresponds with the views of Froch, Wagner, and Falkenreck (2018), who similarly report a very low amount of research which is related to relationships between vendors and buyers in a B2G market context. Additionally, they describe similarities between B2B and B2G market segments and sales-related aspects. One example is the high importance for a selling organization of establishing a business relationship which is founded on trust and customer satisfaction. Thus, due to a dearth of research on sales for B2G market segments, this section of the paper deals with value-oriented selling approaches in B2B market settings.

The previous analysis of the medical device market environment shall be further developed by an analysis of sales-related challenges in B2B market segments. In particular, the first part of this chapter (3.1.) is concerned with market trends. Part two (3.2.) includes an initial characterization of the VBS concept and the impact of this selling approach on the micro-environment of a company. Part three (3.3.) presents an analysis of B2B selling approaches. Due to the fact that different selling situations require different selling approaches, it is important to compare the scopes and concepts of the most relevant selling strategies (Autry, Williams, & Moncrief, 2013, p. 165). Additionally, Haas, Eggert, Terho, and Ulaga. (2013, p. 67) see coherences and dependencies among different selling approaches. This enhances the importance of comparing and analyzing necessary competencies for the application of these selling approaches. Furthermore, such an analysis is needed to identify the impact of VBS on executives in a selling organization. Finally, part four (3.4) contains an analysis of the importance of VBS. It seeks to show how various selling approaches are dealing with current business challenges and how what impact this is having on the output of a selling organization.

3.1 *B2B challenges and market trends*

Almost 30 years ago, De Rose (1991, pp. 87-89) analyzed trends in B2B markets which give rise to an increasing importance of further developing selling processes. The analysis can be summarized as follows:

- Procurement processes in companies are commonly driven by strategic calculations. On the one hand, this trend can be viewed as a result of an increasing number of business activities which are outsourced. On the other hand, an increasing competition level and swift technological progress require faster ‘go-to market’ initiatives for new products.
- The implementation of total quality management systems and just-in-time delivery influence the importance of creating a more strategic view of procurement processes. A steadily growing number of requirements may result in a reduction of the total number of potential suppliers for a buying organization. In such cases, longer, more strategic partnerships between buyers and sellers are needed. DeRose’s contemporaries Karoutchi and Kostecki (1994, pp. 179-181) identified similar developments on the market over the same time period. They concluded that business customers more often require offerings and solutions which solve specific problems, resulting in a higher importance for sales representatives to act as consultants. Additionally, they recognized the importance of establishing tools to support sales representatives in more complex selling situations. Such tools are needed to analyze potential customer issues in greater detail. Furthermore, information quality and knowledge exchange within a selling organization should be increased.

One decade later, D’Andrea (2005, pp. 18-19) and Schmäh (2008, pp. 38-39) confirmed that the above-mentioned market trends still existed. Against this backdrop, they observed an increasing price pressure in the market. This occurs in situations where differences in the quality of offerings are neglected or difficult to identify by the purchasing organization. An ongoing commoditization and an increasing purchasing power on the part of customers, even in industrial markets, are described as drivers of this development (Hinterhuber & Liozu, 2012, pp. 68-70; Ingenbleek & Van der Lans, 2013, p. 35). Previous scholars had also detected important trends in selling organizations. D’Andrea (2005, pp. 18-20) described the phenomenon of selling organizations having to increase the margin instead of sales volume in business markets.

On the one hand this resulted in efforts to reduce costs of selling processes (e.g. by a reduction of internal sales support). On the other hand, restrictions on reducing the selling price or limits on the number of free services were introduced for sales representatives.

Schmäh (2008, pp. 39-41) has identified the importance of offering customized combinations of products and services in selling processes. This finding correlates with the recommendation to establish a sales team in order to interact with various members of and roles in a buying center more effectively.

Töytäri, Brashear, Parvinen, Ollila, and Rosendahl (2011, p. 493) have concluded that it is growing more difficult for suppliers to communicate the high, unique value of their solutions. An incomplete understanding of the value which a customer receives from an offering is also a barrier to positioning more expensive products on a business market (Anderson & Wynstra, 2010, pp. 29 - 31).

Nowadays, Steward, Narus, Roehm, and Ritz (2019, p. 298) report an increasing importance of value-centered thinking in business relationships. Independent of the previously described trend of an increasing power of buying organizations, Töytäri and Rajala (2015, pp. 109 - 110) describe an increasing focus of buying organizations on purchasing the most valuable total solution featuring the highest possible long-term benefits.

Current trends, such as the further development of digital processes in procurement departments, also impact the selling efforts of potential vendors. Buying organizations have access to a variety of information worldwide. Therefore, products are compared and analyzed by customers in greater detail. Additionally, products which are offered by potential suppliers are analyzed before sales representatives of these companies are contacted for the first time. A result of this development is an increasing amount of procurement processes which are completed online. On the other hand, customer organizations expect added value from sales representatives. They presume that company representatives understand their business challenges. This trend also results in an increasing need to develop more individual and customized solutions (Sisakhti, 2015, pp.4-5).

3.2 *The characterization of Value-Based Selling*

Töytäri and Rajala (2015, p. 101) define VBS “as a sales approach that builds on the identification, quantification, communication, and verification of customer value.” An exclusive focus on this definition would necessarily lead to the conclusion that VBS is a unidimensional process. Yet a more thorough examination of additional definitions reveals that VBS is, in fact, a multidimensional construct. This construct includes individual and personal selling, as well as organizational management components. Therefore, other researchers see VBS as a bundle of capabilities and management practices which build the foundation for planning, implementing and leveraging VBS activities (Moorman, 2013, pp. 326-327; Töytäri & Rajala, 2015, p. 101).

VBS is also characterized as a proactive selling approach, especially concerning the manner in which solutions are presented in a selling process (Töytäri et al, 2011, p. 494) or how potential customers perceive value (Möller, 2006, pp. 913, 922). Sales representatives also have to position themselves proactively as an advisor with the objective of increasing the performance of the customer organization (Terho et al, 2017, p. 52).

An orientation towards the problems and needs of customers is another essential element of VBS (Töytäri et al, 2011, p. 494). The importance of developing and understanding a client’s problems and needs from a customer exceeds that of other selling approaches. In a VBS selling process it is essential to gain an in-depth understanding of the client and their market environment. This information then forms the basis for developing offerings in order to tackle business challenges. In light of this, Haas, Snehota, and Corsaro (2012, p. 99) as well as Kaario, Pennanen, Storbacka, and Mäkinen (2003, pp.158-159) reach the conclusion that a thorough understanding of both the customer as well as their internal and external environments build the foundation for creating value in a business relationship.

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.

Thus, a value promise in a VBS process is not a general, imprecise output from the manufacturing process of a potential supplier (Grönroos & Voima, 2013, pp. 147-148; Vargo & Lusch, 2004, pp. 12-13).

A thorough analysis of various VBS definitions indicates that different scientists do not have contradictory understandings and views on VBS. It may be concluded that the concept has been refined over the last two decades, as further elements and aspects were added to the core idea. This selling approach includes conversation techniques in sales talks, the incorporation of a multidimensional selling process, and the inclusion of management practices which influence the whole marketing and sales orientation of the respective company. An in-depth understanding of the individual customer situation forms the basis for the development of a value proposition which translates the benefit of an offering into quantitative numbers.

It may be presumed that the application of VBS impacts various business-related areas. Terho et al (2012, p. 182) summarizes the following effects:

- Impact on the seller (the selling process, positioning on the market)
- Impact on the buyer
- Impact on the relationship between the seller and buyer

Impact on people within the selling process

The development and communication of a value promise for a customer requires conversation and selling activities which are different to other selling approaches (Blocker, Cannon, Sager, & Panagopoulos, 2012, p. 16). In light of this, VBS has been described as a more challenging selling approach (Kindström, Kowalkowski, and Nordin, 2012, p. 542). Hence, it is important to compare the most relevant selling approaches presented by these researchers. Sales representatives act as mediators of value between selling and buying organizations (Töytäri & Rajala, 2015, p. 109). They have a substantial impact on the identification of the individual value realization and cost saving potential in the organization of the customer (Anderson, Kumar, and Narus, 2007, p. 108). Managers must develop an environment that enables salespeople to focus more on the identification and demonstration of value for the customer (Kienzler, Kindström, and Brashear, 2018, p. 369). In this context Terho et al (2012, pp.183-184) mentions that VBS influences the cost structure of the selling company.

Moreover, the application of this selling approach requires investment. Finally, the identification and communication of value to various members of a buying entity also requires more time resources.

Impact on the positioning of the company on the market

VBS also has the potential to strengthen the competitive positioning of a company on a given market (Forbis & Mehta, 1981, p. 32). Töytäri et al (2011, p. 493) summarizes various sources which see in the communication of the total value of an offering an important factor for developing a competitive advantage. On the same subject, other resources state that only a small amount of companies have already developed competences to communicate the financial impact of a solution to the customer (Anderson et al, 2007, p. 2). This also results in the development of more comprehensive and better tailored offerings for different customer groups. (Ulaga & Reinartz, 2011, pp.21-22) Lastly, VBS aids in the development of a more comprehensive segmentation approach for different customer groups. The formulation and focus of a value proposition may be used as a segmentation criterion for markets (Kienzler et al, 2018, pp. 368-369).

Impact on the relationship between seller and buyer

The development of an individual value proposition for a customer requires an active and open two-way exchange of information. This increases the probability of developing a more cooperative form of partnership, which may result in lower price sensitivity (Terho et al, 2012, p. 183). Additionally, it impacts the quality of the relationship and the customer lifetime value (Kienzler et al, 2018, pp. 368-369). A friendly relationship between sales representatives and members of a buying organization contributes to the information-gathering process conducted by the selling company (Hinterhuber, 2017, p. 173).

Impact on the customer

The communication of a quantified value proposition influences the processes in the decision-making unit of the customer as well. The presentation of the monetary impact of a solution on the client organization assists members of a buying center in understanding the benefit of a product offering in greater detail. Purchasing decisions can be justified using more rational arguments. The ongoing trend of vendor offerings increasingly being evaluated based on the long-term effects of the investment rather than the current purchasing price only serves to enhance the importance of this argument (Ulaga & Eggert, 2006, p. 120;

Terho et al, 2012, pp. 182-183). Such a view on offerings may assist the organization to achieve their own objectives. Additionally, it helps enhance the profitability of their business operations. (Grönroos & Voima, 2013, pp. 147-148; Vargo & Lusch, 2004, pp. 13-15)

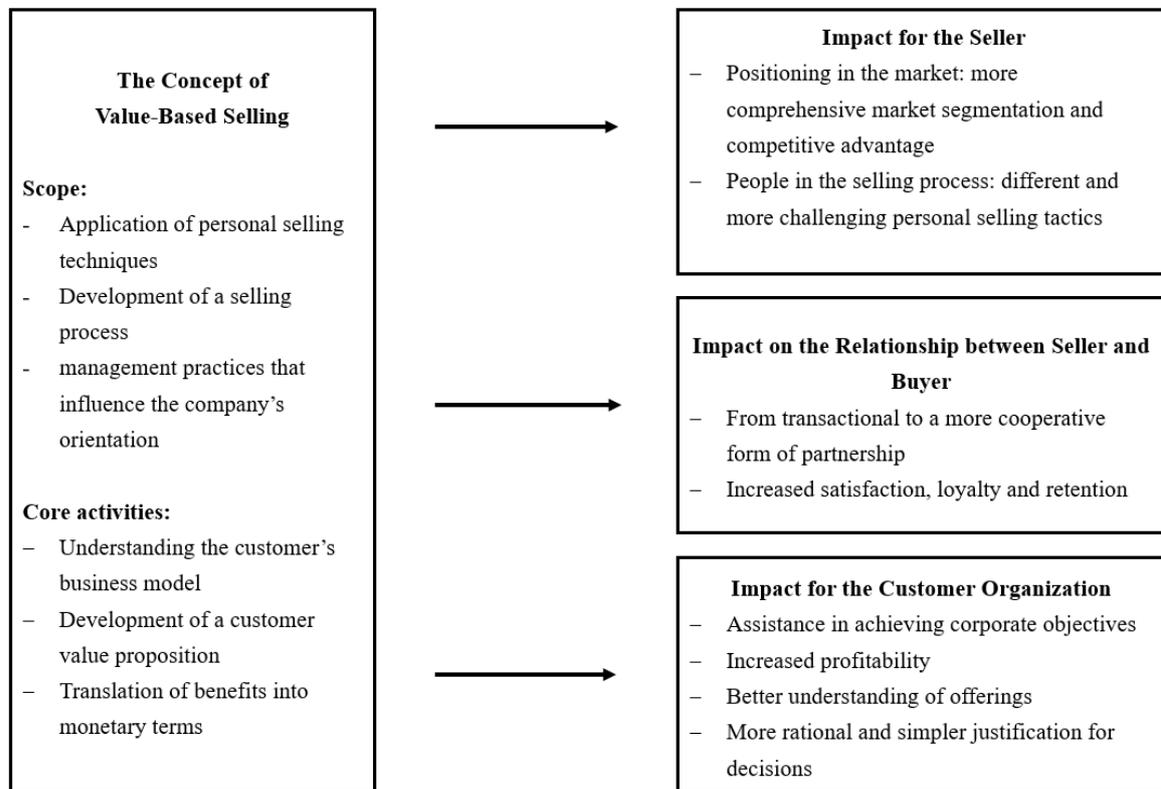


Figure 2: The impact of Value-Based Selling
Source: adapted from Terho et al, 2012, p. 182

Figure 2 summarizes the main findings of this initial analysis. The left side of the diagram describes the main elements of VBS based on an analysis of various definitions and descriptions. The right side shows the impact of VBS on the selling company, the customer organization, and the relationship between the two parties.

3.3 *Value-Based Selling in context with other selling practices.*

Following an initial overview of the value-oriented selling process concept, this part of the dissertation compares VBS with other applicable B2B selling behaviors. The objective of this chapter is to identify different ranges as well as conceptual differences.

Such a comparison helps to analyze the impact of VBS on the selling organization more in detail, in particular concerning a clarification of the required skills and competencies for sales representatives. Such an analysis is crucial for the development of training and coaching activities (Kimura, Bande, and Fernández-Ferrín, 2019, p. 206).

Based on diverging needs and characteristics of different customer groups, it is important to employ different selling approaches in a selling organization (Autry et al, 2013, p. 165). Kimura et al (2019, p. 199) summarize the work of scholars who have identified the importance of using a mixture of different selling approaches in order to generate a competitive advantage. Other research indicates independencies and overlaps a selling approaches. The combination of different selling approaches impacts the effectiveness of a selling organization (Haas et al, 2013, p. 64).

A systematic literature analysis conducted by Terho et al (2012, p. 177) marks the initial starting point for the identification of the most relevant selling behaviors for this paper. Six general selling approaches have been ascertained by the author: adaptive selling, agility selling, consultative selling, customer-oriented selling, partnering-oriented behaviors, and relationship selling. Terho et al (2012, pp.175-176) have described adaptive and customer-oriented selling as the approaches which have enjoyed the most academic attention in the past decades. Also, Terho et al (2017, p. 43) and Franke and Park (2006, p. 693) view customer-oriented and adaptive selling as the most vital approaches. The above-mentioned high degree of academic attention given over to adaptive and customer-oriented selling serves the author as his premise for determining them to be the most pertinent selling approaches, apart from VBS.

3.3.1 Adaptive Selling

Research had already began to define the concept of adaptive selling at the close of the 1980's. Weitz, Sujan, and Sujan (1986, p. 175) developed the first holistic conceptualization of an adaptive selling approach. They defined adaptive selling as "*behaviors during a customer interaction or across customer interactions based on perceived information about the nature of the selling situation.*" (Weitz et al, 1986, p. 175). The basic concept of adaptive selling is to collect information in a selling process or a selling conversation in order to develop a tailored presentation of a product or a service.

This strategy ensures that sales presentations are influenced by individual needs of the customer (Spiro & Weitz, 1990, p. 62). The basis for the presentation is information which was collected in previous selling conversations and selling processes. Additionally, sales representatives have to decide whether previous situations were similar or not. The extent of the adaption is a result of such a comparison. Scholars recommend collecting the necessary information systematically (Sergio & Pedro, 2014, p. 365; Rapp, Ahearne, Mathieu, & Schillewaert, 2008, pp. 339-340).

The range of adaptive behaviors in selling situations differs considerably among leading scholars. In general, they may occur on the macro or micro levels. Adaptive elements on the micro level include activities during an individual sales call. They are focused on the style and the approach used by sales representatives when communicating with the customer. Examples include the employment of different questioning and presentation techniques in diverse selling situations (Kwak, Anderson, Leigh, & Bonifield, 2019, p. 43; Spiro & Weitz, 1990, p. 61).

In contrast, adoption of the macro-level approach for adaptive selling impacts the entire selling process. Implementation of the process might be based on needs of different customer segments, the way in which various products and product categories are sold, or the competitive situation in the market. Moreover, Kwak et al (2019, pp. 42-43) refer to the trend of sales representatives acquiring additional areas of responsibilities, indeed being asked to act as managers of the customer relationship rather than positioning themselves as simple takers of orders. Therefore, modifications to the entire selling process are expected to become increasingly important going forward (Kwak et al, 2019, pp. 42-43). Yet other scholars employ different classifications for the description of adaptive selling's scope. They differentiate between adaptations during customer transactions and adaptations among different customers (Franke & Park, 2006, p. 694; Weitz et al, 1986, p. 174). An overlap with the previously described views, however, can be identified.

As regards the effect of adaptive behaviors on the intended outcome, there is some disagreement. Spiro and Weitz, (1990, pp. 66-67) and Meng, Busch, and John (1989, pp. 174-175) have identified a positive impact of the implementation of adaptive selling on the performance of sales representatives.

Similarly, Kimura et al (2019, pp. 203-204) summarize research results concluding that adaptive selling positively impacts yearly short-term sales results. In contrast to these views, Keillor and Parker (2000, p. 17) sees a positive impact of adaptive selling on the performance of salespeople in a more critical light.

Spiro and Weitz (1990, p. 62) add that the type and style of adoption can be undertaken in more or less effective ways. Weitz et al (1986, p. 187) notes that the output of adaptive selling is influenced by the assumed motives which are perceived by the customer. For example: Self-serving motives on the part of the salesperson which are sensed by the customer do indeed have a negative impact on the effectivity of adaptive selling. In contrast, the output of adaptive selling is expected to be more successful if the client perceives altruistic motives behind a sales representative's activities (DeCarlo, 2005, p. 239).

The level of trust from a customer is substantially influenced by a large number of behaviors displayed by sales representatives. Selling orientations associated with 'hard selling' aim to close a deal as quickly as possible. A combination of adaptive selling and such an orientation can lead to the assumption that the use of adaption in a sales talk is for the purpose of manipulating the customer. The customer may receive the impression that the sole intention of the salesperson is to close the deal efficiently. Such a feeling on the part of the customer is expected to negatively impact the level of customer trust. Conversely, a low selling orientation on the part of the sales person may give the customer the impression that the adaptability of the selling approach is driven by the objective of identifying the best solution for the client. This feeling positively impacts the level of customer trust. (DeCarlo, 2005, p. 239; Guenzi, Luca, & Spiro, 2016, pp. 559-560)

Various studies (e.g. Weitz et al, 1986, p. 174; Spiro & Weitz, 1990, p. 62) emphasize that adaptive selling is by no means an applicable approach for every selling situation. Instead, it is recommended to employ adaptive selling in 'new buy' customer situations instead of as opposed to 'rebuy' ones. Ultimately, it may be concluded that adaptive selling should be used in situations in which the benefits are higher than the costs. More resources are needed for complex, large-scale selling situations and long-lasting relationships with current customers. (Weitz, 1986, p. 176)

Moreover, Guenzi et al (2016, 559, p. 560) suggest changing the extent of adaption in a selling process in accordance with the length of the relationship between the customer and seller as well as the purchase intention. A combination of an adaptive selling and a selling orientation should be avoided at the beginning of a transactional relationship or one featuring a low purchase intention.

In spite of diverging research results regarding the usefulness of adaptive selling, it may be concluded that a selective, well-executed application of this selling approach positively impacts the sales performance of a selling organization.

3.3.2 *Customer-Oriented Selling*

Extensive research has dealt with the establishment of a customer-oriented philosophy in a company. The majority of scholars tend to focus on management aspects such as organizational structure and market environment. Other researchers have investigated the importance of various individual and interpersonal characteristics (Stock & Hoyer, 2005, p. 536), whereby customer-oriented selling primarily deals with interpersonal aspects. It may be concluded that behaviors of sales representatives are the expression of a company's marketing orientation on a personal level.

An analysis of various definitions of customer-oriented selling leads to the conclusion that the concept of customer orientation is primarily based on attitudes and behaviors. For instance, the definition by Stock and Hoyer (2005, p. 538) focuses on attitudes. They view customer-oriented selling as “*the amount of a salesperson's affect for or against customers*” (Stock & Hoyer, 2005, p. 538). A study by Saxe and Weitz (1982, p. 343) can be taken as the basis for the conceptualization of a customer-oriented selling strategy. Their definition focuses primarily on behavioral conversation aspects of sales representatives. A customer-oriented selling approach is seen as “*the degree to which salespeople practice the marketing concept by trying to help their customers make purchase decisions that will satisfy customer needs*” (Saxe & Weitz, 1982, p. 344).

In the same vein, Brown, Moven, Donovan, and Licata (2002, p. 111) also focus their definition of customer-oriented selling on the individual level involving members of an organization.

They describe it as “*an employee’s tendency or predisposition to meet customer needs in an on-the-job context.*” (Brown et al, 2002, p. 111) This definition involves both attitudes and behaviors. According to Ambady and Rosenthal, (1992, pp. 268-269), customer-oriented behaviors are more sustainable when an underlying attitude is the basis for a specific behavior. Nevertheless, this hypothesis also shows the importance of taking both aspects, i.e. attitudes and behaviors into consideration when describing and conceptualizing customer-oriented selling. Zablah, Franke, Brown, and Bartolomew (2012, p. 21) go so far as to regard customer-oriented selling as a psychological, as opposed to a behavioral phenomenon.

Schwepker (2003, p. 152) summarizes definitions which incorporate organizational elements to this selling approach. He considers the establishment of an offering which is based on customer needs in a selling organization to be a central element of customer-oriented selling. This results in the reduced importance of the closing phase of a selling process compared with other selling approaches. In particular, the usage of manipulative closing techniques are to be avoided at the end of such a selling process.

It may be concluded that contradictory views on customer-oriented selling were not apparent in the various academic definitions. Thus, the central element of this selling approach is that offerings which satisfy the articulated needs of the customer are to be developed by the selling organization. Furthermore, sales representatives must embody specific attitudes and display behaviors in order to identify these needs individually.

Scholars have drawn different conclusions concerning the description of the impact customer-oriented selling has on the financial results of a company. Schwepker (2003, pp. 154 - 156) reports a positive impact of customer-oriented selling on the performance of sales representatives in the B2B area and in the retail sector. In contrast to this finding, Franke and Park, (2006, pp. 693, 700) question this positive impact. They conclude that adaptive selling, along with sales experience influence the performance of sales representatives to a greater extent than customer-orientation appears to. In particular, the impact of customer-oriented selling on short-term sales results is not readily discernible. Similarly, Terho et al (2012, p. 176) are unable to detect a positive impact of customer-oriented selling on the performance of sales representatives.

Apart from its impact on financial performance, various scholars have detected a positive impact of customer-oriented selling behaviors on other business-related aspects. Stock and Hoyer (2005, p. 547), Schultz and Good (2000, p. 208), and Williams (1998, p. 282) emphasize that customer-oriented selling serves to strengthen both the long-term relationship and the level of trust between supplier and customer. Howe, Hoffman, and Hardigree (1994, pp. 503-504) conclude that the application of customer-oriented selling reduces unethical behavior in the financial sector. On the same subject, Schwepker (2003, p. 153) states that various researchers have identified a positive influence of customer-oriented cultures on the supportiveness of people in an organization and the level of empowerment employees are granted to resolve problems. Verplanken and Holland (2002, pp. 471-472) describe a positive impact on levels of motivation, engagement, and job satisfaction of employees. Zablah et al (2012, p. 36) report a reduction in salespeople's stress levels, which positively impacts the staff's job engagement levels.

Employing manipulative selling tactics and exerting pressure in order to elicit a specific behavior from the customer are tactics which should not be employed in a customer-oriented selling process, as these activities negatively influence the long-term relationship. In lieu of these activities, it is important to invest sufficient time and resources into the identification and clarification of the situation, potential problems, and the individual needs and wants of the customer organization. (Saxe & Weitz, 1982, p. 344)

Ultimately, it may be concluded that the implementation of a customer-oriented selling approach may be justified, provided that the benefits outweigh the costs. This argument must be taken into serious consideration more often than is usually the case. The higher outlay involved is a consequence of a more in-depth analysis of the customers' needs and greater efforts to serve the customer. Indirect costs which are related to the usage and implementation of products in a customer organization, in particular, are underestimated by selling organizations. On the other hand, more aggressive selling approaches such as adaptive selling may lead to an improved closing ratio of sales representatives. (Franke & Park, 2006, p. 700)

3.3.3 Differences between relevant B2B selling approaches.

The in-depth analysis of adaptive selling, customer-oriented selling, and VBS in the previous section has identified substantial differences among these approaches. Not all concepts, however, can be characterized as being purely communication styles used by sales representatives. In fact, they influence the manner in which a selling organization is led and managed. Even if similarities between the concepts seem obvious, they do indeed differ, especially as to the significance of various managerial practices as well as the degree to which they are implemented. A comparison in summary form is presented in figure 3.

Adaptive Selling	Customer-Oriented Selling	Value-Based Selling
<ul style="list-style-type: none"> - Idea: Selling tactics are adapted based on perceived information in a selling process - Main objective: Creating an efficient and effective selling process 	<ul style="list-style-type: none"> - Idea: The degree to which the companies' marketing concept is applied on the individual sales representative level - Main objective: Satisfying the express or implied need of the customer 	<ul style="list-style-type: none"> - Idea: Identifies, quantifies and communicates the individual value of a solution for a customer - Main objective: Improving the financial result of the customer
<p>Conceptualization:</p> <ul style="list-style-type: none"> - Includes management elements and personal communication tactics - Focuses on personal communication tactics and behaviours in a conversation. 	<p>Conceptualization:</p> <ul style="list-style-type: none"> - Includes management and personal communication tactics - Involves management aspects to a greater extent than adaptive selling - Attitudes and traits of sales representatives are drivers of personal communication tactics 	<p>Conceptualization:</p> <ul style="list-style-type: none"> - Includes management and personal communication tactics - Management aspects are of high importance - Specific attitudes, skills and communication tactics are needed to include the consultative nature

Figure 3: Comparison of the most relevant selling approaches

Source: own figure

The highest number of strategic elements can be identified in definitions of VBS. The main objective of VBS is the quantification of the individual value a customer gains from an offered product, service or a solution. (Moorman, 2013, p. 325; Terho et al, 2012, p. 182). Almost all definitions of VBS include process and management capabilities. Additionally, VBS is more frequently classified as a selling strategy than as a simple selling approach (Töytäri & Rajala, 2015, p. 101).

Neither may an adaptive selling approach be viewed purely as conversation tactics. Researchers have also identified elements in the concept which transcend personal selling activities. This view is expressed by Kwak et al (2019, p. 43), who differentiate between micro and macro perspectives on adaptive selling, the former referring to adaptations on a personal level, and the latter to adaptations between different customer segments. Adaptions on a macro perspective require guidelines of a strategic nature. Nevertheless, strategic and managerial elements in adaptive selling are far less important when compared with VBS. Customer-oriented selling is regarded as the expression of a companies' management and marketing philosophy on an individual level (Stock & Hoyer, 2005, p. 538; Saxe & Weitz, 1982, p. 344). This view strongly suggests that strategic elements are much more relevant for customer-oriented selling compared with adaptive selling, while sharing a similar degree of relevance with VBS.

Moreover, the comparison among different selling approaches reveals certain philosophical differences, although customer-oriented selling and VBS share some philosophical overlap as regards their ultimate objective. Customer-oriented selling highlights the importance of finding the most effective solution for the customer in order to satisfy their long-term needs (Saxe & Weitz, 1982, p. 350; Brown et al, 2002, p. 111). Similarly, various definitions of VBS also include an orientation to and understanding of the customers' needs (Töytäri et al, 2011, p. 183; Haas, Snehota, & Corsaro, 2012, p. 99) as the foundation for further activities.

The main difference among these selling approaches lies in the depth and breadth of their understanding of customers' needs. Several definitions and explanations of VBS mention the importance of going beyond mere identification of explicitly articulated needs of the customer. The previous initial characterization of VBS reveals that selling organizations require a detailed grasp of internal customer processes as well as customer challenges in their organization. Furthermore, external macro and micro-economic forces which influence the business model and strategy of the customer are taken into consideration. (Haas et al, 2012, p. 99; Kaario et al, 2003, p. 17)

In contrast to such an in-depth understanding of the customer and their environment, customer-oriented selling seeks to satisfy needs which have been directly or indirectly expressed by the customer. It may be presumed that selling organizations tend to be reactive.

This reactivity refers to the method in which the needs of the customer are analyzed as well as how solutions are developed and offered. A presentation of a solution is then primarily based on its functionality or benefits. VBS however, in contrast to the above-mentioned viewpoints, is more proactive, i.e. current perceptions of customers regarding their needs and values are influenced by the supplier, who thus acts as a value co-creator. (Töytäri et al, 2011, p. 494; Kaario et al, 2003, p. 17)

The main idea of adaptive selling is substantially different compared with the two other selling approaches. This finding is supported by the fact that adaptive selling does not primarily focus on satisfying the needs of the customer (Sergio & Pedro, 2014, pp. 364-365; Rapp et al, 2008, p. 341).

Even if researchers note that the adoption of a selling tactic is potentially based on customer needs (Spiro & Weitz, 1990, p. 62; Kwak et al, 2019, pp. 42-43), it can be assumed that the main driver for this activity is to close a deal in the most effective and efficient way. Adaptive selling behaviors can also be perceived as being manipulative by customers (DeCarlo, 2005, p. 240; Guenzi et al, 2016, pp. 559-560). Despite the fact that Rapp, Agnihotri, and Forbes (2006, p. 288) regard adaptive selling behaviors as potential elements to help establish a long-term relationship with a customer, a combination of adaptive selling with a selling orientation, for instance, increases the probability of violating the trust between parties. Indeed, such violation has a grave impact on the long-term relationship. Furthermore, Terho et al (2012, p. 184) identifies an adaptive element in a VBS approach, especially concerning the collection of needed information during the process.

Differences between the three selling approaches were also determined on the individual sales-representative level. Descriptions and definitions of adaptive selling (Weitz et al, 1986, pp. 175-176; Spiro & Weitz, 1990, p. 62) emphasize the importance of behavioral and tactical conversation elements (Sergio & Pedro, 2014, p. 365; Rapp et al, 2008, pp. 339-340). Compared with adaptive selling, customer-oriented selling goes beyond behavioral and tactical conversation elements. This is described by several researchers, as they indeed see an attitudinal (Stock & Hoyer, 2005, p. 538; Brown et al, 2002, pp. 111-112) or even a psychological component as an important element of customer orientation. This serves to reveal certain similarities between customer-oriented selling and VBS.

Needed competences of sales representatives for the implementation of VBS, such as possession of an in-depth understanding of the customer (Haas et al, 2012, p. 99), or being proactive in the development of individually tailored offerings (Töytäri et al, 2011, p. 494; Kaario et al, 2003, p. 17), also require specific attitudes which drive specific behaviors.

Interrelations between the three relevant selling approaches are explored as well. For example: Sales representatives with a customer orientation adapt the content and focus of a presentation in a selling process based on the perceived areas of interest of the customer (Saxe & Weitz, 1982, p. 344). Franke and Park (2006, p. 700) have also identified a connection between these selling approaches and conclude that a customer orientation influences the usage of adaptive selling more often than vice versa. A combination of different selling approaches may also lead to a more successful result. For example, Terho et al (2017, pp. 43, 51) have determined that a customer orientation indeed has a positive impact on the application of VBS. Haas et al (2013, p. 68) argues that the application of adaptive selling influences the output of VBS to a greater extent than a combination of customer-oriented and VBS approaches.

3.3.4 Requisite competences for sales representatives

Sales representatives are the most important communicators for companies in B2B market segments (Sharma, Tzokas, Saren, & Kyziridis, 1999, p. 603). Different selling approaches require different abilities and competencies of salespeople. In order to identify prerequisites for the implementation of these selling approaches, it is important to first analyze the requisite mindset as well. The objective of this section is to understand traits, skills, attitudes, and competencies which are needed for the application of VBS as opposed to adaptive or customer-oriented selling.

The academic literature contains a broad range of definitions for the term ‘competences’. Carrol and McCrackin’s definition (1998, p. 46) combines various elements and views from previous definitions. They describe competencies relatively broadly as the “*knowledge, skills, capabilities, attitudes, or behaviors that characterize excellent performance within a specific context*” (Carrol & McCrackin, 1998, p. 46).

In contrast, Korpela (2015, p. 22) defines the term more specifically for the area of personal selling. He uses central elements from Carrol and McCrackin (1998, p. 46), condensing their definition to “*sales-related knowledge and skills*” (Korpela, 2015, p. 22). Korpela’s definition essentially simplifies the view on competences put forward by Carrol and McCrackin (1998, p. 46). This definition is also used by Korpela in order to identify relevant selling competencies in the B2B area. Knowledge in particular may be regarded as an important element of competencies in the area of sales. Knowledge which is gained through selling experience can positively impact financial results independent of the selling technique. Yet it is also work experience which enhances the knowledge of various products on the market, as well as work efficiency and effectiveness (Giacobbe, Crosby, & Bridges, 2006, pp. 133-134).

3.3.4.1 Requisite competences for the implementation of adaptive selling

According to Levy and Sharma (1994, pp. 39-40), sales representatives require a broad range of capabilities and a high level of motivation to practice adaptive selling. Especially communication competencies such as empathy and listening skills are considered to be important for the usage of adaptive selling. In the context of personal selling, Spiro and Weitz (1990, p. 63) defined empathy as “*the reaction of individuals to the observed experiences of another individual*” Weitz (1990, p. 63). Thus, empathy helps sales representatives to better understand the position and situation of the customer. Especially concerning analysis of the personality and mood of a given buyer (Giacobbe et al, 2006, p. 121). Spiro and Weitz (1990, p. 67) see in this ability the chance to incorporate this information immediately into a presentation or negotiation strategy.

Other scholars mention the great importance of well-developed listening skills for the application of adaptive selling (Castleberry & Shepherd, 1993, 37; Ramsey & Sohi, 1997, p. 130). Well-developed listening skills and empathy go hand in hand with the ability to identify cues from a conversation partner. In this context, Giacobbe et al (2006, p. 122) speak about the importance of a ‘cue perception ability’ for the implementation of adaptive selling. This ability gives sales representative the opportunity to perceive and interpret verbal und non-verbal cues from the customer (Giacobbe et al, 2006, p. 122). Immediate reactions to perceived cues in a selling situation, such as an immediate adoption of an argumentation strategy, require a high level of cognitive processing (Porter & Inks, 2013, p. 16).

On this subject Giacobbe et al (2006, p. 122) argues that the presence of empathy along with cue perception ability increases the likelihood of a salesperson using adaptive selling strategies.

Now that knowledge and sales experience have been established as crucial for the implementation of personal selling activities, it can be seen that both aspects are also especially important for adaptive selling. The determination of whether selling processes or selling tactics should be adapted or not can be more reliably performed by those possessing a high level of sales experience (Weitz et al, 1986, pp. 184-185, Levy & Sharma, 1994, p. 42). The probability that a sales representative will more frequently use adaptive selling behaviors increases with their work experience (Giacobbe et al, 2006, pp. 133-134; Levy & Sharma, 1994, p. 42; Spiro & Weitz, 1990, p. 67).

In order to successfully adopt a selling process and selling tactics, a certain aptitude for the development of the necessary communication and conversation skills is demanded of salespeople (Porter, Wiener, & Frankwick, 2003, pp. 279-280). Especially for adaptive selling, it is crucial to participate in sales training seminars which focus on the skills needed to collect pertinent information in selling situations.

3.3.4.2 Requisite competences for the adoption of Customer-Oriented Selling

Based on the analysis in the previous sub-chapter it may be concluded that underlying personal traits are key drivers for the usage and adoption of customer-oriented behaviors by sales representatives. Researchers who have focused on the required competences for implementation of customer-oriented selling can confirm these findings. Thus Schwepker (2003, p. 166) mentions that customer-oriented selling behaviors require a high concern for other people. On the same subject, Kennedy, Lassk, and Goolsby (2002, pp. 160-161) speak of a customer-oriented mindset. Sales representatives with such a mindset regard the creation of a high level of customer satisfaction to be a central element of their jobs.

Based on Saxe and Weitz' (1982, p. 343) definition of customer-oriented selling, it may be concluded that skills for the identification of customers' needs are important for applying this selling approach. Therefore, it can be inferred that the usage of certain question techniques is necessary in order to identify customer problems.

On this subject, Brown et al (2002, pp. 111-112) note that an enjoyment dimension for the identification of the central need of the customer is vital, i.e. salespeople must like or enjoy interactions with different representatives from a customer organization. An intrinsic motivation of sales representatives to identify and satisfy the needs of the customer should exist. Additionally, Brown et al (2002, p. 112) and Schwepker (2003, p. 165) highlight the importance of possessing emotional stability and amiability.

A continuing willingness to serve the customer is another key capacity for the adoption of customer-oriented selling (Schwepker, 2003, p. 152). The development of trustworthiness is mentioned as a central element of this selling approach as well (Stock & Hoyer, 2005, p. 547; Schultz & Good, 2000, p. 208). Swan, Trawick, and Silva (1985, pp. 209, 211) describe an open, honest, and likable communication style as a central element for the establishment of trust in selling process. Additionally, reliability and competence must be demonstrated. This can be achieved through a reliable completion of tasks. Swan, Bowers, and Richardson (1999, p. 99) also add the significance of displaying expertise in order to demonstrate competence.

The manner in which sales representatives act in their organization influences the adoption of customer-oriented selling as well, especially concerning the role perception of a sales representative (Schwepker, 2003, pp. 163, 167). One example is a so-called 'person-culture fit'. Such a fit exists when the values and norms of the organization are in alignment with the personal values of the salesperson.

Additionally, Schwepker (2003, pp. 154 - 156) reports that the collaboration within an organization influences the successful implementation of customer-oriented selling. Examples include the level of sales support within the organization, coaching activities, decentralized decision-making power, and ethical sales behavior.

People with a sales-oriented mindset are using the concept of customer orientation in selling processes less often than in the past. This is likely based on the evidence that such people focus more on their own product portfolio and their recommendations than on their customers' needs (Schwepker, 2003, p. 151). Thus, it may be concluded that a sales-oriented mindset does indeed have a negative impact on the adoption of customer-oriented selling.

Furthermore, Franke and Park (2006, p. 700) summarize that the level of a sales representative's experience positively impacts the extent to which customer orientation is successful.

3.3.4.3 *Requisite competences for the implementation of VBS*

D'Andrea (2005, p. 19) expresses that the competencies of sales representatives influence the profitability of a company in the market. Similarly, Kienzler et al (2018, p. 361) describe sales representatives as the bottleneck in the value creation and communication process between the supplier and a potential customer. Hence a narrow focus by sales representatives on the final selling price, rather than the total value which a solution offers to a potential customer, negatively impacts profitability.

The initial characterization of VBS by the author suggests that such holistic selling tactics demand a diverse set of skills, behaviors, and personality profiles from sales representatives. Terho et al (2017, p. 43), for instance, mentions that not all representatives in an organization may have the capability of practicing VBS. Töytäri et al (2011, p. 500) argues in a similar vein, assuming that required competencies are rarely found among sales representatives who practice a product-oriented selling style.

These statements are substantiated by consideration of an overview of challenges which sales people faced in such a selling process, particularly when they position themselves as a value co-creator (Terho et al, 2017, p. 43):

- Sales representatives may have to co-develop innovative, customized solutions for a customer in order to realize a value potential in their organization. This can be achieved by the reduction of costs, an increase in or improvement of the output of internal operations, or by helping customers to achieve higher revenues.
- Salespeople may have to educate and inform different representatives of the customer organization about how a new solution should be implemented. This is a critical aspect in order to realize cost reductions or improved output in the customer's internal processes.
- Sales representatives may have to align business processes from the supplier and the customer in order to positively impact the customer's financial result.

This leads one to conclude that such activities require consultancy skills and the ability to deal with quantitative key performance indicators during the selling process (Töytäri et al, 2011, p. 500). Likewise, Hinterhuber (2017, p. 164) describes several competencies which are needed in order to deal with complex and demanding processes. Examples include the competence of managing and communicating a high level of risk and the ability to generate creative solutions. The total value which a solution offers to a customer can be interpreted by various representatives of the customer organization in various manners. A quantified value proposition is also characterized by a high degree of ambiguity and uncertainty. These aspects illustrate why creativity and the willingness to take risks are vital traits for sales representatives in a VBS process (Töytäri, Kohtamäki, & Helo, 2015a, pp. 266, 268, 271).

Possessing a learning orientation is an important trait for salespeople in B2B markets in general. Such a learning orientation is of special import in markets where solutions involving various service and product components are sold. VBS is regarded as a key selling tool for such complex offerings. Thus it may be concluded that a learning orientation does indeed have a high degree of importance for the application of VBS as well (Ulaga & Loveland, 2014, pp. 119-120; Kienzler et al, 2018, pp. 369-370). Such an orientation is essential for the understanding of the changing needs and preferences of a customer segment. A product presentation which is based on these findings may result in a different, more holistic view of value on the part of the customer. (Chonko, Dubinsky, Jones, & Roberts, 2003, pp. 937 -939).

Other scholars have analyzed the impact of a learning orientation adapted by salespeople on the application of VBS in greater detail. It leads to the development of broad, in-depth knowledge of the relevant environmental factors in a given business area. An example of such profound knowledge is a clear understanding of how customers serve their customers. This creates an opportunity to create new solutions in order to resolve problems. Lack of superficial knowledge of existing products or technical aspects of the market area are insufficient for the implementation of VBS (Töytäri et al, 2011, pp. 499-500; Terho et al, 2017, pp. 49 - 51). Terho et al (2017, pp. 50-51) even describes a learning orientation as a key motivational construct behind VBS. It also increases the flexibility of people in new, challenging situations as well as providing a method for jettisoning outdated selling routines.

A further factor for the development of an understanding of both the customer's situation and developments in the market is work experience (Kienzler et al, 2018, pp. 367, 368). In fact, Hinterhuber (2017, p. 166) regards it to be the basis for managing customers' cost-saving potential.

Hinterhuber (2017, p. 174) mentions the importance of employing an appropriate questioning style in a VBS process. As an example, he described the positive impact of the SPIN selling model in such selling situations. In particular, implication and need-payoff questions form the basis for quantifying the value which a solution provides a customer. Both question types deal with the consequences of problems which customers may have (Rackham, 1988, pp. 73 - 81).

Practicing extensive networking is important for the implementation of VBS as well. Adopting a more holistic view of value involves contacting many people in different roles of a given buying organization (Terho et al, 2017, pp. 50-51). Value is viewed by members of a buying center and stakeholders in multiple ways (Hinterhuber, 2017, p. 64). Therefore it may be concluded that a broader range of contacts requires increased flexibility and adaptability with regards to the presentation of the value impact.

In addition to above-mentioned external networking abilities in a large buying center, Terho et al (2017, pp. 44-45) also view internal networking abilities as important for the application of VBS. In this context, internal networking abilities are defined as "*a salesperson's ability to develop and manage relationships with relevant members of his or her firm*" (Bradford et al, 2010). An internal network of a sales representative across various departments in a selling organization helps to collect various types of important information which are required for the development of an individual offering with a broad value impact. A broad information flow within the selling company enhances the value creation process (Terho et al, 2017, pp. 44-45). On the same subject, Anderson et al. (2007) mentions the importance of input from various departments for the development of a value proposition. Similarly, Hinterhuber (2017, p. 164) concurs with the fore-mentioned scholars, regarding cross-functional collaboration between different departments within an organization as a key success factor for VBS. Lastly, Terho et al (2012, p. 176) and Hinterhuber (2017, p. 171) agree that empathy as well as good listening skills are needed for the successful implementation of VBS.

3.3.4.4 Requisite competencies for the application of selling approaches

Even though substantial differences in the conceptualization of adaptive selling, customer-oriented selling and VBS have been identified, a comparison of requisite competences for the implementation of these selling approaches certainly reveal some overlap. This is especially true concerning the importance of communication and interpersonal skills.

