

# **Engaging the Sales Force in Digital Solution Selling – An Organizational Behavior Perspective**

DISSERTATION

of the University of St.Gallen,

School of Management,

Economics, Law, Social Sciences

International Affairs and Computer Science,

to obtain the title of

Doctor of Philosophy in Management

submitted by

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Dissertation no. 5407

Difo-Druck GmbH, Untersiemaun 2024

The University of St.Gallen, School of Management, Economics, Law, Social Sciences, International Affairs and Computer Science, hereby consents to the printing of the present dissertation, without hereby expressing any opinion on the views herein expressed.

St.Gallen, October 16, 2023

The President:

Prof. Dr. Bernhard Ehrenzeller

## Acknowledgments

This thesis was written in parallel to my work as a research associate at the Institute of Technology Management at the University of St.Gallen (ITEM-HSG). During the last three and a half years I conducted multiple projects focusing on the development and commercialization of digital business models. Although coming from a manufacturing background, I greatly appreciated the opportunity to explore an entirely new but fascinating area of research. My entire PhD period has, therefore, been an incredible learning journey in which I have grown technically and personally every day. For this, I would like to express my gratitude.

In particular, I would like to thank my thesis supervisor, Prof. Dr. Thomas Friedli, for his continuous encouragement and critical feedback during my research and project activities. Furthermore, I would like to thank my co-supervisor, Prof. Dr. Christian Hildebrand, for his critical reflection on important concepts, thereby helping me to strengthen the theoretical foundation of this thesis. In addition, I would like to thank Prof. Dr. Christian Schmitz for sharing his experience on the topic of sales management and for helping me to improve the conceptual and theoretical framing of this thesis.

Since the empirical data of this thesis builds on the knowledge of numerous industry partners who granted me access to relevant stakeholders in their organizations, I would like to thank all interview partners for their shared insights. Not least for them, I have always strived to provide a high practical contribution in my research endeavors. I hope that I can pass back at least “something” with the results of this thesis.

Furthermore, this thesis would not have been possible without the help of great co-workers. For this reason, I thank Dr. Moritz Classen for the multiple coaching sessions on research and project-related topics. In the same vein, I thank Dr. Jonathan Rösler for the countless discussions on our common project work streams and beyond. Although our opinions differed sometimes, your broad knowledge and relentless drive have been a major source of inspiration for me. I also would like to thank all other Production Management team members for making the PhD time enjoyable and memorable.

Most importantly, I thank my family for always standing behind my decisions and supporting me in all stages of my life. Thanks to my parents, Christel and Werner Tienken, my sister, Dr. Miriam Tienken, my aunt, Andrea Schulten, my uncle, Stefan Schulten, and my grandmother, Erika Schulten. I dedicate this thesis to her.

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## List of abbreviations

ACV	Annual Contract Value
ARR	Annual Recurring Revenue
B2B	Business-to-Business
CEO	Chief Executive Officer
CLV	Customer Lifetime Value
CRM	Customer Relationship Management
DS	Digital Solution
ERP	Enterprise Resource Planning
EVP	Executive Vice President
IoT	Internet of Things
KPI	Key Performance Indicator
MOA	Motivation-Opportunity-Ability
MRQ	Main Research Question
n/a	Not Applicable
NPD	New Product Development
NPS	Net Promoter Score
Rep	Representative
RRM	Recurring Revenue Model
SaaS	Software-as-a-Service
SRQ	Sub-Research Question
VP	Vice President

## Abstract

Digitalization opens up new opportunities for industrial firms to escape the commoditization trap by offering digital solutions based on recurring revenue models. Despite numerous benefits for both providers and customers, many digital solutions fall short of initial revenue expectations. Scholars concur that the commercial success of digital solutions largely hinges on the sales function which needs to adopt the strategic shift toward digital solution selling. However, industrial firms often fail to engage their sales force in digital solution selling and thus struggle to reap the financial benefits of digitalization. Unfortunately, existing knowledge about the different barriers to sales reps' engagement in digital solution selling and possible pathways to overcome these barriers is scarce.

This thesis aims to fill this void by providing guidance on how to engage the sales force in digital solution selling. An organizational behavior perspective is applied to investigate the relationship between sales managers and sales reps in digital solution selling. The theoretical background chapter reveals that sales reps refrain from selling digital solutions due to low motivation, constrained opportunities, or underdeveloped abilities. Three different qualitative studies lay the empirical foundation for this thesis and seek to investigate the necessary changes in sales management instruments to overcome these barriers. Study 1 draws on diffusion theory and uses a case-study design to scrutinize the role of sales support in facilitating sales reps' adoption of digital solutions. The results illustrate how sales managers can influence sales reps' attitude and behavior in digital solution selling by providing concerted sales support. Study 2 adopts an agency-theoretic lens to identify sales control systems that foster digital solution sales. The results, grounded in interview data, point to different controls that – depending on a firm's stage in the transition toward digital solutions – are employed to resolve arising agency problems. Study 3 relies on a contingency perspective to qualitatively examine sales targets and incentives that stimulate digital solution sales.