Rentz et al (2002, p. 15) defines interpersonal skills as “*knowing how to cope with and resolve conflict and understanding, persuading and getting along with others*” Rentz et al (2002, p. 15). Basic communication skills are important for the application of every selling approach. Nevertheless, certain differences have been identified insofar as their relative importance as well as reasons for various communication skills being employed.

Listening skills and question techniques are essential elements of all three selling tactics. Both are important for investigating various situations in selling processes. Adaptive selling processes require the involvement of question techniques to collect information about the current situation from the customer in order to adapt the selling tactics (Weitz et al, 1986, p. 180). Similarly, in customer-oriented selling and VBS, it is important to ask questions in order to understand the client situation. An analysis of various scholars’ works reveals differences in the degree of importance ascribed to the usage of question techniques for different selling approaches. In customer-oriented selling, such techniques form the basis for identifying an explicitly stated customer need. Once identified, this information then forms the basis for the formulation and presentation of a solution for a visible problem of the customer’s.

Furthermore, a holistic understanding of the customer’s situation is a central element in the VBS process. This also requires the usage of questioning techniques in order to identify potential problems in the customer organization (Hinterhuber, 2017, p. 174). Nevertheless, a central characteristic of VBS is to offer a solution with a high amount of value for a customer based on an in-depth analysis of the current situation. Micro and macro-environmental factors need to be taken into consideration as well (Haas et al, 2012, p. 99; Kaario et al., 2003, p. 17). Therefore, it may be concluded that the relative importance of questioning techniques in customer-oriented selling is higher compared that of VBS tactics.

Complementary to questioning techniques, effective listening skills are required in all three selling approaches in order to respond to identified information in the appropriate manner. The reasons for the importance of such skills, however, differs among the selling approaches. Effective listening skills are ascribed the highest significance in adaptive selling processes. This finding is supported by Giacobbe et al (2006, p. 122), who regard the ability to use cues in conversations with customers as a key component for adapting selling tactics. In customer-oriented selling and VBS, active listening skills are important for investigating the customer's situation.

The importance of presentation skills in all three selling approaches is supported by the evidence that a product presentation is an essential part of all selling processes (Korpela, 2015, p. 213). Nevertheless, special attention to this step has been identified in customer-oriented selling and adaptive selling approaches. In the adaptive selling process, presentations are modified, sometimes immediately, based on collected information (Kwak et al, 2019, p. 43). Customer-oriented selling, on the other hand, requires the presentation of valid, reliable information as well as the advantages and disadvantages of various solutions in order to establish trust (Swan et al, 1999, p. 99).

Presentations in VBS processes go beyond the presentation of advantages and disadvantages of products. Therefore, presentations of solutions in such selling process can be described as more demanding. This is especially true when the implementation of complex quantitative measures is involved. (Hinterhuber, 2017, p. 164)

Finally, empathy is an important trait for adaptive selling (Spiro & Weitz, 1990, p. 63) and VBS (Terho et al, 2012, p. 176; Hinterhuber, 2017, p. 171). It is needed to adapt the selling tactics based on the mood and risk-taking level of the customer (Porter et al, 2003, p. 276).

The main difference between required competences for the implementation of adaptive selling, customer-oriented selling and VBS approaches was identified in connection with the application of long, more strategic selling processes. A selling process in the B2B area, which is based on the concept of customer orientation, necessitates the development of a more strategic and detailed plan, especially at the beginning of a selling process (Kelley, 1992, p. 28). The highest importance for management competencies and skills which enhance strategic thinking in selling processes were detected for VBS selling.

Consultative and financial skills are much more valuable for the application of VBS, especially for the development of an individual quantitative customer value promise (Töytäri et al, 2011, p. 494; Kaario et al, 2003, p. 17). Töytäri et al (2011, p. 494) even state that sales representatives possessing these competencies are rare among sales staff.

As previously mentioned in the introduction of this sub-chapter, experience and knowledge are factors which are of the utmost importance for the application of all three selling approaches. A further analysis of the academic literature shall serve to expand on this finding. Experience can be seen as a prerequisite for altering behaviors in adaptive selling approaches (Spiro & Weitz, 1990, pp. 66-67). Additionally, both aspects are typically accompanied by superior knowledge of both products and the market, which helps to provide potential customers with an overview of the benefits and drawbacks of various offerings. Providing such an overview is viewed as essential for customer-oriented selling approaches (Franke & Park, 2006, p. 700). For the implementation of VBS, which requires a holistic understanding of the customer's environment (Kienzler et al, 2018, pp. 367-368; Hinterhuber, 2017, p. 166), these competencies are even more vital.

Especially in B2B selling situations, where various people in the organization influence buying decisions to varying extents (Backhaus & Voeth, 2014, pp. 39f), networking competencies are essential, independent of whether adaptive selling, customer-oriented selling or VBS is applied. Grewal et al. (2015, p. 195) even describes a trend involving an increasing number of people influencing corporate buying decisions, whether directly or indirectly. Therefore, it may be concluded that networking is essential for the implementation of all three selling tactics.

According to Töytäri and Rajala (2015, pp. 104-105), VBS takes several stakeholders and their role in a selling process into consideration. Therefore, it may be inferred that external networking skills are even more valuable in VBS approaches. An additional factor which enhances the importance of networking skills for the implementation of VBS is subjectivity (Hinterhuber, 2017, p. 164) and ambiguity (Töytäri et al, 2015a, pp. 254-256) of value. Consequently, salespeople need to adopt a more holistic view of the offered value in the customer's company.

Scholars dealing requisite competencies for the implementation of these three selling approaches have conducted in-depth analyses of the significance of networking capabilities. In addition to external networking competences, researchers have explicitly investigated the importance of internal, intra-organizational networking skills for the application of adaptive selling (Paparoidamis & Guenzi, 2009, p. 1055) and VBS (Terho et al, 2017, pp. 44-45). Yet the basis for the importance of internal networking capabilities differs between adaptive selling and VBS. In adaptive selling approaches, information needed for the adoption of selling tactics in a specific selling process can be collected within the selling organization (Kimura et al, 2019, p. 198). In a VBS process, however, the value creation process and the development of a value proposition are supported by various departments. This is described as the reason for the increased significance of intra-organizational networking skills for sales representatives (Terho et al, 2017, pp. 44- 45).

Additionally, independent of the selling approach, such internal networking competences are needed to handle complex selling situations. This results from the circumstance that such complex selling situations often require the establishment of a selling team comprised of persons from different professions, e.g. from the field of engineering, legal requirements or supply chain management. (Schmitz & Ganesan, 2014, p. 72; Steward et al, 2010, p. 552; Üstüner & Iacobucci, 2012, p. 189)

Concerning the implementation of different selling approaches, the author has discovered substantial differences regarding the importance of psychological characteristics, especially traits conducive for conducting adaptive selling, customer-oriented selling, or VBS.

Definitions of adaptive selling describe this selling approach based on behaviors (Weitz et al, 1986, p. 175) and/or tactical elements (Spiro & Weitz, 1990, pp. 66-67). Scholars who investigate competencies for the application of adaptive selling typically have a stronger focus on skills than on traits. This stands in contrast to those who deal with competencies for the application of customer-oriented selling. Several research papers in the last decades regard various attitudes and psychological characteristics as sustainable drivers of customer-oriented behaviors, such as Kennedy et al (2002, pp. 160-161) and Schwepker (2003, p. 151). The former highlights the importance of a customer-oriented mindset, while the latter focuses on a concern for others. In this context, similarities between customer-oriented selling and VBS were identified.

The importance of behaviors and psychological characteristics for the application of VBS selling is mentioned by several scholars as well. In addition to a customer-oriented mindset, a learning orientation (Ulaga & Loveland, 2014, pp. 119-120; Kienzler et al, 2018, pp.369-370) and an affinity for risk-taking are explicitly mentioned (Hinterhuber, 2017, pp. 171, 174).

3.3.4.5 The role of management in Value-Based Selling

Even an initial description of VBS shows the importance of involving management and leadership practices in the application of this selling approach. Additionally, a comparison of requisite competencies for the application of different selling approaches reveal that VBS is extremely demanding for sales representatives. Therefore, it is recommended that managers in a selling organization focus on VBS in order to ensure the effectiveness of this selling approach. This sub-chapter of the dissertation deals with the role of managers and executives in a sales organization, especially concerning the application and implementation of a VBS philosophy.

Jolson, Dubinsky, Yammarino, and Comer (1993, pp. 95-96) point out that selling organizations require different leadership and management approaches than other units within a company. The importance of leaders in selling organizations has been explored by several scholars. They directly influence the behaviors and activities of sales representatives through instructions and guidelines (Shannahan, Shannahan, & Bush, 2013, pp. 416-417). Additionally, it is important for leaders to encourage employees to test and apply VBS practices, especially during a transition phase from a product to a value-focused selling orientation (Terho et al, 2017, p.51). A strategic and holistic selling approach such as VBS requires firm guidance from management and leadership, along with ongoing feedback for employees (Kienzler et al, 2018, pp. 367-368).

In particular, the claim that a value-focused selling philosophy positively contributes to the financial performance of a selling organization in the long term is one which challenges leaders and managers in sales organizations. This is due to the fact that various elements and activities which can be described as central elements of VBS do not produce immediate financial results.

Especially the development of a holistic understanding of the customer and their environment (Haas et al, 2012, p.99) and an in-depth analysis of the positive impact a solution offers for the customer's organization (Töytäri et al, 2011, pp. 499-500) require an investment of time and resources. Therefore, in such a selling process it is of the utmost importance for sales representatives to grasp their role and understand the expectations of leaders. Leaders of a sales organization have to ensure that salespeople pursue their assigned role.

Furthermore, several studies have indicated that a learning orientation is an important trait of sales representatives in order to apply VBS (Ulaga & Loveland, 2014, pp. 119-120; Kienzler et al, 2018, pp. 369-370). Hence sales leaders should cultivate an environment that reinforces such a learning orientation, especially during time-intensive competency development phases, such as gaining an in-depth understanding of customer needs. Such activities may be supported through the establishment of ongoing evaluations (Kienzler et al, 2018, p.367).

The transformation of a selling organization from a conventional transactional product selling approach towards a value-focused, collaborative selling philosophy is challenging for all members of such an organization (Ulaga & Loveland, 2014, pp. 122-123; Chonko et al, 2002, pp. 935-936).

In a transition phase, sales managers need to assess whether or not existing members of the sales force possess the capabilities necessary to practice the new selling approach. Such an analysis is the starting point for the development of training activities (Terho et al, 2017, p.51). Lindström (2016, p.90) also emphasizes the importance of training activities for sales representatives. Training programs are absolutely vital for the development of competencies to assess and visualize the value potential of an offering. Additionally, sales managers should establish a hiring process which takes into consideration the requisite competencies and traits for the application of VBS, including having such a learning orientation and work experience (Kienzler et al, 2018, pp. 368-369).

Also, a specific intra-organizational culture must be established and managed by leaders of a selling organization. A central element of such a culture is a focus on the value that a solution offers to the customer, rather than on a predefined selling price.

Additionally, the establishment of such a culture needs to be supported by a respective incentive system (Kienzler et al, 2018, p. 370). A VBS-friendly culture also includes a knowledge management system within the selling organization. This involves the collection and distribution of knowledge, e.g. personal experiences of sales representatives in VBS processes, as well as intra-organizational dialogues (Menguc, Auh, & Uslu, 2013, pp. 20, 36-37).

Concerning the implementation of VBS in an organization, Keränen and Liozu (2021, p. 93) differentiate between a low and a high formalization grade, as well as individual and organizational characteristics. This might lead to a flexible, inexpensive implementation process which in turn may result in a limited opportunity for transferring knowledge in an organization. Or it might lead to a permanent, structured implementation of VBS in the organization which ensures a systematic method of managing and communicating value in the organization. A high investment of resources is needed to develop such a process.

For the implementation and usage of VBS and pricing strategies in an organization, sales managers need to have confidence that the organization is legitimizing the new approach. This can be accomplished by explaining to people in the organization the positive impact of the new approach on their individual situation (Liozu, Hinterhuber, Boland, & Perelli, 2012, pp. 20-21). Moreover, the application of change management practices in order to solve potential intra-organizational conflicts is recommended by Terho et al (2012, p.183).

3.4 The importance of selling approaches for organizational business markets

An analysis of market trends and challenges in business segments at the beginning of this chapter highlight the great importance of VBS in contrast to other relevant selling approaches. Figure 4 summarizes how VBS adaptive selling and customer-oriented selling helped tackle market challenges in the last two decades. It shows precisely how VBS approaches issues in the market in a more holistic manner in comparison with customer-oriented selling. Additionally, it illustrates that an adaptive selling orientation is still important for specific selling situations, in particular online environments or market environments with a substantial number of community products.

Business Challenges	Value-Based Selling	Customer-Oriented Selling	Adaptive Selling
Increasing price pressure (D'Andrea, 2005, 21)	Yes - by performing a quantified value argumentation	Partly - by focusing on the individual customer needs	No
Increasing importance of value-centered thinking (Steward et al., 2019, 298)	Yes - by performing a holistic value argumentation	Partly - by focusing on the individual customer needs	No
Increasing amount of online procurement processes (Sisakhti, 2015, 4 – 5).	No	No	Yes - by establishing an efficient selling process for online purchases
Ongoing commoditization and increasing purchasing power of buying organisations (Hinterhuber & Liozu, 2012 201, 68 - 70; Ingenbleek & van der Lans, 2013, 35).	No	No	Yes - by establishing an efficient selling process for online purchases
Increasing importance of customized offerings (Schmäh (2008, 39-41)	Yes - by an in-depth understanding of the customer's situation	Partly - by offering products which are based on the expressed need of the customer	No
Increasing difficulty to communicate a high and unique value (Töytäri et al., 2011, 493)	Yes - by performing a systematic value analysis and holistic value argumentation	Partly - by communicating how an offering satisfies an individual need	No

Figure 4: Selling approaches and their impact on business challenges.
Source: own figure

These findings corroborate those of scholars who examine the impact of different selling approaches on success. A preliminary analysis of the relative effectiveness of the three relevant selling approaches in his chapter shows that the extent of their impact on financial measures is somewhat contentious. In this sub-chapter, these results will be compared in detail. Researchers who have identified a positive impact or no impact on financial results can be found for all selling approaches.

There are indicators that adaptive selling does indeed have the tendency to influence short-time results (Keillor & Parker, 2000, p. 17). Several scholars have indicated a positive impact of customer orientation on the long-term relationship between a potential vendor and a customer (Stock & Hoyer, 2005, p. 547; Schultz & Good, 2000, p. 208; Williams, 1998, p. 282). Based on the positive impact on the relationship with a customer, Martin and Bush (2003 131, 132) expected more than one decade ago an increasing popularity of customer-oriented selling. Nevertheless, Franke and Park (2006, p. 700) and Kimura et al (2019, pp. 205-206) conclude that adaptive selling influences the performance of salespeople more dramatically than customer-oriented selling does.

In contrast to contentious results regarding the impact of adaptive selling and customer-oriented selling on the financial output, scholars in the area of VBS record predominately positive effects of this selling approach on the financial metrics of an organization, despite there being some doubts concerning the existence of a direct correlation between the application of VBS by an individual salesperson and success, especially concerning the impact on short-term results (Hinterhuber, 2017, p. 174). Reasons for an absence of such correlation might potentially include a strong, exclusively customer orientation on the part of the individual salespeople, or the importance of involving other departments of a company in such a complex selling process. Additionally, Hinterhuber (2017, p. 174) argues that final agreement from a buying organization to a contract is influenced by countless micro-environmental factors. Examples include the ranking of importance for a specific corporate purchasing process, the weights of different decision criteria and the financial situation of a customer (Hinterhuber, 2017, pp. 173-175).

The increased importance of VBS has also been recognized by Classen and Friedli (2019, p. 3), who report an increasing number of scholars who have been investigating different aspects of VBS, especially since 2015. Apart from the previously described positive influence of VBS on the financial results of an organization, it may be concluded that the application of this selling approach does indeed have a positive impact on several other measures, such as the development of competencies within a selling organization. Additionally, Moorman (2013, pp. 325-326) even claims that the usage of VBS in business-to-business settings will serve to separate those companies which enjoy greater or smaller success.

Finally, the characteristics of the market segments which a company targets influence the importance of VBS. Kienzler et al (2018, pp. 368-369) indicate that a selling process with clear communication of the individual customer value is vital in niche markets. These market segments are characterized by the unique needs and requirements of potential customers. Such markets are profitable for companies when they possess the capability to match the unique value of an offering with the individual requirements of the target group. In contrast to these findings, Hinterhuber (2017, p. 174) states that VBS is less relevant in commoditized markets. He also views the positive impact of VBS on performance as weaker in extremely dynamic markets.

4 The conceptualization of Value-Based Selling

This part of the dissertation is concerned with the conceptualization and structuring of a VBS process in an organization. Preliminary analysis indicates that the conceptualization of VBS is broader in scope than other selling approaches, being described as a holistic value management process in a company. This view is reinforced by various definitions. Terho et al (2012, p. 182) regard VBS as a “*bundle of capabilities and management practices*” that form the foundation for the planning, implementation and leverage of VBS activities (Moorman, 2013, pp. 325-326; Terho et al, 2012, p. 182).

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. The objective of this review is to identify conceivable measures and elements of a VBS process. Seuring and Mueller (2008, p. 1703) view the performance of a systematic literature review as a method of identifying trends, themes and current topics in the literature. Additionally, this methodology serves to reduce the potential bias of a researcher (Cook, Mulrow, & Haynes, 1997, p. 377).

A systematic analysis of the literature comprises four main steps according to Fink (2010: p. 4):

- (1) Definition of the main objective and the research question for the review
- (2) Selection of bibliographic databases and web sites
- (3) Selection of search terms
- (4) Application of a practical and methodological screening process

The precise explanation of how the literature analysis was performed by the author is presented in Appendix A. Essentially, the in-depth analysis of VBS is conducted based on three steps. Step one includes an overview of the historical development of VBS in the academic literature (Chapter 4.1.). This overview serves to generate insightful information on how trends on the market have impacted the further development of this selling approach. Afterwards, articles which focus on the description and comparison of process steps and workflows are analyzed (Chapter 4.2.). In turn, this comparison results in the development of a new VBS framework in the third step (4.3.). This framework provides the basis for the conceptualization and detailed description of activities and practices in VBS.

4.1 *The evolution of Value-Based Selling*

The conceptualization of a selling approach with a focus on the communication of offering the total value of an offering, first received attention from the academic community at the beginning of the 1990s. Following an evaluation of several academic articles in the field of B2B marketing, De Rose (1991, p. 87) came to the conclusion that the communication of the value which is offered to an organization in a selling process, would become an essential element of future selling strategies. This was expected to be especially applicable in a B2B industrial selling context. It was in this decade that an exclusive focus on the low price of an offering ceased to be regarded as the most important element of value. This paradigm shift is reflected in definitions of the term ‘value’ as well. Thus De Rose concluded that “*Value, as perceived by the customer, is the satisfaction of purchase requirements at the lowest total cost in use*” (De Rose, 1991, p. 88). This definition demonstrates that the focus on value is centered on costs related to owning, using, maintaining, or replacing a specific product. Nevertheless, articles from this time period failed to characterize the business processes and management capabilities which are needed for the communication of the total customer. Selling process descriptions at this time included descriptions of how sellers can demonstrate to the customer that their offering reduces costs or enhances a company’s financial situation (De Rose, 1992, pp. 67-68). Following analyses by various scholars in the area of B2B selling in the 1990s, it may be concluded that the need for a holistic and strategic VBS process was identified, yet not described in detail.

Over a period exceeding one decade, D’Andrea (2005, pp. 20-22) investigated practices of sales representatives with the aim of increasing the selling price of products in a selling process. This scholar had a focus on behaviors and activities, rather than managerial or strategic aspects. The high relevance of this research is substantiated by the large size of the sample. More than 2,000 sales representatives from various industries possessing different levels of experience participated in this study. Results revealed that representatives need to demonstrate the offered value of a solution and the return on investment to the organization of a customer. In this time period, Schmah (2008, pp. 40-41) also regarded clear communication of a solution’s impact on operative and strategic dimensions in an organization as a key element for increasing the selling price.

This points to the conclusion that, one decade ago, competencies and skills of sales representatives were viewed as a central success factor for the application of the value-oriented selling approach. In particular, the potential of a solution for improving the performance of the customer organization must be communicated by sales representatives (Schmäh, 2008, p. 41; D'Andrea, 2005, p. 22). At this time, the involvement of other departments (Marketing, Product Management, etc.) in such a selling process and the importance of strategic planning activities remained a factor that had been largely disregarded.

It was only ten years ago when Terho et al (2012, p. 174) recognized that the implementation and the management of a process which communicates the value of an offering to a customer had been hitherto ignored in the academic community. The focus of the academic community at this time was directed towards developing a general understanding of the concept and importance of value in business relationships (e.g. Anderson et al, 2007; Anderson, Narus, & van Rossum, 2006; Ulaga & Eggert, 2006) or value pricing (e.g. Anderson & Wynstra, 2010; Hinterhuber, 2008; Liozu et al, 2012,). Nevertheless, from 2011 onwards, various studies were conducted with the aim of advancing the concept of VBS as a management and selling philosophy. Especially scholars such as Töytäri et al (2011), Terho et al (2012), Lindström (2016), Töytäri and Rajala (2015), Liinamaa et al (2016), Luotola, Hellström, Gustafsson, and Perminova-Harikoski (2017), and Raja, Frandsen, Kowalkowski, and Jarmatz (2020) developed and conceptualized VBS, incorporating both management practices and an overview of requisite capabilities in an organization.

4.2 Models of Value-Based Selling

Following a brief overview of the historical development of value-oriented selling processes in the academic literature, this section will present an analysis of various models and process descriptions of VBS from the previous decade. The objective is to identify similarities and differences among VBS concepts based on the work of several academic experts. A detailed comparison of specific activities within the process will be performed in the final section of this chapter. Ultimately, the comparison and analysis of VBS models in this sub-chapter shall provide a basis for the development of a new VBS framework in the following sub-chapter.

One decade ago, Töytäri et al (2011, p.493) described a lack of descriptions of practical activities in the academic literature concerning the application of value-oriented selling approaches. The objective of these scholars was the development of a framework which includes key selling activities. Hence, they developed a VBS framework which is based on a multiple case study approach with two companies in an industrial market environment. Both companies involved operated in industries in which the communication of value was a common and vital element of the selling process at this time.

The main objective of establishing a framework which consists of pragmatic practices is reflected in the visualization of the VBS process and the manner in which selling activities are described. Various similarities with process descriptions from conventional, non-value-oriented selling activities, have been identified by the author. The majority of the process steps describe personal selling activities (See Figure 5). Process steps are divided into an analysis section and activities which are performed with or without customers. Elements such as prospecting, setting objectives, and various interactional activities with the customer are included in conventional and general personal selling process descriptions as well. Detailed information concerning the successful implementation of the process in a selling organization are underrepresented. ultimately, it may be concluded that this process description serves to provide the reader with an overview of how the value potential of an offered solution can be identified, quantified and communicated to a customer organization. (Töytäri et al, 2011, p. 501)

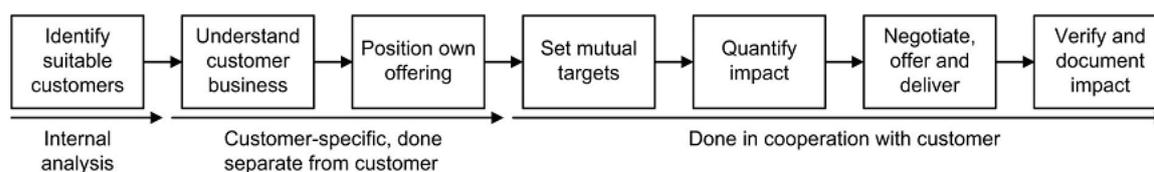


Figure 5: Framework of a Value-Based Selling process
Source: Töytäri et al, 2011, p. 501

At the same time, Terho et al (2012, p. 174) identified a dearth of research concerning best practices for the implementation of the value orientation of a company at the individual sales representative level. They developed a description of a VBS process which is based on ten in-depth interviews with experts from ten different companies in the B2B area. The interviewees were holding positions on a management level, especially in marketing/sales related positions, in their company.

Some of them operated in small/medium sized (7-25 employees) entities or huge transnational (up to 49.000 employees) companies. The objective of such a heterogeneous sample was the collection of a huge variety of facets in order to establish a more holistic VBS framework for the B2B sector.

In this scholar, Terho et al (2012, p. 78) describes VBS a multidimensional construct. In total, three different dimensions are needed to create value in a selling process. These dimensions include an understanding of the customers' business model, the development of a value proposition and the communication of the value to the customer (see figure 6). Every dimension consists of a description from needed activities in order to achieve the intended objective. The authors describe a high relevance of the model for B2B selling situations and they see it as a way to differentiate complex offerings and solutions on a market.

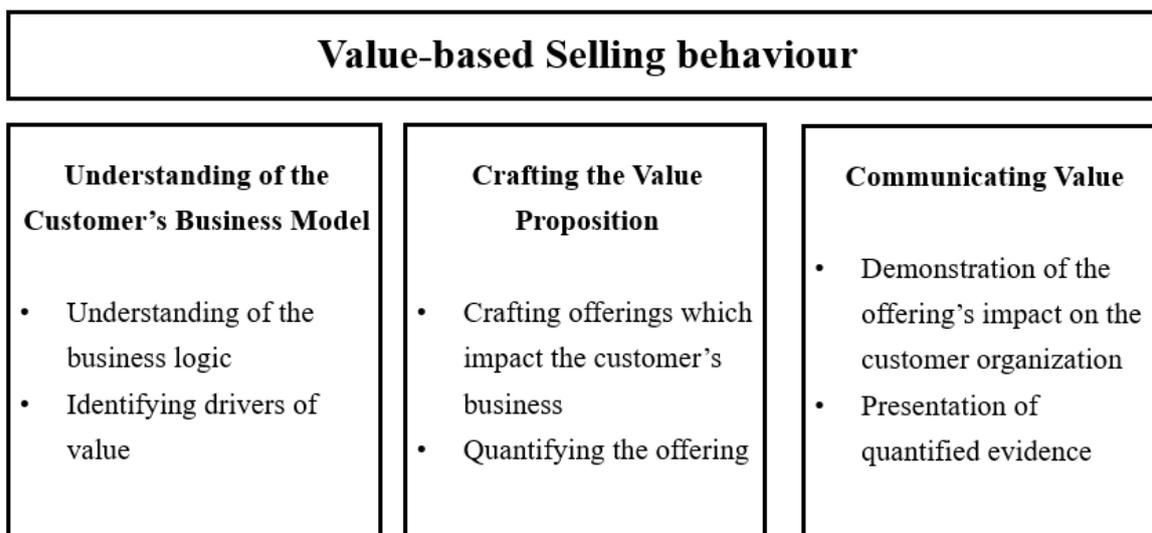


Figure 6: Conceptualization of Value-Based Selling
Source: adapted from Terho et al, 2012, p. 182

The VBS models of Terho et al (2012, p. 182) and Töytäri et al (2011, p. 501) differ in the extent of descriptions and recommendations regarding the implementation of separate steps of the process in organizations. Additionally, their perspectives on the concept of VBS differ. This finding is also reflected in the manner in which the individual steps and elements of the established selling models are described.

As previously mentioned, Töytäri et al (2011, p. 182) describe VBS from the personal selling perspective of a selling organization. It may be concluded that this perspective can be supplemented by the perspective of Terho et al (2012, p. 501). The focus of this VBS process is based on designing and communicating offerings in order to demonstrate their value impact on the customer's organization.

Nonetheless, the two concepts have much in common. The importance of understanding the individual situation of the customer, along with the quantification and communication of the total value are the core elements shared by both scholars. In contrast to the model proposed by Töytäri et al (2011, p. 501), Terho et al's model (2012, p. 182) underlines the importance of identifying the appropriate customer for the application of VBS. Nevertheless, the process of interviewing a large number of respondents from different organizations in the B2B area, which may be seen as the basis for the model designed by Terho et al (2012, p. 177), has enabled them to gain a more detailed understanding of the selling approach, as well as provide a more holistic description of processes within the organization. Their model also includes guidelines and information for managers on the requisite resources and capabilities for this selling approach in an organization.

Lindström (2016, p. 71) has identified a gap in the academic literature which deals with the quantification and presentation of value in a selling process. The study focused on the manufacturing industry, a sector in which the quantification of value is especially challenging due to the nature of products which are offered. Industrial offerings are in general more complex when compared with other organizational market areas, as well as including product and service components to a greater extent. A model for the quantification of value was then developed using an action research approach with five different companies. The research was carried out between 2000 and 2013. Representatives from various corporate management functions as well as those from personal sales departments were involved in the data collection process. Hence, this approach ensures a broad-ranging investigation of the topic area. (Lindström, 2016, pp. 70-72)

The basis for the quantification of value in business relationships in this study is the calculation of the total Net Present Value (NPV) of an offering for a customer. This model classifies the total impact of an offering on the organization of the customer into the following four different types of benefits: unattained, hard-to-estimate, indirect and direct income/benefits. The following sub-chapter of this paper includes a description of how NPV may be calculated in a VBS process. (Lindström, 2016, pp. 78-79)

The VBS model described above substantially diverges from the VBS models proposed by Terho et al (2012, p. 182) and Töytäri et al (2011, p. 501), at least from a conceptual point of view. While the two previous scholars primarily deal with VBS in a holistic manner, Lindström (2016, pp. 86 - 90) describes elements of the communication process between customers and potential vendors in greater detail. It may be concluded that these activities can be classified as VBS practices associated with the ‘crafting the value proposition’ and ‘communicating the value’ process steps according to Terho et al (2012, p. 182), and the ‘Quantify Impact’ and ‘Verify and document impact’ steps of the VBS process description according to Töytäri et al (2011, p. 501). Nevertheless, as Lindström (2016, pp. 90-92) provides detailed managerial recommendations for the application of VBS, it is useful to include his research in the current analysis.

Subsequently, Töytäri and Rajala (2015) developed the most holistic model for the application of a VBS approach in existence at that time. This model takes managerial aspects into consideration as well. It views VBS as more of an organizational capability rather than a linear process, whereby ‘organizational capability’ refers to the necessary tasks and resources for achievement of VBS’ intended objective (Helfat & Peteraf, 2003, p. 999). Therefore, it may be presumed that this was also the first occasion that organizational aspects and the role of managers in these selling process had been taken into account. The model was developed through a multi-case study approach involving nine companies from different B2B industries. A total of 46 interviews were conducted. According to Töytäri and Rajala (2015, p. 104), VBS is divided into three different main stages, consisting of twelve different managerial capabilities in sum (figure 7). The implementation of these steps helps move from a transactional relationship with the customer to a strategic–collaborative one. It is particularly the planning phase of these models which adds strategic elements to the selling approach.



Figure 7: Value-Based Selling capabilities
Source: adapted from Töytäri and Rajala, 2015, p. 104

All the elements, activities and process descriptions in a VBS approach which had already been described by Töytäri (2011, p. 501), Terho et al (2012, p. 182), and Lindström (2016, p. 82) are represented in the study performed by Töytäri and Rajala (2015, p. 104) as well. Differences may be identified concerning the how the different elements of this selling philosophy are seen in relation to each other. Virtually all activities contained in the first three VBS model descriptions in this dissertation may be regarded as elements from the ‘implementation’ phase, according to Töytäri and Rajala (2015, p. 104). The only exception is the ‘value verification’ step at the end of the process description proposed by Töytäri (2011, p. 501) and Terho et al (2012, p. 182). ‘Value verification’ can be classified as an element of the ‘leverage phase’ of the most recent VBS at that time.

In 2015, a research paper by Töytäri et al (2015a, pp. 254 - 256) helped to develop a greater appreciation for the necessity of regarding various elements of a VBS process as organizational capabilities. Thus this paper must be mentioned in a discussion of the conceptualization of VBS as well. In the paper, Töytäri et al (2015a, pp. 252-256) differentiated between activities and necessary support material for the application of a VBS process. Activities consist of processes (e.g. the development of instructions for meetings with customers) and routines (e.g. guidelines for selecting appropriate customers for VBS, or instructions for negotiations with customers). Additionally, these scholars show the importance of managing the development of support material for sales representatives strategically. Necessary support material include documents (e.g. reference stories from other customers) and value visualization tools (e.g. value quantification calculators).

Detailed information on the importance and usage of value visualization tools in a VBS process will be presented in the next sub-chapter of this thesis. The distinction between processes and tools in a VBS process (Töytäri et al, 2015a, p. 252) also demonstrates the importance of involving several departments and entities of an organization in VBS processes. If one views these activities in the context of the model proposed by Töytäri and Rajala (2015, p. 104), they can be identified as parts of the planning phase.

The growing importance of helping customers to achieve quantitative objectives has been touched upon in previously reviewed papers. The VBS process descriptions by Liinamaa et al (2016, p. 37) focus on the consequences of this trend in 2016. When examining the development of performance-based contracts, they saw an additional element of a VBS process in order to demonstrate that potential vendors contribute to the achievement of the business objectives of the customer. Hence it may be concluded that taking a holistic view of VBS entails the implementation of some elements of performance-based contracting (PBC). A description of methods of incorporating PBC into a VBS process was formulated using an action research approach in cooperation with a company in the logistics equipment manufacturing sector. It includes a visualization of the development of selling objectives, sales tools and how PBC can be added to a value oriented selling process. The original model designed by Liinamaa et al, (2016, p. 41) is simplified in the context of this thesis in order to focus on the further development and a holistic conceptualization of VBS. An in-depth discussion of its elements and the importance of PBC will be presented in the next chapter of this paper. (Liinamaa et al, 2016, pp. 38-41)

A comparison of the VBS model by Liinamaa et al, (2016, p. 41) (Figure 8) with the holistic VBS framework by Töytäri and Rajala (2015, p. 104) illustrates that all described activities by Liinamaa et al, (2016, p. 41) may be regarded as a part of the implementation and leverage phase of the model by Töytäri and Rajala (2015, p. 104). Planning activities are totally neglected by Liinamaa et al, (2016, p. 41).

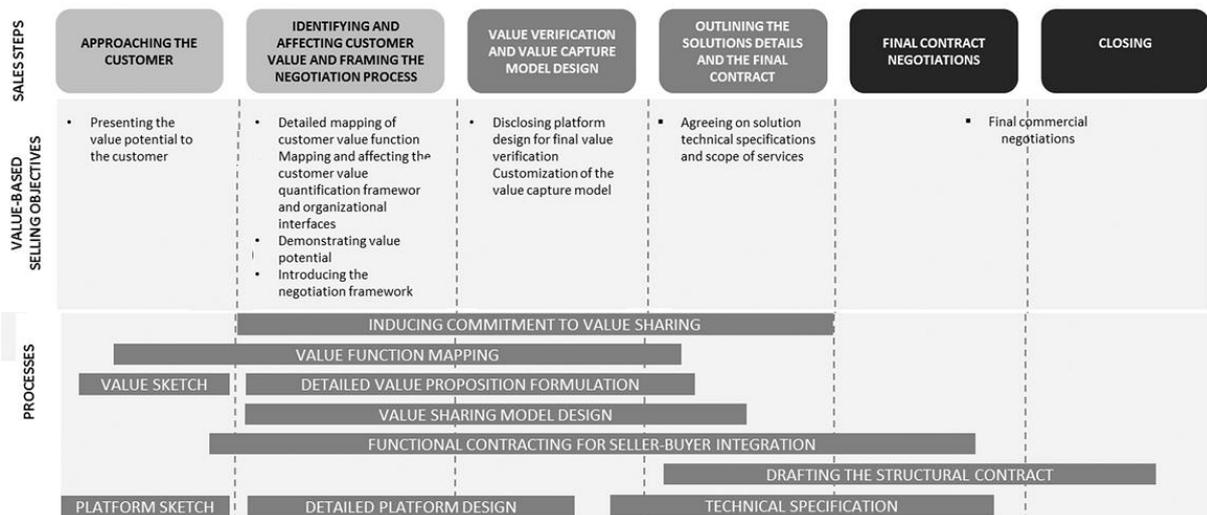


Figure 8: Implementation of PBC in a Value-Based Selling process

Source: adapted from Liinamaa et al, 2016, p. 41

On the other hand, it may be concluded that the VBS characterization by Liinamaa et al, (2016, p. 41) does not substantially differ from other VBS models except that of Töytäri and Rajala (2015, p. 104). The added value of this model is to highlight that PBC must be applied in several elements of a VBS, with the exception of the negotiation phase. Activities such as ‘functional contracting for seller-buyer integration’, ‘sketching and designing the contract platform’, ‘drafting the structural contract’, and the definition of ‘technical specifications’ have to be performed concurrently with the identification and verification of the value. Hence, they may be viewed as an element of the implementation phase according to Töytäri and Rajala, (2015, p. 104) or the ‘crafting the value proposition’ dimension of Terho et al (2012, p. 182). The definition of ‘technical specifications’ and the draft of the structural contract are elements of the ‘leverage phase’ of Töytäri and Rajala (2015, p. 104). A more detailed description of how PB contracts are incorporated into a VBS will be summarized in the next sub-chapter of this dissertation.

In 2017, Luotola et al (2017, p. 59) identified a dearth of research concerning the development of precise operationalization elements in a VBS process, especially concerning the co-creation of customer value in a selling process. The model proposed by Luotola et al (2017, p. 61) regards VBS as an abductive selling approach. It describes a situation in which, at the beginning of the interaction, the potential supplier and the customer do not share a common understanding of current problems and potential solutions in the organization. Problems which are not obvious in the customer’s organization are termed ‘wicked problems’ by Rittel and Webber (1973, p. 157).

In such an abductive selling situation, a solution is co-created between the buyer and the seller (Svensson & Grönroos, 2008, p. 300). These situations require a high level of trust and commitment from both parties involved in the selling process. For the development of this VBS model, 15 different sales cases from two different companies were analyzed. The framework demonstrates in detail the interaction between the two parties as well as the activities performed in a value co-creation process within a VBS framework (figure 9). Supplier actions in this interaction process are taken into consideration for the development of a VBS framework in this paper.

The VBS visualization model designed by Luotola et al (2017, p. 71) includes a higher number of strategic elements than that of Linamaa et al (2016, p. 41). Activities are elements of the planning, implementation and leverage phase from the process description of Töytäri and Rajala, (2015, p. 104). ‘Ongoing value research on the customers’ business’ may be characterized as planning activities. ‘Problem identification and value demonstration’ activities and the ‘design phase of a solution’ are elements of the ‘implementation’ phase, while ‘Reaching certainty’ is an element of the ‘leverage’ phase of Töytäri and Rajala, (2015, p. 104).

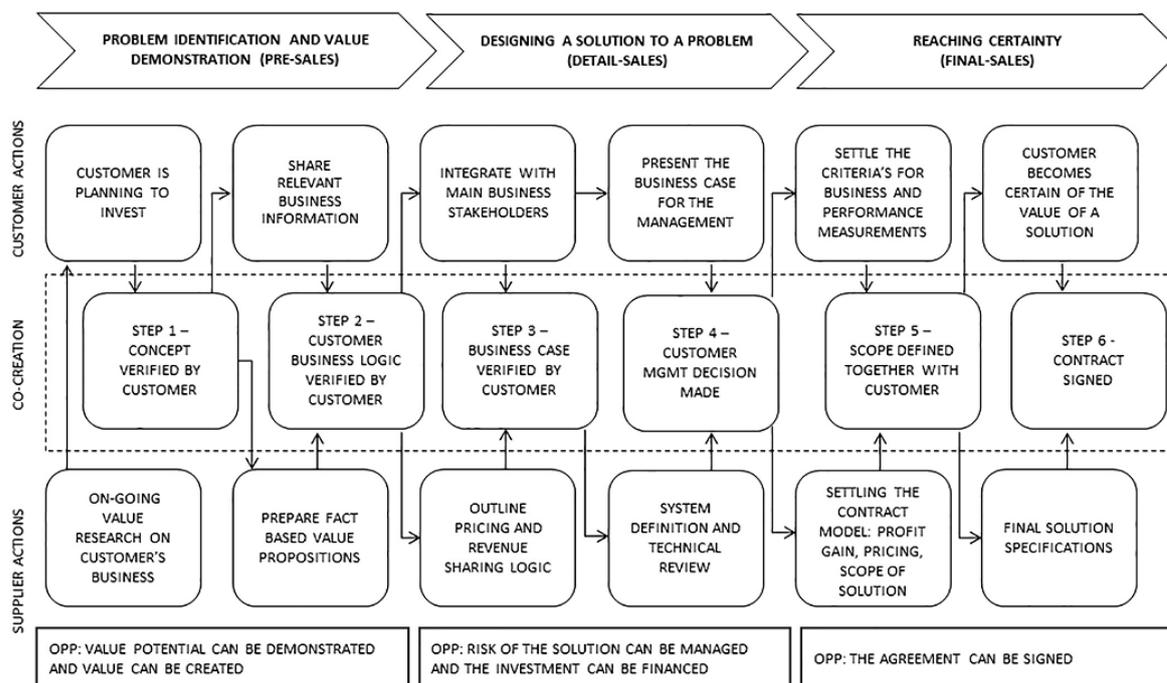


Figure 9: Value co-creation within a Value-Based Selling process
Source: Luotola et al, 2017, p. 71

The most recent scholar on this subject places VBS in the context of Value-Based Pricing (VBP) (Raja et al, 2020, p. 142). The researchers' objective is to create a more dynamic conceptualization of this selling approach. They refined this selling philosophy by conducting a case study involving two companies from the industrial services sector. In total, 78 qualitative interviews with key personnel from both companies were carried out. The VBS description according to Raja et al (2020, p. 153) is based on the main findings of Terho et al (2012, p. 182) as well as Töytäri and Rajala (2015, p. 104). A customer analysis forms the basis for the implementation of VBS. The final stage in the process includes the verification of value as well. This model thus provides a clear link between VBS activities and VBP practices.

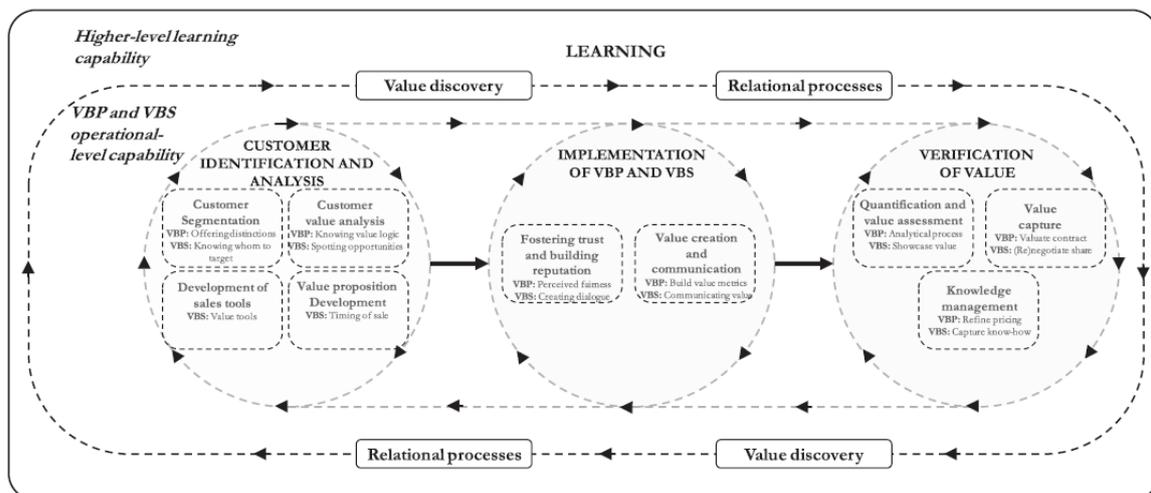


Figure 10: Value-Based Pricing and learning in context with Value-Based Selling
Source: Raja et al, 2020, p. 153

In addition to key operational selling activities, Raja et al (2020, pp. 152-153) added a learning capability to VBS (figure 10). Knowledge management systems are required to disseminate relevant information about the customer, market developments, and practical experiences from VBS selling activities within the organization. This leads to the refinement of VBS and VBP activities as well as an understanding of the significance and relevance of different value components in the market.

4.3 A holistic Value-Based Selling framework

For the development of a holistic VBS framework, the author has divided VBS activities into three discrete main phases: (A) ‘pre-selling practices’, (B) ‘direct VBS practices’, and (C) ‘after sales practices’. 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. The author has differentiated between ten different process steps within a holistic VBS framework (see Figure 11).

Articles by Töytäri et al (2011), Terho et al (2012), Lindström (2016), Töytäri and Rajala (2015), and Raja et al (2020) form the foundation for the development of the holistic VBS framework. Moreover, elements of the VBS process description by Liinamaa et al (2016) have been incorporated in order to provide a more detailed description of ‘direct VBS practices’, especially concerning an explanation of how PBC may be included in such a process. Elements of the VBS model by Luotola et al (2017) have been included in the pre-selling phase. This framework also provides a detailed account of a value co-creation process between a customer and a potential vendor.

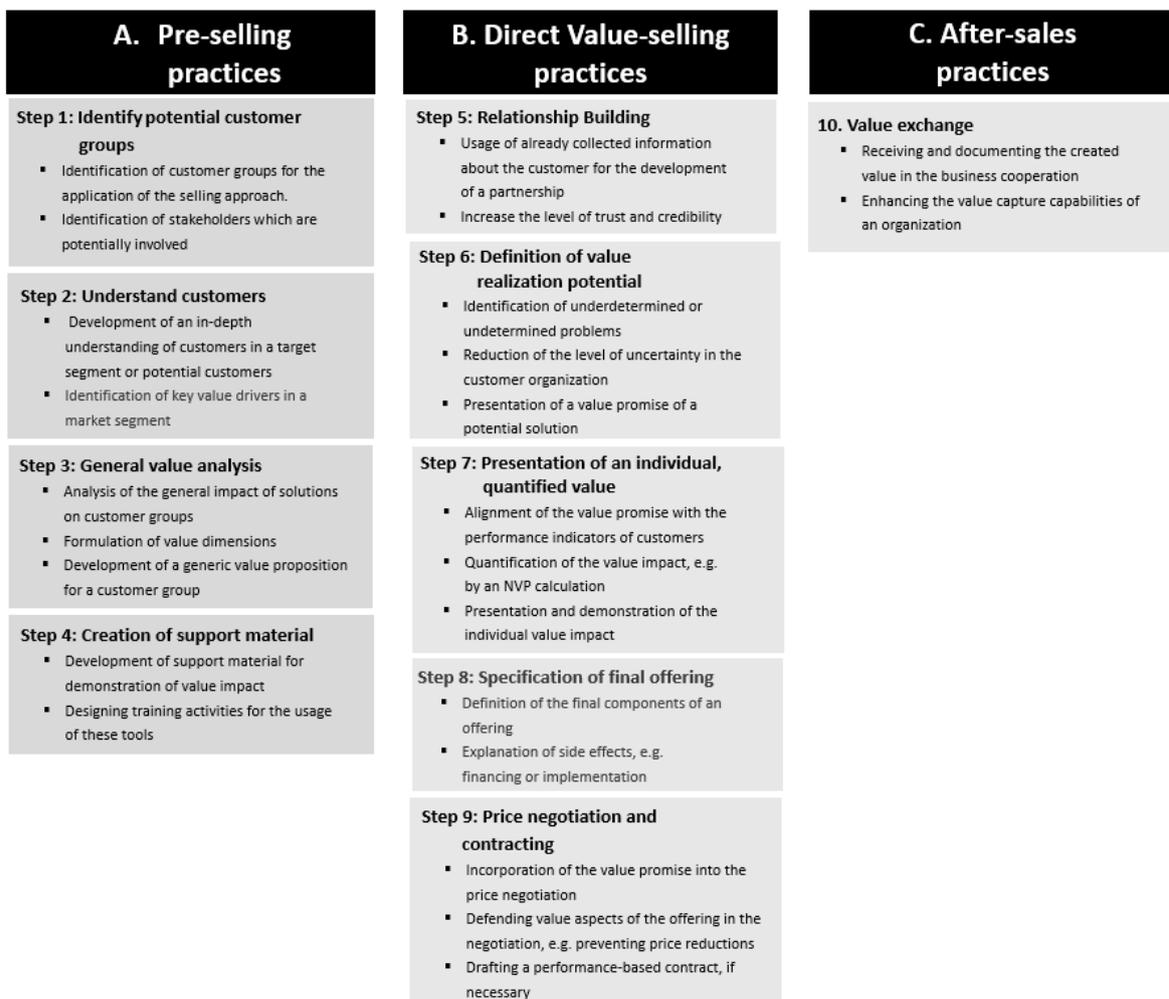


Figure 11: Overview of the holistic Value-Based Selling framework
Source: own figure

In the next section of the paper, VBS practices will be presented in detail.

4.3.1 Customer identification

It is unnecessary to perform elements of the pre-selling phase of the holistic VBS framework sequentially, as the determination of the number and extent of activities in this phase is always performed on an individual basis. The very first step of the new model is to take a strategic decision in the sales department. This involves defining customer groups for whom it the application of VBS is deemed sensible. This process step is cited in two different VBS models.

Töytäri et al (2011, p. 499) explicitly mentions that the identification of ‘suitable customers’ is the initial task for VBS activities. In light of this, Töytäri and Rajala (2015, p. 104) describe this activity in greater detail. They recommend beginning with the definition of a target segment. B2B segmentation variables can be used for the definition of potential customer groups. On the same subject, Kaario et al (2003, p. 35) suggests using conventional variables such as the type of industry or size of company. The customer groups which are most likely to create and capture value should be selected. In the second phase of this process step, individual customers are selected from the target segment.

Davies (2017, pp. 61 – 63) suggests classifying customers based on their size and the expected selling potential. They recommend distinguishing between the following three segments: (1) large key customers, (2) medium core customers and (3) small foundation customers. He proposes approaching core customers and foundation customers with more generic, less complex offerings, even in a VBS process. Concerning the development of key customers, Davies (2017, pp. 65-68) supports the view of Kaario et al (2003, p. 35) in that he suggests ranking this segment based on the current status of the relationship. Additionally, it is regarded as important to evaluate the attractiveness of the customer. This may be assessed based on quantitative elements (e.g. customer size or production capacity) as well as qualitative factors (e.g. realistic opportunity to grow, alignment with the strategy of other suppliers in the sector).

Moreover, the views of customers as to the importance of a specific offering is a potential segmentation variable. Apart from the size of the customer organization or the current status of the relationship, it is important to understand the price sensitivity of the buying organization (Raja et al, 2020 p. 153).

Two different factors contribute to the importance of defining potential customer groups or individual customers prior to the application of direct selling practices. In comparison to adaptive selling and customer-oriented selling, VBS requires the investment of more resources (e.g. time, manpower, budget). Thus, the application of this concept in the wrong target segment can result in insufficient effectiveness of selling efforts in an organization. The second factor which drives the importance of a customer segmentation is the method of creating a value proposition. The previous analysis from various VBS models leads to the conclusion that this process is implemented in all phases of the selling approach. Töytäri and Rajala (2015, pp. 104-105) and Storbacka (2011, p. 702) recommend creating an initial value proposition for different customer segments prior to the optional establishment of an individual value proposition for an individual customer. Accurate segmentation increases the effectiveness of a general market segment-oriented value proposition. Kaario et al (2003, p. 35) suggests that a supplier should select customers with which they have already established a good relationship. Additionally, customers should commit to an in-depth interaction with a potential supplier.

In addition to the definition of potential customer groups for the application of VBS, Töytäri and Rajala (2015, pp. 104-105) include a further element in this initial stage. They recommend analyzing stakeholder groups in pre-defined target segments who are potentially involved in a decision-making process. This analysis should also be applied to individual customers. Nevertheless, Raja et al (2020, p. 149) view the identification of stakeholders as a challenging task for a selling organization, especially in an industrial environment. From a managerial point of view, Töytäri and Rajala (2015, pp. 104-105) recommend disseminating information from such an initial analysis to relevant entities in the selling organization. Making this information available to every employee in selling organizations is a vital step.

Ultimately it may be concluded that the decision as to whether a VBS approach should be applied for a specific target segment or not, also depends on the characteristics of the product and the service portfolio of a company. Töytäri et al (2011, p. 499) suggest applying VBS for products with an underestimated or unknown total perceived value potential. Examples include new, innovative solutions which consist of product and service elements.

4.3.2 Development of an in-depth understanding of the customer

After having defined potential target groups for the application of VBS it is crucial to develop an in-depth understanding of these customer groups. The development of a holistic and in-depth understanding of the customer's business is a key differentiator between VBS and other applicable selling approaches, as has been mentioned in the previous chapter of this dissertation. The significance of this activity is also reflected in various process models, as explicitly stated by Töytäri et al (2011, p. 501), Terho et al (2012, p. 182), and Luotola et al (2017, p. 72) in their VBS process descriptions.

The collection of information on the business environment in target market segments prior to the implementation of direct selling practices is critical in situations where customers are unaware of a specific problem in their organization or environment. Various customers do not recognize underlying problems and their impact on business processes (Tuli, Kohli, & Bharadwaj, 2007, p. 4; Terho et al, 2012, p. 176). Therefore, a comprehensive understanding of the business environment might be fertile grounds upon which to develop business opportunities for the selling organization (Luotola et al, 2017, p. 60).

An understanding of the customer's situation is acquired in multiple steps of the selling process. Information about environmental factors which influence all the companies in a specific segment must be collected at the beginning. Publicly available information concerning key customers and industry reports can be analyzed without interacting with a customer. This information then forms the basis for approaching a potential customer with a value-oriented selling strategy (Luotola et al, 2017, p. 60). Davies (2017, p. 56) recommends to apply the 'Five Competitive Forces that Shape Strategy' analysis in order to develop an initial understanding about a customer segment.

Various scholars have discussed the type and extent of information which is needed to develop an in-depth understanding of a customer segment. Terho et al (2012, p. 176) suggests that a consultative selling approach such as VBS requires an analysis of the objectives from different customers. In addition, the business model and the manner in which customers earn their income should be identified. On this subject, Terho et al (2017, p. 43) speak about the importance of understanding idiosyncratic business processes in a target segment.

Particularly in B2B markets, it is crucial to differentiate target customers from customers (Terho et al, 2012, p. 178; Töytäri et al, 2011, p. 501). Luotola et al (2017, p. 68) explicitly states that it is important to take into consideration changing needs from the end consumer and their impact on companies in the B2C area. This is an important driver of changes in the market environment.

Töytäri and Rajala, (2015, pp. 104-105) propose additional tasks for the acquisition of an in-depth understanding of customers as the basis for a reliable value analysis. As examples they suggest marketing research activities such as workshops, focus groups with experts or holistic market analysis studies. Opportunities for improving the performance of potential customers in a target segment are identified through activity mapping. Furthermore, it is essential to distribute these types of information among people in a selling organization.

A strategic collection of this information helps to identify key value drivers of customers in a target segment. Töytäri et al (2011, p. 501) add, that this also helps selling organizations to understand how their own offerings are positioned with respect to the internal processes and workflows of a potential customer. Hence, the development of a completely novel approach to solving business problems is a potential outcome of such a holistic understanding of the business environment in a specific market segment.

4.3.3 *General value analysis*

The development of an understanding of business processes and the market environment forms the foundation for conducting an analysis of the value potential which a solution offers customers. Töytäri and Rajala (2015, p. 104) regard such a general value analysis as a separate process step and an element of the planning phase of VBS.

The output of this activity prepares selling organizations to approach customers with a value-oriented view of their products at the beginning of their direct selling practices. With the big picture in mind, however, the application of a general value analysis must be grounded in a thorough understanding of the concept of value.

A deeper understanding of the scope, and the versatility of value is important for the development of an effective value proposition. It is for this reason that this information is presented in the author's discussion of this step of the VBS framework. It forms the basis for a detailed quantification of the customer value potential in the 'direct selling phase'. Winter (2000, p. 983) even views the value analysis of a product and the definition of a value proposition as almost identical activities which produce the same outcome.

Definition of the term 'value'

In order to estimate the value impact of a product or solution on potential customers, it is crucial to classify and understand the meaning of the term 'value' in a VBS context. Therefore, definitions, dimensions and elements of value are summarized in this part of the dissertation. Terho et al (2012, p. 175) argues that value research is found in several research disciplines. Examples include such research areas as economics, psychology, and business administration. The context of VBS demands a primary focus on the meaning of 'value' in the field of business administration.

Additionally, Terho et al (2012, pp. 175-176) differentiate between a vendor, a customer and a dyadic perspective on value. The vendor perspective focuses on the financial benefit which can be realized from a cooperation with current and new potential customers, while the customer perspective on value deals primarily with the impact and benefits of an offering for the customer. The dyadic perspective takes both previously described elements into consideration. It may focus, for example, on the enhancement of a long-term relationship value or the co-creation of value which is based on an intensive cooperation between supplier and customer.

A value analysis of an offering in the pre-selling phase of a VBS process focuses primarily on the customer perspective of value. Direct selling activities may also include dyadic perspectives on value, especially when it concerns an in-depth analysis of potential issues in the organization of the customer and the development of joint problem-solving approaches.

Töytäri et al (2011, p. 494) note that a common definition is absent in the academic literature. In a succinct summary, they propose that value represents the difference between giving and taking. They also differentiate between desired and perceived value from the customer's perspective. As the two concepts in fact complement each other, customer value may be defined as *"the difference between the customer's desired value and the customer's total cost of ownership"* (Töytäri et al, 2011, p. 494). The facets of this concept are shown in figure 12.

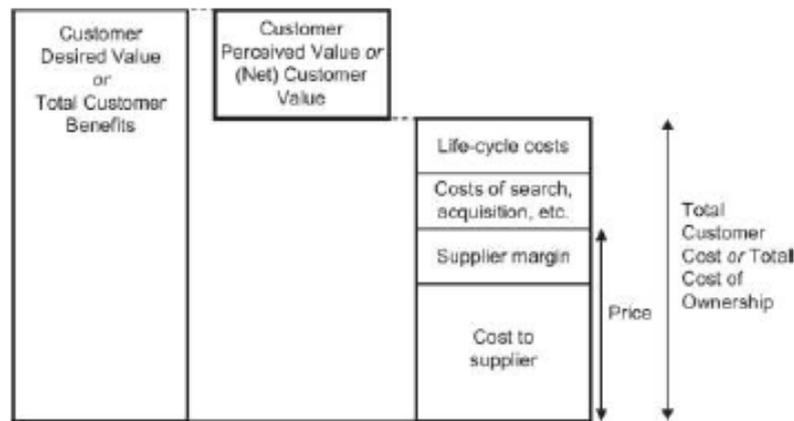


Figure 12: Difference between customer desired and perceived value
Source: Töytäri et al, 2011, p. 494

An increasing importance of service elements from offerings on B2B market segments, which has been described in the first part of the thesis several times, leads to the conclusion that the perceived quality of service components influence the perceived value from customers to a substantial extent. Parasuraman, Zeithaml and Berry (1985, pp. 42-44) state that the evaluation of the quality of service components is challenging for customers. They conclude that quality of services can be described as the gap between prior expectations and the performance after the performance of service activities. Expectations related to the quality of services are influenced by word-of-mouth (inside and outside the buying centre), personal needs, and previous experiences with the potential vendor. Additionally, Parasuraman et al (1985, pp. 47-48) identify several facets which may positively or negatively influence perceived service quality.

Examples of important quality determinates include:

- Access, which may include the accessibility of sales reps via telephone, for instance
- Courtesy, which refers to communication and conversation behaviors of contact personnel (e.g. politeness, friendliness)
- Reliability and responsiveness, which take the stability of the performance and the accuracy of the service delivery time into account
- Understanding the customer and their requirements

These findings show that sales representatives influence the perceived value of an offering in B2B market segments to a substantial extent.

Töytäri and Rajala (2015, p. 105) have refined the term value. In the context of VBS they summarize and combine various definitions and from previous scholars. Ultimately, they regard value as *“a bundle of benefits that address business goals of specific target groups and offer significant value for the customer”* (Töytäri & Rajala, 2015, p. 105). The definition of value as ‘a bundle of benefits’ leads one to conclude that this concept transcends the purely output-oriented financial elements typically seen as performance indicators in various industries. Value propositions which have been developed following an in-depth value analysis tend to be focused either on an enhancement of value or reduction of sacrifices. They may be classified as input or output-oriented, and may include monetary as well as non-monetary aspects. (Töytäri & Rajala, 2015, p.105)

Dimensions of value:

Graf and Maas, (2008, pp. 8-11) have identified two components of perceived customer value. They distinguish between a product-oriented and relationship-oriented component of value. Product-oriented value relates the perceived quality of a product and its features, as well as its brand name, to the offered price. In contrast, the relationship-oriented dimension involves services as well as process and risk components of offerings. The value concept proposed by Graf and Maas (2008, pp. 8-11) does not primarily focus on B2B perspectives. Therefore, it remains more universal and hence relevant for B2B and B2C areas. This more general perspective also entails a shift from a product-oriented to a service-oriented understanding of value. (Graf & Maas, 2008, p. 11)

Töytäri and Rajala (2015, p. 105) define the concept of value for B2B markets as a multidimensional construct which has been refined by various academic contributions. Dimensions are described, classified, and employed in different ways. Töytäri et al (2011, p. 497) summarizes just two value dimensions. This study deals with challenges in the process automation industry and identifies two value dimensions which are related with the production process. The first dimension focuses on the output of the production process. An example of this dimension is the positive impact of an offering on the production capacity of a potential customer. The second dimension deals with cost savings in the production process, such as energy savings or reduced maintenance costs.

Hinterhuber (2017, p. 164) also differentiates between two value elements: quantitative and qualitative. While the former includes the positive impact of an offering on the cost structure in the organization or an increase of revenues, the latter involves intangible advantages for a company, such as a better reputation or brand image. In comparison, the value concept of Hinterhuber (2017, p. 164) is more holistic than that of Töytäri et al (2011, p. 497), who completely neglect intangible elements of a value proposition.

Töytäri et al (2015b, pp. 54-55) closely examines the concept of value in a VBS context. Based on an analysis of previous scholars, they have defined four relevant dimensions of value in VBS processes: strategic value, operational value, social value, and symbolic value. Operational value influences processes and workflows within a company. The benefits of elements from such a value dimension include the reduction of costs in the production process and the increase of output from other processes, such as an increase in production capacity (Töytäri, Rajala, & Alejandro, 2015b, p. 54). Töytäri et al (2015b, p. 54) also presents additional examples of operational value dimensions. An improvement of processes by establishing higher reliability, and thus fewer production shutdowns, and the reduction of failure rates during the production process are additional examples of operational value propositions. The implementation of product features resulting in a simpler and safer method of using a product is a further element in this value dimension. Secondly, the strategic dimension of value concerns general changes and challenges within the organization of the customer. (Töytäri et al, 2015b, pp. 54-55). A selling organization which emphasizes this value dimension in a VBS process is highlighting their capability to enhance the well-being of the customer organization. Examples include the delivery of know-how or the establishment of new competencies within the workforce of a potential customer.

This may result in a more innovative corporate culture. Thirdly, social value components of an offering assist customer organizations in enhancing their network (Töytäri et al, 2015b, pp. 54-55). This might be achieved by providing the customer the opportunity to become a member of a prestigious community, for instance. Some possible positive consequences of using this value dimension are greater access to new market segments, reduced selling costs through already established connections, and improved access to key information (Ritter & Walter, 2012, p. 138). Lastly, symbolic elements of a value proposition influence human resource-related aspects (e.g. employees and their development) within the organization of a customer. They have a positive impact on motivation and satisfaction levels (Töytäri et al, 2015b, p. 55). This leads to higher productivity and work performance of employees. (Ritter & Walter, 2012, p. 138).

The four-dimensional value framework by Töytäri et al (2015b, pp. 53-55) is the most holistic and detailed view of value as it applies to VBS. Elements of other previously explained value constructs can be integrated into this framework. Both value components of Töytäri et al (2011, p. 497) are elements of the operational value dimension, whereas quantitative value aspects according to Hinterhuber (2017, p. 164) may predominantly be classified as strategic, operational, and symbolic value dimensions. Qualitative value elements play an important role in the social value dimension. Product-oriented components of value according to Graf and Maas (2008, pp. 8-11) can be primarily classified as the operational value dimension, while relationship-oriented components play an important role in the strategic, social and symbolic value dimensions.

The usage of the previously mentioned value models in a VBS process helps to identify and communicate the total impact of a solution on a potential customer organization in a structured and strategic manner. It must therefore be viewed as a central planning element of the VBS process.

4.3.4 Preparation of support material

It is important to demonstrate and visualize the value realization potential of an offering or the individual value impact of a solution on the customer organization. The versatile four-dimensional value analysis proposed by Töytäri et al (2015b, pp. 54-55) shows the complexity and breadth of the concept of value. Therefore it is important to assist in the demonstration of value by using visuals.

Töytäri and Rajala (2015, pp. 105-106) and Raja et al (2020, p. 149) regard the preparation of tools which support salespeople in a VBS process as a planning capability. Therefore, this step can be seen as an element of the pre-selling phase. Tools and their impact on the value communication process are described in this part of the dissertation.

Even if the VBS process descriptions by Töytäri et al (2011, p. 501) and Terho et al (2012, p. 182) do not classify the preparation of selling tools as a separate process step in the VBS process, it may be concluded that this topic enjoys considerable attention in academia. Terho et al (2017, p. 52) recommend that value quantification and visualization tools should not be developed by individual employees, such as sales representatives. Rather, support and input from various functions and entities in an organization are needed. Thus such tools should be conceptualized in a central way by involving the whole selling organization. The usage of such tools also helps to further develop competencies of individual sales representatives which are needed for the implementation of VBS. It assists in transforming a product-oriented selling logic into a value and solution-oriented communication approach. This ensures that salespeople demonstrate the impact of a solution on the customer organization instead of holding a simple presentation on features and benefits of individual products. (Terho et al, 2017, p. 52; Töytäri & Rajala, 2015, pp. 106-107)

Anderson and Wynstra (2010, p.31) state that tools which show the impact of a solution on the customer organization help to reduce the ambiguity and uncertainty of the value potential. This corresponds with findings from Terho et al (2012, p. 181), who conclude that the level of risk which is perceived by a customer in a buying process, can be reduced as well. Ultimately, it may be concluded that the usage of marketing and sales support material in VBS processes helps to deliver a clear value message (Raja et al, 2020, p. 150).

Researchers have identified the following tools to demonstrate and visualize the value impact of a solution in a VBS process.

- reference lists and reference stories (Töytäri & Rajala, 2015, p. 105; Töytäri et al, 2011, p. 498)
- value studies (Terho et al, 2012, p. 180)
- calculation models (Töytäri et al, 2011, p. 496)
- excursions to reference customers (Töytäri et al, 2011, p. 497)
- piloting of solutions (Töytäri & Rajala, 2015, p. 106)
- value calculators including such elements as return-on-investment studies, total cost of ownership, and lifecycle calculations (Terho et al, 2012, p. 180; Töytäri & Rajala, 2015, p. 105; Pöyry, Parvinen, & Martens, 2021, p. 354)

An important success factor for the usage of value visualization tools in a selling process is employing them in an appropriate manner, especially concerning the identification of situations where such tools can be used (Töytäri & Rajala, 2015, 110). Pöyry et al (2021, pp. 354–356) reports that value calculators are used in selling situations where larger clients are involved. Moreover, the length of the current business relationship influences the usage of value calculators.

The architecture of a tool, such as the structure or visibility of value realization potential, also impacts effectiveness to a great extent. It is important to design an appealing, informative interface in order to ensure practicable implementation for sales representatives. A clear visual overview of different value realization potentials may also help decision-makers from customer organizations to identify and understand the value-saving potential in a sales talk. (Töytäri & Rajala, 2015, p. 110; Pöyry et al, 2021, pp. 354-356)

Tools for the visualization of the individual value potential of the customer should include variable calculation elements and simulations with different output variables (Töytäri & Rajala, 2015, pp. 105, 110). Lindström (2016, p. 84) also describes the importance of creating various scenarios and their impact on the cash flow of the customer organization. Such an approach helps to discover and visualize value drivers for the customer. Models and templates are adapted based on the needs and requirements of a specific selling situation. The development of master templates is recommended in order to guarantee both flexibility as well as practicability.

Such flexible value calculators have had a substantial impact on the effectiveness of VBS. (Pöyry et al, 2021, pp. 335, 357; Lindström, 2016, p. 84). Additionally, Pöyry et al (2021, pp. 356, 357) recommend using calculators which show the investment in the purchase in contrast to the value realization potential.

On the other hand, Pöyry et al (2021, pp. 356-357) states that usage of value calculators is time-consuming in sales talks. It may lead to detailed discussions about different value components and their quantitative impacts on the organization of the customer. Therefore, value components which are potentially of minor importance for a customer should not be included in a talk.

The systematic collection and management of references is a driver of success in a VBS setting (Anderson & Wynstra, 2010, p. 34). Töytäri et al (2011, p. 497) concur, highlighting the importance of reference cases in VBS processes. These tools are especially important in selling situations in which the credibility of a value calculation is low. Great similarity of the reference case to the current situation of the customer is necessary in order to demonstrate the value impact of a solution on the individual situation of the customer. Additionally, the presentation of reference cases increases the credibility of the selling organization. It demonstrates that a potential supplier definitely possesses the willingness and competence to deliver a promised value realization potential. (Terho et al, 2012, p. 181)

In addition to the previously mentioned sources, Töytäri and Rajala (2015, pp. 107-108) also describe the positive impact of reference cases on the reliability and credibility of the selling organization. They view the development of a case repository as an explicit element of the last phase of their VBS model. A holistic and professional case archive may contain thousands of verified cases. The strategic importance of this activity is highlighted by the fact that the development of such a case repository might span as long as 10 years. Therefore, this element of a VBS process may be regarded as a long-term activity. What is important for the development of such a large, accurate case repository is the application of a systematic approach. The indexing and labeling of cases (based on stakeholder or similar attributes) is necessary in order to handle such a large quantity of data. Töytäri and Rajala (2015, p.107) also relate that companies which apply VBS in a professional manner systematically document such cases in customer relationship management systems or internal knowledge management systems.

Keränen and Liozu (2020, p. 89) describe the necessity of dedicating resources in order to develop a systematic case repository. They report that companies which use VBS on a regular basis establish value teams in order to develop value calculators.

From a managerial point of view, it is important to formulate a training strategy for sales representatives in order to implement value visualization tools correctly. This guarantees a continuous learning effect for individual members of the selling process as well as the entire organization. Such a process must be driven by leaders of a selling organization. It also helps to refine tools, which serves to increase the effectiveness of VBS. The development of test procedures is recommended in this context as well. (Töytäri & Rajala, 2015, p. 110; Pöyry et al, 2021, pp. 354 - 356)

Following the analysis of various conceptual studies in the area of VBS, it may be concluded that several strategic and operational practices must be completed before a potential customer may be approached with a VBS strategy. All of these elements are summarized and listed in the pre-selling phase of this new holistic VBS framework. Nevertheless, different activities of this phase must be performed to different extents and at different frequencies. In particular, the strategic decision to implement VBS with a new customer segment leads to an increased investment of resources, especially concerning activities performed in order to gain an understanding of the situation and potential problems of a specific customer group. Moreover, the development of a general and holistic value promise for a new market segment requires a substantial investment of resources. The creation and refinement of support material may be considered ongoing activities which are performed occasionally.

4.3.5 Relationship building

The previous elements of the new holistic VBS framework must be conducted prior to the first contact with a customer. An analysis of various studies leads one to the conclusion that the application of VBS requires intensive communication between customers and representatives of a potential supplier, especially regarding the collection of in-depth information and data from a potential customer company. A further characteristic of this selling approach is the sharing of industry knowledge and know-how with a potential customer by a potential supplier.

A transactional relationship between a potential customer and supplier is characterized by few coordination efforts, a focus on individual transactions, and unilateral improvement initiatives. Such a relationship is expected to have a negative impact on the application of VBS. The establishment of a partnership which is characterized by an open and honest communication process is the basis for a selling process with a focus on the establishment of a long-term value for both partners. (Duffy & Fearne, 2004, p. 65) On the same subject, Töytäri and Rajala (2015, pp. 106-107) regard the development of trust and respect as the foundation for the application of a VBS process and the establishment of an intensive partnership. Indeed, they view the establishment of trust as a key capability. The absence of a close relationship and credibility reduces the willingness of the customer organization to share important information with a potential supplier. Yet without such important information about the customers, it is almost impossible to formulate a reliable value proposition. The application of value visualization tools such as reference cases and value calculators are viewed as an essential component for enhancing the level of trust between partners.

Terho et al (2012, p. 177) and Lindström (2016, pp. 82 - 84) do not consider the establishment of trust and credibility to represent a separate process step. Nevertheless, they concur that trust and credibility are essential for the application of VBS. Moreover, it is viewed as one of the most challenging elements of a VBS process. The output of previous cooperations between potential suppliers and customers, the reputation of key personnel (e.g. service engineers), and the general image of a brand on the B2B market impact the development of trust to a high degree. (Raja et al, 2020, p. 149)

Ultimately it may be concluded that, even if the cultivation of trust and credibility is rarely mentioned by scholars in the area of VBS, it must indeed be seen as a prerequisite for the application of other selling activities. This conclusion also supports the decision to regard it as the first step of 'direct value selling' practices in this holistic VBS framework.

4.3.6 Definition of the value realization potential

An analysis of various studies leads one to draw the conclusion that various activities must be completed prior to the presentation of a detailed, quantified value impact for a specific customer. These may include the presentation of the value realization potential of an offered solution, the identification of potential problems in the organization of the customer, and the presentation of various offerings which help resolve these problems.

Terho et al (2012, p. 172) and Liinamaa et al (2016, p. 45) describe in their VBS models that a general visualization of the value potential, which can be realized through the implementation of an offered solution, can be performed as a process step prior to the individual quantification of the value impact of a specific offering. A presentation of the value potential means that company representatives outline the potential value impact of a solution on the organization of the customer.

Töytäri and Rajala (2015, pp. 104 - 107) and Storbacka (2011, pp. 702-703) regard the development of such a general value proposition in this phase of a VBS process as an opportunity to stimulate general interest for an offering at the beginning of a selling process. Afterwards, such a pre-crafted value proposition can be adapted to the needs of individual customers, stakeholders or members of a buying center (Töytäri & Rajala, 2015, p. 105). This two-step process ensures on the one hand that the investment of resources at the beginning of a selling process is limited. On the other hand, the second step in particular guarantees that the value proposition is sufficiently detailed and specific to prove persuasive (Anderson et al, 2006, p. 95).

Furthermore, Luotola et al (2017, p. 72) view the demonstration of a value realization potential or a general value promise as the foundation for the development of a fact-based value proposition. The presentation of a general value promise at the beginning of a selling process presents an additional opportunity to enhance the level of trust between the buyer and seller. It may be regarded as the result of the value analysis for a specific customer segment in the 'general value analysis' step of the pre-selling phase.

In contrast to the previously mentioned scholars, Terho et al (2012, p. 172) arrive at a different assessment of the importance of formulating a general value realization potential and an individual quantified value promise for customers. The presentation of a value realization potential at the beginning of a selling process is not explicitly stated as a separate process step. These researchers also indicate, that an individual quantification of the offered value from a solution is not always required. It reveals that the communication of the value potential of a solution is of higher importance than the creation of an individual model which is not based on verified and reliable numbers. The presentation of a total value impact is especially important in situations in which the impact of a solution on the customer organization cannot be quantified precisely (Terho et al, 2012, pp. 178, 182).

The VBS process description by Terho et al (2012, p. 183) and Töytäri et al (2011, p. 497) view it as important to identify problems in the organization of the customer. This activity helps to raise a customer's awareness of the value realization potential of a solution. Additionally, it aids the development of the individually quantified value promise of a solution.

A preliminary understanding of potential problems for customers in a target segment is developed early on, in the pre-selling phase. At the beginning of the direct selling phase it is important to perform a problem analysis for customers individually. An intensive interaction between the customer and the potential supplier in such a phase of a selling process helps this process (Luotola et al, 2017, pp. 72-73). Additionally, it is important to understand the different natures of different types of problems.

On this subject, Dorst (2007) identifies three discrete problem categories which can be identified in the organization of a customer in a VBS process: determined, underdetermined, and undetermined problems. Customers are aware of determined problems, which include facts, goals, or business processes of the customer. Based on such explicit problems, potential suppliers need to demonstrate that they have the requisite capabilities to solve these problems. In contrast to determined problems, underdetermined and undetermined problems are not defined or are ill-defined at the beginning of a selling process. Suppliers need the competence to identify such problems. In such a situation, the selling organization acts as a designer of value. Undetermined problems are difficult to locate and are unexpected by the customer at the beginning of the selling process.

In such situations, value drivers of an offering can be viewed by various members of a decision-making in different manners. Moreover, suppliers need to formulate strategies in order to deal with unexpected situations. When underdetermined problems occur, selling organizations operate as designers of value. Raja et al (2020, p. 149) states that companies who apply VBS conduct audits in the organization of the customer in order to identify different types of problems. This becomes the basis for adding value to the organization of the customer.

Scholars such as Luotola et al (2017, p. 73) also view the identification of problems as an essential element of a VBS process. They refer to a number of previous scholars who have described VBS as a process for handling uncertainty in the organization of the customer, especially concerning the identification of underdetermined and undetermined problems. Therefore, one essential objective of a VBS process is the development of certainty in the organization of the customer. In case of underdetermined and undetermined problems, the buyer and the seller have not generated any ideas concerning required elements of a solution at the beginning of a VBS selling process. The development of a strategy to master these situations is the core idea of VBS, according to Luotola et al (2017, p. 72). It can be summarized as an opportunity to co-create value in a selling process. Value co-creation is seen as an approach in which the buyer and seller develop a mutual solution for a problem (Vargo & Lusch, 2004, p. 3). At the beginning of such a process, uncertainty is created by the identification of previously unseen problems. Towards the end of the selling process, however, certainty is created by the development of an individual solution which resolves the problem. Luotola et al (2017, p. 73) suggest using design thinking in order to solve unidentified, ill-formulated problems in the organization from the customer. The objective of design thinking in this context is to create technically and economically feasible solutions for the customer.

On the subject of value co-creation, Töytäri (2015a, pp. 257-258) has refined the idea developed by Töytäri et al (2011, pp. 497-501) in order to generate mutual objectives at the beginning of such a process. Prior to the presentation and quantification of the individual value promise, it is vital to create a shared vision of a solution in the customer organization, i.e. a common understanding concerning the importance of solving or improving a specific situation in the customer organization. This is especially important in situations in which different stakeholders have significantly different views, perceptions, and goals.

This researcher also highlights the importance of changing the views of various stakeholders in the early phases of a selling process. Sales organizations seek to influence the customer's vision of the solution in a desired direction. Areas where the supplier has the opportunity to improve the value potential better than competitors can, must be emphasized. This is viewed as an essential measure for eliminating competitors in the customer buying process. Töytäri (2015a, pp. 257-258)

Ultimately, it may be concluded that the mutual identification of problem areas and the co-creation of an offering for these problems represents an opportunity to create a unique selling proposition as an organization during a selling process. It is also an important element of the VBS process, especially when the selling company seeks to position themselves as a problem-solver, as this positioning indicates that underdetermined and undetermined problems have been detected. Activities such as design thinking may become essential elements in the presentation and definition of value realization potential in the VBS framework (Luotola et al, 2017, p. 69). Schaefers, Ruffer, and Böhm (2021, p. 472) also state that such an in-depth collaboration between two parties forms the foundation for the development of a performance-based contract.

4.3.7 Presentation of the individual quantified value

The previously mentioned elements of the holistic VBS framework supports build the basis for the development of a quantified value proposition. This section of the dissertation further explores the importance of presenting an individual value promise more. Additionally, it shows methods for quantifying value.

All the researchers who are concerned with the conceptualization of VBS describe the quantification and presentation of value as the central element of such a selling philosophy (Terho et al, 2012; Lindström 2016; Töytäri and Rajala, 2015; Liinamaa et al, 2016; Luotola et al, 2017; Raja et al, 2020).

Two VBS frameworks describe the value quantification and presentation process in greater detail. Terho et al (2012, p. 182) include these practices in the 'communication of value' phase of their final VBS dimension. The objective of this final dimension is to demonstrate "*the offering's contribution to the customer's business profits*" Terho et al (2012, p. 182).

Even if they do not regard the presentation of an individual quantitative value impact as a necessity in a VBS process, they recommend demonstrating quantified evidence in this phase of the selling process. Furthermore, Anderson et al, (2006, p. 93), Lindström, (2016, p. 68) and Hinterhuber (2004, p. 777) view the creation of evidence of the value impact in the form of quantitative numbers to be a key element of the VBS process. Hence it may be considered a success factor for long-term business relationships.

In contrast to the previously mentioned high importance of a value quantification, Töytäri et al (2011, p. 501) describe this activity as just one from a bundle of relevant practices. An especially high importance of value quantification, however, is not explicitly mentioned. This view can be explained by their observation that some customers do not find quantified numbers which are presented by a potential supplier to be credible. This is especially likely to happen in situations in which suppliers lack commitment from the customer to participate in a value co-creation process. This might be based on insufficient understanding of problems in the organization of the customer. (Töytäri et al, 2011, p. 498)

Based on a current analysis of ‘direct selling practices’ it may be concluded that selling organizations are presented with two options to convince the customer of the validity of a value promise:

- Option one is to quantify the general value proposition which was developed for a specific customer segment. This might take the form of a quantification of the general value realization potential. In such a case, sales representatives must convince the customer of the ways in which this general value proposition impacts the organization of the customer. For instance, suppliers can sensitize the customer to the view that the initial purchasing price of a product is only a minor component of the total costs of product ownership.
- Option two includes an adaption of the general value proposition (or value realization potential) based on the individual situation of the customer.

Luotola et al (2017, p. 73) focus their VBS model on selling situations in which novel individual solutions are designed. Therefore, this approach is especially suitable for the previously mentioned option two. Such a process must be initiated by the presentation of the value potential of a potential solution. This is the basis for the development of a framework for designing a solution to a problem.

In turn, such a solution framework forms the basis for the development of a business case. It also must be verified by the customer and the potential supplier. This situation is characterized by Luotola et al (2017, p. 74) as a ‘problem-solution fit’. Afterwards, a quantified individual value proposition is developed for the specific business case. A crucial element of such a process is that the customer shares business information with the supplier to a greater extent in comparison to other VBS approaches. Especially in situations in which new and innovative solutions are generated in cooperation with the customer, it is important to manage the risk level associated with the implementation of such a novel solution at the beginning of ‘direct VBS practices’.

Other scholars summarize arguments for the manner in which a two-step process might lead to a higher success rate in VBS processes. Value propositions which take specific issues, concerns and drivers of the business of potential customers and their stakeholders into consideration, are described as being more effective (Töytäri & Rajala, 2015, p. 102). In such a case, the development of a value proposition must be aligned with the individual objectives of the customer. This can be accomplished through the incorporation of key performance indicators (KPIs) into the individual value promise. This results in a more reliable demonstration of how an offering positively impacts a customer’s revenue and/or cost structure (Töytäri & Rajala, 2015, p. 105). On the same subject, Liinamaa et al (2016, p. 37) and Raja et al (2020, p. 150) also highlight, that performance drivers display significant variation among different customers. A dynamic development of the importance of different KPIs in the organization of the customer must be taken into consideration as well. These findings, however, serve to complicate the individual and targeted formalization of the value impact. Additionally, it is vital for selling organizations to highlight elements of a value proposition which differentiate their offering from that of the competition. (Töytäri and Rajala, 2015, p. 107)

The previous sub-chapter describes the versatility of the concept of value. The manner in which value is perceived in the customer organization is further evidence for a quantified and customized value proposition (option two) having a more powerful impact than the presentation of a general, vague value promise. Töytäri et al (2011, p. 494) summarize the following descriptions of value in the academic literature: Value is “*subjective, customer-focused, evolving over time, contextual, and subject to other alternatives*” (Töytäri et al (2011, p. 494).

Certain attributes of an organizational buying process increase the difficulty of managing the concept of value in B2B selling processes. This buying process is characterized by the involvement of multiple decision-makers on different hierarchical levels. This may lead to varied readings of the relative importance of decision criteria among members of the buying center as well as diverging individual goals (Wind & Webster, 1972, p. 15). In turn, this may lead to divergent perspectives on the value propositions of an offering. On the other hand, this aspect may be regarded as an indicator for the importance of creating individual, customized value propositions.

Töytäri and Rajala (2015, p. 106) adds that value in business situations is future-oriented. Potential cost savings or value realization potentials are realized throughout the total lifecycle of a solution. This characteristic increases the perceived level of risk which is associated with a purchase of a product which requires a high initial investment. On the same subject, Lamming, Philips, & Caldwell (2003, p. 556) note that the perception of the value of an offering is influenced by the current quality of the relationship between the parties in the transaction. This cognition corresponds with the previously described finding, that well-established healthy relationship between two companies is an essential pre-requisite for the implementation of VBS. (Terho et al, 2012, p. 177; Lindström, 2016, pp. 82 - 84)

The value quantification and presentation process

The development of a value promise which visualizes the impact of an offering on a customer's key performance indicators is one method for increasing the effectiveness of a value proposition. Hinterhuber (2017, p. 172) recommends presenting the total impact of an offering on the customer organization. Yet the involvement of a substantial amount of quantitative value elements is perceived as challenging. This view is based on the circumstance that various elements of a value proposition are less tangible than others and thus more difficult to quantify. This aspect has been gaining in importance recently due to the rise in the number of key intangible digital services on the market. Hence, it may be concluded that the presentation of the total value impact has the task of transforming the intangible nature of service elements into a tangible value realization potential. (Classen & Friedli, 2019, p. 4)

Additionally, less tangible value elements may influence customer KPIs in multiple respects. This increases the need for developing different scenarios in order to demonstrate the versatile impact of an offering (Töytäri & Rajala, 2015, p. 110). In this context, Liinamaa et al (2016, p. 43) discusses the necessity of conducting a detailed mapping of the value function in order to illustrate the value impact in multiple respects. They also view such a mapping as the basis for establishing a negotiation framework in subsequent steps of the selling process.

Furthermore, in the academic discourse, there is an ongoing debate as to the number of value elements which should be communicated to the customer. Töytäri and Rajala (2015, p. 106) observes that value propositions featuring a high or a low number either a large or a small amount of value dimensions are communicated to customers.

Access to data and information is an essential pre-requirement for the quantification of value. Pöyry et al (2021, p. 355) reports difficulties in obtaining the required data for individual value calculations. Concerning the quantification of a value realization potential in production processes, Töytäri and Rajala (2015, p. 108) observed that sensors may be installed on products in order to measure performance indicators. This can be performed prior to the installation of the new solution in order to calculate the performance of the current solution. The installation of such sensors after the implementation of a new product helps to verify the value of the new offering. Classen and Friedli (2019, p. 4) identify the increasing importance of building the appropriate IT infrastructure in order to manage the enormous amount of complex data to be dealt with.

Lindström (2016, pp. 80 - 82) identifies two models which demonstrate the impact of a solution on the customer organization. The NVP calculation takes expected benefits and costs during the total life cycle of a solution into consideration. In contrast, the PENG² Model calculates the net cash flow of a solution for a specific period. The calculation of NVP first requires a calculation of the value according to the PENG² model for each time period (e.g. one year) in the total life cycle of the solution.

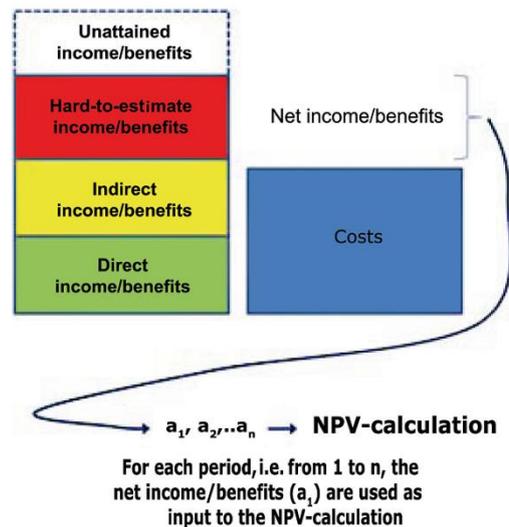


Figure 13: PENG² Model – Calculation of the financial impact on customers
 Source: Lindström, 2016, p. 82

The PENG² model divides the value impact of a solution for a customer organization into four different categories: direct, indirect, hard-to-estimate, and unattained value components (Lindström, 2016, pp. 83-84). Direct benefits include value elements and hard facts, i.e. those which are easily quantifiable. A comparison with value models focusing on different dimensions leads to the conclusion that process-oriented operational value elements in particular (e.g. lower costs or higher output) may predominantly be classified as direct value components (Töytäri et al, 2015b, pp. 60-61). Secondly, indirect benefits are those which are currently not quantified in a customer organization. According to Töytäri et al (2015b, pp. 60-61), these benefits may be regarded as the most strategic value dimension. Examples include the development of new capabilities or the enhancement of existing ones in the customer organization through the support of the selling organization. The probability that these elements will need to be identified and quantified in a value quantification process on a more frequent basis, is somewhat higher compared with operational value elements. Thirdly, Töytäri et al (2015b, pp. 60-61) state that social and symbolic value dimensions are primarily hard-to-estimate value components. Examples would be the positive impact of an offering on the brand or image of the customer organization. Finally, the realization of unattained benefits requires the flawless execution of an offering in the customer organization.

Moreover, the PENG² model takes the cost structure of an offering into account. The cost structure of the offering is influenced by the type of product, service elements, or the mix of these two parts of a solution in an offering.

Tangible products have the tendency to generate higher initial purchasing costs, whereas service offerings or service components of a solution have the tendency to generate higher annual costs, as is the case with leasing or subscription costs. In the case of a complex combination of product and service elements, it is even more important to reduce the perceived level of risk for the customer. (Lindström, 2016, p. 81)

All of the previous components combine to influence the net income of an offering. Additionally, the net income is shaped by the implementation level and extent of usage in the customer organization. Subsequently, NPV is calculated for individual time periods. Ultimately, the PENG² model represents the net income for the total life cycle of a product.

In general, it can be concluded that the quantification of a value is challenging for selling organizations. This conclusion is based on the fact that numbers and data must reflect the individual requirements and needs of the customer (Raja et al, 2020, p. 149). Keränen and Liozu (2020, p. 89) report that the establishment of a core value team helps to manage this critical and complex process. This team educates and supports other organizational entities, such as the personal selling department.

4.3.8 Specification and definition of a final offering

The previously described elements of a holistic VBS framework contribute to the quantified value promise of an offering for an organization. Especially in complex market environments and B2B/B2G customer segments, it is vital to specify various elements of an offering. Several statements in academic articles lead one to draw the conclusion that a specification and definition of a final offering is becoming more important. This results in the definition of a separate process step in a holistic VBS framework.

Several trends in organizational markets are driving the importance of conducting this process step more frequently. Sisakht (2015, pp. 4-5) describes the increasing leverage of buying organizations, especially in B2B segments. This leverage is enhanced by an increasing level of competition and the more ready availability of information from online sources.

A further consequence of this trend is an increasing demand for more individualized and customized solutions. Moreover, the tendency to develop multiple approaches to resolving a problem in VBS enhances the importance of clarifying the components of a final offering towards the end of such a selling process. According to Lindström (2016, p. 87), the development of customized offerings requires a specification of product components which are needed by the customer. Subsequently, it is vital to identify exactly which elements of the offering generate benefits for the customer. Based on these findings, it is important to determine the activities which need be performed in order to guarantee the value impact of the solution. Furthermore, in this context Lindström (2016, pp. 84-85) recommends developing different scenarios in order to demonstrate how different parameters influence the customer organization.

Luotola et al (2017) regard such a specification of an offering as an essential element of the VBS process, especially in a selling process where value is co-created between the buyer and the seller through the identification of wicked problems, i.e. complex challenges. They also add that this process step includes clarification of a new solution's potential financing. This financial aspect is especially important in situations with large investments and high market risks. Luotola et al (2017, pp. 13-14) also reports that the role of the customer organization during the implementation of a solution must be clarified. This increases the importance of establishing strategies concerning how information on the usage of a new product and its impact on other areas of the organization is to be distributed among the customer's employees. This aspect must be incorporated into this step of the selling process as well.

4.3.9 Negotiation of the price and contracting.

This part of the VBS selling process displays overlap with selling approaches which do not include consultancy elements or which do not require strategic practices to such an extent. The negotiation of the final selling/purchasing price and the establishment of a final contract are key elements of all selling situations. In fact, they may be regarded as mandatory elements of personal selling. This forms the basis for establishing it as a separate step in the new VBS framework of this dissertation.

Specific value-oriented negotiation practices and traditional negotiation strategies are summarized in the academic literature in a VBS context. Töytäri et al (2011, p. 500) describe the negotiation of the offering as the penultimate step in their VBS model. Luotola et al (2017, p. 68) observe standard negotiation procedures in B2B selling and buying processes. In such standard procedures, negotiations take place between sales representatives of a potential supplier company and members of a purchasing department from a potential customer. Legal aspects of a contract are hammered out on after commercial agreements. Luotola et al (2017, p. 64) observe problems in justifying a high selling price until the customer has acknowledged the value of the offering in the negotiation phase. This underscores the view of Töytäri and Rajala (2015, p. 9), who regard the perceived value of the customer as the reference point for the negotiation of the price in B2B selling processes.

In contrast to standard negotiation procedures, VBS processes according to Luotola et al (2017, p. 68) and D'Andrea (2005, pp. 22 – 24) use a value-oriented focus to formulate key principles for price negotiations. A value-orientated positioning is viewed as an essential step prior to price negotiation. To accomplish this, it is recommended to highlight strategic advantages, such as the impact on success in the market, or the impact on the customer's profitability). This affirms the decision to employ the four-dimensional value construct proposed by Töytäri et al (2015b pp. 53 - 55) for the development of arguments to justify a higher price. Additionally, Töytäri et al (2015b, pp. 53 - 55) recommend defining high price targets in advance of the negotiation. A price reduction in a negotiation process may damage the established value promise of the solution in the mind of the customer. Sales representatives need confidence in the total value realization potential of an offering in order to avoid an ill-considered, hasty reduction of the selling price. Potential concessions must be defined prior to the price negotiation. Sales representatives should also keep the 'needs' rather than the 'wants' of the customer in mind. A high level of quality, a trustworthy product, and convenient service elements are desirable benefits for customers, even if they request an urgent price reduction.

The negotiation and contracting phase in a VBS process is substantially influenced by the decision as to whether a performance-based contract must be drafted or not. Liinamaa et al (2016, pp. 37, 41, 43) regard the creation of a performance-based contract (PBC) as a critical element of a pricing strategy which is based on the delivered value of a solution to the customer.

Such a contract includes measurable performance standards with a focus on the impact of the offered solution on the organization of the customer. Generally, such contracts include variable elements (non-monetary and/or monetary) and do not include a fixed price rate.

From a legal point of view, formulations in the contract must be unambiguous and clear for all parties involved in the deal. It must facilitate a mutual understanding of the rights and obligations of both partner organizations. Moreover, the definition and implementation of measurement producers is important in order to monitor the development of KPIs prior to and subsequent to the implementation of a solution in the customer organization. Additional important elements of a PBC include economic feasibility and transparency, especially concerning the exact estimation of the impact of an offering on performance indicators. On this subject, Schaefer et al (2021, pp. 472- 473) also describe the importance of generating an in-depth analysis of the customer's situation prior to the formulation of such a contract. Thus, it may be concluded that the development of a performance-based contract can be viewed as a method of establishing the unique positioning of a company on the market through the demonstration of market know-how. Reviewing reference cases and previous experience help to demonstrate the market competence of a potential vendor and of individual sales representatives. This is especially true with regard to the combination of engineering and business market know-how. (Schaefer et al, 2021, p. 472)

Researchers have revealed various challenges which are associated with the drafting of performance-based contracts. Töytäri et al (2015, p. 62) and Liinamaa et al (2016, pp. 44-45) note that the drafting of a performance-based contract might be a barrier for the usage of VBS. Liinamaa et al (2016, pp. 44-45) report that this process is difficult to communicate to people in a buying organization who have the authority to negotiate such contracts. In many selling situations, the implementation of such pricing models requires final approval from top managers of the customer organization. Additionally, it is important to involve legal experts in the process. Researchers regard the lack of baseline data for the customer organization as a further obstacle associated with the development of PBC. Töytäri et al (2015, p. 59) relate a high level of risk which is associated with the establishment of such a contract for the selling organization. Based on the complexity of solutions in the B2B or industrial areas, it is difficult to describe the direct impact of an offering on customer performance indicators.

In addition to factors which have a direct impact on the performance (e.g. purely technical specifications), additional environmental forces such as market conditions, pricing strategies of competitors, and other operational elements in the organization of the customer may impact the individual performance of processes as well.

Moreover, the costs for the development of a performance-based contract should not be underestimated. Investments into developing an infrastructure for data exchange are required as well. Ultimately, it may be concluded that the preparation of such a contract requires intensive information exchange (e.g. technical specifications and more detailed plans) between supplier and customer. However, this provides customers with the opportunity to inquire about offerings with the same specifications from other potential suppliers. Such a situation presents a problem for companies who act as innovators on a market, a role which entails high fixed costs and investment. This aspect has to be taken into consideration in negotiation processes. (Liinamaa et al, 2016, pp. 45-46)

Liinamaa et al (2016, p. 46) describe the process of PBC preparation in the value-oriented selling process. It helps to overcome the previously described obstacles. The process begins with an explanation and definition of the steps which are needed for the drafting of a final PBC. Subsequently, it is important to develop a framework for the intended pricing model and define the extent of the information exchange between both parties. At the final stage of the process, obligations for both contract partners in the negotiation are specified. A smooth integration of new products into the customer organization and the avoidance of production stops are important prerequisites for the preparation of a PBC (Schaefers et al, 2021, p. 473).

4.3.10 Value exchange

A selling process which is based on the development of a long-term relationship between a potential supplier and a customer does not end after the contracting phase. This view is supported through findings of scholars who have investigated the development of VBS process models.

Anderson et al (2006, p. 96) emphasizes the importance of receiving and documenting the value which is created through the implementation of a new solution in the organization of the customer. The last step of the VBS selling process model according to Töytäri et al (2011, p. 501) includes documentation of the impact of a solution on the customer

organization. It affirms the positive contribution of the vendor to economic issues of the customer. This activity may be regarded as a key factor which leads to a shift from a transactional to a long-term relationship.

Also, suppliers benefit from such an activity in various respects, such as the development of reference cases which are used in subsequent selling processes, the importance of which has already discussed in this paper. Töytäri and Rajala (2015, p. 8) consider the verification of value to constitute a separate element of the leverage phase in their VBS model. The development of a business case is the final step of a VBS process. This process step also enhances value capture capabilities of the selling organization, especially concerning the identification of the earning potential of customers. It requires the development, implementation, and refinement of tools for the verification of value. Companies with experience and expertise in the area of VBS verify the value of the offered solution more frequently than selling organizations with less experience. (Töytäri and Rajala, 2015, p. 8)

5 Methodology

After a characterization of VBS in organizational buying markets in the previous section of this dissertation, the objective of the methodological section is to identify the relevance and importance of various VBS activities for the medical device market in Austria.

In order to create a broader, more holistic understanding of a specific topic area, Hesse-Biber (2010, p. 5) suggests employing mixed-method research design. Such a research approach comprises the collection of both qualitative and quantitative data (Hesse-Biber, 2010, p. 5). Creswell and Plano Clark (2018, p. 4) highlight the importance of integrating and combining results from qualitative and quantitative findings.

Creswell and Plano Clark (2018, pp. 65-66) differentiate between three different core mixed-method research designs. The concept of a convergent design the combination of quantitative and qualitative information from the data collection process. Results from both data collection processes may be combined in order to achieve greater confidence in the validity of the findings. In contrast to convergent design, Creswell and Plano Clark (2018, pp. 65-66) identify two sequential mixed-method research approaches. A study which is based on an explanatory sequential design uses exploratory qualitative data to investigate and interpret descriptive quantitative information. Exploratory sequential research designs start with the collection of qualitative data prior to conducting a quantitative survey. Data from the first part of the data collection process are used to structure and focus the quantitative data collection process. Creswell and Plano Clark (2018, pp. 85-86) summarizes that exploratory sequential research designs may be used to develop activity plans or new products. Qualitative information may be used to create quantitative measurement instruments, to identify the relative importance of variables which were previously investigated in the literature, or to investigate a situation in greater depth (see figure 14).

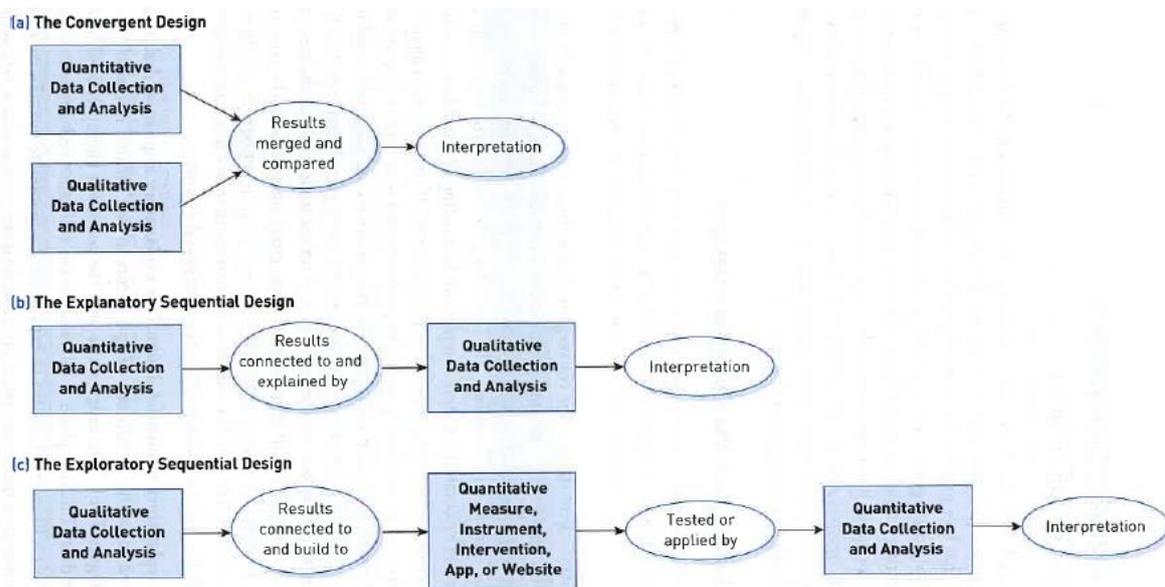


Figure 14: Core multi method research designs
Source: Creswell & Plano Clark, 2018, p. 99

An in-depth analysis of the literature in the area of VBS selling which is found in chapters three and four of this paper has identified a wide variety of activities and practices which may be applied. Yet a quantitative analysis of the relevance of all selling activities which can potentially be used for the medical device sector would result in a rather long questionnaire, which could result in indeterminate findings possessing low relevance for this industry sector. Therefore, the objective of the first data collection method in this paper is to identify the importance and relevance of various activities in a B2B/VBS process for the medical device industry. It should also provide insights about how VBS activities are applied in this market segment. Qualitative in-depth interviews with experts from the industry have been conducted in order to explore the topic in greater detail. The collected information is used to assist in the development of a focused, precise questionnaire for a quantitative survey of employees in sales and sales-related functions in the medical area. Ultimately, it may be concluded that an exploratory sequential research design, such as that described by Creswell and Plano Clark (2018, pp. 85-86), is the most appropriate approach in order to attempt to answer the central questions of this dissertation. Figure 15 shows the structure and core elements of such an exploratory sequential mixed-method design.

Basic procedures of an exploratory sequential research design					
Step 1	Design and Implement the Qualitative Strand		Step 2	Use Strategies to Build on the Qualitative Results	
	<ul style="list-style-type: none"> • Determine the qualitative approach • Identify the sample • Collect qualitative data • Analyze qualitative data 			<ul style="list-style-type: none"> • Test of the quantitative data collection instrument • Refine quantitative research questions and hypothesis • Determine the selection of the quantitative sample 	
Step 3	Design and implement the Quantitative Strand		Step 4	Interpret the Connected Results	
	<ul style="list-style-type: none"> • Finalization of the research question and research hypothesis • Selection of the quantitative sample • Collection of primarily closed-ended questions • Quantitative data collection 			<ul style="list-style-type: none"> • Summarize and interpret the qualitative results • Summarize and interpret the quantitative results • Discussion how quantitative results can be generalized 	

Figure 15: Overview of exploratory sequential mixed methods design
Source: adapted from Creswell and Plano Clark (2018, p. 88)

The following two sub-chapters consists of a detailed description of the qualitative and quantitative data collection approach in this exploratory sequential research design.

5.1 Qualitative research

Creswell and Plano Clark (2018, p. 88) describe the investigation of the qualitative stand as the first step to an exploratory sequential research design. This step includes all relevant elements of a qualitative research approach. In addition to the construction of a central qualitative research question, a sampling strategy, and a research strategy for answering the research question, must be developed.

Bryman and Bell (2015, pp. 395 – 397) describe the procedure of a qualitative research approach in greater detail. Based on an analysis of the academic literature in this topic area, they specify six discrete components. The first element corresponds with the process description by Creswell and Plano Clark (2018, p. 88) and consists of the construction of a general research question. Subsequently, this study design requires the definition of the characteristics of interviewees (step 2) prior to the collection of relevant data (step 3). Examples of qualitative data collection methods include qualitative in-depth interviews, focus groups, and observation techniques.

Bryman and Bell (2015, p. 396) regard the inductive grounded theory approach as an appropriate example for the interpretation and analysis of data (step 4) towards the end of the process. The next step of the research approach (step 5, theoretical work) extends the knowledge in a specific topic area. This element of the process may involve the development of a theoretical model. New perceptions which arise during the data collection process may result in a revision or refinement of the research question. The findings and conclusions of these process steps are summarized in the last element of this research approach (step 6). The following pages provide an overview of how these process steps are applied in this study.

(1) Research Question:

Saldaña (2011, p. 68) recommends conducting a literature review prior to the collection of primary qualitative data. This initial step helps to develop a profound level of knowledge about a topic area. In this work, findings from the academic literature in the area of VBS build the basis for the qualitative data collection process. As was mentioned in the introduction of this chapter, the objective of the first 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 research questions:

Qualitative research question 1:

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

Qualitative research question 2:

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

(2) Sampling

The second step of a qualitative research approach is to identify participants for interviews who have the knowledge and competence necessary to produce adequate responses to the research questions.

Probability sampling would allow a generalization of the results. Such a generalization of findings is not required in the first step of an exploratory sequential multi-method research design. Therefore, other sampling techniques may be applied in this part of the dissertation. Bryman and Bell (2015, pp. 428-430) describe purposive sampling as an appropriate sampling method for qualitative data collection. Bryman and Bell (2015, p. 408) characterize this sampling method as a form of non-probability sampling. Interviewees are chosen in a strategic manner.

Bryman (2015, pp. 408 - 415) differentiates between three different types of purposive sampling methods: theoretical sampling, snowball sampling, and generic purposive sampling. Theoretical sampling is used for studies whose main focus is on the development of new theories. In snowball sampling procedures, researchers identify several appropriate respondents for the data collection process. Recommendations from these respondents help to expand the sample size. This sampling method is used in situations in which it is difficult to identify potential interviewees. Generic purposive sampling is described as a method which requires the initial clear definition of criteria for the selection respondents.

Bryman (2015, p. 414) views generic purposive sampling as an appropriate method for qualitative elements of mixed methods research. Therefore, 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.

Knowledge derived from experts is required in order to collect valid information. Bogner, Littig and Menz (2002, p. 45) define experts as interviewees who have practical experience and knowledge in a specific topic area. Therefore, the precise formulation of selection criteria for potential interviewees guarantees that they can be expected to contribute to the core issue of this research element. Moreover, Bryman and Bell (2015, pp. 428-430) add that the central research question must act as a guide for the selection of the interviewees.

Hence, the following two selection criteria were defined:

- **Work experience:** Participants have to have at least seven years of work experience in the medical device industry on the Austrian market, particularly in sales or sales-related functions. Examples include job positions involving ongoing customer contact such as sales representatives, sales managers, market managers, sales-oriented product managers, marketing managers, and business development managers. Seven years of professional experience ensures that experts have the necessary competence to understand the needs and problems of different customer groups and to be familiar with the positioning and importance of relevant stakeholders. Additionally, such experts have spent a sufficient length of time in the industry to have observed trends and developments in the market. Ultimately, it may be concluded that this selection criterion also ensures that interviewees have gained ample practical experience, which is viewed as an essential quality for an expert to possess, according to Bogner, Littig and Menz (2002, p. 45).
- **Knowledge about value communication in the selling processes of the medical device market in Austria:** Participants must have experience in creating or applying selling strategies with a focus on a holistic communication of the value which a solution offers to a customer. Therefore, they require the experience of gaining an in-depth understanding of the customer's situation, of communicating the total value, and implementing strategies to increase the final selling price. They must have either functioned as an active member of a selling team (e.g. as a sales representative or product specialist) or been involved in the development and implementation of such sales activities in a strategy. Examples include functions in a company which establish selling strategies for sales departments (e.g. market management, business development, and product management). These criteria ensure that interviewees have the necessary knowledge about the topic area in order to be classified as an expert, according to Bogner, Littig and Menz (2002, p. 45).

(3) Sample size

Bryman (2015, pp. 416 - 418) has concluded that a narrow scope of a qualitative study and the absence of different respondent groups require a smaller sample size. He also summarizes recommendations from other authors who suggest a minimum number of five or twelve interviews in qualitative research projects. Based on the selection criteria, it may be concluded that the population of the sample is rather homogeneous. Additionally, the research questions in this part of the dissertation may be described as specific. Both elements substantiate the decision to implement a smaller number of interviews in this research context.

(4) Data collection:

Interviews are considered to be the most popular data collection method for qualitative research approaches, whereby it must be differentiated between unstructured and semi-structured interview approaches. Unstructured interviews are similar in nature to natural conversations, including a very small number of pre-defined questions. Interviewees speak virtually freely about a specific topic area. In contrast to such a flexible interview approach, semi-structured interviews include a higher amount of pre-defined questions or different topic areas. Questions concerning these topic areas are summarized in a set of guidelines. This interview approach also guarantees flexibility for the interviewer. Questions may diverge from the exact formulation, and question order may be improvised. Such a flexible nature allows the interviewer to identify insights and feelings of the respondent (Bryman, 2015, pp. 466 - 469). Mayring (2016, p. 67) also sees a similarity between semi-structured interviews and natural conversation. Additionally, he suggests developing topic areas for a semi-structured interview guideline based on an analysis of the literature.

In this study a semi-structured interview guideline was employed as the basis for the collection of qualitative data. The interview guidelines consist of four different parts:

- Part A: The introduction of the interview helps to identify whether interviewees fulfil the predefined criteria for an expert or not. The first question specifically deals with the career of the interviewee in the medical device industry. The first part of the interview guidelines also aids in identifying the understanding of VBS which a respondent has acquired. It also helps to identify relevant VBS elements and components of definitions for this industry sector. Additionally, it assists in understanding the relevance of value-oriented selling approaches for medical devices.
- Part B: The second part of the interview guidelines deals with strategic decisions and activities which are primarily performed prior to initial customer contact. It investigates selling situations which are suitable for the application of VBS. Various scholars regard the development of an in-depth understanding of the customer and the formulation of a value proposition to be elements of such a pre-selling phase (Töytäri et al, 2011, p. 501; Terho et al, 2012, p. 182; Luotola et al, 2017, p. 72). Additionally, this part of the interview guideline identifies the manner in which such activities are applied in the medical device industry. Finally, the relevance of strategic, operational, social, and symbolic value dimensions according to Töytäri et al (2015b, pp. 54-55) for this industry sector are included in this part of the guidelines.
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- Part B: The second part of the interview guidelines deals with strategic decisions and activities which are primarily performed prior to initial customer contact. It investigates selling situations which are suitable for the application of VBS. Various scholars regard the development of an in-depth understanding of the customer and the formulation of a value proposition to be elements of such a pre-selling phase (Töytäri et al, 2011, p. 501; Terho et al, 2012, p. 182; Luotola et al, 2017, p. 72). Additionally, this part of the interview guideline identifies the manner in which such activities are applied in the medical device industry. Finally, the relevance of strategic, operational, social, and

symbolic value dimensions according to Töytäri et al (2015b, pp. 54-55) for this industry sector are included in this part of the guidelines.

- Part C: The third part of the semi-structured interview guidelines deals with the applicability of various direct VBS selling activities for the medical device industry. This part addresses the quantification, visualization, and calculation of the value impact for the customer, activities which distinguish VBS from other selling approaches (Terho et al, 2012, p. 182). It also investigates how VBS helps to enhance the selling price and the probability of closing a deal with a customer. The role of the procurement department in particular is discussed at the end of this part.
- Part D: The final part of the guidelines investigates the importance of selling activities after purchase by the customer. Various VBS processes explicitly state that the verification of value is the last step of the selling process, e.g. Töytäri et al (2011, p. 501) and Töytäri and Rajala (2015, p. 104).

An English version of the interview guidelines was developed in March 2021. A draft version of the guidelines was tested by means of in-depth interviews with two experts, both of whom have experience in research and personal selling. Subsequently, the revised interview guidelines were translated into German. The final interview guidelines were used for the data collection process. The final version of the semi-structured interview guidelines in English and German is added to Appendix B.

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. Context and semantic transcription rules according to Dresing and Pehl (2018) were applied for the production of the transcript.

Table 1 provides an overview of the qualitative expert interviews. Relevant criteria for the definition of experts are summarized and documented on the table.

	Work experience in the medical device sector	Relevant positions	Interview language	Length of the interview
Interviewee A:	13 years	sales representative	German	50 min.
Interviewee B:	18 years	product, marketing, and sales management	German	47 min.
Interviewee C:	19 years	product, key account, and division management,	German	62 min.
Interviewee D:	17 years	marketing management and sales representative	German	43 min.
Interviewee E:	31 years	key account management, sales management, business development	German	35 min.
Interviewee F:	7 years	technical support, sales representative	German	38 min.
Interviewee G:	21 years	product and marketing management	German	57 min.
Interviewee H:	17 years	sales representative	German	26 min.
Interviewee I:	18 years	product, account, and sales management	German	35 min.
Interviewee J:	23 years	general management, consultancy	German	55 min.

Table 1: Overview of qualitative expert interviews
Source: own table

(5) Interpretation of 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.

The structure of this qualitative data analysis approach is described as follows:

- *Step 1: Initial analysis of the text:* During the preliminary analysis of the transcript, researchers mark and analyze important elements of the text. Additionally, Kuckartz (2018, p. 101) recommends writing memos. Such memos include initial investigations of and ideas for the evaluation of the text.
- *Step 2: Development of main categories:* The development of main and sub-categories assists in illuminating the text's structure more clearly. The research questions guide the development of such main categories. In this paper, main categories were developed in a deductive manner. The research question and the existing holistic VBS framework formed the basis for the development of six main categories, as described in Appendix C. (Kuckartz, 2018, pp. 64, 101)
- *Step 3: Initial coding:* Kuckartz (2018, p. 102) recommends the thorough analysis every element of the text in detail. Furthermore, in this part of the analysis process every element of the text is assigned to main categories.
- *Step 4: Development of a summary:* Afterwards, all elements of the text from different interviews are summarized in main categories. Kuckartz (2018, p. 106)
- *Step 5: Development of sub-categories:* Kuckartz (2018, p. 106) describes main categories as relatively broad topic areas. This stage of the qualitative content analysis develops more specific sub-categories in order to structure and cluster the content more thoroughly. The initial analysis process (step 3) is the basis for the development of these sub-categories which are developed for those main categories which have a broad scope.
- *Step 6: Second coding:* The penultimate step of the qualitative content analysis process consists of a second analysis of the whole text. Text elements which are assigned to specific main categories are revised and assigned to sub-categories. The number of sub-categories is influenced by the size of the sample (Kuckartz 2018, p. 110). A description of the sub-categories has been included in appendix D.
- *Step 7: Analysis and visualization:* Kuckartz (2018, p. 118) describes six different opportunities to analyze the text of the interviews. This dissertation consists of an evaluation of different main- and sub-categories. At the close of the analysis process, correlations between different categories are analyzed and visualized. These coherencies and differences are summarized in the next chapter.

5.2 *Quantitative research*

Creswell and Clark (2018, p. 88) recommend collecting quantitative data based on preliminary qualitative results in an exploratory sequential research design. They also describe required work packages for this research approach in detail. Research questions and hypotheses form the basis for development of the data collection instrument. In order to ensure a high level of validity and reliability, it is necessary to develop an appropriate sampling strategy and to refine the questionnaire based on qualitative and quantitative pre-tests. The work package concludes with an analysis and interpretation of the data. All of the required elements from the quantitative part of the exploratory sequential research are described and documented in this section of the dissertation.

5.2.1 *Research questions and hypothesis*

The first qualitative part of the exploratory sequential research revealed approaches for the implementation of various value-oriented selling activities in the Austrian medical device industry. This section of the paper aims to understand the importance of value-oriented selling approaches in this industry more in detail. Additionally, it investigates elements of the VBS process which might impact the success of selling organizations. Moreover, it examines the importance of value arguments. The following research questions 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?

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?

Eight hypotheses investigate the research questions in greater detail. Hypothesis one is concerned with the demand for value by customers in the medical device industry. Six hypotheses (H2 – H6) are related to the quantitative research question one. They investigate whether a correlation among various elements of a VBS process exist or not. Two hypotheses (H7 – H8) examine the relative importance of specific value dimensions and value arguments for customers in this industry sector. These hypotheses assist in answering the quantitative research question two. All eight hypotheses focus on elements of the selling process which are primarily used in value-oriented selling processes. Therefore, the final two steps of the tentative VBS model (step 8: price negotiation; step 9: implementation of the solution) will not be investigated further in the quantitative section of this dissertation.

The importance of VBS for the B2B sector has already been summarized and described in the first part of the dissertation. One objective of the survey is the determination of the relative importance of value-oriented selling approaches in a market which is characterized by B2B and a substantial amount of B2G market segments. Terho et al (2017, p. 46) view the value demandingness of customers as an indicator for the importance of VBS. Additionally, statements by experts in the medical device market which are presented in the qualitative findings of the paper reveal several trends that might be indicators for the increasing importance of such a selling approach in this industry sector. It may be viewed as a means of developing a competitive advantage. Examples of such trends include an increasing number of competitors, a greater number of similar products, a higher demand for service components, and the increasing clout of procurement departments in decision-making processes. Hence, the first hypothesis is concerned with the value demandingness of customers in the medical device market in Austria.

H₁: Health care institutions have a high value demandingness towards medical device companies in Austria.

The second hypothesis investigates whether or not it is important to employ different selling strategies for different customers. An analysis of the academic literature indicates that a VBS requires additional resources (Toytäri et al, 2011, pp. 499 – 500) and investments (Terho et al, 2012, pp. 183- 184), compared with other selling approaches.

However, Panagopoulos and Avlonitis, (2010, pp. 49, 50, 55) view a prioritization of customers in cases involving the implementation of different selling approaches to be an essential element of the selling strategy for increasing the efficiency and effectivity of selling efforts. It leads to a decision to employ selling approaches of greater or lesser complexity for individual customers.

Findings from the in-depth interviews of the dissertation indicate that the selection of customers for the application a value-oriented selling approach is based on a prioritization of individual organizations rather than the segmentation of different market segments. These elements are summarized in the first step of the tentative VBS model, which is described in the qualitative results of chapter 6. Even if a prioritization of customers for the application of more resource-intensive selling approaches is important for selling organizations, Terho, Haas, Eggert and Ulaga (2015, p. 17) fail to identify a correlation with the performance of sales representatives in the B2B area. Similar results are expected for the medical device industry in Austria as well.

H₂: 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.

The development of a holistic understanding of the customer (e.g. processes in the organization, business issues) is a central element of a VBS strategy (Haas et al, 2012, p. 99). Statements by experts in the qualitative interviews in this paper indicate the high significance of this aspect as well. It thus occupies a prominent position in the tentative VBS model for medical devices, which is stated in chapter 6 of this dissertation. The requirements of customers in the healthcare sector are analyzed in the pre-selling phase (step two) and further developed through direct selling activities (step six). The collection of information from key decision-makers on processes and problems in the customer organization is a central element of this activity. These tentative results are further investigated in a quantitative manner by two hypotheses (H3 – H4) in this thesis.

Hypothesis three investigates whether or not it is important to be familiar with processes, workflows and related potential problems in the organization of healthcare providers in Austria. Kienzler et al (2018, p. 361) subsume these activities in the term “customer comprehension”. The results of the qualitative expert interviews in the first data collection step lead to the conclusion that such “customer comprehension” indeed enjoys high importance in the medical care industry. Kienzler et al (2018, pp. 366, 367) have identified a positive impact of such an activity on the performance of sales representatives in the industrial steel market. This hypothesis is also concerned with the identification of potential problems in the customer organization. In cases involving the identification of problems in the customer organization, experts recommend applying the SPIN questioning selling technique according to Rackham (1988, pp. 73 - 81). This view corroborates the findings of Hinterhuber (2017, p. 168) who considers this questioning technique to be a method of improving VBS output. This questioning technique consists of four different types of questions. Situation questions help to explore the current situation of the customer, while problem questions and implication questions identify potential problems in the customer organization and their negative consequences for the customer. Need payoff questions reveal the impact of a potential solution on the customer. This study reveals that problem and implication questions are used more frequently by the more successful sales representatives. (Rackham, 1988, pp. 67 – 90)

H₃: There is a correlation between the development of customer comprehension and the performance of sales representatives in the medical device market in Austria.

Hypothesis four is concerned with the importance of the networking capabilities of sales representatives in this market. Relationship-building is the first step of direct value selling activities according to the tentative VBS model for the medical device industry (step 5), which is stated in chapter 6 of this dissertation. Several experts from the medical device industry view it as important to identify and involve relevant key decision-makers at customer organizations. In a VBS context, Terho et al (2017, pp. 45, 47, 53) define this sales representative competency as “customer networking ability”. They have revealed a positive impact of such abilities on the selling performance in B2B market segment.

H₄: There is a correlation between the ‘customer networking abilities’ and the performance of sales representatives in the medical device market in Austria.

Hypothesis five is concerned with the role of value visualization tools in value-oriented selling processes in the Austrian medical device industry. The development of support material is an element of the pre-selling phase in the tentative VBS model for medical devices (step 4). Research have identified the great significance of such tools in VBS processes for B2B market segments (Töytäri & Rajala, 2015, pp. 105-106; Terho et al, 2017, pp. 48–50). Statements by the qualitative expert interviews in this thesis generate similar conclusions. In particular, reference cases are considered to be a key tool in this industry sector. Statements by experts also indicate that value calculators are very rarely used in this industry. Hence, the current hypothesis is particularly focused on the “customer references” value visualization tool.

H₅: There is a correlation between the usage of customer references and the performance of sales representatives in the medical device market in Austria.

An analysis by various research (e.g. Terho et al, 2012, p. 183) lead to the conclusion that the quantification and demonstration of value impact is a central element of the VBS process. This finding is also reflected in the tentative VBS model for medical devices (step 7), which is based on the qualitative findings of this dissertation. Hypothesis six is concerned with the role of value quantification in the medical device market. On the one hand, statements by experts in the qualitative in-depth interviews presented in this paper indicate the high importance of presenting customers with a holistic overview of the value realization potential of an offering. On the other hand, it is important to thoroughly discuss specific elements of the value proposition with representatives of the buying center. These results indicate a high probability that a correlation between success in sales and value quantification capabilities exists.

H₆: There is a correlation between high value quantification capabilities and the performance of sales representatives in the medical device market in Austria.

The last two hypotheses involve the development of a value proposition and the importance of specific value components in the Austrian medical device industry. Components of a value proposition describe the exact customer benefits of a solution. (Grönroos & Voima, 2013, p. 147-148; Vargo & Lusch, 2004, p. 12 - 13).

The selling organization's focus on value dimensions and value arguments which are highly relevant for customers builds the basis for a strong value proposition. In the tentative VBS model, the development of a value proposition is based on a general value analysis in the pre-selling phase (in particular, during step 3) and various direct selling practices (especially during step 7). The results of the qualitative expert interviews reveal several value dimensions which may be important for providers of health care services.

They may be viewed as the basis for the development of value arguments and are clustered as follows:

- Cluster 1: The impact of medical device companies on the quality and length of procurement processes by the arrangement of fixed, reliable delivery dates
- Cluster 2: The handling of medical devices (products which are easy to handle, high reliability of products, a reduction in potential complications or handling mistakes with are associated with medical devices, reduction of handling risks for the users of the medical device)
- Cluster 3: The optimization of clinical processes:
 - Cluster 3a: External support by potential vendors in cases involving the optimization of processes in healthcare institutions
 - Cluster 3b: The impact of medical devices on the wellbeing of patients: length of clinical processes (length of a hospital stay/length of an operation/length of the mobilization period) and to prevent patients from infections in hospitals
- Cluster 4: The Impact of medical device companies on the image of the healthcare institution and the image of key medical personnel in healthcare organizations

Some Statements by the experts lead to diverge results in cases involving the importance of different value components and value arguments. This step of the research process further investigates the importance of various value arguments, which are stated in the qualitative results of this dissertation. The four-dimensional value construct according to Töytäri et al (2015b, pp. 54-55) helps to classify value arguments. Primarily operational value dimensions were mentioned in the qualitative interviews (e.g. clusters 1–2). Cluster 3 includes elements of operational value dimensions (Cluster 3a) and social value dimensions (Cluster 3b). Cluster 4 is exclusively focused on social value dimensions.

Töytäri et al (2011, p. 497) view operational value dimensions as the most important components of a value proposition. This corroborates findings from the expert interviews. Statements in the interviews indicate the great importance of value arguments which involve handling aspects of medical devices. Indeed, the straightforward and safe handling of medical devices are considered to be basic requirements. Experts also indicate that value arguments which involve the wellbeing of patients are essential. On the other hand, value arguments for medical devices which are focused on an enhancement of the image of healthcare providers are mentioned less frequently. Therefore, hypotheses seven and eight are formulated as follows:

H7: Value arguments which are associated with the wellbeing of patients are significantly more important than other value arguments in the medical device industry.

H8: Value arguments which are associated with handling aspects of medical devices are significantly more important than those which address the customer organization's image.

5.2.2 Scales and measures

This section of the dissertation explains in detail how different theoretical constructs in the area of personal selling and VBS are measured in this paper. Chiefly scales which are extensively used by researchers in a VBS context formed the basis for the development of the questionnaire.

Hypotheses two through six involve the impact of various selling activities on sales representatives' performance. All of these hypotheses require a calculation of the selling performance by survey respondents. Various research in the area of VBS have associated the impact of different activities of selling organizations on sales performance. Terho et al (2015, p. 19) and Terho et al (2017, p. 53) use a scale for the measurement of sales performance in a VBS context which is based on findings from Homburg, Müller and Klarmann (2011, pp. 70 – 72). The scale has a major focus on quantitative and primarily financial elements such as sales volume, contribution margin, achievement of pre-defined sales targets, and market share in the preceding 12 months. The necessary scale items for this market context were selected based on statements by experts in the qualitative in-depth interviews.

An investigation of sales performance by respondents in the previous 12 months would not be invalid, as it would not take fundamental environmental factors such as the COVID-19 crisis into consideration. The COVID-19 crisis is likely to have a substantial impact on performance, independent of the behaviors of sales representatives. This view is supported by Rangarajan, Sharma, Lyngdoh, and Paesbrugghe (2021, p. 11) who see a fundamental impact of this crisis on personal selling activities. Therefore, the performance of sales representatives in the 12 months prior to the survey (September 2020 – September 2021) and the performance in the 12 months prior to the onset of the COVID crisis (March 2019 – March 2020) is taken into consideration in this study. The average value of all scale items from both time periods is then calculated.

Sales performance in this study is measured as follows:

Compared with other salespeople working for your company, how would you evaluate your overall performance?

(-3 = “much worse” and +3 = “much better”)

- on achieved sales in the 12 months prior to the COVID crisis
- on achieved sales in the last 12 months
- on the achieved total contribution margin in the 12 months prior to the COVID crisis
- on the achieved total contribution margin in the last 12 months
- exceeding the sales targets and objectives that were assigned to me in the 12 months prior to the COVID crisis
- exceeding the sales targets and objectives that were assigned to me in the last 12 months
- selling products with higher profit margins in the 12 months prior to the COVID crisis
- selling products with higher profit margins in the last 12 months
- producing a high market share for my company in my territory in the 12 months prior to the COVID crisis
- producing a high market share for my company in my territory in the last 12 months

The first hypothesis is concerned with the value demandingness of customers in this market. Terho et al (2017, p. 52) measure this aspect using a scale consisting of four question items. This scale is employed in this paper in order to measure the expectations of customers.

On the one hand, it is concerned with the importance of demonstrating the superior value of an offering and the importance of service and support. On the other hand, it considers how potential vendors might help customers to enhance business metrics and business challenges. Question items three and four of the scale by Terho et al (2017, p. 52) explicitly include the terms “business performance” and “business challenges”. Statements by the qualitative in-depth interviews in this paper indicate that customers of medical device companies may expect support from vendors to enhance the quality of work processes in their organization. However, the impact of potential vendors on “business challenges” and “business performance” which is primarily associated with financial measures has gone unmentioned in a medical device context. Hence, it is necessary to adapt the wording of the last two questions to a this context.

Value demandingness in this paper is measured as follows:

To what extent do you agree with the following statements? (1 = I don't agree; 7 = I totally agree):

- Our customers challenge us to demonstrate the superior value of our market offerings.
- Our customers have high expectations for service and support.
- Our customers expect us to resolve challenges in workflows.
- Our customers expect us to make an impact on their medical performance.

The objective of the second hypothesis is to measure the impact on financial performance resulting from the prioritization of customers for the implementation of VBS. In a selling context, Terho et al (2015, p. 20) have adapted findings from Panagopoulos and Avlonitis (2010) in order to measure the construct of prioritization. The scale includes a total of four question items. Customer prioritization in this study is measured as follows:

Please indicate to what extent you perform the following activities (1 = not at all; 7 = to a great extent)

- I prioritize customers based on their reputation to our firm.
- I allocate our resources relative to the attractiveness of the customer.
- I use clear guidelines clear guidelines for qualifying high potential prospects.
- We target our selling efforts based on customers' fit with our value creation capabilities.

The third hypothesis identifies the impact of “customer comprehension” on the performance of sales representatives. The measurement of “customer comprehension” is based on two parts. Part one consists of a four-item scale developed by Kienzler et al (2018, p. 361). The focus of this paper on the medical device industry requires modification of the wording from questions three and four. The term “business model” which is used in question number three is not relevant for a substantial number of customers in this market area, as various institutions such as public hospitals are controlled and financed through governmental institutions. Statements by the experts in the qualitative part of this paper lead to the conclusion that it is more important to understand how customers are financed or supported by different governmental institutions. This finding has been integrated into question item three in order to specify the meaning of this question. Additionally, people who are treated in healthcare institutions are generally referred to as patients rather than customers. This influences the formulation of question four.

The impact on sales performance of having “customer comprehension” is measured as follows:

Which of the following statements best describe your preferred method of analyzing the customer: (1 = does not apply; 7 = fully applies)

- I routinely analyze how customers use our products/service.
- I routinely analyze my customers’ processes.
- I understand my customers’ business model (or I understand how public healthcare institutions such as state hospitals are financed).
- To better understand my customers’ needs, I also try to understand our customers’ patients and their needs.

The second part of hypothesis three is concerned with the impact of the SPIN selling questioning techniques on the performance of sales representatives. The understanding of problems and their impact In order to measure the impact of this questioning technique on the results 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.

The impact of questioning techniques in order to identify customer problems on success in sales is measured by the following questions:

Which of the following statements best describe your preferred method of asking questions during a sales encounter: (1 = does not apply; 7 = fully applies)

- I spend a lot of time asking questions about the customer's current situation (e.g. “How many patients do you treat per year?”)
- I spend a lot of time asking questions about the customer's problems, difficulties, or dissatisfaction (e.g. “Do you have problems with a high number of false alarms by patients?”)
- I spend a lot of time asking questions about the consequences of the customer's problems on her/his operations (e.g. “What effect does this high number of false alarms have on you and your colleagues?”)
- I spend a lot of time asking questions about the payoff of a possible solution for the customer's operations (e.g. “If you had a solution for reducing the number of false alarms, how much time would you save?”)

The fourth hypothesis is concerned with the impact of customer networking abilities on the performance of sales representatives. 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 as well. Healthcare providers in Austria are not associated with the term “firm”. Therefore, the term “customers’ firm” has been replaced by the term “customer organization” in question items one, two and four. The impact of networking abilities on the success of sales representatives is measured as follows:

Which of the following statements best describe your preferred method of analyzing the customer: (1 = does not apply; 7 = fully applies)

- I work hard to identify the relevant key stakeholders for our products and services in the customer organization.
- Typically, I deal with relevant decision-makers for our products and services in the customer organization.
- Typically, the contacts I have in the customer organization make me very effective at working with them.
- Typically, I know a diverse cross-section of people in the customer organization.

Hypothesis five examines whether the usage of reference cases in value-oriented selling processes impacts the performance of sales representatives or not. 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. Two questions from this scale involve organizational aspects of a sales department. This study investigates the impact of VBS activities on the performance of individual people who are involved in selling processes. Therefore, the first and last items on this scale are not included in the questionnaire. Moreover, the term ‘we’ at the beginning of the remaining questions has been replaced by the term ‘I’. The impact of customer references on sales success is measured as follows: Which of the following statements best describe your method of using customer references: (1 = does not apply; 7 = fully applies)

- I use customer references in sales communications to provide evidence of our performance.
- I utilize evidence from our customer references to communicate the value of our products/services.
- I apply customer references to concretize how customers can benefit from our products/services
- I communicate our customer references as a proof of the functionality of our products/services

The sixth hypothesis investigates the impact of value quantification capabilities on the success of salespeople. 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’. Value quantification capability in this study is measured by the following three question items: Please indicate to what extent you do the following activities (1 = not at all; 7 = to a great extent)

- The offerings to the customers are customized based on an analysis of our customers’ needs.
- For each offering made to the customer, I calculate the value that we can provide to the customer.
- An important part of my selling process is to demonstrate the value of our offerings to the customers.

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 previous section of this paper, the new scale measures the importance of specific value arguments.

The following questions were used in the questionnaire:

How do you evaluate the importance of the following value arguments (customer benefits) of medical devices for customers: (1 = not important; 7 = very important)

Procurement processes (cluster 1):

- Assured availability of products
- Fixed delivery dates of products

Handling of medical devices (cluster 2):

- Straightforward handling of products
- High reliability of products
- Reduction of potential handling errors by means of intuitive handling of products

Process analysis (cluster 3a):

- Support customers in the optimization of internal processes

Wellbeing of patients (cluster 3b):

- Reduction of the length of clinical processes (hospital stay / length of an operation / length of the mobilization period)
- Reduction of infections in healthcare institutions.

Image of healthcare institutions (cluster 4):

- Enhancement of the image of healthcare institutions (e.g. by improved clinical processes or fewer mistakes)
- Enhancement of the image of key medical personnel (e.g. support of clinical studies conducted by chief physicians)

5.2.3 Development of the questionnaire

Persons with experience in sales in the medical device market in Austria comprise the survey's target group. The provision of valid answers to the questions requires both knowledge and professional experience in the area of sales in this market. Hence the target group 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. A filter question at the beginning of the survey serves to identify whether respondents possess the required knowledge and experience to provide valid answers to the questions or not. Two additional demographic questions (gender and education level) were added to the questionnaire in order to gain an overview of the participants' profiles. In total, the first version of questionnaire consists of 50 question items.

Regarding questionnaire development, Döring, Bortz and Poschl (2016, p. 407) recommend grouping different question items according to the scope and content of the question. Furthermore, it is vital to rank questions by means of a logical structure, thus the scales used in the study's questionnaire were ranked based on the structure of the VBS process. Findings from the academic literature and the qualitative section of this paper formed the basis for the structure of the questionnaire.

Döring et al (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. Furthermore, Döring et al (2016, pp. 410-415) recommend conducting a pre-test of a questionnaire which does not solely consist of pre-defined scientific scales. The adaption of scales based on the specific requirements of the medical device market as well as the translation of the questionnaire from English to German therefore required such a pre-test. Döring et al (2016, p. 411) also regard a pre-test as an appropriate method for increasing the questionnaire's reliability. Such a procedure involves the evaluation of a draft version of the questionnaire. Hence in this study, three experts evaluated the draft version of the questionnaire. Pre-defined criteria for experts ensured a high quality of the feedback.

The criteria for experts were as follows:

- At least five years' professional experience in the area of personal selling
- Scientific contributions (presentations at conferences, publication of articles in conference proceedings or academic journals)
- German native speaker with an English proficiency level of at least C1

The following objectives were defined for the qualitative pre-test:

- Quality of the scales which are used in the questionnaire; quality of the modifications of the original scales based on the specific requirements of the medical device market
- Comprehensibility and formulation of the questions
- Quality of the translation (from English into German)

Comments on the questionnaire in German and English are documented in Appendix F. This document displays a significant overlap with recommendations by the experts. Following the qualitative pre-test, the questionnaire was tested in terms of its quantitative dimension by 20 additional respondents. This additional pre-test revealed that two demographic questions (gender and educational level achieved) were left unanswered by 12 out of 20 respondents. Therefore, questions two and three were deleted from the draft version. The author then incorporated feedback from the qualitative and quantitative pre-tests into the final version of the questionnaire, which may be accessed in Appendix G.

5.2.4 Sampling

The total number of potential respondents for this survey was relatively small. Around 550 medical device companies in Austria employ approximately 26,500 people (Life Science Austria, 2017). There is no report available which is concerned with the total number of persons who operate in sales and sales-related functions in the Austrian medical device market. Therefore, it was necessary to estimate the size of the target population. PWC (2018, p. 15) reports that approximately 30% of the total number of employees work in sales and sales-related functions in organizations which employ fewer than 99 people. This number includes back office and field workforce, product managers, product specialists and other sales-related functions. The proportion of sales and sales-related jobs in companies decreases to approximately 12% in companies with a total workforce of 100 – 1,000 employees. The medical device industry is characterized by a high number of small companies. Indeed, 95% of such companies are classified as SMEs. A high proportion of these companies employ less than 50 employees (MedTech Europe, 2020, p. 13). In Austria, approximately 70% of companies which are members of AUSTROMED employ less than 50 people as well (AUSTROMED. 2013, p. 3), while roughly 10% employ more than 250 people. Thus the number of sales and sales-related jobs in medical device companies was calculated at 30% of the total number of employees in the industry, resulting in a target population for the survey of approximately 8,000 people. Table 2 shows the margin of error of different sample sizes for this population.

Population Size: 8.000		
Confidence Level	Margin of Error	Ideal Sample Size
95%	5%	370
95%	6%	260
95%	7%	193
95%	8%	148
95%	9%	118
95%	10%	96

Table 2: Margin of error for different sample sizes
Source: own table

Based on the scope and objectives of the paper, it may be concluded that the identification of suitable respondents for the survey would be difficult.

Two types of non-probability sampling methods were employed in this paper. Non-probability sampling methods are frequently used in social research (Döring et al, 2016, p. 305) and business research (Bryman & Bell, 2015, p. 200-210). 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. This approach is considered to be a convenience sampling method. The main characteristics of this strategy are convenient accessibility of respondents and low investment of resources (Döring & Bortz, 2016, p. 305).

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.

The scope of the paper required the development of a web-based survey. Bryman & Bell (2015, p. 682) describe several pertinent advantages of this approach. It minimizes bias on the part of interviewers, the probability of socially desirable answers, and the probability of data entry errors. Additionally, this method is suitable for posing sensitive questions (such as success in sales). The questionnaire of the survey was distributed to respondents by a commercial provider of web surveys. The question items were transferred from MS Word format to an online format by the Qualtrics (2021) online tool, characterized by high flexibility with regards to visualization of different scales, as well as convenient accessibility. Response rates were increased by a questionnaire design which was optimized for desktop and mobile screens. The final, revised questionnaire which was developed in the Qualtrics system has been added to Appendix H.

5.2.5 Objectivity, Validity, Reliability

Döring et al (2016, pp. 446- 447) describe three different forms of validity: construct, content and criterion validity. All the hypotheses in this dissertation were developed based on findings from the qualitative section of this paper and/or published academic articles. Additionally, the questionnaire includes scales and items which were used in papers in the area of value-oriented selling and pricing strategies. Sub-chapter 5.2.2 (scales and measures) consists of a detailed description of how pre-defined scales from other studies were refined based on the scope of the research in one specific market segment (the medical device sector). On the same subject, Döring et al (2016, p. 446) recommend incorporating feedback from external experts into the modification of scales. The expertise and competencies of the experts (professional experience in sales, academic contributions, language skills) ensure the validity of scales and individual scale items in the final version of the questionnaire. A filter question regarding the work experiences in sales and sales-related jobs in the medical device industry ensured that the respondents possessed the expertise to answer the questions convincingly.

The questionnaire is characterized by a high degree of standardization from the scales and scale items. The final version of the questionnaire included 46 closed questions, which led to a high amount of objectivity. The Cronbach alpha coefficient and the item correlation of scales were calculated in order to show the reliability of the results.

Döring et al (2016, p. 479) interpret a value correlation of between 0.30 – 0.50 to be suitable, and one above 0.50 as good. Terho et al (2017, p. 46) report that a Cronbach alpha coefficient above 0.7 is considered to be high in VBS research. The individual results of the value correlation and alpha Cronbach coefficient for different scales and scale items are presented in the following chapter.

5.3 Overview of the empirical research process

Figure 16 provides an overview of the empirical research process of this dissertation. It shows the connection between research objective three and research objective four and the qualitative and quantitative part of the exploratory sequential research design. The relevance of various VBS activities, which were stated in the holistic VBS framework, are analysed by means of qualitative in-depth interviews with experts.

Additionally, these interviews reveal how elements of B2B VBS processes may be applied in the Austrian medical device industry. The importance of VBS for this industry sector is also investigated in one hypothesis of the quantitative data collection part (H1).

The impact of value-oriented selling practices on success (research objective four) in the medical device industry in Austria is analysed exclusively through the quantitative part of the research process. The first quantitative research question focuses on an individual evaluation of the impact of various process steps on success of sales representatives (H2 – H6). Hypotheses seven and eight identify the importance of potential elements from a value proposition in this industry, which also impacts the success of value-oriented selling practices in this industry sector.

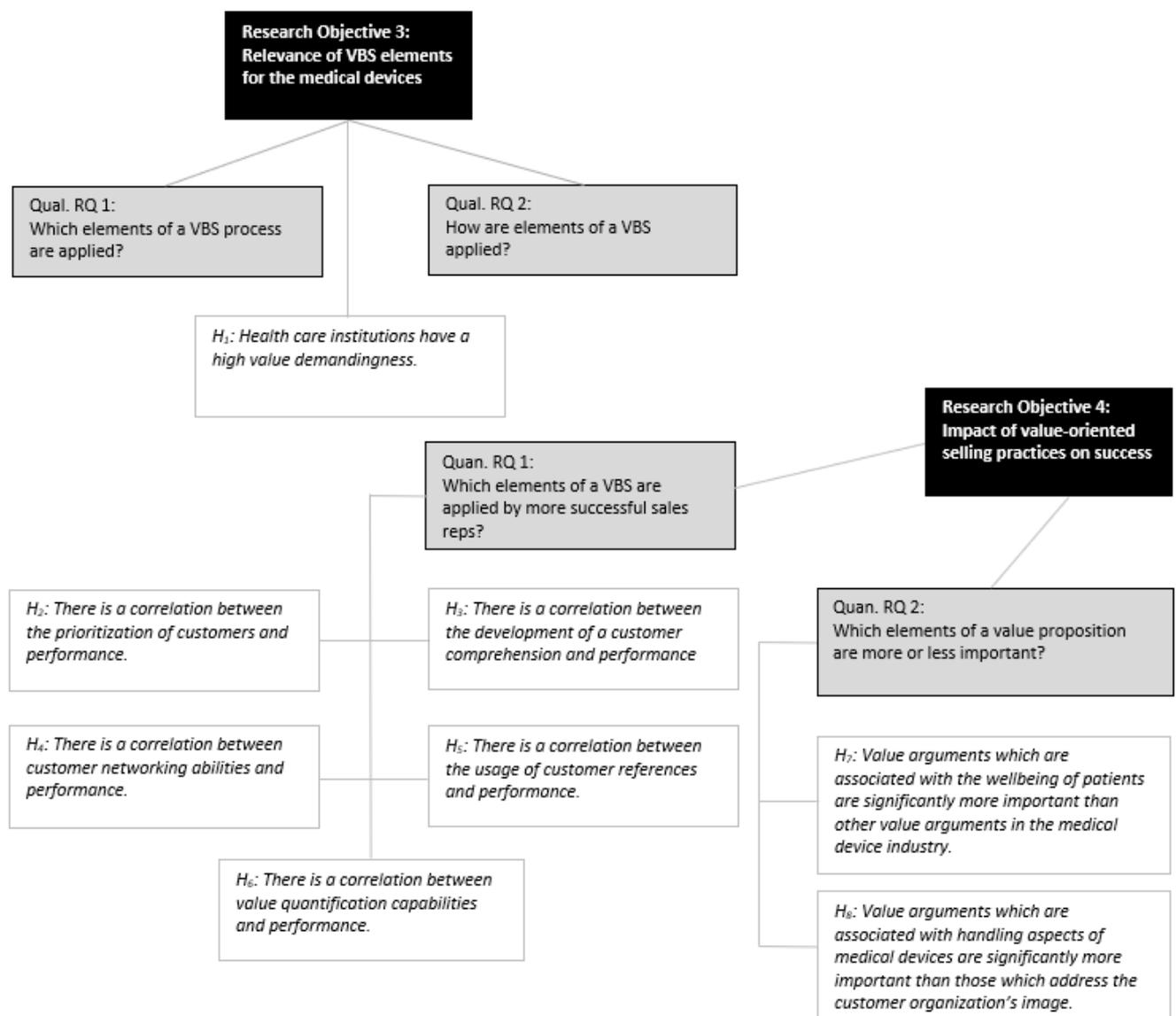


Figure 16: Overview of research objectives, research questions and hypotheses
Source: own figure

6 Results of the empirical research

This part of the dissertation summarizes the results of the primary data collection process. Findings are structured based on the concept of exploratory sequential research design. Qualitative data form the basis for the quantitative research. The impact of qualitative findings on the development of hypotheses and scales is also shown in the previous chapter of this dissertation.

6.1 Results of the qualitative research

The last stage in the qualitative data analysis process (Step 7: Analysis and visualization) according to Kuckartz (2018, p. 100) has been conveyed to the author as a process consisting of two steps. The first step includes an in-depth, holistic analysis of the main and sub categories from the transcript. Appendix E of the thesis consists of a detailed overview of the results of this first part of the text analysis. They are summarized in the following ten topic areas:

- A) Trends in the medical device market (e.g. The immense importance of developing more strategic selling approaches on the market is documented in the interviews).
- B) The scope of VBS on the medical device market (e.g. the communication of the total value from an offering to different conversation partners is a central element of this selling approach in this industry sector). VBS helps to differentiate offerings from competitors on the market.
- C) Strategies for developing an understanding of the customer (e.g. sales organizations are the most important entity in a medical device company in terms of developing an understanding of customers. A grasp of clinical processes is needed to identify key value drivers and the decision-making process).
- D) The importance of value dimensions on the medical device market (e.g. operational value dimensions are highly important. Solutions from vendors must contribute to the improvement of medical workflows and procurement processes).
- E) Practices for the development of a value proposition. (e.g. it is vital to establish a structured, detailed sales plan. It is important to take top decision-makers in the selling process into consideration.)

- F) Formulation and visualization of a value proposition. (e.g. the development of a holistic overview of the value impact is required. It is important to use different KPIs for the establishment of a value promise involving different members of the buying center)
- G) The role of VBS in price negotiations (e.g. approaching the procurement department at the close of the selling process. It is important to identify the customer's general procurement.)
- H) After-sales activities (e.g. The importance of ensuring an effective introduction of offerings into workflows from the customer)
- I) Strategies for implementing VBS in an organization. (e.g. the involvement of various departments in a VBS process. Examples include sales, marketing, clinical engineering, and support departments)
- J) Challenges in a VBS process (e.g. The difficulty of aligning the objectives of different entities in the selling organization. The coordination of selling activities is difficult in large organizations)

Findings from the in-depth interviews are placed in context with findings from the academic literature in the area of VBS for B2B markets. This stage of the analysis forms the basis for the development of a tentative VBS selling model for the medical device industry.

Statements from experts indicate that VBS processes in the medical device industry include several selling activities which are summarized in the holistic VBS framework for the B2B area in the previous part of this thesis. Additionally, they show how activities of VBS can or have to be applied in the medical device industry. These findings form the foundation for the development of a tentative VBS model for the medical device industry.

Qualitative 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). These findings corroborate the observations on general B2B market segments reported by D'Andrea (2005, pp. 18-22) and Schmäh (2008, pp. 38-39). 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. 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. Furthermore, central elements of direct value selling practices which are described in the holistic VBS framework are applied in the medical device area as well. Nevertheless, differences in the manner in which value is quantified and presented were detected in the qualitative research. After-sales practices are also an essential element of VBS processes in the medical device industry. The scope of these activities in this industry is different compared with findings from the VBS literature with a focus on pure B2B market segments. Activities in this phase are more focused on the implementation of the product rather than verification of the value impact.

The main elements of VBS in the medical device industry are summarized in Figure 17.

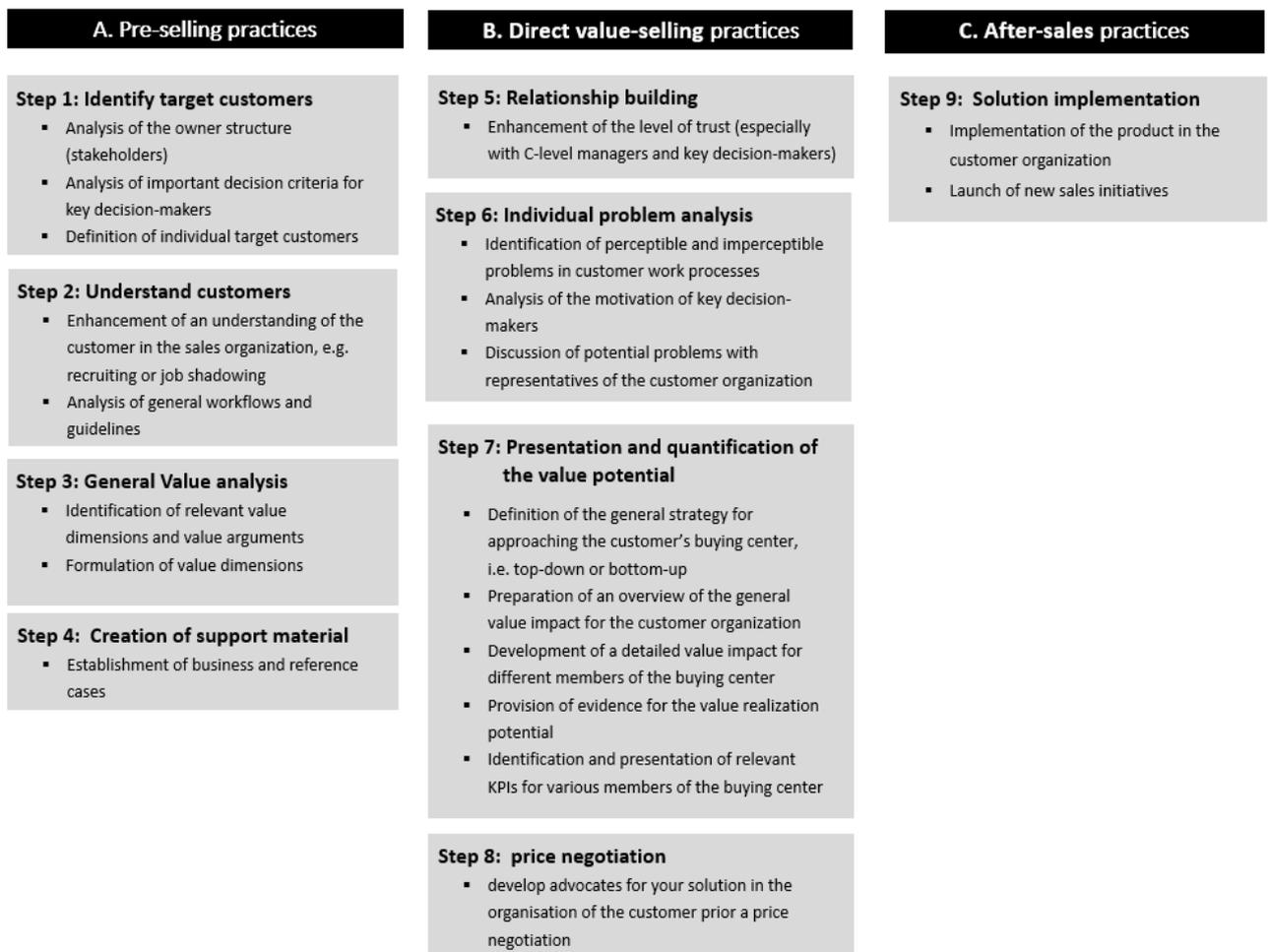


Figure 17: Tentative model of a value-based selling process for the medical devices
Source: own figure

The model will be explained and discussed on the subsequent pages.

A. Pre-selling practices

The identification of an appropriate situation for the application of VBS is the initial starting point for the usage of this selling approach in the academic literature (step 1 of the holistic VBS framework). Töytäri and Rajala (2015, p. 104) recommend defining a target segment in a pre-selling phase. The qualitative expert interviews in this paper indicate that conventional demographical B2B segmentation variables, such as size or the market area of customers (Kaario et al, 2003, p. 35) are only marginally applicable in the Austrian medical device market. An analysis of the most relevant stakeholders from healthcare providers (e.g. owner structure) as well as the general buying approach of customers are considered to be relevant criteria for the definition of target customers.

Healthcare providers which are primarily owned by private stakeholders seem to be more receptive to holistic value arguments than publicly-owned customers such as federal states (Interviewee C, 50; Interviewee G, 19; Interviewee I, 21). It may thus be concluded that a stakeholder analysis of customers which is recommended by Töytäri and Rajala (2015, pp. 104-105) for VBS processes in general B2B markets is relevant in this industry sector as well. In order to identify an appropriate customer, it is essential to analyze the attitude of key decision-makers towards holistic value argumentation (Interviewee E, 29; Interviewee F, 25; Interviewee I, 21). Ultimately, it may be concluded that this process step does not include a definition of a target segment in the medical device industry. Rather, it is important to define target customers individually.

The development of a general understanding of customers (step 2 of the holistic VBS model) is also a central element of a VBS process in the medical device area. Differences regarding the extent and relevance of information were able to be identified in the medical device area, which starkly contrasts with market segments comprised purely of B2B customers. Results of the interviews indicate that market research activities such as focus groups (Töytäri & Rajala, 2015, pp. 104-105) are not typically conducted in this market area. Analyses of the macro and micro environments of the customer, which are described as a part of a VBS according to Davies (2017, p. 56), were similarly unreported by experts in the medical device area.

The entire selling organization of the company must further the development of an understanding of customers (Interviewee D, 41; Interviewee H, 41). A corresponding recruiting strategy (Interviewee D, 35; Interviewee B, 19; Interviewee H, 45), or the development of job shadowing initiatives in cooperation with healthcare institutions (Interviewee A, 33; Interviewee B, 15; Interviewee C, 56; Interviewee G, 35) are viewed as opportunities to enhance such an understanding. The following information about customers is regarded as relevant for a VBS process in this market area:

- Workflows, guidelines (Interviewee D, 37).
- Identification of perceptible and imperceptible (Interviewee A, 69).
- Decision-making processes (Interviewee E, 73; Interviewee C, 52; Interviewee A, 27)
- Motivation and personality of key decision-makers (Interviewee F, 59; Interviewee C, 58; Interviewee E, 73, Interviewee J, 35; Interviewee F, 57).

The academic literature views it as beneficial to conduct a general value analysis of an offering prior to the implementation of VBS in a market segment (step 3 of the holistic VBS framework). As far as the medical device market is concerned, experts argue that it is important to determine whether the devices include attractive value dimensions for customers or not (Interviewee G, 41). Hence it may be concluded that a pre-value analysis, such as that described by Töytäri and Rajala (2015, p. 104), is a typical element of a pre-selling phase in this market area.

Models which describe facets of value can be used as a guideline for the analysis of the value impact. The four-dimensional value construct proposed by Töytäri et al (2015b, pp. 54-55) represents one of the most holistic value analysis models in a B2B context. In in-depth interviews, experts touched upon various value elements which are relevant for the formulation of a value proposition for medical devices. Operational value dimensions in particular were mentioned more often than were other value dimensions.

They may be classified in the following categories:

- **Procurement processes** – e.g. safe delivery dates (Interviewee B, 7; Interviewee C, 4, 22; Interviewee D, 15, Interviewee Y, 4).
- **Handling processes for medical devices** – e.g. trouble-free, reliable handling of products (Interviewee F, 37; Interviewee J, 37; Interviewee A, 41)
- **Length of processes (stays) which are associated with patients** – e.g. length of hospital stays, length of operations, length of mobilization periods (Interviewee A, 41; Interviewee E, 55; Interviewee G, 63).

Social value elements are important for providers of healthcare services as well. Aspects of a medical device which may enhance or damage the image of organizations on the market, are regarded as important elements of the value proposition as well (Interviewee G, 23; Interviewee A, 15; Interviewee B, 39; Interviewee J, 35). This is especially important concerning safety aspects which are relevant for patients. The prevention of nosocomial infections in health care institutions are also considered to be an important element of this value facet (Interviewee C, 28; Interviewee H, 16).

Experts also regard symbolic value dimensions which are associated with the wellbeing of employees as a relevant value dimension in this market area. Examples include measures which prevent employees from blood exposures or needle stick injuries. Another pertinent aspect is the reduction of employee stress levels (Interviewee C, 28; Interviewee H, 16; Interviewee I, 31). Even though qualitative results from the interviews indicate a high importance of these symbolic value dimensions, it may be concluded that they are difficult to calculate and quantify for the selling organization (Lindström, 2016, p. 83-84). Such a value analysis also helps to determine whether or not VBS should be applied for a specific product and customer group. The formulation of a general value proposition for a product in VBS processes in B2B markets, which is recommended by Töytäri and Rajala (2015, pp. 104-107) and Storbacka (2011, pp. 702-703), is also applicable to the medical device industry.

Töytäri and Rajala (2015, pp. 105-106) suggest designing tools that support and demonstrate the value impact of an offering (step 4 of the holistic VBS framework) prior to the implementation of direct VBS practices.

Findings of the in-depth interviews in the study at hand indicate the great importance of these tools in the medical device sector as well. Such visualizations help to raise customer awareness for a new offering. Reference cases are viewed as the most common tools used by companies in this industry at the moment (Interviewee B, 15; Interviewee F, 73; Interviewee G 83).

Furthermore, statements by experts indicate that value calculators are hardly ever used in the medical device industry, even if such a tool may be considered useful or viewed as an opportunity to differentiate a company from competitors on the market (Interviewee G, 75, 79; Interviewee B, 45). An analysis of the manner in which versatile value should be quantified in the medical device area may represent a further reason for the relatively rare use of value calculators in this market. Additional information related to this topic is summarized in the following section of the process description.

B. Direct value-selling practices

Töytäri and Rajala (2015, pp. 106-107) describe the establishment of a high level of trust between a potential customer and a seller as a pre-requirement for the initiation of direct selling practices. This finding is corroborated by results from the interviews conducted by the author. Experts affirm that the application of VBS activities requires commitment from the customer organization to analyzing and improving their internal processes. A strong relationship and a high level of trust form the basis for obtaining such a commitment prior to the conduction of further selling activities. Interviewees recommend approaching top managers of healthcare providers in order to secure commitment for such a process analysis (Interviewee C, 68; Interviewee D, 19). In particular, their view on the total value which a solution potentially offers to their company enhances the effectivity of this selling tool (Interviewee I, 37; Interviewee G, 67).

Hence, it may be concluded that the establishment of a strong relationship with key decision-makers in the customer organization, which is included in the fifth step of the holistic VBS framework for B2B market segments, is applicable to the medical device industry as well. This finding is also represented at the beginning of direct selling practices in the VBS framework for the medical device area.

Expert interviews conducted in this study also detected a high relevance of additional direct selling activities prior to the quantification of value, all of which have been confirmed by researchers with a B2B focus. Luotola et al (2017, p. 73), for example, characterize it as vital to identify obvious and hidden problems in the customer organization. Moreover, job shadowing initiatives and recruiting strategies are described as strategies for the development of a general understanding about processes and workflows of different customer groups. Therefore, these activities can be classified as elements of a pre-selling phase (Interviewee A, 33; Interviewee B, 15; Interviewee C, 56; Interviewee G, 35). Additionally, it is important to identify perceptible or imperceptible 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 (Interviewee J, 27). The collection of information is viewed as the basis for the presentation and quantification of a value potential.

Various VBS models in the B2B area consider the quantification of the value which a solution offers to the customer to be a multi-step process. Luotola et al (2017, p. 72) recommend demonstrating the potential impact which an offering may have on the customer organization prior to performing further specification and individualization of the value impact. Hence, value realization potential is defined as an activity performed prior to the presentation of the individual value impact in the holistic VBS framework for the B2B sector (steps 6 and 7). Results from the expert interviews in study at hand indicate the use of a similar approach in the medical device market. The interviews provide valuable insights into strategies for presenting the value for a customer organization, customized for individual members of a buying unit. This results in a structure for the description of direct value selling practices in the tentative VBS model for the medical device area which differs from general B2B selling approaches.

On the one hand, it is crucial to provide customer representatives with a holistic overview of a solution's value potential. Nevertheless, it is vital to discuss specific elements of a value proposition in greater detail.

Top managers in particular should be approached with an overview of the value realization potential (Interviewee I, 37; Interviewee G, 63, 65). For such presentations, it is important to reduce the complexity of the value proposition (Interviewee J, 25, Interviewee I, 45 - 47). These findings corroborate those of Terho et al (2012, pp. 178, 182), who have reported the great importance of presenting a broad value realization potential to the customer. They consider such an approach to offer greater promise than an individual quantification of different value components. At the beginning of this selling phase in the medical device industry it must be decided whether top managers are approached with such a simple overview of the value potential at the beginning or the end of the process. Either a 'top-down' or 'bottom-up' strategy might be suitable in this market area (Interviewee B, 15; Interviewee F, 49; Interviewee J, 49, 51).

Additionally, 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 (Interviewee A, 87, 91).

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 (Interviewee B, 29; Interviewee C, 58; Interviewee F, 87; Interviewee I, 35). Lindström, (2016, p. 68) and Hinterhuber (2004, p. 777) consider it important to create evidence for the value realization potential of an offering. This aspect is pertinent for the medical care industry as well. The performance of test runs is viewed as a reliable method for quantifying a potential time reduction compared with clinical processes (Interviewee D, 57; 69 – 71). The availability of academic scholars who can confirm benefits such as a potential reduction of infections is also considered vital in this industry sector (Interviewee A, 41, 55).

Based on the expert interviews it may be concluded that the quantification and presentation of value is one of the most central ‘direct selling practices’ of VBS in the medical device area. These activities are summarized in step 7 of the tentative VBC model for this market segment.

After the value quantification process, Luotola et al (2017) recommend adopting, specifying, and defining a final version of an offering in a VBS process. This activity is represented in step 8 of the holistic VBS framework for B2B market segments. However, experts from the medical device industry failed to report any instances of such an activity in this market area. Potential adoption of components from offerings seem to primarily arise after the identification of the customer’s situation. Such an activity is tremendously influenced by the type of product, and cannot be seen as a separate process step after quantification of the value impact in this industry.

Töytäri et al (2011, p. 500) view the negotiation of the selling price and the establishment of a contract to be the final direct VBS practices in the B2B area. Luotola et al (2017, pp. 63-64) highlight the importance of persuading the customer of the total value impact of a solution prior to conducting a price negotiation. Experts consider this aspect to be highly relevant in the medical device industry as well. The procurement department is described as a very challenging entity in the customer organization for the implementation of a VBS strategy. Mounting pressure to reduce prices and the exclusive focus on initial purchasing price combine to increase the difficulty of implementing this selling concept in this market area (Interviewee H, 57; Interviewee A, 101).

This fact impacts the order, in which different departments in health care institutions are approached with VBS. Prior to the negotiation of a selling price with the purchasing department, it is critical to convince the customer organization's medical personnel and/or top managers of the offering's total value for the customer. Such a strategy aids in obtaining a higher price for the product (Interviewee F, 93, Interviewee C, 50; Interviewee B, 39; Interviewee A, 107, 109-111). The importance of preparing the specific positioning of an offering in the customer organization in advance of a price negotiation with the purchasing department is reflected by its inclusion in a separate step of the tentative VBS model for the medical device industry (step 8: price negotiation).

A. After-sales practices

Töytäri et al (2011, p. 501) view it as vital to document and verify the value impact of the offering at the final stage of the VBS approach. Töytäri and Rajala (2015, p. 8) describe this as a distinct process step in their VBS model. In the holistic VBS framework for the B2B sector in this dissertation, these activities are summarized in step 10: value exchange. Such a process step is an essential factor for the transformation of a transactional relationship into a long-term relationship. Experts failed to report the documentation and verification of the value impact after the implementation of a new solution in this market segment.

Apart from the potential absence of these activities from the medical device industry, it may be concluded that after-sales practices constitute essential elements of the VBS process in this industry sector as well. Findings from the qualitative interviews indicate that these activities may be viewed as essential elements for the position of sales representative.

After-sales practices serve to ensure that the implementation of the new product in the customer organization is running smoothly. Furthermore, salespeople should make certain that the product is correctly managed by employees of the customer (Interviewee J,91). 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 (Interviewee B, 59). Finally, reliability is viewed as an important prerequisite for embarking on new sales initiatives (Interviewee I, 53, 55; Interviewee J, 51).

6.2 Results of the quantitative research

SPSS IT software was used for data analysis. 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. 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 (see Table 3).

How many years of work experience do you have in sales and sales-related jobs (e.g. market management, product management) in the medical device sector in Austria?

	N	%
0 years	1	0.9%
1 – 5 years	15	13.3%
6 – 10 years	11	9.7%
11 – 15 years	22	19.5%
16 – 20 years	21	18.6%
21 – 25 years	16	14.2%
> 25 years	27	23.9%

Table 3: Professional experience of respondents
Source: own table

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. There were only three cases in which an answer was missing, which yields a total number of $n=110$ cases for the reliability analysis. Cronbach's alpha $\alpha=.86$ is high and corroborates with a corrected item-total correlation of between 0.48 and 0.86. The descriptive statistics of the single items and the mean may be accessed in Appendix II.

Regarding overall sales performance, the mean was calculated if at least 7 from 8 questions were completed. Performance is rated significantly higher than the central value of 0: $M=0.80$ ($SD=0.88$) and $t(112)=9.56$, while $p<.001$ shows a strong effect Cohens $d=0.90$. The distribution of the scale is depicted in Table 4.

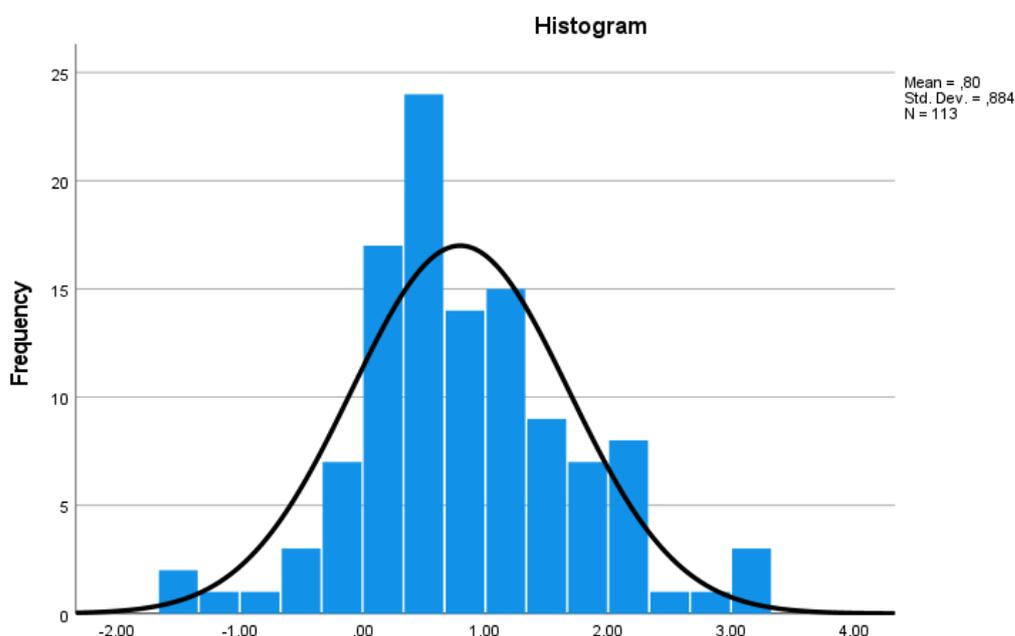


Table 4: Overall sales performance among respondents
Source: own table

Hypothesis one investigates the value demandingness of healthcare providers in Austria, which may be viewed as an indicator for the importance of VBS in this market. 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. Only in one case was an answer missing, yielding a total number of $n=112$ cases for the reliability analysis. 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 $p < 0.001$), 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 healthcare institutions have a high value demandingness towards medical device companies in Austria. The 95% confidence intervals are depicted in Table 5.

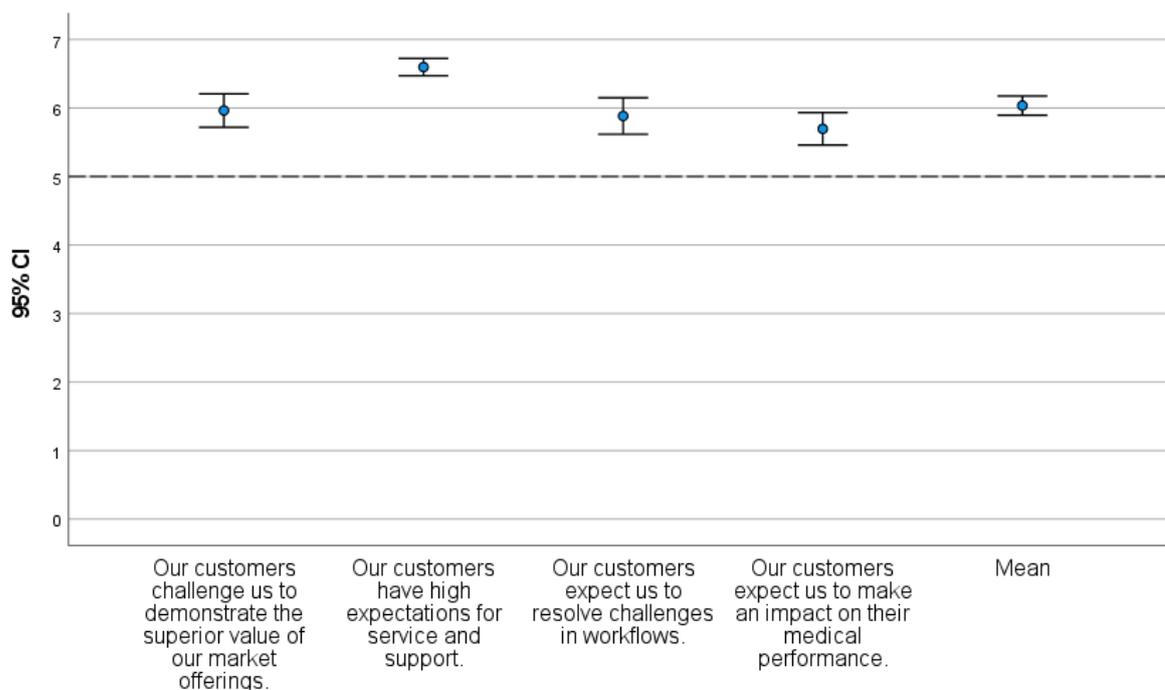


Table 5: Comparison of components from customer value demandingness.
Source: own table

The mean value of all scale items is 6.04. The differences between the aspects show a medium effect with partial $\eta^2 = 0.12$ and are highly significant (ANOVA with repeated measurement and Greenhouse Geisser correction $F(283.43; 2.55) = 14.60$ with $p < 0.001$). The Bonferroni-adjusted 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 (all $p < 0.001$). No further significant differences can be observed. The descriptive statistics are summarized in Appendix I2.

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. 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. 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 mean value of all scale items is 4.91. The descriptive statistics are summarized in Appendix I3. The overall prioritization and the single items are correlated with the performance of the salesperson. The pairwise Pearson correlations are shown in Table 6.

		Mean performance
Mean prioritization	Pearson Correlation	-0.073
	Sig. (2-tailed)	0.442
	N	113
I prioritize customers based on their reputation to our firm.	Pearson Correlation	-0.140
	Sig. (2-tailed)	0.139
	N	113
I allocate our resources relative to the attractiveness of the customer.	Pearson Correlation	0.186*
	Sig. (2-tailed)	0.049
	N	113
I use clear guidelines for qualifying high potential prospects.	Pearson Correlation	-0.073
	Sig. (2-tailed)	0.440
	N	113
We target our selling efforts based on customer's fit with our value creation capabilities.	Pearson Correlation	-0.119
	Sig. (2-tailed)	0.208
	N	113

* Correlation is significant at the 0.05 level (2-tailed).

Table 6: Correlation between sales performance and the prioritization of customers
Source: own table

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. The higher the allocation of resources for more attractive customers, the higher the sales performance. All other correlations fail to display significances and exhibit effect sizes ranging from small to none at all.

Hypothesis three identifies the impact of customer comprehension on the success of sales representatives. In particular, this concerns cases involving knowledge about processes, workflows and problems in the customer organization.

The average development of such customer comprehension was calculated using four 7-point Likert scales (1 = does not apply; 7 = fully applies) capturing different aspects of the comprehension. The mean value of all scale items of customer comprehension is 5.23. The descriptive statistics are summarized in Appendix I5.

Cronbach's alpha $\alpha=0.73$ is sufficient and satisfactory featuring high corrected item-total correlations of between 0.29 and 0.66. The question on the understanding of the business model shows the lowest correlation with the mean score. Hence, the mean customer comprehension score may be considered to be a reliable index, yet single items and composite scores are also correlated with the performance of the salesperson. The pairwise Pearson correlations are shown in Table 8.

		Mean performance
Mean development of a customer comprehension	Pearson Correlation	0.,055
	Sig. (2-tailed)	0.563
	N	112
I routinely analyze how the customers use our products/service.	Pearson Correlation	-0.076
	Sig. (2-tailed)	0.426
	N	112
I routinely analyze my customers' processes.	Pearson Correlation	0.068
	Sig. (2-tailed)	0.474
	N	112
I understand my customers' business model. (or I understand how public healthcare institutions such as state hospitals are financed)	Pearson Correlation	0.087
	Sig. (2-tailed)	0.364
	N	112
To better understand my customers' needs, I also try to understand our customers' patients and their needs.	Pearson Correlation	0.082
	Sig. (2-tailed)	0.388
	N	112

Table 7: Correlation between sales performance and knowledge about processes and workflows

Source: own table

The second element of hypothesis three is concerned with the importance of identifying problems in the customer organization. The average identification of problems and their impact on the customer was calculated using four 7-point Likert scales (1 = does not apply; 7 = fully applies) capturing different aspects of problem identification. Cronbach's alpha $\alpha=0.90$ is very high and satisfying and with excellent corrected item-total correlations between 0.73 and 0.83.

Thus, the mean problem identification score may be considered to be a reliable index. Moreover, single items and composite scores are also correlated with the performance of the salesperson. The pairwise Pearson correlations are shown in Table 7.

		Mean performance
Mean identification of problems and impact	Pearson Correlation	0.143
	Sig. (2-tailed)	0.131
	N	113
I spend a lot of time asking questions about the customer's current situation (e.g. "How many patients do you treat per month?")	Pearson Correlation	0.114
	Sig. (2-tailed)	0.231
	N	113
I spend a lot of time asking questions about the customer's problems, difficulties, or dissatisfaction (e.g. "Do you have problems with a high number of false alarms by patients?")	Pearson Correlation	0.094
	Sig. (2-tailed)	0.324
	N	113
I spend a lot of time asking questions about the consequences of the customer's problems on her/his operations (e.g. "What effect does this high number of false alarms have on you and your colleagues?")	Pearson Correlation	0.143
	Sig. (2-tailed)	0.132
	N	112
I spend a lot of time asking questions about the payoff of a possible solution for the customer's operations (e.g. "If you had a solution for reducing the number of false alarms, how much time would you save?")	Pearson Correlation	0.153
	Sig. (2-tailed)	0.06
	N	113

Table 8: Correlation between sales performance and the identification of problems
Source: own table

Since no significant correlations can be identified in either of the previously described analyses, 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.

However, even if a correlation with success in sales was undetectable, the descriptive results of the quantitative survey show that respondents generally ascribe great importance to investigating problems in the customer organization. The mean value of all scale items, i.e. questions from the SPIN selling model, is 5.72. The descriptive statistics are summarized in Appendix I4.

Hypothesis four identifies the impact of the networking abilities of sales representatives on their performance. The average customer networking ability was calculated using four 7-point Likert scales (1 = does not apply; 7 = fully applies) capturing different aspects of the abilities. Cronbach's alpha $\alpha=0.67$ 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. The pairwise Pearson correlations are shown in Table 9.

		Mean performance
Mean customer networking ability	Pearson Correlation	0.117
	Sig. (2-tailed)	0.221
	N	112
I work hard to identify the relevant key stakeholders for our products and services in the customer organization.	Pearson Correlation	0.148
	Sig. (2-tailed)	0.120
	N	112
Typically, I deal with relevant decision-makers for our products and services in the customer organization.	Pearson Correlation	0.081
	Sig. (2-tailed)	0.397
	N	112
Typically, the contacts I have in the customer organization make me very effective at working with them.	Pearson Correlation	0.112
	Sig. (2-tailed)	0.240
	N	112
Typically, I know a diverse cross-section of people in the customer organization.	Pearson Correlation	-0.002
	Sig. (2-tailed)	0.983
	N	112

Table 9: Correlation between sales performance and customer networking abilities
Source: own table

Since no significant correlations can be identified, the null hypothesis must be maintained. Hence, 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. Independent of a lack of a correlation between customer networking abilities and sales success, however, the results of the quantitative survey show that respondents also view networking abilities as important in general. The mean value of all scale items is 5.91. The descriptive statistics are summarized in Appendix I6.

Hypothesis five investigates the role of customer references as a value visualization tool for the medical device industry in Austria. The average usage of customer references was calculated using four 7-point Likert scales (1 = does not apply; 7 = fully applies) capturing different aspects of the usage. 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 pairwise Pearson correlations are shown in Table 10.

		Mean performance
Mean usage of customer references	Pearson Correlation	0.186*
	Sig. (2-tailed)	0.049
	N	113
I use customer references in sales communications to provide evidence of our performance.	Pearson Correlation	0.126
	Sig. (2-tailed)	0.182
	N	113
I utilize evidence from our customer references to communicate the value of our products/services.	Pearson Correlation	0.184
	Sig. (2-tailed)	0.051
	N	113
I apply customer references to concretize how customers can benefit from our products/services.	Pearson Correlation	0.238*
	Sig. (2-tailed)	0.011
	N	113
I communicate our customer references as a proof of the functionality of our products/services.	Pearson Correlation	0.135
	Sig. (2-tailed)	0.153
	N	113

* Correlation is significant at the 0.05 level (2-tailed).

Table 10: Correlation between sales performance and the usage of customer references

Source: own table

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 higher the application, the higher the sales performance. The overall mean is also positively and significantly related to performance, exhibiting a small effect. All other correlations show no significances yet all of them show small effect sizes. 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. The mean value of all scale items is 4.97. This mean value is lower compared with the previous scales which involve the development of a customer comprehension (H3). The descriptive statistics are summarized in Appendix I7.

Quantification of the value which is offered by the selling organization is a central element of a VBS strategy. Hypothesis six investigates the role of value quantification in the medical device market in Austria and its potential impact on sales success. The average high value quantification capabilities were calculated using three 7-point Likert scales (1 = does not apply; 7 = fully applies) capturing different aspects of the capabilities. 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 pairwise Pearson correlations are shown in Table 11.

		Mean performance
Mean high value quantification capabilities	Pearson Correlation	0.215*
	Sig. (2-tailed)	0.022
	N	113
The offerings to the customers are customized based on an analysis of our customers' needs.	Pearson Correlation	0.079
	Sig. (2-tailed)	0.403
	N	113
For each offering made to the customer, I calculate the value that we can provide to the customer.	Pearson Correlation	0.264**
	Sig. (2-tailed)	0.005
	N	113
An important part of my selling process is to demonstrate the value of our offerings to the customers.	Pearson Correlation	0.157
	Sig. (2-tailed)	0.097
	N	113

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table 11: Correlation between performance and value quantification capabilities
Source: own table

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 more frequently the calculation is performed, the higher the sales performance. 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. The mean value of all scale items is 5.28. The descriptive statistics are summarized in Appendix I8.

The final two hypothesis (H7 and H8) investigate the importance of specific value arguments for providers of healthcare services in the medical device market in Austria. The descriptive statistics of the single items can be found in Table 12.

	Mean	SD	N
Assured availability of products	6.56	.925	113
Fixed delivery dates of products	6.47	1.010	113
High reliability of products	6.74	0.579	113
Reduction of potential handling errors by means of intuitive handling of products	6.13	0.977	113
Straightforward handling of products	5.89	1.205	113
Reduction of infections in healthcare institutions	5.80	1.576	113
Support customers in the optimization of internal processes	5.78	1.237	113
Reduction of the length of clinical processes (hospital stay / length of an operation / length of the mobilization period)	5.65	1.529	113
Enhancement of the image of healthcare institutions (e.g. by improved clinical processes or fewer mistakes)	5.41	1.539	113
Enhancement of the image of key medical personnel (e.g. support of clinical studies conducted by chief physicians)	5.00	1.685	113
Mean patient wellbeing	5.72	1.377	113
Mean other value dimensions	6.00	0.722	113

Table 12: The importance of value arguments for healthcare providers in Austria
Source: own table

Hypothesis seven attempts to determine whether value arguments of medical devices with a focus on the well-being of patients (Cluster 3b) 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 (cluster 3b) have a mean value of 5.72 (SD 1.377), while the mean value of other value dimensions is 6.00 (SD 0.722). Therefore, in contrast to statements in the qualitative expert interviews, quantitative results show that the mean value of value arguments which are associated with the wellbeing of patients are significantly less important than other value dimensions.

This holds for the single-item comparison ($t(112) = -3.06$; $p = 0.003$ and Cohens $d = 0.29$) including the length as well as for the mean comparisons ($t(112) = -2,70$; $p = 0.008$ and Cohens $d = 0.25$). The reduction of infection does not significantly differ from the other dimensions ($t(112) = -1.55$; $p = 0.124$ and Cohens $d = 0.15$), also view Table 13.

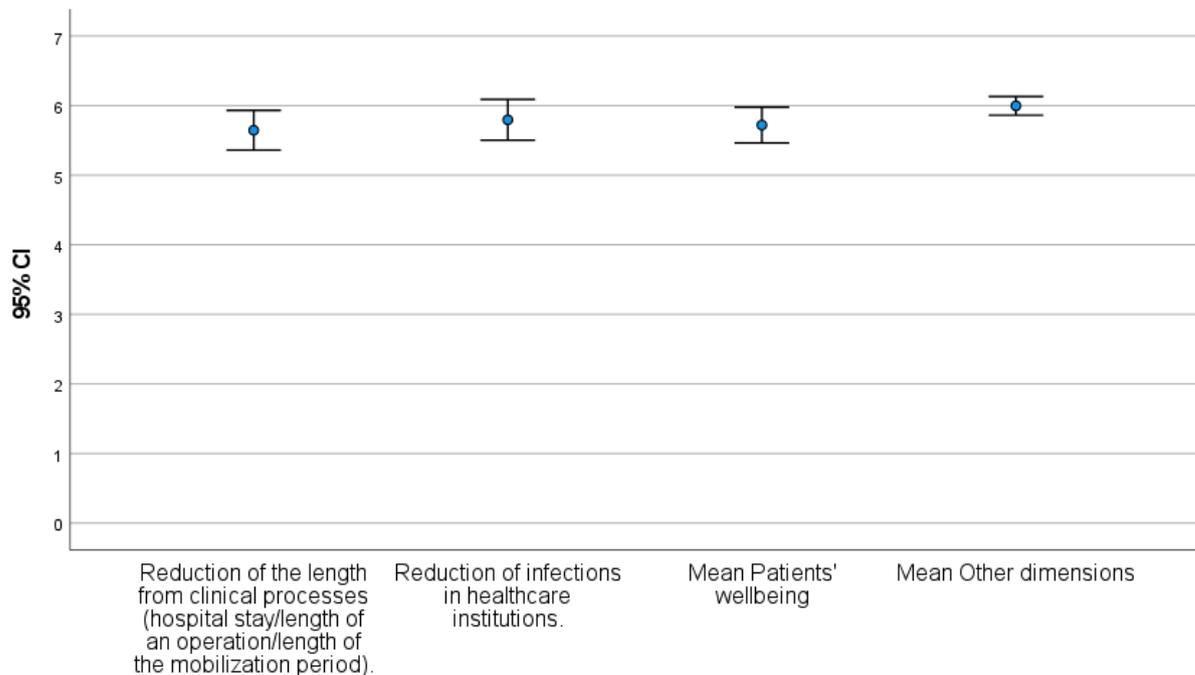


Table 13: Comparison of value arguments which are associated with the wellbeing of patients and other value arguments
Source: own table

Based on these overall comparisons the null hypothesis needs to be maintained. Value arguments which are associated with the wellbeing of patients are not significantly more important than other value arguments in the medical device industry. Due to the fact that these comparisons might be superficial, the items were inspected more closely and visualized in appendix I9.

It has become obvious that considerable variation exists among the value dimensions. Multiple comparisons reveal that values associated with patients' wellbeing are ascribed significantly more importance than "enhancement of the image of healthcare institutions (e.g. by improved clinical processes or fewer mistakes)" (all $ps < 0.001$) and "enhancement of the image of key medical personnel (e.g. support of clinical studies by chief physicians)" (all $ps < 0.01$).

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. Based on prior findings, the following comparisons exhibit significant differences in the expected direction (descriptive statistics may be accessed in Table 14). The mean value arguments which are associated with the handling aspects (Cluster 2) of medical devices is significantly more important than the mean value arguments which concern customer image (Cluster 4) with $t(112)=7.76$ and $p<0.001$ displaying a strong effect with Cohens $d=0.73$.

	Std.		N
	Mean	Deviation	
Mean handling (cluster 2)	6.26	0.720	113
Mean image (cluster 4)	5.20	1.469	113
Mean procurement processes (cluster 1)	6.51	0.878	113
Mean process optimization (cluster 3a + 3b)	5.74	1.209	113

Table 14: The importance of different clusters of value arguments
Source: own table

Furthermore, the mean comparisons of procurement processes, handling, process optimization and image reveal a powerful effect with partial $\text{Eta}^2=0.30$ and are highly significant (ANOVA with repeated measurement and Greenhouse Geisser correction $F(262.54; 2.34)=48.71$ with $p<0.001$). The Bonferroni-adjusted multiple comparisons clearly indicate that all dimensions are significantly different from one another (all $ps<0.001$ except for the comparison between handling and procurement processes; $p=0.019$).

Following a statistical analysis it may be summarized that the quantitative data further developed the concept of value-oriented selling approaches for this industry. Figure 18 provides an overview of the central results, showing a high value demandingness from customers on the medical device market in Austria. The data analysis also identifies a correlation between the usage of customer references (H5) and the quantification of value (H6) with selling performance. Both practices may be seen as central elements of the VBS concept. Even though no correlation of selling performance and other selling practices (H2 – H4) could be detected, it might be tentatively concluded that all other detected elements of a value-oriented selling idea may be seen as having medium or high importance.

When it comes to the evaluation of the importance of various value arguments, the quantitative results show a high importance of value arguments which are associated with handling of medical devices (H8) and arguments which are associated with an enhancement of procurement processes. Arguments related to the well-being of patients are seen as less important (H7) by respondents of the survey.

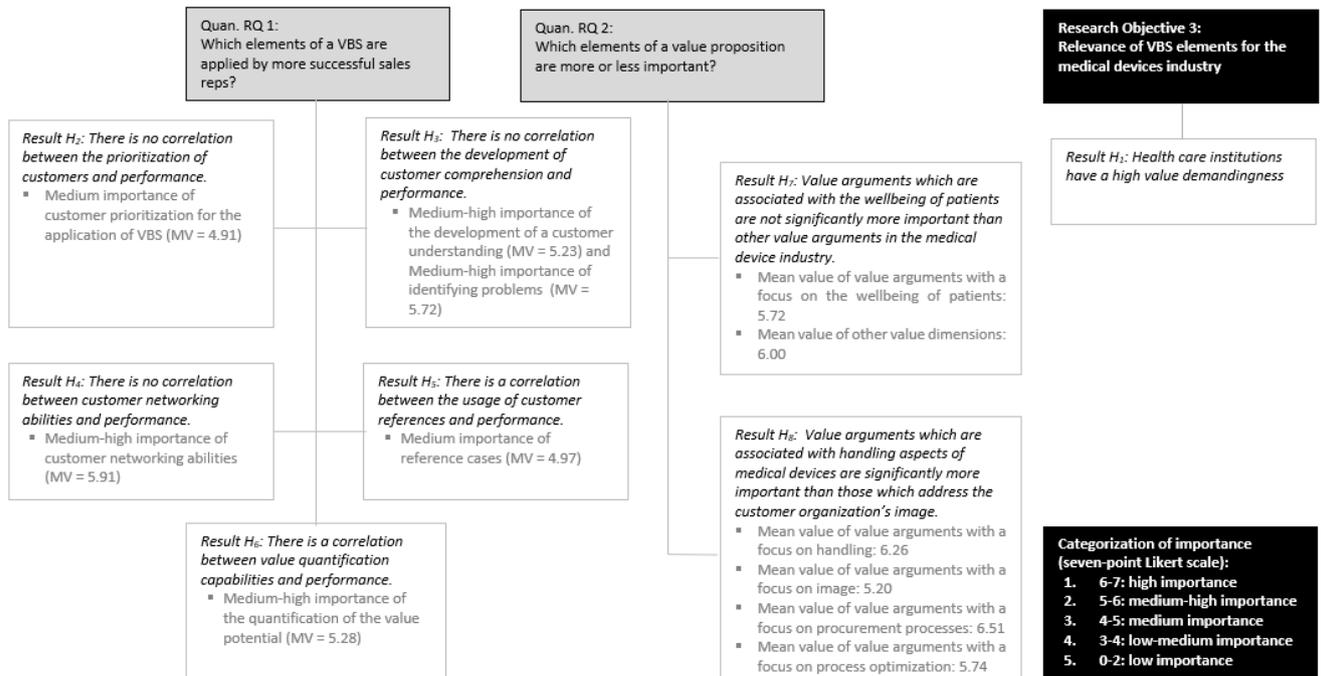


Figure 18: Summary of the quantitative results
 Source: own graph

7 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.

The medical device market is increasingly important for the economy. The world-wide market volume grew from 209 to 405 billion USD between 2005 and 2019, with a further increase to 595.5 billion USD expected by 2024 (Statista, 2018a). In the European Union, the medical device market represents approximately 1% of the total GDP (MedTech Europe, 2020, p. 23). Denis et al (2007, p. 179) characterize the market environment as complex and pluralistic. The main features of the medical device market in Austria are summarized in figure 19.

Market structure	<ul style="list-style-type: none"> ▪ High amount of companies who employ less than 50 people ▪ High amount of market niches ▪ High importance of non-market actors like researchers 	<p>AUSTROMED (2013, p. 3)</p> <p>Altenstetter (2003, p. 229)</p> <p>Laurell (2018, p. 139)</p>
Market dynamics	<ul style="list-style-type: none"> ▪ Very innovative market; 2nd highest number of patients among Europe (14,000) 	<p>MedTech Europe (2020, p. 13)</p>
Important legislation	<ul style="list-style-type: none"> ▪ Medizinproduktegesetz 	
Customers	<ul style="list-style-type: none"> ▪ High number of customers who are financed or supported by governmental institutions (more than 50% of the total healthcare expenditures in Austria are financed by public institutions) ▪ Circa 45,000 registered doctors, 900 private outpatient clients (incl. outpatient departments of hospitals), 271 hospitals, 2,350 pharmacies 	<p>Hofmarcher (2013, p. 93)</p> <p>Bundesministerium für Arbeit, Soziales, Gesundheit und Konsumentenschutz (2019, pp. 22-23)</p>

Figure 19: Characteristics of the medical device market in Austria
Source: own figure

This study reveals factors which influence the selling processes of medical device providers. Additionally, it reveals challenges facing companies which operate in B2B market segments. Examples of such challenges include the increasing clout which buying organizations wield (e.g. Hinterhuber & Liozu, 2012, pp. 68-70), which leads to increasing price pressure (e.g. Schmäh, 2008, pp. 38-39), the increasing difficulty of communicating the unique value of an offering (e.g. Töytäri et al, 2011, p. 493), and the further digitalization of procurement processes (e.g. Sisakhti, 2015, pp.4-5).

Based on these findings, it may be concluded that it is of vital importance to conduct further investigation regarding how value-oriented selling approaches might be developed for such a complex and challenging market environment. In contrast, publications in the area of sales for medical devices primarily deal with management aspects such as the structure and composition of sales departments (e.g. Bowers et al, 1994; Jaeger & Kopf, 2014; Chatterji et al, 2019). Another research path is concerned with the importance of traits, competencies and behaviors of individual sales representatives in selling situations in the market (e.g. Lai et al, 2013; Harris et al, 2012). Unfortunately, virtually no academic literature is available which investigates the importance and structure of value-oriented selling approaches in a market which consists of B2B and a substantial number of B2G market segments. An analysis of the literature, qualitative in-depth interviews, and a quantitative survey form the basis for answering four research objectives.

Objective one of this dissertation is to identify the importance and characteristics of VBS in contrast to other relevant selling approaches, such as customer-oriented selling and adaptive selling. 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. In addition to basic selling skills, selling organizations need various management capabilities in order to implement and apply VBS (Töytäri & Rajala, 2015, p. 101). Moreover, the implementation of VBS entails a broader scope of competencies required of sales representatives compared with that of other selling approaches.

Examples include the consultancy skills needed to develop individual solutions for customers to tackle business challenges, as well as the ability to involve quantitative measures in conversations with customers (Töytäri et al, 2011, p. 500). 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. A systematic analysis of the academic literature revealed seven papers which have undertaken the conceptualization and further development of VBS in the last decade (Töytäri et al, 2011; Terho et al, 2012; Töytäri and Rajala, 2015; Lindström, 2016, Liinamaa et al, 2016; Luotola et al, 2017; Raja et al, 2020).

Töytäri et al (2011) and Terho et al (2012) fashioned a fundamental basis for the conceptualization of VBS almost 10 years ago. Based on findings from these scholars, Töytäri and Rajala (2015) mapped out the most holistic concept for organizational market segments at this time. Planning activities, practices of a selling organization in selling processes, and strategies for verifying the value impact are included in this model. Other research has specified different elements from the VBS process according to Töytäri and Rajala (2015) or added further facets which may be applied to this selling approach. Lindström, (2016) has defined strategies for analyzing the value impact of a solution and developed methods of quantifying a value proposition by the calculation of 'Net Present Value', while Liinamaa et al (2016) have explained how the development of performance-based contracts can be implemented in this selling approach. Luotola et al (2017) have examined the role of design thinking in VBS processes in order to co-create a solution based on various problems in the customer organization, and Raja et al (2020) have expanded the scope of value-oriented selling approaches, placing selling activities in context with VBP practices. Furthermore, this paper investigates how information and knowledge of markets, customers, and experiences are distributed among the selling company. Even if the VBS process is described differently in these studies, it may be concluded that the basic construct has retained its integrity.

An in-depth analysis of the academic literature along with a comparison of different VBS models form the basis for the establishment of the holistic VBS framework in this dissertation (see chapter 4.3). This framework divides VBS into three different phases (pre-selling, direct selling and after-sales practices). Activities and practices are clustered into ten different process steps. The benefit of this framework is to provide an overview of potential activities which may be applied in such a selling process. It also forms the foundation for a further analysis which is related to objectives three and four of this paper.

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 VBS 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 owner structure of healthcare providers and an analysis of the most important decision criteria from key decision-makers forms the basis for this decision, regardless of whether VBS is applied in a specific selling situation or not.
- 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. This aspect is taken into consideration in recruiting processes as well. Potential problems and challenges in the customer organization may be detected by job shadowing initiatives, whose main objective is to observe workflows in the customer organization, while also helping identify decision-making processes. The employment of market research initiatives and market analysis activities which are mentioned in the academic literature failed to be confirmed by experts in the interviews.

- In cases involving the importance of different value dimensions, experts regard operational value dimensions above all as important elements of the value proposition. Examples of operational value dimensions include an enhancement of procurement processes, the handling aspect of medical devices, and the length of clinical processes. 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. Nevertheless, value calculators are viewed as a method for differentiating the position of a company on the market.
- In contrast to VBS research in a B2B context, results of the expert interviews in this study indicate that an individual estimation of value impact is used for each different member of the buying center. This requires a focus on different aspects of the value proposition for different conversations.
- 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, yet additional measures are used in the Austrian healthcare sector. One example is the calculation of working time rather than process costs in conversations with members of a buying center. Test runs are vital for evidencing the enhancement of current processes.
- In order to achieve higher prices, a value-oriented price negotiation with members of the procurement department requires support and commitment from key medical personnel. This is especially important in healthcare institutions which are primarily financed by public institutions, such as public hospitals.
- 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. Experts failed to mention the importance of quantifying the value impact following the introduction of a product.

Findings from the in-depth interviews form the basis for the establishment of a tentative VBS model for medical devices. This tentative model is illustrated and described in chapter 6.1. A quantitative analysis investigates in greater depth the relevance of the value-oriented selling approaches presented in this paper.

Moreover, this research path is concerned with **objective four** of the dissertation, which 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 formulation of managerial implications in the subsequent sub-chapter.

7.1 Managerial implications

An overview of the research objectives and related findings, as described in the previous paragraphs, form the basis for managerial implications. 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. Furthermore, this determination is substantiated by statements from experts in the medical-device industry in qualitative in-depth interviews. Additionally, a quantitative survey in this study has revealed the high value of demandingness which healthcare providers in Austria exercise towards suppliers of medical devices, featuring a mean value of 6.04 on a seven-point Likert scale. It appears as though selling organizations must demonstrate to customers the superior value of their solutions as well as offer service and support. Hence, the development of a value-oriented selling strategy and highly regarded training programs for sales representatives is strongly recommended for this industry sector.

Sales representatives can be described as ambassadors of value-oriented thinking in the organization of the customer. Therefore, training programs must further develop an understanding of the needs and problems of customers, as well as environmental factors which might impact processes and workflows in health-care institutions in the future. Additionally, sales reps must be trained to quantify the value impact of offerings. This includes the ability to deal with relevant quantitative measures and the acquisition of consultancy skills which are needed to co-create value with the customer throughout the process.

This goes hand-in-hand with a needed change in the culture concerning the way in which marketing and selling functions are applied in organizations of providers of medical devices. It can be concluded that Slater's (1997, p. 166) suggestions for the development of a value-focused firm have high practical relevance in this industry sector.

The tentative VBS selling model for the VBS which is based on the results of the qualitative expert interviews forms the foundation for the final VBS model for this industry. This model is the ultimate conclusion of this paper and may be viewed as a guideline for the establishment of such selling processes in this industry. The full description of the model is presented in figure 20. All the selling activities which were revealed through qualitative in-depth interviews in a VBS context have a medium or a high importance for the medical device industry according to the results of the quantitative survey.

The identification of target customers for the application of value-oriented selling approaches has to be performed individually. Prior to the start of the approach, it is important to identify key personnel in the organization of the customer who support a broad, long-term view of the value potential of medical devices. Additionally, it is recommended to investigate the relevance of key decision criteria and decision-making processes in the customer's organization prior to the start of a value-oriented selling approach.

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 (assured availability of products $MV = 6.56$; fixed delivery dates for products = $MW 6.47$) and a smooth handling of medical devices (high reliability of products $MW = 6.74$; reduction of handling errors $MW = 6.13$; straightforward handling of products = 5.80) 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.

From a managerial point of view it is important to invest in value quantification tools, such as business case databases and value calculators, in the pre-selling phase.

The involvement of c-level executives is highly recommended in direct value-selling practices in the medical device industry. It has to be decided whether they are approached right at the beginning (top-down approach) or towards the end (bottom-up approach) of direct selling activities. Selling practices 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. Thus, it may be concluded that this phase of the VBS process is crucial as well.

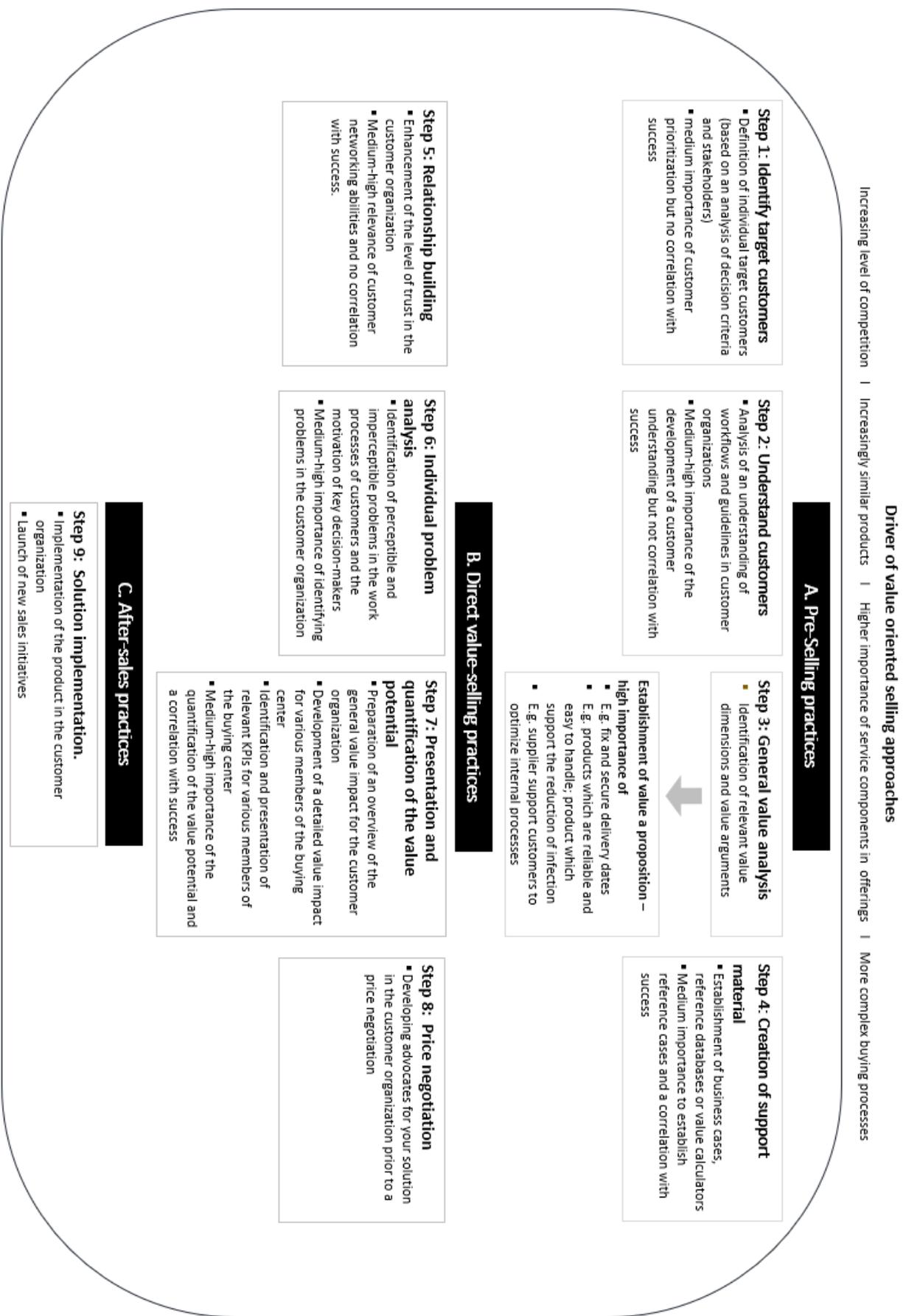


Figure 20: Final Value-Oriented Selling model for the medical-device market
Source: own figure

7.2 *Scientific contribution*

Several scholars in the academic literature have investigated the impact of selling practices on the performance of selling entities or sales personnel in general B2B market settings. However, differences in the product and market structures have generally been neglected. Ultimately, it can be concluded that this dissertation includes several novelties for the academic literature concerning a further analysis of the application of VBS for a complex and heterogeneous market environment. They can be summarized in four scientific outcomes.

Scientific outcome one: Even though central elements of a selling process (e.g. the prioritization of customers, the development of a customer comprehension networking abilities) are described as important in the current academic literature, the quantitative data of the dissertation do not confirm a correlation of these elements with success in sales in this complex market environment.

Scientific outcome two: Quantitative results of this dissertation reveal that central elements of the idea of value-oriented selling processes (e.g. the usage of customer references for the verification of value and the quantification of value arguments) correlate with success in markets with business customers and a substantial amount of institutional, primarily public financed organisations.

Scientific outcome three: The qualitative and quantitative data of this study provides, for the first time, an understanding of the importance of value arguments for medical devices. Its results reveal the high importance of reliable procurement processes and the delivery of reliable products which are easy to handle.

Scientific outcome four: This dissertation further develops the academic literature related to value-oriented selling models for specific market purposes. Results of qualitative in-depth interviews are the basis for the establishment of the tentative VBS model (figure 17) for medical devices. This model includes a description of selling practices in the industry. It is the basis for a broader, more final conceptualisation. The final value-oriented selling model (figure 20) combines results of the qualitative research with quantitative findings. It asserts the importance of this selling concept for this industry, describes VBS practices and summarizes their importance.

7.3 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. An analysis of the Austrian medical device market has revealed various environmental challenges which impact sales approaches. 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. Additionally, this dissertation concludes that value-oriented selling strategies are vital for markets with a substantial amount of B2G market 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. The product category may well impact the relevance of value dimensions or value arguments as well as the importance of different practices from a value-oriented selling process. 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. On the one hand, research might involve the relevance of online communication platforms such as Zoom or MS Teams in various steps of the selling model. On the other hand, research could help to refine value-oriented communication strategies for online and social media channels in this market. 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.

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9 Appendices

9.1 Appendix A: Steps of a systematic literature review

Definition of the research question:

The objective of a systematic analysis of the current literature is to obtain an in-depth understanding of processes and management practices which can be applied in a VBS approach. Unfortunately, there is a dearth of research focusing on value-oriented selling processes in B2G market segments. Therefore, this literature analysis centered on VBS literature which involves B2B market segments. 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?”

Selection of bibliographic databases, web sites and search terms:

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”.

Töytari and Rajala (2015, p. 102) state that many scholars in the academic literature are concerned with the creation of customer value in organizations. Yet the application and the holistic communication of value, especially in selling processes, has received scant attention in the research community. Moreover, Töytari and Rajala (2015, p. 102) mention that the number of academic scholars in this research area is rather limited. The selected key words in this literature review ensure the identification of those scholars who have focused on the development of a value proposition in combination with selling practices.

The analysis of the chosen scientific databases generated the following results:

Database	“value-based selling”	“value+selling”
Sciencedirect.com	57	163
Emeraldinsight.com	47	55
Scholar.google.com	738	1990

Practical and methodological quality screening

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. Documents of the scholars were reviewed in order to ensure that the key words “value-based selling” or “value selling” were present in the key words, title or in the abstract of the sources. Ultimately, 31 double-blind reviewed articles were selected. All 31 articles were read in detail and form the foundation for an in-depth description of VBS activities in business markets.

9.2 *Appendix B: Interview Guidelines (English and German)*

General information about the Research Project Value-Based Selling in the Medical Device Industry in Austria

Objective of the research: Development of a Value-Based Selling model for the medical device industry in Austria by means of a multi-method research design.

The first part of the data collection process consists of qualitative expert interviews. The objective is to investigate the importance of various tactics and practices which can be applied in a Value-Based Selling process in the Austrian medical device industry.

The prerequisite for participating in the qualitative survey is at least 5 years' work experience in the Austrian medical device industry in sales or sales-related positions, e.g. sales representative, sales manager, sales-oriented product manager, market manager or marketing manager with regular customer contact.

Participants should also have experience in creating or applying selling strategies with a focus on the communication of the total value which an offered product/solution delivers to the customer.

The interview consists of 18 - 20 open-ended questions which are related to specific selling activities or Value-Based Selling practices in the medical device industry. The length of the interview is approximately 40 - 45 minutes. Information is then analyzed employing a qualitative content analysis following the Kuckartz method. Information from the interview will be processed anonymously in the dissertation by Johannes Reiterer, student of the International Economic Relations and Management PhD programme and Head of the Business Development & Sales Management master's program at the University of Applied Sciences, Wiener Neustadt.

Thank you very much for your participation.

A: Introduction and relevance of VBS for the medical device market in Austria

1. What kind of work experience do you have in the medical device area in Austria? (total years of work experience, functions, area of responsibilities, product areas)
2. Which selling approaches/strategies have you ever applied in this market segment? (or: Which approaches have been employed by companies you have worked for?)
3. What do you associate with the term Value-Based Selling? How would you characterize this selling approach?

Definition of Value-Based Selling: “Value-Based Selling is a selling process which includes the identification, quantification, communication and verification of value from an offered product/solution for a customer.” (Töytäri and Rajala, 2015, 101)

4. How important is Value-Based Selling in the medical device industry? Why is it important/not important?
5. Which departments deal with the concept of Value-Based Selling in this market segment? How are these different departments involved in the selling process?

B: Pre-selling activities

6. Which criteria are relevant for the decision to use a specific selling approach for a specific customer, or not? In which selling situations does it make sense to apply Value-Based Selling? (e.g. for specific products/product areas, companies and their positioning, market situations, economic conditions, or customer groups)
7. Which characteristics should a provider of medical services in Austria possess in order to apply Value-Based Selling?
8. Value-Based Selling requires an in-depth understanding of the customer. How should an in-depth understanding of customers or customer groups be developed in a selling organization? How would you distribute this information within the selling organization?
9. Which value dimensions are important for the medical device market in Austria? (What do customers value?)

Investigate the importance of different value dimensions:

- *strategic value = e.g. increased know-how, new competencies within an organisation*
- *operational value = e.g. reduction of process costs or increase in output, higher*
- *reliability*
- *social value = e.g. being a member of a network*
- *symbolic value = e.g. focus on employees and their development*

10. Which practices are employed to analyse the total value which a solution provides a customer? Which people should be involved in such a process?
11. How would you develop a value proposition? (e.g. for individual customers, for customer groups, for individual products or product groups) Do you develop a value proposition prior to initial customer contact?
12. Which tools are required to communicate the total value to the customer? (the relevance of value calculators, reference stories, and pre-defined cases) What are the advantages and disadvantages of these tools? How would you train employees to master these tools?

C: Direct selling activities:

13. How would you collect information for the calculation of value impact? How important is trust in this process? How do you further develop trust in the customer's organisation?
14. How important is the identification of problems (potential problems or unexpected problems) in the customer's organisation for a Value-Based Selling process? How do you identify such problems in a VBS process?
15. How would you design a value promise? How would you quantify the value impact of an offering? What are important KPIs in the industry? How would you present these KPIs?
16. How would you present a value proposition to the customer? What are the prerequisites for the presentation of the value proposition?
17. How important is a specification of the offering in your industry? (definition of components, financing and implementation)

18. How do you incorporate the total value which a solution provides the customer in a price negotiation? What is the importance of performance-based contracts in the industry?

D: After-sales activities

19. Are there any activities related to Value-Based Selling which are conducted after the purchase? How is the offering's value impact on the customer's organisation documented?

Informationen Forschungsprojekt

Value-Based Selling in der Medizinproduktebranche in Österreich

Das Ziel des Forschungsprojektes ist die Erstellung eines Value-Based Selling Modells für die Medizintechnikbranche in Österreich durch ein mehrmethodisches Forschungsdesign.

Der erste Teil des Datensammelungsprozess beinhaltet die Durchführung von qualitativen Experteninterviews. Ziel diese Befragung ist die Ermittlung der Wichtigkeit und der Bedeutung von einzelnen möglichen Prozessschritten in einem Value-Based Selling Prozess in der Medizintechnikbranche in Österreich.

Vorraussetzung für die Teilnahme an den Experteninterviews sind 5 Jahre Berufserfahrung in vertriebs bzw. vertriebsnahen Positionen in der Medizinproduktebranche in Österreich (z.B. Vertriebsmitarbeiter, Vertriebs bzw. Verkaufsleiter, vertriebsorientiertes Produktmanagement, Marktmanagement, Marketing Management mit laufendem Kundenkontakt). Teilnehmer benötigen ebenfalls Erfahrung bei der Planung oder der Durchführung von Verkaufsstrategien mit einem Fokus auf der Kommunikation eines holistischen Gesamtnutzens bzw. Gesamtwertes eines Produktes (oder einer Dienstleistung) für einen Kunden.

Das Interview beinhaltet ca. 19 offene Fragen, welche im Zusammenhang mit möglichen Value-Based Selling Aktivitäten stehen. Die erwartete Interviewdauer beträgt 40 – 45 Minuten. Die gesammelten Daten werden mit einer qualitativen Inhaltsanalyse nach Kuckartz analysiert. Resultate der Befragung werden in anonymisierter Form in der Dissertation von Johannes Reiterer, Studierender im Doktoratsprogramm „International Joint Cross-Border PhD Programme in International Economic Relations and Management“ und Leiter des Studiengangs „Business Development & Sales Management“ an der FH Wiener Neustadt, veröffentlicht.

Vielen Dank für Ihre Teilnahme!

A: Einleitung und allgemeine Beschreibung der Bedeutung von VBS für die Medizintechnikbranche in Österreich

1. Welche Berufserfahrung haben Sie im Bereich der Medizintechnik in Österreich?
(Umfang Arbeitserfahrung, Funktionen, Verantwortlichkeiten für Produktbereiche)
2. Welche Verkaufsstrategien und Verkaufsansätze haben sie bisher im Markt angewendet (oder wurden durch Unternehmen in denen Sie bisher tätig waren angewendet)?
3. Was verstehen Sie unter Value-Based Selling? Wie würden Sie diesen Verkaufsansatz beschreiben?

Definition Value-Based Selling: "Value-Based Selling ist ein Verkaufsansatz, welcher die Identifizierung, Quantifizierung, Kommunikation und Verifizierung des Wertes eines Produktes für den Kunden beinhaltet".

4. Wie wichtig ist Value-Based Selling in der Medizintechnikbranche? Warum ist es wichtig bzw. nicht wichtig?
5. Welche Abteilungen in einem Unternehmen sind mit dem Themenbereich Value-Based Selling beschäftigt? Wie sind diese Abteilungen involviert?

B: Pre-Selling Aktivitäten

6. Wie entscheiden Sie, welcher Verkaufsansatz in welcher bestimmten Verkaufssituation, Verkaufsprozess oder Kunden angewendet wird? In welchen Verkaufssituationen würde es Sinn machen Value-Based Selling einzusetzen?
(Produkte bzw. Produktbereiche, Unternehmen und Ihre Positionierung am Markt, Marktsituationen, ökonomische Bedingungen, Kundengruppen?)
7. Welche Charakteristik sollen Kunden haben, damit Value-Based Selling eingesetzt werden kann?
8. Value-Based Selling setzt ein detailliertes Verständnis des Kunden voraus. Wie soll so ein Verständnis in einer Verkaufsorganisation geschaffen werden? Wie werden bzw. sollen Informationen über Kunden innerhalb einer Organisation verteilt und gehandhabt werden?
9. Welche Wertdimensionen sind für Kunden in der Medizintechnikbranche wichtig? Worin sehen Kunden einen Wert?

Erfrage die Bedeutung von unterschiedlichen Wertdimensionen

- *Strategischer Wert: Know how, neue Kompetenzen in der Organization des Kunden*
- *Operationaler Wert: Reduktion von Prozesskosten oder Erhöhung des Outputs, höhere Verlässlichkeit*
- *Sozialer Wert: Ein Teil eines Netzwerks zu sein?*
- *Symbolischer Wert: Fokus auf Mitarbeiter und deren Entwicklung*

10. Wie soll der Wert einer Lösung für einen Kunden analysiert werden? Welche Aspekte sind dabei zu berücksichtigen? Welche Personen sollen in solche Prozesse involviert werden?
11. Wie soll ein Wertversprechen formuliert werden (für individuelle Kunden, für Kundengruppen, für individuelle Produkte oder Produktgruppen)? Sind Wertversprechen vor dem ersten Kundenkontakt zu formulieren (Warum – Warum nicht)?
12. Welche Tools werden benötigt, um den Wert eines Produktes an den Kunden zu kommunizieren (Bedeutung von Wertkalkulatoren, Referenzgeschichten, vordefinierte Cases? Warum, warum nicht? Was sind Vorteile von unterschiedlichen Kommunikationsinstrumenten? Wie sollen Vertriebsmitarbeiter für die Verwendung der Tools trainiert werden?

C: Direct Selling Aktivitäten

13. Wie sollen Informationen, welche für die Kalkulation des Wertes wichtig sind, gesammelt werden? Welche Bedeutung nimmt Vertrauen dabei ein? Wie kann man Vertrauen in solchen Situationen aufbauen?
14. Welche Bedeutung haben die Identifizierung von Problemen, potentiellen Problemen odr Problemen über die der Kunde bisher nicht gedacht hat für einen Value-Based Selling Prozess? Wie können solche Probleme aufgedeckt werden?
15. Wie soll man ein Wertversprechen erstellen? Wie soll der Einfluss eines Angebotes quantifiziert werden (in welchem Ausmaß)? Wie soll der Einfluss demonstriert werden? Was sind wichtige KPI's für die Industrie? Wie sollen diese KPI's präsentiert werden?

16. Wie soll ein Wertversprechen dem Kunden präsentiert werden? In welchem Teil des Verkaufsprozesses? Was sind Grundvoraussetzung für die Präsentation des Kundenwertes?
17. Wie wichtig ist es in der Industrie, ein Angebot während des Verkaufsprozesses weiter zu spezifizieren (Definition von Komponenten, Finanzierung und Einführung in die Organisation)? Welche Rolle spielt dies in einem Value-Based Selling Prozess?
18. Wie kann ein Wertversprechen in eine Preisverhandlung eingebaut werden? Welche Rolle nehmen leistungsbezogene Verträge in der Industrie ein?

D: After Sales Aktivitäten

19. Gibt es Aktivitäten oder Schritte die in Zusammenhang mit einem Value-Based Selling Verkaufsprozess stehen, die nach dem Kauf gesetzt werden? Wie wird der Einfluss der verkauften Lösungen auf die Organisation des Kunden dokumentiert?

9.3 Appendix C: Main categories for the qualitative content analysis

Category 1	Sales trends on the medical device market
Description:	All statements with a focus on developing selling processes on the medical device market over recent years(decades) and the positioning of the company on the market are summarized in this category.
Application:	Practices used throughout the years, e.g. general selling strategies, sales tools, general selling tactics, trends in selling processes.
Example:	Ten years ago, almost all companies on the market were using product-focused selling approaches.
Distinction:	This category does not include a description of specific elements from a VBS process.

Category 2	Idea and the application of VBS
Description:	All statements with a focus on situations where VBS can be used are summarized in this category. It also includes statements about the interviewees' general understanding of VBS.
Application:	Products, customer groups, the characteristics of customers or specific situations where VBS can be used. Statements dealing with a general and basic description of VBS.
Example:	Especially complex solutions of medical devices require a value-oriented selling argumentation. The product is not in the centre of attention in a VBS process, but rather the main focus of VBS is to solve a problem of the customer.
Distinction:	This category includes statements about elements from VBS that are initially mentioned by interviewees at the beginning of the interview. It does not include a detailed discussion about individual elements and aspects of VBS.

Category 3	Developing an understanding of customers and their problems
Description:	All statements with a focus on developing an understanding of the situation of the customer are summarized in this category. Moreover, statements with a focus on apparent or non-apparent problems are summarized in this category. Additionally, statements with a focus on the type of information to be collected in a VBS process are summarized in this category.
Application:	It includes planning activities and direct selling activities in a VBS process. Examples are market and customer analysis tools, internal analysis practices, observation of workflows in the organization of customers.
Example:	Sales representatives have to have knowledge about workflows in the organization of the customer. Job shadowing initiatives are an excellent way to identify potential problems.
Distinction:	This category includes statements with a focus on identifying problems and workflows in the organization of the customer. Other elements of a VBS process and recommendations concerning how to deal with difficulties during a selling process, are summarized in category 4.

Category 4	Development and communication of a value proposition
Description:	All statements with a focus on the communication and quantification of a value realization potential are summarized this category.
Application:	Examples of value dimensions and value arguments that are relevant for the medical device area. Ways of quantifying and communicating elements of a value proposition (including KPIs and organizational issues) in sales conversations. Value communication and visualization tools like value calculators or reference stories.
Example:	An intuitive handling of medical devices is an important value argument. People in a product management department have to identify a general value potential that a solution offers to the customer.
Distinction:	Process steps associated with the analysis of the situation and problems from customers are not summarized in this category. Statements dealing with these elements of a VBS process are summarized in category 3.

Category 5	Specification of the offering and price negotiation
Description:	All statements with a focus on a price negotiation process and the role of the purchasing department in a price negotiation are summarized in this category.
Application:	Negotiation tactics, pricing strategies and examples of how purchasing departments have to be approached in a VBS process.
Example:	A reduction of the price in a value-oriented selling process should be avoided. VBS requires the development of a price corridor.
Distinction:	Ways in which to quantify the total value of a solution for a customer are not summarized in this category.

Category 6	After-sales activities
Description:	All statements with a focus on selling activities after the finalization of a contract are summarized this category.
Application:	Strategies for the implementation of a solution in an organization. Verification of value after the implementation of a product.
Example:	The role of after-sales activities, strategies to verify value after the introduction of a product in the organization of the customer.
Distinction:	Process steps prior to the establishment of the final contract are not summarized in this category.

9.4 Appendix D: Sub categories for the qualitative content analysis

Category 1	Sales trends on the medical device market
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Category 2	Idea and application of VBS
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Sub-category 2.1: General scope of VBS

- All statements dealing with an initial and general understanding of value-oriented selling approaches or VBS are summarized in this category.
- IN: Every argument dealing with a general overview of VBS prior to a detailed discussion of elements and activities in the process.
- NOT: Detailed explanations about specific elements and process steps of VBS.

Sub-category 2.2: Importance of VBS on the market

- All statements dealing with the importance of VBS and the medical device market are summarized in this category.
- IN: Every argument justifying the application of this selling approach. Additionally, counter-arguments related to the usage of VBS in this industry sector are also summarized in this category.
- NOT: General statements about VBS.

Sub-category 2.3: Application of VBS for specific products

- All statements including products or product categories where the application of VBS makes sense are summarized in this category.
- IN: Arguments justifying the usage of VBS for different product groups.
- NOT: Arguments dealing with other selling tactics that might be relevant for specific product categories.

Sub-category 2.4: Customer groups where VBS can be used

- All statements dealing with the application of VBS for specific customer groups are summarized in this category.
- IN: Arguments why VBS should be used (or not) for specific customers or customer groups.
- NOT: Arguments dealing with other selling tactics that might be relevant for specific customers or customer groups.

Category 3	Developing an understanding of customers and their problems
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Sub-category 3.1: Activities to develop an understanding of processes in the organization of the customer

- All statements dealing with recommendations concerning how sales organizations or individual sales representatives develop an understanding of the customer are summarized in this category.
- IN: Requirements and knowledge experiences that sales representatives need to understand processes in the organization of the customer.
- NOT: Statements focusing on identifying specific problems in the organization of the customer.

Sub-category 3.2: Activities to uncover problems from customers

- All statements dealing with practices to identify apparent or non-apparent problems in the organization of the customers are summarized in this category.
- IN: Strategies to increase the awareness in an organization of different problems. Types of potential problems in the organization of the customer.
- NOT: Statements focusing on identifying decision-making processes and decision criteria.

Sub-category 3.3: Type of information needed to develop an understanding of customers

- All statements dealing with various categories and types of information needed for a VBS process are summarized in this category.
- IN: Types of information mentioned by experts, e.g. decision criteria, motives of key decision-makers.
- NOT: Statements focusing on processes and strategies to identify required information.

Category 4	Development and communication of a value proposition
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Sub-category 4.1: Operational value dimensions

- All statements dealing with elements of a value proposition with a focus on operational value dimensions, which influence the input or output of processes in a positive way.
- IN: Examples such as the more efficient usage of resources, improved quality of products or services, reduction of risks.
- Elements of a value proposition associated with other value dimensions.

Sub-category 4.2: Strategic value dimensions

- All statements dealing with elements of a value proposition with a focus on the competitiveness of a company on the market.
- IN: Examples such as enhancing learning capabilities, developing know-how in the organization of the customer, increasing the ability to develop innovations, reducing the dependence on other actors on the market.
- Elements of a value proposition associated with other value dimensions.

Sub-category 4.3: Social value dimensions

- All statements dealing with elements of a value proposition that influence the image of the customer on the market.
- IN: Examples such as facilitating customers to be a member of an exclusive network or an alliance, supporting acquisition strategies from customers.
- Elements of a value proposition associated with other value dimensions.

Sub-category 4.4: Symbolic value dimensions

- All statements dealing with elements of a value proposition that influence the productivity of employees in the organization of a customer in a positive way.
- IN: Examples such as enhancing the job satisfaction or motivation among employees.
- Elements of a value proposition associated with other value dimensions.

Sub-category 4.5: Departments dealing with VBS and organizational issues

- All statements dealing with departments involved in VBS process in the selling organization are summarized in this category.
- IN: The role of departments in VBS processes, activities that have to be completed by different departments in a VBS process, organizational issues in a VBS process.
- OUT: No description of specific process steps in a VBS process.

Sub-category 4.6: Strategic approach to the customer, process steps and recommendations

- All statements dealing with a description of a general VBS approach are summarized in this category. This includes descriptions of specific elements and activities of a VBS process.
- IN: Explanations concerning how C-level manager and important decision-makers from a customer are involved in a VBS process, order of activities, preparation of a value proposition during the process.
- OUT: Elements of a price negotiation and the exact quantification of a value proposition.

Sub-category 4.7: Tools in a Value-Based Selling process

- All statements dealing with value visualization and quantification tools are summarized in this category.
- IN: The role of value calculators, reference stories and other value visualization tools. Pitfalls associated with the usage of these tools.
- OUT: Descriptions of general activities for developing a value proposition.

Sub-category 4.8: Formulation and quantification of a value proposition

- All statements dealing with approaches to formulate and quantify a value proposition are summarized in this category.
- IN: KPIs of a value proposition, the importance of KPIs for different members of a buying unit in a selling process, elements of a value proposition that have to be quantified.
- OUT: Descriptions of general activities for developing a value proposition and a description of general value dimensions.

Sub-category 4.9: Challenges in a VBS process

- All statements dealing with obstacles challenges in a VBS selling process are summarized in this category.
- IN: Awareness towards problems and costs in the healthcare system.
- OUT: Specific challenges and obstacles in a price negotiation.

Category 5	Specification of the offering and price negotiation
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Category 6	After-sales activities
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9.5 Appendix E: Results of the Text Analysis

A) Trends in the medical device market

Medical devices are an extremely heterogenic product category (e.g. complex investment goods, simple commodity products). The complexity of the product, the usage area, and the cost structure all influence the communication and selling approach (Interviewee B, 8-9; interviewee C, 16-18; interviewee D, 9). Apart from differences among product categories it may be summarized that product-oriented selling approaches were the most common selling tactics more than one decade ago (Interviewee A, 7-9; Interviewee J, 37). The demonstration of a unique selling proposition and specific product features were major parts of the product presentation (interviewee G, 3 – 5). Question techniques in sales conversations were used to determine the degree of relevance of product features for a specific customer (Interviewee E, 7-9).

Experts discern various trends on the market which increase the importance of developing and using more powerful selling approaches:

- Increasing level of competition: An increasing number of companies which offer medical devices in Austria have been observed over the last decades (Interviewee G, 7).
- Product specifications: An increasing number of products with similar functions and features (Interviewee I, 11, Interviewee A, 17). Additionally, service components are becoming more important (Interviewee G, 5; Interviewee J, 23; Interviewee B, 7).
- Cooperation's between providers of healthcare services and the establishment of hospital holding companies have changed the procurement process (Interviewee J, 21). In turn, this has changed the decision-making power in procurement processes, with procurement departments now influencing the final purchasing decision to a greater extent compared with decades ago (Interviewee I, 7; Interviewee J, 21). Cost aspects of an offering are gaining in importance for decision-makers in medical departments, such as chief physicians.

The establishment of more strategic selling approaches is one opportunity to tackle these changes on the market (Interviewee D, 11).

(B) The scope of VBS in the medical device market

The interview guideline includes questions aimed at identifying activities which are primarily associated with VBS in the medical device market. This leads to an overview of the most relevant elements of this selling approach in this market area. This section of the interview guidelines also concerns the application of VBS in various situations on the market, thus generating an overview of product groups and customer segments in which VBS can be applied.

Experts view VBS as a sales tactics which avoids placing features and benefits at the center of attention during sales conversations with customers. (Interviewee A, 15). Communication of the individual and holistic values which a solution offers providers of healthcare services or individual people in the organization is seen to be the central concept of this selling approach (Interviewee C, 22; Interviewee E, 11). It also includes the quantification of the value potential of a solution (Interviewee F, 27; Interviewee D, 13). The term VBS is not commonly used by experts in this market area. Synonyms for VBS include “economic value” (Interviewee B, 11) and “customer insights” sales tactics (Interviewee A, 15).

Experts identify two main benefits from VBS on the medical device market: One the one hand it represents an opportunity to differentiate one’s offering from that of one’s main competitors (Interviewee G, 7, 17; Interviewee A, 17). On the other hand, it is a method of justifying higher prices on the market (Interviewee B, 11; Interviewee D, 33).

VBS can be applied in various selling situations and for a broad range of product categories in the medical device market in Austria. Indeed, the majority of the experts mention that VBS may be implemented for almost every product category (Interviewee G, 39; Interviewee D, 31; Interviewee I, 15; Interviewee C, 2). On the one hand, this includes less complex products which are sold individually, e.g. commodities such as infusion lines (Interviewee B, 8; Interviewee C, 24; Interviewee D, 27). Additionally, VBS may also be applied in selling processes for more complex offerings with product and service components, high-tech products (Interviewee C, 26), and forms of therapy (Interviewee C, 32). Product type influences the extent and/or the intensity at which various elements of VBS are applied in a selling process. VBS processes are less complex with regard to the

demonstration of the total value impact of simple standalone products (Interviewee C, 32; Interviewee E, 41).

The usage of VBS is called into question in situations in which a small selling volume does not justify investment in additional selling efforts (Interviewee H, 51) or in the absence of relevant key value dimensions which are important for customers (Interviewee G, 41).

Statements by experts revealed varying views as regards the importance of VBS for different customer segments in the healthcare market. The financing structure and ownership structure of healthcare service providers influence the strategic decision as to whether VBS should be applied or not. Three experts stated that privately-owned institutions such as private hospitals and veterinary hospitals are more receptive to holistic value arguments than are publicly financed institutions such as public hospitals (Interviewee C, 50; Interviewee G, 19; Interviewee I, 21). The general procurement strategy of healthcare providers also influences the decision as to whether VBS should be applied or not. It is very difficult to apply value-oriented selling approaches to selling situations in which customers are strongly focused on the initial purchasing price (Interviewee B, 17; Interviewee C, 48). Decision criteria of key decision-makers are significant indicators for the usage of VBS. Key decision-makers must have a holistic view of the value which an offering provides to providers of healthcare services (Interviewee E, 29; Interviewee F, 25; Interviewee I, 21). One method of enhancing the receptiveness of key decision-makers towards a holistic value argumentation is the ability of a sales representative to identify imperceptible problems (Interviewee A, 23) or to address obvious issues in the customer organization (Interviewee E, 33-35; Interviewee B, 17).

(C) Development of an understanding about the customer

The application of VBS from a selling organization in the medical device industry requires an understanding about issues and problems from customers. Sales representatives play a key role when it comes to the development of such an understanding (Interviewee D, 41; Interviewee H, 41). Work experience of individual sales reps have an essential role when it comes to the development of such an understanding in a selling entity. One expert even mentions that it lasts three to four years to understand processes in a hospital (Interviewee A, 35).

Experts mention two general methods of developing such competencies in a sales force. The first approach involves the development of an appropriate recruiting strategy in which hiring processes are focused on professionals (e.g. nurses or physicians) from the healthcare sector (Interviewee D, 35; Interviewee B, 19; Interviewee H, 45). The second approach includes the establishment of job shadowing strategies in cooperation with healthcare institutions (Interviewee A, 33; Interviewee B, 15; Interviewee C, 56; Interviewee G, 35). In such an initiative, sales representatives spend one day in the customer organization. This additionally helps to develop an understanding of the personality and motives of key decision-makers (Interviewee F, 59). The development of a corporate job shadowing strategy requires trust and close cooperation between the selling organization and healthcare institution.

The structure of the sales force also influences the manner in which an understanding of various customer groups is developed. When a small number of customers are assigned to one sales representative, this enhances their ability to become more familiar with different internal processes (Interviewee D, 37). Inexperienced sales representatives can also be supported and trained by more experienced colleagues in such sales force structures (Interviewee H, 43).

Interviewees mentioned a wide variety of information about customers which is important for the implementation of VBS. One expert recommends collecting information at the beginning of the process in order to identify whether the application of VBS is justified. One example is the analysis of the vision statement or annual reports of the healthcare provider. These documents may include information which potentially increases the need for solving a specific issue (Interviewee E, 71). The collection of information about potential budget constraints for new investments at the beginning of the selling process also influences the general decision as to whether VBS should be used or not (Interviewee E, 53).

Regarding the development of an understanding of processes in the customer organization, experts confirm that basic workflows in a specific market segment such as hospitals, are similar. Additionally, every healthcare provider has different guidelines and work approaches which should be identified as well (Interviewee D, 37).

From an organizational point of view, it is important to identify the decision-making process and key decision-makers in the organization (Interviewee E, 73; Interviewee C, 52; Interviewee A, 27). This includes the personal motivation of key decision-makers and their receptivity towards innovations (Interviewee F, 59; Interviewee C, 58; Interviewee E, 73, Interviewee J, 35; Interviewee F, 57). Identification of perceptible or imperceptible problems in the customer organization is an essential element of the VBS process in the medical device industry. In this context, it is important to develop awareness of a problem among key decision-makers prior to the presentation of the value potential of an offering (Interviewee A, 69). This requires patience on the part of sales representatives as well as ongoing discussions concerning different topics (Interviewee E, 67; Interviewee F, 17).

Particularly at the beginning of a selling process, experts characterize the expression of potential problems in conversations with customers as being difficult (Interviewee A, 73; Interviewee A, 69). They therefore recommend addressing problems indirectly. For example, a problem might be stated as an observation by a sales representative in another department at the same healthcare organization or another healthcare institution (Interviewee A, 77). Furthermore, the SPIN selling problem analysis technique is recommended as a potential tool for revealing problems in the customer organization (Interviewee J, 27). The objective of this technique is to raise a customer's awareness of the consequences of thus far unsolved problems (Interviewee C, 38). Sales representatives also must display their expertise and experience in tackling customer issues (Interviewee B, 19; Interviewee A, 31). A significant factor during such a problem analysis is transparency, i.e. findings should be presented quite objectively. Solutions for problems should be developed in a mutual process involving both the customer and the selling organization (Interviewee G, 85).

Ultimately, it is vital to develop a holistic overview of potential problem areas and their consequences in the customer organization. This requires a problem analysis from different angles. It is important to identify overlaps of problem descriptions from different entities and representatives of the customer organization (Interviewee A, 71).

(D) Relevant value dimensions

A holistic presentation of how an offering positively impacts the customer is crucial for the successful application of VBS. Value dimensions and value arguments which are associated

with operations and processes in the customer organization are described by experts as absolutely vital. Ultimately, the qualitative in-depth interviews revealed three process categories which may be enhanced by offerings from vendors:

Procurements processes: This process category concerns the drawing up of contracts and delivery of orders. Reliable availability of products and assured delivery dates are seen as important value components. Experts stated that this value dimension has been becoming more important since the start of the Corona crisis (Interviewee B, 7; Interviewee C, 4, 22; Interviewee D, 15, Interviewee Y, 4).

Handling of medical devices in medical workflows: This process category consists of the daily working routines of people who work with medical devices, such as doctors and nurses. Medical devices must be straightforward in their operation (Interviewee F, 37; Interviewee J, 37; Interviewee A, 41) and must be reliable (Interviewee D, 33, 45; Interviewee B, 21; Interviewee G, 9). A reduction of potential complications and a reduction of handling errors are also seen as elements of a holistic value proposition (Interviewee A, 53). External support serving to optimize processes in healthcare institutions is a further method of increasing the effectivity of a value proposition (Interviewee H, 35; Interviewee D, 45). The availability of data which evidence the quality and reliability of products is vital for the establishment of a valid value proposition (Interviewee A, 41).

Medical workflows with patients: The third process category focuses primarily on the impact of medical devices on the wellbeing of patients. In this regard, it is important to distinguish between varying lengths of clinical processes or safety aspects (Interviewee E, 55). Examples of the length of clinical processes include the length of hospital stays, time in the operation theater (Interviewee A, 41), and the length of the mobilization period of patients following an operation (Interviewee G, 63). On this subject, repair services and rapid access to sales representatives when a problem arises are described as important value arguments as well (Interviewee D, 15, 45; Interviewee Y, 4).

The in-depth interviews revealed contrasting views of experts regarding the importance of communicating the potential impact of a medical device on the length of patients' hospital stays. One expert explicitly stated that he does not use this argument in VBS processes. He defends this by arguing that the length of hospital stay is seen as an unimportant KPI for many healthcare institutions (Interviewee E, 57, 95). Experts also point out that the length

of hospital stay cannot be seen in isolation from other indicators. Reduced hospital stay may cause other infections, which can in turn result in additional hospital stay (Interviewee C, 62). Another expert argues that the reduction of the total time a customer spends in a hospital increases the turnover of patients in a healthcare institution, thus potentially resulting in higher costs for the institution (Interviewee A, 43).

In contrast to these views, other experts view the reduction of patients' hospital stays as an important additional value dimension (Interviewee A, 11). This argument is most relevant for privately owned providers of healthcare services (Interviewee C, 64). A reduced length of patients' hospital stay may lead to a higher total number of patients which can be treated in an organization (Interviewee I, 31).

Statements by expert leads to the conclusion that value arguments which are associated with patients are an important component of a value proposition (Interviewee F, 29; Interviewee D, 49, 51; Interviewee E, 57). One expert even mentions that "*The patient is at the center of attention by providers of healthcare institutions*" (Interviewee B, 21). One central issue in this context is the occurrence of infections in healthcare institutions (Interviewee H, 13). "*More people die from infections in hospitals than they do from cancer.*" (Interviewee E, 63) Two experts explicitly stated that an explanation of how a medical device helps to prevent infections in a healthcare institution is an important element of value proposition (Interviewee C, 28; Interviewee H, 16).). Though infections are seen as a big issue, experts see great potential in creating more awareness for this issue among providers of healthcare services (Interviewee G, 23). Another example of an important value dimension in this context is the reduction of complications which are associated with an operation (Interviewee A, 53).

Image and reputation are a significant factors for providers of healthcare services. Though experts mentioned this component of a value proposition far less often compared with operational value dimensions, it may nevertheless be concluded that this aspect could be an important element of a holistic value communication as well.

In addition to a broad range of value arguments which were identified by means of in-depth interviews, experts stated that the number of reference customers and the positioning of a vendor on the market also influences purchasing decisions by customers (Interviewee J, 57).

The reputation of a company can vary between different product categories (Interviewee G, 27). This leads to the conclusion that companies in the market are associated with core competencies in different product categories. Providers of medical devices must position themselves as a reliable partner in the market who adds value to customers (Interviewee C, 26). Flexible accessibility and responsiveness of sales representatives when problems with medical devices arise are important factors for establishing such an image on the market (Interviewee A, 81).

The image and reputation of healthcare providers may be established on two different levels. The first level includes the whole healthcare organization. This aspect is especially important for private organizations such as private hospitals (Interviewee G, 23). A high level of patient satisfaction forms the basis for the establishment of a positive image. Hence, experts report the increasing importance of conducting systematic patient marketing, especially for privately managed organizations (Interviewee A, 15). Patients also recognize quality and innovation in the infrastructure of healthcare providers. One expert mentioned as an example robotic technology which is used in operation theaters (Interviewee A, 45). The second component of image is associated with the reputation of important persons in the healthcare institution, such as chief physicians or surgeons. The number and quality of research projects may enhance the individual reputation these people. Therefore, the support of such research projects can also be seen as an element of a holistic value proposition (Interviewee B, 39; Interviewee J, 35).

The establishment of a safe working environment for employees may be an important component of a value proposition as well (Interviewee E, 59; Interviewee H, 39). Blood exposure and needle prick injuries are examples of the kinds of risks which medical staff are exposed to (Interviewee B, 27). The intuitive, straightforward operation of medical devices (Interviewee A, 41; Interviewee D, 53) and well-structured training courses contribute to a safe working environment. Moreover, the reduction of the high workload and stress levels of employees may be used as a value argument (Interviewee I, 31).

(E) Development of a value proposition.

This topic area concerns activities which are needed to establish a holistic, powerful value proposition throughout a selling process. It also includes strategies for approaching customers using VBS. Experts regard it as crucial to begin with the development of a clear sales plan prior to initial customer contact. This plan includes an analysis of key persons in the buying process and a plan for approaching these people by representatives of the selling organization (Interviewee I, 37; Interviewee C, 46).

One expert suggests selling customers the idea and the benefit of a value-oriented view on products and processes at the beginning of the selling process. A commitment by customers is required to analyze internal processes in detail. This forms the basis for the development of suggestions for how these processes may be improved (Interviewee C, 68). The establishment of a high level of trust is regarded as a key prerequisite prior to the start of the project (Interviewee D, 19). Experts recommend involving C-level managers from the customer organization in this process, as these managers focus on the total performance and image of the organization. Hence such managers have the tendency not to primarily evaluate medical devices on their initial purchasing price (Interviewee I, 37; Interviewee G, 67). A commitment by a C-level manager to a holistic view of value also assists selling departments in price negotiations with purchasing departments (Interviewee G, 73).

Experts describe different strategies for involving C-level managers from the customer organization in value-oriented selling approaches, whereby they distinguish between top-down and bottom-up strategies. A selling organization involves C-level managers at the beginning of a top-down strategy. This includes the presentation of an overview of the value realization potential which a potential vendor can offer (Interviewee B, 15; Interviewee F, 49). One expert affirms that this approach is suitable in situations in which companies offer a broad range of products for different medical workflows and different departments (Interviewee F, 53). In a bottom-up strategy, however, individual users of medical devices, e.g. nurses and physicians, need to be convinced by different facets of a value proposition at the beginning of the selling process. This strategy stimulates a broad demand among different entities and functions for a new solution in the customer organization. The demand for a new solution from various parts of the organization is communicated to C-level managers afterwards (Interviewee J, 49, 51).

Ultimately, it may be concluded that the implementation of a new solution or therapy concept is a lengthy process. A company must also be aware that VBS requires additional resources compared with other selling approaches (Interviewee E, 63). Furthermore, implementation of VBS in a selling organization requires change management capabilities. Finally, the concept must be accepted by all the departments of the company which is involved in the process. (Interviewee G, 45).

(F) Formulation and visualization of a value proposition

Following the presentation of an overview of general approaches in a VBS process, this topic area concerns the visualization and formulation of the value proposition.

The quantification of value components increases the objectivity of benefits (Interviewee G, 15). Experts recommend quantifying value individually for different customers (Interviewee A, 87, 91). In contrast to this recommendation, some experts report that such a strategy is rarely employed in the market (Interviewee A, 113). Various companies do not quantify the value impact of an offering in monetary terms (Interviewee D, 62). Some national sales entities use value cases and value calculations which have been developed in other countries (Interviewee A, 56-57).

The formulation and quantification of a value promise must be conducted in multiple ways during a selling process. On the one hand it is important to provide customers an overview of the holistic value impact of an offering (Interviewee I, 37; Interviewee G, 63, 65). On the other hand, and it is crucial to present the value impact in different ways (Interviewee F, 65; Interviewee I, 33). Different members of the buying center require different value communication approaches. Therefore, it may be concluded that different KPIs should be used for different sales conversations (Interviewee B, 32 – 34; Interviewee E, 23; Interviewee F, 89, Interviewee J, 35). For example, purchasing departments are primarily interested in low purchasing prices, while physicians focus on the impact of a medical device or therapy concept (Interviewee E, 23), and nurses are interested in the impact of medical devices on the length of their working processes. The availability of data, e.g. from scientific research, is absolutely vital for medical personnel (Interviewee A, 41, 55). Therefore, it may be concluded that it is essential to include scientific evidence in the value communication.

With regard to the quantification of how medical devices impact the length of medical workflows, some experts recommend calculating the reduction of minutes in the process rather than labor costs. This is particularly important in conversations with medical professionals (Interviewee B, 29,). However, establishing a connection between a reduction in the length of medical processes and a potential for reducing the number of medical personnel in a department should be avoided. Experts fail to see a focus of the healthcare industry on the reduction of HR costs (Interviewee B, 29; Interviewee C, 58; Interviewee F, 87; Interviewee I, 35).

In-depth comparison of an existing process with a modified one created by the usage of a new solution represents an opportunity to show the positive impact of an offering on the customer organization (Interviewee B, 29). Performance of test runs with a new solution is regarded as an effective tool for quantifying a potential time reduction (Interviewee D, 57; 69–71). Experts also recommend developing an easily comprehensible value proposition for various members of the customer's buying center. This may require a reduction in the complexity and versatility of value dimensions and value arguments (Interviewee J, 25, Interviewee I, 45 - 47).

Reference cases or reference stories are vital tools for visualizing the value impact of an offering (Interviewee B, 15; Interviewee F, 73; Interviewee G 83). They are used to create awareness of a problem or a value realization potential (Interviewee G, 73, 77; Interviewee E, 77). Based on a potential rivalry between different healthcare providers or even different organizations in a healthcare holding, experts recommend using different reference cases for different sales conversations (Interviewee A, 87, 93; Interviewee B, 41). The usage of the appropriate case requires experience and industry knowledge by members of a selling department.

Various experts view individual calculations which show the value impact of an offering on an individual customer organization as the most effective value visualization tool in the VBS process. Such individual calculations serve to improve the probability of increasing a customer's commitment to a completely new solution. Based on the relatively rare usage of such calculators, it may be concluded that they represent a means of differentiating a company from its competitors. (Interviewee G, 75, 79; Interviewee B, 45). Sales representatives must take into consideration, however, that value calculators which include

very concrete numbers may lead to detailed discussions of minor details. (Interviewee B, 45; Interviewee A, 99)

(G) The role of VBS in price negotiations

The academic literature describes VBS as a strategy for increasing the average price of products on a market (Schmäh, 2008 40-41). Experts regard it as vital to include a value-oriented price negotiation in the VBS process in the medical device industry. Purchasing departments are viewed as challenging entities in the customer organization with regard to the value-oriented presentation of a product, as purchasing department staff are primarily focused on the initial purchasing price of a product. Experts report an increasing pressure on purchasing departments to reduce initial purchasing costs of medical devices (Interviewee H, 57). An exclusive focus by purchasing departments on their own budget also makes a holistic, long-term value argumentation for a product more difficult (Interviewee A, 101). Members of a purchasing department are less interested in other value dimensions such as time reduction of medical workflows (Interviewee D, 67).

Therefore, it is important to convince users, i.e. nurses and physicians, as well as department heads of the product's value prior to a price negotiation (Interviewee F, 93, Interviewee C, 50; Interviewee B, 39; Interviewee A, 107, 109-111). Support by chief physicians helps to justify a higher price in a price negotiation (Interviewee D, 61; Interviewee J, 51). Experts report the tendency for this to have a strong impact on the final buying decision of medical departments which employ more expensive or more sensitive medical devices (Interviewee E, 85). It is vital for selling organizations to have an understanding of the purchasing approach of the buying organization as well as the motives of procurement department staff (Interviewee D, 61).

Both the transparent communication of added value (Interviewee C, 72) and a unique selling proposition help to achieve higher prices (Interviewee C, 72). During a price negotiation it is important to set the purchasing price of an offering in relation to the value realization potential in the customer organization (Interviewee F, 85; Interviewee C, 76, Interviewee G, 89). Additionally, experts recommend developing a clear pricing strategy for a product in a selling organization. This includes the establishment of floor prices and a price corridor for different customer segments (Interviewee B, 47; Interviewee C, 38). It is also important

to avoid price reductions in price negotiations for products which offer a high added value (Interviewee C, 76; Interviewee I, 51). Due to the increasing transparency of market prices, such a reduction may lead to a decrease in the average market price (Interviewee J, 23, 83).

(H) After-sales activities

Experts regard after-sales support as an essential element of the VBS process in the medical device industry. This process step concerns the implementation of products in the customer organization (Interviewee J,91; Interviewee H, 59). Sales representatives must ensure that products from their companies are handled correctly in order to deliver the added value which was previously communicated in the selling process. Market segments which have a tendency to include transactions with a high volume (e.g. hospitals) are characterized by a limited, static number of customers (Interviewee B, 59). Indeed, one expert stated that sales in such market segments per definition do not include after-sales activities (Interviewee F, 97). Meetings and activities by sales representatives at the end of a selling process may lead to new sales initiatives (Interviewee I, 53, 55; Interviewee J, 51).

(I) Implementation of VBS in an organization

VBS may be characterized as a broad, holistic selling approach which requires the involvement of several departments in the selling activities. The in-depth interviews revealed four different functions in a company which can assume different responsibilities in a selling process: Sales; marketing, clinical engineering, and support (Interviewee D, 39; Interviewee G, 47; Interviewee I, 29). In VBS processes which include several entities of an organization, experts recommend defining one person as the main liaison for the customer. This contact person should also act as a coordinator of activities in the selling organization. In the majority of cases, sales representatives or account managers who are assigned to a specific customer take on this responsibility (Interviewee J, 71; Interviewee A, 19, 85).

Apart from personal selling activities, communication of value is conducted by marketing departments or product management functions (Interviewee C, 21). In the VBS process these entities must also analyze market trends (Interviewee I, 31) and the positioning of different products on the market (Interviewee G, 55). Furthermore, they review scientific studies in order to generate an evidence-based value proposition. (Interviewee A, 21, 51). An

evaluation of the customer satisfaction levels and the documentation of success rates of therapies are other key activities performed by these departments in a VBS process (Interviewee J, 71). Some experts also view marketing as a part of sales (Interviewee J, 51) thus necessitating employees of these departments to visit customers on a regular basis (Interviewee G, 55).

Departments in the area of clinical engineering handle complex technical inquiries from customers (Interviewee D, 21; Interviewee I, 59). Customer service or supply chain management units ensure the reliable distribution of products (Interviewee A, 21). Additionally, experts also regard controlling departments as being highly significant in VBS processes (Interviewee G, 47, 49, 59), particularly with regard to the definition of pricing strategies. Experts also mention the possibility of establishing a separate pricing department in order to define the exact price corridors for various products (Interviewee I, 45).

(J) Challenges in the VBS process

Finally, experts identify various challenges and difficulties with regard to the application of VBS in the medical care sector. This selling approach requires an alignment of objectives from different entities in the organization. One expert provided the following example: The value of a reliable, frequent delivery of products can be counteracted by the supply chain department's objective to reduce a company's stock or logistic costs (Interviewee A, 59, 61, 67). A lack of coordination of activities from different departments negatively impacts the output of VBS as well (Interviewee A, 67).

Experts recount that employees of healthcare providers are primarily focused on their own area of responsibility. This increases the difficulty of communicating the total value impact which an offering has on the whole institution (Interviewee E, 81; Interviewee F, 33; Interviewee G, 15). Additionally, experts characterize the process of gaining access to key persons in the customer organization as difficult. It is a challenge to secure meetings with top decision-makers such as C-level managers of healthcare providers. (Interviewee F, 39; Interviewee G, 69-71)

Expert also view it as problematic that many hospital employees are not aware of the "performance-oriented hospital financing" system (LFK), which regulates the

reimbursement of costs for the healthcare services provided by hospitals. This system potentially supports the calculation of an offering's financial value impact on the healthcare provider (Interviewee J, 39; Interviewee I, 13). One expert describes this system as not performance-oriented at the moment (Interviewee I, 39).

9.6 Appendix F: Draft version of the questionnaire (incl. comments)

1. How many years of work experience do you have in sales and sales-related jobs (e.g. market management, product management, business development) in the medical device sector in Austria?

A: 0 years

B: 1 – 5 years

C: 6 – 10 years

D: 10 – 15 years

E: 15 – 20 years

F: 20 – 25 years

G: More than 25 years

2. What is your gender?

A: Female

B: Male

C: Other

3. What is the highest level of education that you have completed?

A: University postgraduate programme (Master, PhD)

B: University undergraduate programme (Bachelor)

C: High school

D: College

E: Secondary school

Compared with other salespeople working for your company, how would you evaluate your overall performance. (-3 = “much worse” and +3 = “much better.”)

4. on achieved sales in the 12 months prior to the COVID crisis

5. on achieved sales in the last 12 months.

6. on the achieved total contribution margin in the 12 months prior to the COVID crisis

7. on the achieved total contribution margin in the last 12 months.

8. exceeding the sales targets and objectives that were assigned to me in the 12 months prior to the COVID crisis

9. exceeding the sales targets and objectives that were assigned to me in the last 12 months

10. selling products with higher profit margins in the 12 months prior to the COVID crisis
11. selling products with higher profit margin in the last 12 months.
12. producing a high market share for my company in my territory in the 12 months prior to the COVID crisis
13. producing a high market share for my company in my territory in the last 12 months.

Feedback A: “Keep in mind that not all companies are setting up sales targets for individual sales representatives. Therefore, I would skip this question item. Additionally, the formulation of the questions can be characterized as long and complication. I would suggest to reduce the length and complexity of the questions. The definition of the time period is vague. I do not have the exact starting point of the crisis in my mind. Therefore, I would recommend to mention the exact timespan (March 2019 – March 2020).”

Feedback B: “A lot of companies in the medical device area develop sales targets individually. A comparison of one sales rep with other sales reps in an organization is difficult. I recommend to skip this question from the questionnaire. “

Feedback C: “The scale which is used to measure success is very long. I would recommend to skip one question item with the lowest relevance (e.g. exceeding sales targets or market share in a sales territory). The formulation of the questions is very complicated. Develop one item Battery for the performance prior the COVID crises and one item battery for the performance in the last 12 months. Also write down the exact timespan prior the COVID crises.”

General Feedback A, B, C: The adoption of the scale and scale items, which were originally developed by Terho et al (2017, p. 52) is suitable for the medical device industry and the scope of this scholar.

How do you agree with the following statements? (1 = I don't agree; 7 = I totally agree):

14. Our customers challenge us to demonstrate the superior value of our market offerings.
15. Our customers have high expectations for service and support.
16. Our customers expect us to resolve challenges in workflows.
17. Our customers expect us to make an impact on their medical performance.

General feedback A, B, C: The adoption of the scale items, which were originally developed by Homburg, Müller and Klarmann (2011, pp. 70 – 72) for the medical device industry and the scope of this scholar is ok. The adoption of the wording from individual questions in this scale which is based on the requirements from the medical device industry is fine.

Please indicate to what extent you do the following activities (1 = not at all; 7 = to a great extent)

- 18. I prioritize customers based on their reputation to our firm.
- 19. I allocate resources relative to the attractiveness of the customer.
- 20. I use clear guidelines for qualifying high potential prospects.
- 21. We target our selling efforts based on customers' fit with our value creation capabilities.

Which of the following statements best describe your preferred way to asking question during a sales encounter: (1 = does not apply; 7 = fully applies)

- 22. I spend a lot of time asking questions about the customer's current situation (e.g. "How many patients do you treat per year?")

Feedback A: "The time period of one year in this question is very long and difficult to estimate for respondents. Reduce the time period which is mentioned as an example of this question."

Feedback C: "The time period in this question is too long. Reduce it to one month."

- 23. I spend a lot of time asking questions about the customer's problems, difficulties, or dissatisfaction (e.g. "Do you have problems with a high number of false alarms by patients?")
- 24. I spend a lot of time asking questions about the consequences of the customer's problems on her/his operations (e.g. "What effect does this high number of false alarms have on you and your colleagues?")
- 25. I spend a lot of time asking questions about the payoff of a possible solution for the customer's operations (e.g. "If you had a solution for reducing the number of false alarms, how much time would you save?")

General feedback A, B, C: The scale according to Hinterhuber (2017, p. 169) is suitable for this scholar and the medical device industry.

Which of the following statements best describe your preferred way to analyze the customer: (1 = does not apply; 7 = fully applies)

- 26. I routinely analyze how customers use our products/service.
- 27. I routinely analyze my customers' processes.
- 28. I understand my customers' business model (or I understand how public healthcare institutions such as state hospitals are financed).

29. To better understand my customers' needs, I also try to understand our customers' patients and their needs.

General feedback A, B, C: The scale according to Kienzler et al (2018, p. 361) is suitable for this scholar and the medical device industry. The adoption of question number three and question number four in this scale is suitable.

Which of the following statements best describe your preferred way to analyze the customer: (1 = does not apply; 7 = fully applies)

30. I work hard to identify the relevant key stakeholders for our products and services in the customer organization.
31. Typically, I deal with relevant decision-makers for our products and services in the customer organization.
32. Typically, the contacts I have in the customer organization make me very effective at working with them.
33. Typically, I know a diverse cross-section of people in the customer organization.

General feedback A, B, C: The scale from Terho et al (2017, pp. 45, 53) is suitable for this scholar and the medical device industry. The adoption of question number one, two and four ("customer organization" instead of "customers' firm") is suitable.

Which of the following statements best describe your method of using customer references: (1 = does not apply; 7 = fully applies)

34. I use customer references in sales communications to provide evidence of our performance.
35. I utilize evidence from our customer references to communicate the value of our products/services.
36. I apply customer references to concretize how customers can benefit from our products/services.
37. I communicate our customer references as a proof of the functionality of our products/services.

General feedback A, B, C: The scale from Terho et al (2017, p. 50) is suitable for this scholar and the medical device industry. It does makes sense to skip question number one and question number six from the original scale based on the objective of this research.

Which of the following statements best describe your preferred way to demonstrate the value(benefit) the customer: (1 = does not apply; 7 = fully applies)

- 38. The offerings to the customers are customized based on an analysis of our customers' needs.
- 39. For each offering made to the customer, I calculate the value that we can provide to the customer.
- 40. An important part of my selling process is to demonstrate the value of our offerings to the customers.

General feedback A, B, C: The scale from Kienzler et al (2018, pp. 365-367) is suitable to measure the value quantification capabilities in a medical device context and this scholar.

How do you evaluate the importance of the following value arguments (customer benefits) of medical devices for customers: (1 = not important; 7 = very important)

- 41. Assured availability of products
- 42. Fixed delivery dates of products
- 43. Straightforward handling of products
- 44. High reliability of products.
- 45. Reduction of potential handling errors by means of intuitive handling of products
- 46. Support customers in the optimization of internal processes
- 47. Reduction of the length of clinical processes (hospital stay / length of an operation / length of the mobilization period)
- 48. Reduction of infections in healthcare institutions.
- 49. Enhancement of the image of healthcare institutions (e.g. by improved clinical processes or fewer mistakes)
- 50. Enhancement of the image of key medical personnel (e.g. support of clinical studies conducted by chief physicians)

1. Version des Fragebogens

1. Wie viele Jahre Berufserfahrungen haben Sie in vertriebs- bzw. vertriebsnahen Positionen (z.B. Markt Management, Produktmanagement, Business Development) im Bereich der Medizintechnik in Österreich?

A: 0 Jahre

B: 1 – 5 Jahre

C: 6 – 10 Jahre

D: 11 – 15 Jahre

E: 16 – 20 Jahre

F: 21 – 25 Jahre

G: Über 25 Jahre

2. Was ist Ihr Geschlecht?

A: weiblich

B: männlich

C: anders

Feedback A: „Es stellt sich für mich die Frage ob der Anonymität der Teilnehmer in einem so kleinen Markt gewahrt bleibt.“

Feedback B: „Ich würde die Frage nicht stellen. Die Fragen haben für die Ziele der Forschung (Forschungsfragen und Hypothesen) keine wirkliche Relevanz.“

3. Was ist Ihre höchste Abgeschlossene Ausbildung?

A: Postgraduate Programm (Master, PhD)

B: Undergraduate Programm (Bachelor)

C: Matura

D: Fachausbildung (Lehre)

E: Hauptschule

Feedback A: „Hier gilt dasselbe wie bei Frage zwei. Dies könnte die Anzahl der Antworten deutlich reduzieren. Achtung die Übersetzung ist nicht korrekt.“

Feedback B: „Wenn man so viele demografische Variablen abfragt kann es im Bereich der Medizintechnik passieren, dass viele Personen diese Fragen nicht beantworten. Teilnehmer könnten dabei fürchten, dass man Ihre Identität nachvollziehen kann.“

Feedback C: „Die Übersetzung ist nicht ganz korrekt.“

Wie würden Sie ihre Verkaufperformance im Vergleich zu Arbeitskolleginnen in Ihrem Unternehmen bewerten (- 3 viel schlechter; +3 viel besser)

Feedback A: *“Hier würde ich natürlich ebenfalls das Feedback zum Aufbau der Skala in der englischen Fassung des Fragebogens übernehmen. In Bezug auf das Wording ist anzumerken, dass „Verkaufperformance“ ein wenig geläufiger Begriff ist. Daher würde ich diesen Begriff durch Erfolg ersetzen.“*

Feedback B: *“In Bezug auf die Fragenstruktur bitte auch das Feedback zur englischen Fassung einbauen. Es ist eher unüblich, dass Wort „Verkaufperformance“ zu verwenden. Ich würde ihn durch „Verkaufsleistung“ oder „Verkaufserfolg“ ersetzen.“*

Feedback C: *“Zur Fragenstruktur habe ich schon Feedback bei der englischen Fassung gegeben. Bei Wording im deutschsprachigen Fragebogen würde ich bei „Performance“ aufpassen. Hier gibt es viel Interpretationsspielraum.“*

4. Erreichtes Verkaufsvolumen in den letzten 12 Monaten vor der COVID Krise.

Feedback A: *“Verkaufsvolumen“ definiert nicht klar was eigentlich gemeint ist. Dies können der Umsatz oder der Deckungsbeitrag sein. Ich würde den Begriff „Umsatz“ verwenden, wenn dies das Ziel der Frage ist.“*

Feedback B: *“Die Bedeutung des Satzes ist mit dem Begriff „Verkaufsvolumen“ schwammig definiert. Ich würde das Wort „Umsatz“ verwenden.“*

Feedback C: *“Die Frage ist für mich nicht ganz verständlich. Daher würde ich den Begriff „Absatz“ oder „Umsatz“ anstelle von Volumen verwenden. Beides wird häufiger von Vertriebsmitarbeitern verwendet.“*

5. Erreichtes Verkaufsvolumen in den letzten 12 Monaten.

Feedback A: *“Hier gilt dieselbe Rückmeldung wie bei Frage 2.“*

Feedback B: *“Siehe Rückmeldung wie bei Frage 2.“*

6. Erreichter Deckungsbeitrag in den letzten 12 Monaten vor der COVID Krise.

7. Erreichter Deckungsbeitrag in den letzten 12 Monaten.

8. Erreichen von Verkaufszielen in den letzten 12 Monaten vor der COVID Krise.

Feedback A: *“Die aktuelle Formulierung in der Fragestellung wird umgangssprachlich wenig verwendet und ist aus meiner Sicht nicht eindeutig“. Ich würde „gesetzte“ oder „vereinbarte“ Verkaufsziele schreiben. Achtung: Die Sinnhaftigkeit der Frage ist zu hinterfragen.“*

Feedback B: *“Ich bin mir nicht sicher ob die Frage so klar genug für Teilnehmer gestellt ist. Ich würde es als „erreichen von Zielvereinbarungen“ formulieren.“*

9. Erreichen von Verkaufszielen in den letzten 12 Monaten.

Feedback A: *“Hier gilt dasselbe in Bezug auf das Wording wie bei Frage 6.“*

Feedback B: *“Die Anmerkungen bei Frage 6 sind hier auch passend.“*

10. Verkauf von Produkten mit einem höheren Deckungsbeitrag in den letzten 12 Monaten vor der COVID Krise.

Feedback A: *“Es ist in der Fragestellung eindeutiger herausarbeiten, dass es dabei um das Verhältnis von Produkten mit höherem DB im Vergleich zu anderen Produkten mit geringerem DB geht.“*

Feedback B: *“Für mich ist dies aktuell keine klare Formulierung der Fragestellung. Ich würde wie folgt die Frage formulieren: Verkauf des Anteils an Produkten mit einem höheren Deckungsbeitrag.“*

11. Verkauf von Produkten mit einem höheren Deckungsbeitrag in den letzten 12 Monaten.

Feedback A: *“Hier decken sich die Anmerkungen mit den Anmerkungen zu Frage 8.“*

Feedback B: *“Hier habe ich dieselben Anmerkungen wie bei Frage 8.“*

12. Steigerung des Marktanteils in Ihrem Verkaufsgebiet in den letzten 12 Monaten vor der COVID Krise.

Feedback A: *“Für mich stellt sich die Frage, ob der Zielgruppe der Umfrage dies überhaupt einschätzen kann.“*

Feedback B: *“Für mich ist die Formulierung nicht klar. Ich würde die Frage wie folgt definieren: Steigerung des Marktanteils im Vergleich zu Mitbewerbern in Ihrem Verkaufsgebiet in den letzten 12 Monaten vor der COVID Krise.“*

13. Steigerung des Marktanteils in Ihrem Verkaufsgebiet in den letzten 12 Monaten.

Feedback A: *“Hier habe ich dieselben Anmerkungen wie bei Frage 10.“*

Feedback B: *“Bitte die Anmerkungen von Frage 10 hier übernehmen.“*

Wie stimmen Sie mit den folgenden Aussagen überein? (1 = ich stimme nicht zu; 7 = Ich stimme voll zu)

14. Unsere Kunden fordern uns auf, den Mehrwert (Zusatznutzen) unserer Angebote zu demonstrieren.

Feedback A: *“Die Formulierung „Unsere Kunden fordern uns auf“ ist wenig deutlich formuliert. Mein Vorschlag für die Formulierung ist „Kunden erwarten sich“. Der Begriff „Zusatznutzen“ ist nicht die korrekte Übersetzung aus dem Englischen. Meine Vorschläge für eine klarere und korrektere Übersetzung sind wie folgt: Nutzen (Wert) unserer Produkte für den Kunden“.*

Feedback B: *“ Die Formulierung von Mehrwert (Kundennutzen) ist nicht eindeutig. Der Begriff „demonstrieren“ in diesem Kontext ist eher unüblich. Vorschlag: Verwendung des Begriffes „darstellen“.“*

Feedback C: *“Ich finde die Formulierung des Begriffes „demonstrieren“ ist unverständlich. Ein anderes Wording wie z.B. „darlegen“ erhöht die Verständlichkeit der Aussage.“*

15. Unsere Kunden haben hohe Erwartungen an Services und Unterstützung.

Feedback C: *“Zielt diese Frage auf die Erreichbarkeit von Vertriebsmitarbeitern ab? Ich finde es nicht als zwingend notwendig dies in den Fragebogen einzuarbeiten.“*

16. Unsere Kunden erwarten von uns, Herausforderungen (oder z.B. Probleme) bei Arbeitsprozessen zu lösen.

Feedback A: *“Ich würde keine Klammer in diesem Satz verwendet. Dies beeinträchtigt den Lesefluss des Satzes. Mein Vorschlag ist wie folgt:*

„Herausforderungen/Probleme“. Die Formulierung Arbeitsprozesse ist eher im produzierenden Bereich angesetzt. Mein Vorschlag: „bei internen Arbeitsabläufen“ als Formulierung verwenden.“

Feedback B: *“Die Formulierung „Arbeitsprozesse“ passt nicht in den Bereich Medizintechnik. Mein Vorschlag wäre diesen Begriff durch „Arbeitsabläufe“ zu ersetzen.“*

Feedback C: *“Es ist klarer darauf hinzuweisen, dass es um „Arbeitsabläufe“ bei Kunden geht.“*

17. Unsere Kunden erwarten, dass wir Ihre Ihren medizinischen Leistungen beeinflussen.

Feedback A: *“Ich empfinde die aktuelle Satzstellung als zu kompliziert. Mein Vorschlag für die Formulierung wäre wie folgt: Unsere Kunden erwarten das wir sie unterstützen, Ihre medizinischen Leistungen zu bessern.“*

Feedback B: *“Die Satzstellung ist aktuell nicht klar formuliert. Mein Vorschlag für die Formulierung: Unsere Kunden erwarten, dass wir ihnen helfen Ihre medizinischen Leistungen zu verbessern.“*

Feedback C: *“ In der aktuellen Fragestellung ist der Fokus auf die Verbesserung der Leistungen besser herauszuarbeiten.“*

Bitte geben Sie an, in welchem Ausmaß Sie die folgenden Aktivitäten durchführen: (1 = gar nicht; 7 = überwiegend)

18. Wir priorisieren Kunden basierend auf Ihrer Wichtigkeit (z.B. durch Reputation) für unser Unternehmen.

Feedback A: *“Ich finde, dass die „Wichtigkeit von Kunden“ keine für die Zielgruppe der Umfrage klare Formulierung ist. Mein Vorschlag ist die Verwendung des Begriffes „Bedeutung“ in diesem Satz.“*

Feedback B: *“Der Begriff „Wichtigkeit von Kunden“ ist unklar formuliert und übersetzt die Fragestellung nicht korrekt aus dem Englischen. Mein Vorschlag für die Formulierung wäre: Kunden mit einem hohen Ansehen (guten Ruf) werden von uns bei der Bearbeitung priorisiert.“*

Feedback C: *“Achtung, die aktuelle Übersetzung aus dem englischen Fragebogen ist nicht präzise. „Wichtigkeit“ kann vielseitig gedeutet werden.“*

19. Wir investieren Ressourcen (Z.B. Zeit, Geld) basierend auf der Attraktivität des Kunden.

Feedback A: *“Ich empfinde die Formulierung „Attraktivität des Kunden“ als nicht klar für die Zielgruppe. Mein Vorschlag für die Formulierung ist wie folgt: Basierend auf der Bedeutung des Kunden für unser Unternehmen investieren wir Ressourcen (z.B. Zeit und Geld).“*

Feedback B: *“ Aus meiner Sicht ist die Formulierung „Attraktivität des Kunden“ nicht klar. Mein Vorschlag ist die Formulierung „Verkaufspotential“ zu verwenden.“*

Feedback C: *“Ich würde die Frage direkt auf das Vertriebspotential fokussieren. Dies fasst das Thema der Attraktivität treffender zusammen.“*

20. Wir haben klare Richtlinien um Kunden mit hohem Verkaufspotential zu identifizieren.

Feedback A: *“Anstelle von „Richtlinien“ würde ich das Wort „Strategien“ verwenden. Dieser Begriff wird stärker von der Zielgruppe verwendet.“*

Feedback B: *„Die Formulierung „Strategie“ ist in diesem Zusammenhang treffender als die Formulierung „Richtlinie“ in dieser Frage.“*

Feedback C: *“Ich würde die Frage etwas verständlicher formulieren. Dies könnte wie folgt gemacht werden: Wir haben klare Richtlinien, wie man Kunden mit hohem Verkaufspotential identifizieren kann.“*

21. Wir fokussieren unsere Verkaufsaktivitäten auf Kunden bei denen wir viele Mehrwerte generieren können.

Feedback A: *“Für mich wirkt die Formulierung umständlich und daher würde ich die Satzstellung adaptieren.“*

Feedback B: “ Die Satzstellung ist klarer an die Zielgruppe anzupassen. Mein Vorschlag dafür ist wie folgt: Wir konzentrieren unsere Verkaufsaktivitäten auf Kunden bei denen wir einen hohen Zusatznutzen realisieren können. “

Feedback C: “Ich würde die Satzstellung verbessern und klarer aus dem englischen übersetzen. Mein Vorschlag: Wir konzentrieren unsere Verkaufsaktivitäten auf jene Kunden die vom Nutzen (Wert) unserer Produkte am meisten profitieren. “

Welcher der folgenden Statements beschreiben am besten, wie Sie Fragen in einem Gespräch mit einem Kunden stellen: (1 = nicht zutreffend; 7 = voll zutreffend)

22. Ich verwende viel Zeit um den Kunden über seine aktuelle Situation zu befragen? (z.B: Wie viele Patienten behandeln Sie pro Monat?)

Feedback A: “Im Vergleich zur englischen Fassung ist „Ich verwende viel Zeit“ nicht klar übersetzt. Die Formulierung könnte für Vertriebsmitarbeiter ebenfalls nicht klar verständlich sein. Mein Vorschlag: „Ich investiere Zeit“ verwenden oder „Anzahl der Fragen“ in diesem Satz verwenden. “

Feedback B: “Aus meiner Sicht passt das Wording „Ich verwende viel Zeit“ nicht für die Zielgruppe. “

Feedback C: “Die erste Silbe des Satzes klingt unnatürlich. Mein Vorschlag für eine alternative Formulierung: Ich nehme mir viel Zeit, um... “

23. Ich verwende viel Zeit um den Kunden über Probleme oder Unzufriedenheiten zu fragen. (z.B.: Haben Sie viele Probleme mit einer hohen Anzahl an falschen Patientenalarmen?)

Feedback A: “Hier deckt sich meine Rückmeldung mit der Frage 22. “

Feedback B: “Siehe meine Rückmeldung bei Frage 22. “

24. Ich verwende viel Zeit um den Kunden über die Auswirkungen von Problemen auf seinen Arbeitsalltag zu fragen (z.B.: Welche Auswirkung hat eine hohe Anzahl an Fehlalarmen auf Sie und Ihre Kollegen?)

Feedback A: “Hier bitte ebenfalls meine Rückmeldung wie für Frage 22 berücksichtigen. “

Feedback B: “Siehe Frage 22. “

25. Ich verwende viel Zeit um Kunden über die Auswirkung einer möglichen Lösung zu fragen. (z.B. Wie viel Zeit würden Sie sich ersparen wir eine Lösung anbieten können wie die Anzahl an Fehlalarmen reduziert wird?)

Feedback A: „Idente Rückmeldung wie für Frage 22. “

Feedback B: “Keine weiteren Anmerkungen wie bei Frage 22. “

Welche der folgenden Aussagen beschreiben am besten wie Sie Kunden analysieren:

(1 = nicht zutreffend ; 7 = voll zutreffend)

26. Ich frage regelmäßig wie Kunden unsere Produkte/Services anwenden

Feedback B: *“Die Übersetzung ist nicht korrekt. Korrekt wäre wie folgt: Ich analysiere regelmäßig wie Kunden unsere Produkte verwenden.“*

Feedback C: *“Die Fragestellung ist nicht präzise. Ich würde wie folgt formulieren: Ich analysiere laufend.....“*

27. Ich analysiere regelmäßig Arbeitsweisen und Prozesse unserer Kunden.

Feedback A: *“Der Begriff „Arbeitsabläufe“ ist klarer als der Begriff „Arbeitsweisen“ in diesem Zusammenhang.“*

28. Ich verstehe das Geschäftsmodell unserer Kunden (Bzw.: Ich verstehe wie öffentliche Gesundheitseinrichtungen wie z.B. Krankenhäuser finanziert werden.)

Feedback A: *“Die ist eine sehr lange und für den Medizintechnikbereich nur zum Teil relevante Formulierung. Mein Vorschlag für die Formulierung ist wie folgt: Ich verstehe die Finanzierungsstruktur von Gesundheitseinrichtungen.“*

Feedback B: *“Die Formulierung ist zu lange und kompliziert.“*

Feedback C: *“Ich würde den Fokus der Frage stärker auf die Situation der Medizintechnik, speziell die Finanzierung in diesem Bereich, legen.“*

29. Ich versuche die Bedürfnisse von Patienten zu verstehen um die Anforderungen meiner Kunden (z.B. Gesundheitseinrichtungen) besser zu kennen.

Feedback A: *“Ich empfinde die Formulierung als umständlich und nicht zielgerichtet. Mein Vorschlag für eine einfachere Formulierung wäre wie folgt: Ich kenne die Bedürfnisse von Patienten, um die Anforderungen meiner Kunden besser zu verstehen.“*

Feedback B: *“Die aktuelle Formulierung ist nicht zielgerichtet. Mein Vorschlag: Um die Anforderungen meiner Kunden besser zu verstehen, kenne ich die Bedürfnisse Ihrer Patienten.“*

Feedback C: *“Die Idee der Frage ist klar, sie könnte jedoch präziser formuliert werden. Formulierungsvorschlag: Um besser die Anforderungen von Gesundheitseinrichtungen zu verstehen, versuche Ich auch die Bedürfnisse derer Patienten zu verstehen.“*

Welche der folgenden Aussagen beschreiben am besten wie Sie Kunden analysieren: (1 = nicht zutreffend; 7 = voll zutreffend)

30. Ich arbeite hart um relevante Personen für den Verkauf meiner Produkte und Services beim Kunden zu identifizieren.

Feedback A: *“Die Formulierung „Ich arbeite hart“ ist sehr angloamerikanisch.*

Vorschlag: „Ich investiere viel Zeit“ als Formulierung verwenden.“

Feedback B: *“Ich würde die Formulierung „Ich arbeite hart“ nicht verwenden. Mein*

Vorschlag: Ich investiere viel Zeit um relevante Personen für den Verkauf meiner Produkte /Services beim Kunden zu identifizieren.“

Feedback C: *„Die Formulierung „Ich arbeite hart“ klingt nicht natürlich.“*

31. Normalerweise arbeite ich mit relevanten Entscheidungsträgern bei Kunden zusammen.

Feedback A: *“Ich würde die Formulierung vereinfachen.“*

Feedback B: *“Dies ist eine sehr komplizierte Satzstellung. Daher würde ich „Normalerweise“ weglassen.“*

Feedback C: *“Das Wort „Normalerweise“ keinesfalls in der Formulierung verwenden. Man könnte es durch das Wort „generell“ ersetzen.“*

32. Normalerweise ermöglichen mir meine aktuellen Kontakte beim Kunden eine sehr effektive Arbeitsweise.

Feedback A: *“Auch hier ist die Formulierung umständlich. Vorschlag: Meine aktuellen Kontakte beim Kunden ermöglichen mir eine sehr effektive Arbeitsweise.“*

Feedback B: *“Das ist eine sehr umständliche Formulierung. Ich würde den Satz etwas kürzen.“*

33. Normalerweise kenn ich viele Personen aus unterschiedlichen Bereichen des Kunden.

Feedback A: *“Hier gilt auch die Rückmeldung wie bei den vorherigen Fragen. Der Satz ist zu umständlich formuliert. Mein Vorschlag für eine neue Formulierung: Ich kenne viele Personen aus unterschiedlichen Bereichen (Abteilungen) meines Kunden.“*

Feedback B: *“Siehe Anmerkung oben. Daher würde ich wie folgt formulieren: Ich kenne viele Personen aus unterschiedlichen Abteilungen des Kunden.“*

Feedback C: *“Auch hier das Wort „normalerweise“ weglassen.“*

Welcher der folgenden Aussagen beschreiben am besten wie Sie Kundenreferenzen verwenden (1 = nicht zutreffend; 7 = voll zutreffend)

34. Um die Leistungsfähigkeit unserer Produkte zu beweisen verwende ich Kundenreferenzen in Kundengesprächen.

Feedback A: *“Der Begriff Leistungsfähigkeit wird in diesem Kontext nicht verwendet. Die Fragestellung ist nicht zu 100% korrekt übersetzt „Leistungsfähigkeit des Unternehmens“ wäre eine korrekte Formulierung.“*

Feedback B: *“Achtung, die Übersetzung ist nicht korrekt. Mein Vorschlag: Um das Leistungsspektrum unseres Unternehmens zu beweisen, verwende ich Kundenreferenzen.“*

Feedback C: *“Die Übersetzung ist nicht korrekt. Der Fokus liegt auf der Leistung des Unternehmens und nicht der Produkte.“*

35. Um den Mehrwert unserer Produkte/Services dem Kunden zu kommunizieren verwende Ich Beweise aus Kundenreferenzen

Feedback A: *“Diese Satzstellung ist unklar und ist zu überarbeiten.“*

Feedback B: *“Ich würde den Satz etwas klarer und einfacher formulieren. Vorschlag: Um den Nutzen (Wert) unserer Produkte zu kommunizieren, argumentiere ich mit Kundenreferenzen.“*

Feedback C: *“Mehrwert ist nicht die ganz korrekte Übersetzung aus der englischen Version. Die Verwendung des Begriffes „Nutzen“ in Kombination mit „Wert“ ist präziser.“*

36. Um Kunden den Nutzen unsere Produkte/Services zu konkretisieren verwende Ich Kundenreferenzen.

Feedback A: *“Dies ist eine Umständliche und nicht klare Formulierung. Die Satzstellung ist zu überarbeiten.“*

Feedback B: *“Das Ziel der Frage ist klarer herausarbeiten. Vorschlag: Um den Kunden zu zeigen, wie Sie von unseren Produkten profitieren können, verwende ich Kundenreferenzen.“*

Feedback C: *“Umständliche und nicht klare Formulierung. Daher würde ich den Satz grundlegend überarbeiten.“*

37. Um die Funktionalität unserer Produkte/Services zu beweisen verwende Ich Kundenreferenzen.

Feedback A: *“Der Satz ist sehr schwer zu lesen. Ich würde im Satz „Funktionsweise“ anstelle von „Funktionalität“ verwenden.“*

Feedback B: *“Der Begriff „Funktionalität“ ist eine umständliche Formulierung.“*

Welcher der folgenden Aussagen beschreiben am besten wie Sie dem Kunden den Wert (Nutzen) demonstrieren: (1 = nicht zutreffend; 7 = voll zutreffend)

Feedback A: *“Das Wort „demonstrieren“ wird in diesem Kontext nicht verwendet.*

Daher würde ich „darlegen“ als Formulierung verwenden. „Wert“ ist in Klammer zu setzen da „Nutzen“ besser verständlich ist. Dies gilt auch für die Fragen 36 – 38.“

Feedback B: *“Der Begriff „demonstrieren“ assoziiert man mit aufwendigen und komplizierten Produkten. Mein Verbesserungsvorschlag: „beweisen“ oder „darlegen“ verwenden.“*

Feedback C: *“Die Übersetzung ist nicht 100% korrekt. Es geht darum was am bevorzugtesten gemacht wird.“*

38. Angebote für den Kunden werden basierend auf seinen Bedürfnissen angepasst.

Feedback C: *“Grundsätzlich ist die Frage verständlich. Ich würde noch folgendes an der Frage anfügen: basierend auf einer Analyse der Bedürfnisse.“*

39. Bei jedem Angebot kalkuliere ich den Wert (Nutzen) den wir dem Kunden bieten können.

Feedback A: *“Ich würde das Wort „kalkulieren“ durch einen klareren Begriff ersetzen.“*

Feedback B: *“Die Übersetzung ist nicht ganz klar. Der Begriff „berechnen“ übersetzt die Bedeutung der Fragestellung klarer als der Begriff „kalkulieren.“*

Feedback C: *„Bei dieser Frage würde ich den Fokus auf die individuelle Berechnung des Nutzens legen.“*

40. Den Wert (Nutzen) eines Angebotes zu demonstrieren ist ein wichtiger Teil meines Verkaufsprozesses.

Feedback A: *“Auch hier würde ich den Begriff „demonstrieren“ ersetzen.“*

Feedback B: *“Das Wort „demonstrieren“ passt nicht gut zu dieser Aussage.“*

Welche der folgenden Nutzenargumente empfinden Kunden von Medizinprodukten als wichtig? (1 = nicht wichtig; 7 = sehr wichtig)

41. Sichere Verfügbarkeit der Produkte.

42. Fixe Liefertermine für die Produkte.

Feedback A: *“Dies ist keine korrekte Übersetzung. Verbesserungsvorschlag für die Formulierung: Halten von vereinbarten Lieferterminen.“*

Feedback B: *“Die Formulierung trifft nicht ganz genau die englische Bedeutung. Ich würde wie folgt formulieren: Halten von Lieferterminen.“*

43. Einfach zu bedienende Produkte.
44. Eine hohe Verlässlichkeit der Produkte
45. Reduktion von Anwendungsfehlern durch intuitive Bedienung der Produkte.
46. Kunden bei Prozessoptimierungen zu unterstützen.
- Feedback A: "Die aktuelle Formulierung konzentriert sich sehr stark auf produzierende Unternehmen. Vorschlag für eine alternative Formulierung: Unterstützung bei der Optimierung von Arbeitsabläufen."*
- Feedback B: "Die aktuelle Formulierung passt weniger in den Gesundheitsbereich."*
47. Reduktion der Dauer von klinischen Prozessen (z.B. Länge von Krankenhausaufhalten, Operationen, Mobilisierung von Patienten)
48. Reduktion von Infektionen in Gesundheitseinrichtungen
49. Image der Gesundheitseinrichtung erhöhen (z.B. durch verbesserte klinische Prozesse, weniger Fehler).
- Feedback A: "Die Formulierung ist sehr umständlich und sollte vereinfacht werden. Verbesserungsvorschlag: Image des Kunden erhöhen."*
- Feedback B: "Das Wort „Gesundheitseinrichtung“ wird von der Zielgruppe der Umfrage eher seltener in diesem Kontext verwendet."*
50. Image von bedeutenden medizinischen Personen erhöhen. (z.B.: Unterstützung eines Primars bei einer Studie)
- Feedback A: "Ich würde in der Aussage kürzer und klarer formulieren, um welche Personen es sich handelt. Verbesserungsvorschlag: Image von Ärzten/Pflegepersonal verbessern."*
- Feedback B: "Hier macht es Sinn die Personengruppe gleich direkt zu benennen."*
- Feedback C: "Lange und umständliche Formulierung. Besser wäre die folgende Formulierung: Image / Reputationserhöhung von Medizinischen Personal."*

9.7 Appendix G: final version of the questionnaire.

1. How many years of work experience do you have in sales and sales-related jobs (e.g. market management, product management, business development) in the medical device sector in Austria?

A: 0 years

B: 1 – 5 years

C: 6 – 10 years

D: 10 – 15 years

E: 15 – 20 years

F: 20 – 25 years

G: More than 25 years

Compared with other salespeople working for your company, how would you evaluate your overall performance in the last month prior the start of the COVID crises (March 2020) . (-3 = “much worse” and +3 = “much better.”)

2. on achieved sales
3. on the achieved total contribution margin
4. selling products with higher profit margins
5. producing a high market share for my company in my territory

Compared with other salespeople working for your company, how would you evaluate your overall performance in the last 12 months (September 2020 – September 2021). (-3 = “much worse” and +3 = “much better.”)

6. on achieved sales
7. on the achieved total contribution margin
8. selling products with higher profit margins
9. producing a high market share for my company in my territory

How do you agree with the following statements? (1 = I don't agree; 7 = I totally agree):

10. Our customers challenge us to demonstrate the superior value of our market offerings.
11. Our customers have high expectations for service and support.
12. Our customers expect us to resolve challenges in workflows.
13. Our customers expect us to make an impact on their medical performance.

Please indicate to what extent you do the following activities (1 = not at all; 7 = to a great extent)

14. I prioritize customers based on their reputation to our firm.
15. I allocate resources relative to the attractiveness of the customer.
16. I use clear guidelines for qualifying high potential prospects.
17. We target our selling efforts based on customers' fit with our value creation capabilities.

Which of the following statements best describe your preferred way to asking question during a sales encounter: (1 = does not apply; 7 = fully applies)

18. I spend a lot of time asking questions about the customer's current situation (e.g. "How many patients do you treat per month?")
19. I spend a lot of time asking questions about the customer's problems, difficulties, or dissatisfaction (e.g. "Do you have problems with a high number of false alarms by patients?")
20. I spend a lot of time asking questions about the consequences of the customer's problems on her/his operations (e.g. "What effect does this high number of false alarms have on you and your colleagues?")
21. I spend a lot of time asking questions about the payoff of a possible solution for the customer's operations (e.g. "If you had a solution for reducing the number of false alarms, how much time would you save?")

Which of the following statements best describe your preferred way to analyze the customer: (1 = does not apply; 7 = fully applies)

22. I routinely analyze how customers use our products/service.
23. I routinely analyze my customers' processes.
24. I understand my customers' business model (or I understand how public healthcare institutions such as state hospitals are financed).
25. To better understand my customers' needs, I also try to understand our customers' patients and their needs.

Which of the following statements best describe your preferred way to analyze the customer: (1 = does not apply; 7 = fully applies)

26. I work hard to identify the relevant key stakeholders for our products and services in the customer organization.
27. Typically, I deal with relevant decision-makers for our products and services in the customer organization.
28. Typically, the contacts I have in the customer organization make me very effective at working with them.
29. Typically, I know a diverse cross-section of people in the customer organization.

Which of the following statements best describe your method of using customer references: (1 = does not apply; 7 = fully applies)

30. I use customer references in sales communications to provide evidence of our performance.
31. I utilize evidence from our customer references to communicate the value of our products/services.
32. I apply customer references to concretize how customers can benefit from our products/services.
33. I communicate our customer references as a proof of the functionality of our products/services.

Which of the following statements best describe your preferred way to demonstrate the value(benefit) the customer: (1 = does not apply; 7 = fully applies)

34. The offerings to the customers are customized based on an analysis of our customers' needs.
35. For each offering made to the customer, I calculate the value that we can provide to the customer.
36. An important part of my selling process is to demonstrate the value of our offerings to the customers.

How do you evaluate the importance of the following value arguments (customer benefits) of medical devices for customers: (1 = not important; 7 = very important)

37. Assured availability of products
38. Fixed delivery dates of products
39. Straightforward handling of products
40. High reliability of products.
41. Reduction of potential handling errors by means of intuitive handling of products
42. Support customers in the optimization of internal processes
43. Reduction of the length of clinical processes (hospital stay / length of an operation / length of the mobilization period)
44. Reduction of infections in healthcare institutions.
45. Enhancement of the image of healthcare institutions (e.g. by improved clinical processes or fewer mistakes)
46. Enhancement of the image of key medical personnel (e.g. support of clinical studies conducted by chief physicians)

Finale Version Fragebogen: Deutsch**1. Wie viele Jahre Berufserfahrung haben Sie im verkauf oder in verkaufsnahen Positionen (z.B. Markt Management, Produktmanagement, Business Development) in der Medizintechnik in Österreich?**

A: 0 Jahre

B: 1 – 5 Jahre

C: 6 – 10 Jahre

D: 11 – 15 Jahre

E: 16 – 20 Jahre

F: 21 – 25 Jahre

G: Über 25 Jahre

Wie würden Sie Ihre Verkaufsleistung im Vergleich zu ArbeitskollegInnen in Ihrem Unternehmen in den letzten 12 Monaten vor Beginn der COVID Krise (März 2020) bewerten?**(- 3 viel schlechter; +3 viel besser)**

2. Erreichter Umsatz.
3. Erreichter Deckungsbeitrag.
4. Höherer Anteil an verkauften Produkten mit hohem Deckungsbeitrag.
5. Steigerung des Marktanteils in Ihrem Verkaufsgebiet im Vergleich zu Mitbewerbern.

Wie würden Sie Ihre Verkaufsleistung im Vergleich zu ArbeitskollegInnen in Ihrem Unternehmen in den letzten 12 Monaten (Sept. 2020 – Sept. 2021) bewerten?**(- 3 viel schlechter; +3 viel besser)**

6. Erreichter Umsatz.
7. Erreichter Deckungsbeitrag.
8. Höherer Anteil an verkauften Produkten mit hohem Deckungsbeitrag.
9. Steigerung des Marktanteils in Ihrem Verkaufsgebiet im Vergleich zu Mitbewerbern.

Wie stimmen Sie mit den folgenden Aussagen überein? (1 = Ich stimme gar nicht zu; 7 = Ich stimme voll zu)

10. Unsere Kunden erwarten sich, dass wir den Nutzen (Wert) unserer Angebote darstellen.
11. Unsere Kunden haben hohe Erwartungen an Services und Unterstützung.
12. Unsere Kunden erwarten von uns, Herausforderungen/ Probleme bei internen Arbeitsabläufen zu lösen.
13. Unsere Kunden erwarten, dass wir ihnen helfen, ihre medizinischen Leistungen zu verbessern.

Bitte geben Sie an, in welchem Ausmaß Sie die folgenden Aktivitäten durchführen: (1 = gar nicht; 7 = überwiegend)

14. Kunden mit einem hohen Ansehen (guten Ruf) werden bei der Bearbeitung priorisiert.
15. Basierend auf dem Verkaufspotential für unser Unternehmen bei einem Kunden investieren wir Ressourcen (z.B. Zeit und Geld).
16. Wir haben eine klare Strategie, um Kunden mit einem hohem Verkaufspotential zu identifizieren.
17. Wir konzentrieren unsere Verkaufsaktivitäten auf jene Kunden, die vom Nutzen (Wert) unserer Produkte am meisten profitieren.

Welcher der folgenden Statements beschreiben am besten, wie Sie Fragen in einem Gespräch mit einem Kunden stellen: (1 = nicht zutreffend; 7 = voll zutreffend)

18. Ich nehme mir viel Zeit, um Fragen über die aktuelle Situation des Kunden zu stellen. (z.B.: Wie viele Patienten behandeln Sie pro Monat?)
19. Ich nehme mir viel Zeit, um Fragen über Probleme oder Unzufriedenheiten des Kunden zu stellen. (z.B.: Haben Sie Probleme mit einer hohen Anzahl an falschen Patientenalarmen?)
20. Ich nehme mir viel Zeit, um Kunden Fragen über mögliche Auswirkungen von Problemen auf Ihren Arbeitsalltag zu stellen. (z.B.: Welche Auswirkung hat eine hohe Anzahl an Fehlalarmen auf Sie und Ihre Kollegen?)
21. Ich nehme mir viel Zeit um Kunden Fragen über die Auswirkung von möglichen Lösungen auf ihren Arbeitsalltag zu stellen. (z.B. Wie viel Zeit würden Sie sich ersparen, wenn wir eine Lösung anbieten können, die die Anzahl an Fehlalarmen reduziert wird?)

Welche der folgenden Aussagen beschreiben am besten wie, Sie Kunden analysieren?**(1 = nicht zutreffend; 7 = voll zutreffend)**

- 22. Ich analysiere regelmäßig, wie Kunden unsere Produkte/Services verwenden.
- 23. Ich analysiere regelmäßig Arbeitsabläufe und Prozesse unserer Kunden.
- 24. Ich verstehe die Finanzierungsstruktur und das Geschäftsmodell von unseren Kunden.
- 25. Um besser die Anforderungen von Gesundheitseinrichtungen zu verstehen, versuche Ich auch die Bedürfnisse derer Patienten zu kennen.

Welche der folgenden Aussagen beschreiben am besten wie, Sie Kunden analysieren?**(1 = nicht zutreffend; 7 = voll zutreffend)**

- 26. Ich investiere viel Zeit, um relevante Personen für den Verkauf meiner Produkte und Services beim Kunden zu identifizieren.
- 27. Ich arbeite mit relevanten Entscheidungsträgern bei Kunden zusammen.
- 28. Meine aktuellen Kontakte beim Kunden ermöglichen mir eine sehr effektive Arbeitsweise.
- 29. Ich kenne viele Personen aus unterschiedlichen Bereichen (Abteilungen) meines Kunden.

Welcher der folgenden Aussagen beschreiben am besten, wie Sie Kundenreferenzen verwenden? (1 = nicht zutreffend; 7 = voll zutreffend)

- 30. Um die Leistungsfähigkeit unseres Unternehmens zu beweisen, verwende Ich Kundenreferenzen.
- 31. Um den Nutzen (Wert) unserer Produkte/Services zu kommunizieren, verwende Ich Kundenreferenzen.
- 32. Um den Kunden zu zeigen, wie er von unseren Produkten profitieren kann, verwende Ich Kundenreferenzen.
- 33. Um die Funktionsweise unserer Produkte/Services zu beweisen, verwende Ich Kundenreferenzen.

Welcher der folgenden Aussagen beschreiben wie Sie am liebsten den Nutzen (Wert) Ihrer Angebote Kunden darlegen? (1 = nicht zutreffend; 7 = voll zutreffend)

34. Angebote für Kunden werden basierend auf deren Bedürfnisse angepasst.
35. Bei jedem Angebot berechne Ich den individuellen **Nutzen (Wert)**, den wir dem Kunden bieten können.
36. Den **Nutzen (Wert)** eines Angebotes darzulegen, ist ein wichtiger Teil meines Verkaufsprozesses.

Welche der folgenden Nutzenargumente empfinden Kunden von Medizinprodukten als wichtig? (1 = nicht wichtig; 7 = sehr wichtig)

37. Sichere Verfügbarkeit der Produkte.
38. Halten von vereinbarten Lieferterminen.
39. Einfach zu bedienende Produkte.
40. Eine hohe Verlässlichkeit der Produkte.
41. Reduktion von Anwendungsfehlern durch intuitive Bedienung der Produkte.
42. Unterstützung bei der Optimierung von Arbeitsabläufen.
43. Reduktion der Dauer von klinischen Prozessen (z.B. Länge von Krankenhausaufhalten, Operationen, Mobilisierung von Patienten)
44. Reduktion von Infektionen in Gesundheitseinrichtungen.
45. Image des Kunden erhöhen (z.B. durch verbesserte klinische Prozesse, weniger Fehler).
46. Image von Ärzten/Pflegepersonal erhöhen. (z.B.: Unterstützung eines Primars bei einer Studie)

9.8 Appendix H: Questionnaire Qualtrics (English)

Q1:

How many years of work experience do you have in sales and sales-related jobs (e.g. market management, product management, business development) in the medical device sector in Austria?

0 years
1 – 5 years
6 – 10 years
11 – 15 years
16 – 20 years
21 – 25 years
> 25 years

Q2-Q5:

Compared with other salespeople working for your company, how would you evaluate your overall performance in the last 12 month prior the start of the COVID Crises (March 2020). (-3 = "much worse" and +3 = "much better.")

	-3	-2	-1	0	1	2	3
on achieved sales	<input type="radio"/>						
on the achieved total contribution margin	<input type="radio"/>						
selling products with higher profit margin	<input type="radio"/>						
producing a high market share for my company in my territory	<input type="radio"/>						

Q6 – Q9:

Compared with other salespeople working for your company, how would you evaluate your overall performance in the last 12 month (September 2020 - September 2021).

(-3 = “much worse” and +3 = “much better.”)

	-3	-2	-1	0	1	2	3
on achieved sales	<input type="radio"/>						
on the achieved total contribution margin	<input type="radio"/>						
selling products with higher profit margin	<input type="radio"/>						
producing a high market share for my company in my territory	<input type="radio"/>						

Q10 – Q13:

How do you agree with the following statements? (1 = I don't agree; 7 = I totally agree):

Our customers challenge us to demonstrate the superior value of our market offerings.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Our customers have high expectations for service and support.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Our customers expect us to resolve challenges in workflows.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Our customers expect us to make an impact on their medical performance.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Q14 – Q17:

Please indicate to what extent you do the following activities (1 = not at all; 7 = to a great extent)

I prioritize customers based on their reputation to our firm.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

I allocate resources relative to the attractiveness of the customer.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

I use clear guidelines for qualifying high potential prospects.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

We target our selling efforts based on customers' fit with our value creation capabilities.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Q18 – Q21:

Which of the following statements best describe your preferred way to asking question during a sales encounter: (1 = does not apply; 7 = fully applies)

I spend a lot of time asking questions about the customer's current situation (e.g. "How many patients do you treat per month?")

1	2	3	4	5	6	7
---	---	---	---	---	---	---

I spend a lot of time asking questions about the customer's problems, difficulties, or dissatisfaction (e.g. "Do you have problems with a high number of false alarms by patients?")

1	2	3	4	5	6	7
---	---	---	---	---	---	---

I spend a lot of time asking questions about the consequences of the customer's problems on her/his operations (e.g. "What effect does this high number of false alarms have on you and your colleagues?")

1	2	3	4	5	6	7
---	---	---	---	---	---	---

I spend a lot of time asking questions about the payoff of a possible solution for the customer's operations (e.g. "If you had a solution for reducing the number of false alarms, how much time would you save?")

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Q22 – Q25:

Which of the following statements best describe your preferred way to analyze the customer: (1 = does not apply; 7 = fully applies)

I routinely analyze how customers use our products/service.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

I routinely analyze my customers' processes.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

I understand my customers' business model (or I understand how public healthcare institutions such as state hospitals are financed).

1	2	3	4	5	6	7
---	---	---	---	---	---	---

To better understand my customers' needs, I also try to understand our customers' patients and their needs.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Q26 – Q29:

I work hard to identify the relevant key stakeholders for our products and services in the customer organization.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Typically, I deal with relevant decision-makers for our products and services in the customer organization.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Typically, the contacts I have in the customer organization make me very effective at working with them.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Typically, I know a diverse cross-section of people in the customer organization.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Q30 – Q33:

Which of the following statements best describe your method of using customer references: (1 = does not apply; 7 = fully applies)

I use customer references in sales communications to provide evidence of our performance.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

I utilize evidence from our customer references to communicate the value of our products/services.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

I apply customer references to concretize how customers can benefit from our products/services.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

I communicate our customer references as a proof of the functionality of our products/services.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Q34 – Q36:

Which of the following statements best describe your preferred way to demonstrate the value(benefit) the customer: (1 = does not apply; 7 = fully applies)

The offerings to the customers are customized based on an analysis of our customers' needs.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

For each offering made to the customer, I calculate the value that we can provide to the customer.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

An important part of my selling process is to demonstrate the value of our offerings to the customers.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Q37 – Q 46:

How do you evaluate the importance of the following value arguments (customer benefits) of medical devices for customers: (1 = not important; 7 = very important)

Assured availability of products

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Fixed delivery dates of products

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Straightforward handling of products

1	2	3	4	5	6	7
---	---	---	---	---	---	---

High reliability of products.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Reduction of potential handling errors by means of intuitive handling of products

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Support customers in the optimization of internal processes

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Reduction of the length of clinical processes (hospital stay / length of an operation / length of the mobilization period)

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Reduction of infections in healthcare institutions.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Enhancement of the image of healthcare institutions (e.g. by improved clinical processes or fewer mistakes)

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Enhancement of the image of key medical personnel (e.g. support of clinical studies conducted by chief physicians)

1	2	3	4	5	6	7
---	---	---	---	---	---	---

9.9 Appendix I: Statistical Analysis

Appendix I1: Estimation of the performance from the respondents from the survey.

Descriptive statistics

	Mean	SD	N
Performance rating on achieved sales in the last 12 months prior to the COVID crisis.	1.00	1.232	113
Performance rating on the achieved total contribution margin in the 12 months prior to the COVID crisis.	0.96	1.100	110
Performance rating selling products with higher profit margins in the 12 months prior to the COVID crisis.	0.79	1.114	113
Performance rating producing a high market share for my company in my territory in the 12 months prior to the COVID crisis.	1.00	1.157	113
Performance rating on achieved sales in the last 12 months.	0.66	1.480	113
Performance rating on the achieved total contribution margin in the last 12 months.	0.73	1.268	113
Performance rating selling products with higher profit margin in the last 12 months.	0.51	1.254	113
Performance rating producing a high market share for my company in my territory in the last 12 months.	0.71	1.321	113
Mean Performance	0.80	0.884	113

Appendix I2: Estimation of the value demandingness from health care provider

Descriptive statistics

Table. Item Statistics Demandingness

	Mean	SD	N
Our customers challenge us to demonstrate the superior value of our market offerings.	5.96	1.301	112
Our customers have high expectations for service and support.	6.60	0.677	112
Our customers expect us to resolve challenges in workflows.	5.88	1.419	112
Our customers expect us to make an impact on their medical performance.	5.70	1.265	112
Mean Demandingness	6.04	0.750	113

Appendix I3: Estimation of the importance from a customer prioritization in VBS processes in the medical device industry in Austria. Descriptive statistics

Table. Item Statistics Prioritization

	Mean	SD	N
I prioritize customers based on their reputation to our firm.	4.07	1.791	113
I allocate resources relative to the attractiveness of the customer.	5.21	1.339	113
I use clear guidelines for qualifying high potential prospects.	5.25	1.509	113
We target our selling efforts based on customers' fit with our value creation capabilities.	5.12	1.551	113

Appendix I4: The importance to identify problems in the organization of the customer through questioning techniques in the medical device industry in Austria. Descriptive statistics

Table. Item Statistics Identification of Problems and Impact

	Mean	SD	N
I spend a lot of time asking questions about the customer's current situation (e.g. "How many patients do you treat per month?")	5.80	1.307	112
I spend a lot of time asking questions about the customer's problems, difficulties, or dissatisfaction (e.g. "Do you have problems with a high number of false alarms by patients?")	5.77	1.408	112
I spend a lot of time asking questions about the consequences of the customer's problems on her/his operations (e.g. "What effect does this high number of false alarms have on you and your colleagues?")	5.45	1.535	112
I spend a lot of time asking questions about the payoff of a possible solution for the customer's operations (e.g. "If you had a solution for reducing the number of false alarms, how much time would you save?")	5.85	1.350	112

Appendix I5: The importance to develop a customer comprehension in the medical device industry in Austria. Descriptive statistics

Table. Item Statistics Development of a Customer Comprehension

	Mean	SD	N
I routinely analyze how the customers use our products/service.	5.25	1.417	112
I routinely analyze my customers' processes.	4.65	1.564	112
I understand my customers' business model. (or I understand how public healthcare institutions such as state hospitals are financed).	5.57	1.327	112
To better understand my customers' needs, I also try to understand our customers' patients and their needs.	5.46	1.512	112

Appendix I6: The importance of customer networking abilities in the medical device industry in Austria. Descriptive statistics

Table. Item Statistics Customer Networking Ability

	Mean	SD	N
I work hard to identify the relevant key stakeholders for our products and services in the customer organization.	5.69	1.343	112
Typically, I deal with relevant decision-makers for our products and services in the customer organization.	6.28	0.932	112
Typically, the contacts I have in the customer organization make me very effective at working with them.	5.92	1.092	112
Typically, I know a diverse cross-section of people in the customer organization.	5.76	1.330	112

Appendix I7: The importance of customer references in the medical device industry in Austria. Descriptive statistics

Table. Item Statistics Usage of Customer References

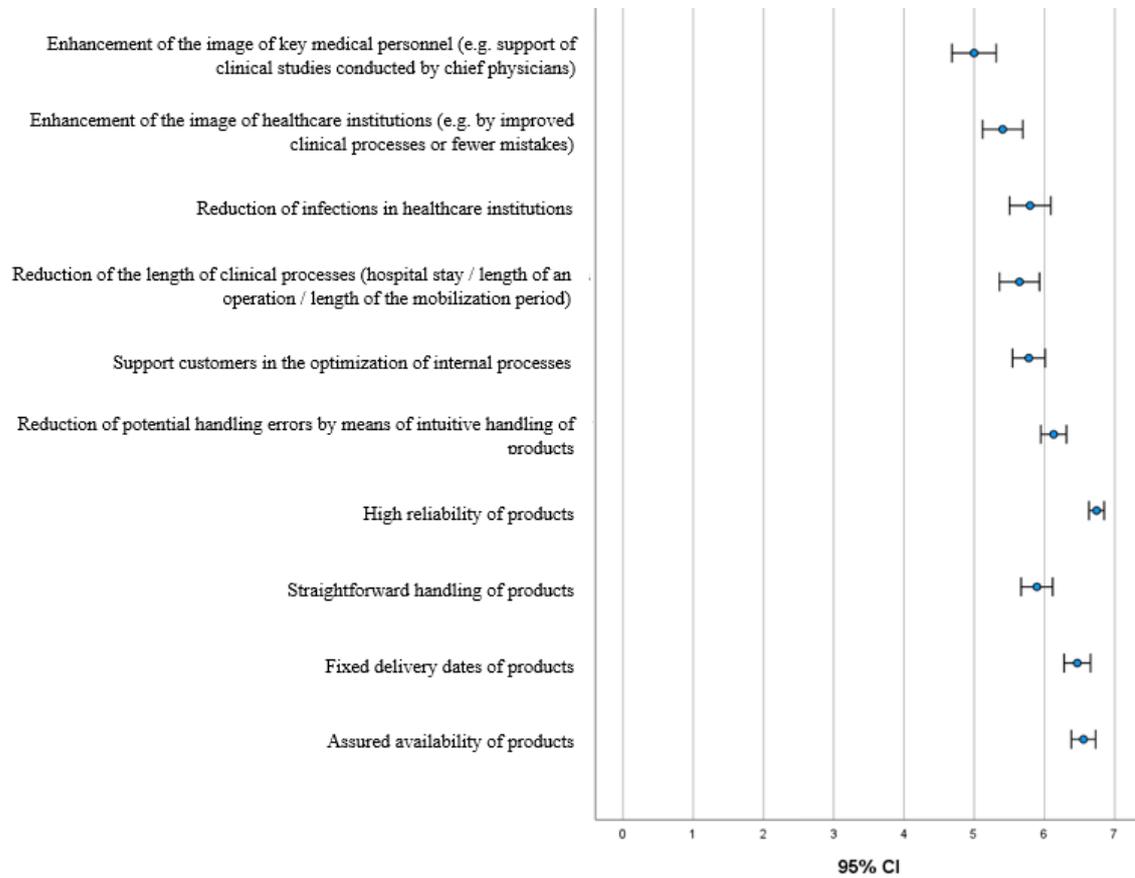
	Mean	SD	N
I use customer references in sales communications to provide evidence of our performance.	4.90	1.842	113
I utilize evidence from our customer references to communicate the value of our products/services.	5.19	1.674	113
I apply customer references to concretize how customers can benefit from our products/services.	4.94	1.779	113
I communicate our customer references as a proof of the functionality of our products/services.	4.86	1.884	113

Appendix I8: The importance of value quantification capabilities the medical device industry in Austria. Descriptive statistics

Table. Item Statistics High Value Quantification Capabilities

	Mean	SD	N
The offerings to the customers are customized based on an analysis of our customers' needs.	5.81	1.349	113
For each offering made to the customer, I calculate the value that we can provide to the customer.	4.65	1.832	113
An important part of my selling process is to demonstrate the value of our offerings to the customers.	5.37	1.712	113

Appendix I9: Detailed comparison of value arguments which are associated with the wellbeing of patients and other value arguments. (own source)



10 Declaration

I, Johannes Reiterer, by signing this declaration assert that my PHD thesis, “**The Importance of Value Communication in Selling Processes of the Medical Device Market in Austria .**” was my own work. During the dissertation I complied with the LXXVI and the rules of the doctoral dissertation prescribed by the Doctoral School, especially regarding references and citations.¹

Furthermore, I declare that I did not mislead the supervisor(s) or the programme leader with the dissertation.

By signing this declaration, I acknowledge that if it can be proved that the dissertation is not self-made or the author of a copyright infringement is related to the dissertation, the University of Sopron is entitled to refuse the acceptance of the dissertation.

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Sopron, 2022, March

Johannes Reiterer

PhD candidate

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