This thesis has several theoretical and managerial implications. It contributes to the service and sales literature by 1) conceptualizing digital solutions, 2) disclosing seven different barriers to sales reps' engagement in digital solution selling, 3) defining the nature of sales support that facilitates sales reps' adoption of digital solutions, 4) identifying sales control systems as well as 5) sales targets and incentives that foster digital solution sales. The findings are summarized in a managerial framework that presents 15 levers describing how sales managers can engage their sales reps in digital solution selling.

## Zusammenfassung

Die Digitalisierung eröffnet Industrieunternehmen durch das Angebot von digitalen Lösungen mit wiederkehrenden Erlösmodellen neue Möglichkeiten, dem zunehmenden Margendruck im klassischen Produktgeschäft entgegenzuwirken. Trotz zahlreicher Vorteile für Anbieter und Kunden bleiben erstaunlich viele digitale Lösungen hinter den ursprünglichen Umsatzerwartungen zurück. Wissenschaftler sind sich einig, dass der kommerzielle Erfolg digitaler Lösungen zum grössten Teil von der Vertriebsfunktion abhängt, die den strategischen Wandel hin zum Verkauf digitaler Lösungen umsetzen muss. Dabei scheitern Industrieunternehmen häufig daran, ihre Vertriebsmitarbeiter in den Verkauf digitaler Lösungen einzubinden. Aus diesem Grund können sie nur selten von den finanziellen Vorteilen der Digitalisierung profitieren. Leider gibt es bis heute nur wenig Erkenntnisse zu den Barrieren, die Vertriebsmitarbeiter vom Verkauf digitaler Lösungen abhalten, und zu den Ansätzen zur Überwindung dieser Barrieren.

Die vorliegende Arbeit schliesst diese Lücke, indem sie eine Anleitung für die Einbindung der Vertriebsmitarbeiter in den Verkauf digitaler Lösungen bietet. Aus der Perspektive des Organisationsverhaltens wird die Beziehung zwischen Vertriebsmanagern und Vertriebsmitarbeitern beim Verkauf digitaler Lösungen beleuchtet. Die Analyse bestehender Literatur zeigt, dass Vertriebsmitarbeiter den Verkauf digitaler Lösungen aufgrund geringer Motivation, eingeschränkter Möglichkeiten oder unterentwickelter Fähigkeiten ablehnen. Drei verschiedene qualitative Studien legen die empirische Grundlage für diese Arbeit und versuchen, die notwendigen Veränderungen in den Instrumenten des Vertriebsmanagements zu untersuchen, um diese Hindernisse zu überwinden. Studie 1 basiert auf einem Fallstudiendesign und stützt sich auf die Diffusionstheorie, um aufzuzeigen, welche Vertriebsunterstützung notwendig ist, damit Vertriebsmitarbeiter digitale Lösungen akzeptieren und in ihr Verkaufsportfolio mit aufnehmen. Studie 2 beruht auf einer Interviewstudie und skizziert aus einer Prinzipal-Agenten Perspektive verschiedene Mechanismen der Vertriebssteuerung, welche den Verkauf digitaler Lösungen fördern. Studie 3 basiert ebenfalls auf Interviewdaten und nutzt die Kontingenztheorie, um geeignete Ziele und Anreize für den Verkauf von digitalen Lösungen zu identifizieren.

Diese Arbeit hat zahlreiche theoretische und praktische Implikationen. Sie leistet in fünffacher Hinsicht einen Beitrag zur bestehenden Service- und Vertriebsliteratur. Die Ergebnisse werden in einem managementorientierten Ordnungsrahmen zusammengefasst, der beschreibt, wie es Vertriebsmanagern gelingt, ihre Vertriebsmitarbeiter in den Verkauf digitaler Lösungen einzubinden.

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# 1 Introduction<sup>1</sup>

## 1.1 Managerial relevance

To create superior customer value, industrial firms increasingly pivot from the manufacturing of goods to the provision of software and services enabled by the Internet of Things (IoT) and digital technologies (Gebauer, Fleisch, et al., 2020; Linde et al., 2021; Parida et al., 2019; Töytäri et al., 2018). For example, the industrial automation company Schneider Electric recently launched its IoT platform “EcoStruxure,” which enhances building performance, reduces energy costs, and provides operator comfort by integrating products, services, and software applications in new customer solutions (Schneider Electric, 2022). Schneider Electric furthermore introduced Software-as-a-Service (SaaS) offerings based on recurring (or “subscription-based”) revenue models (RRMs) to capture the created value and recoup substantial investments in digitalization and cloud infrastructure through predictable income streams. This technological and commercial evolution of the customer solution concept (Tuli et al., 2007) builds the foundation of what this thesis calls *digital solutions* (DS).

The shift toward DS is compelling for both customers and providers (Paschou et al., 2020). Customers can benefit from entirely new value propositions enabled by digital technologies, such as reduced costs (Paiola & Gebauer, 2020), optimized process performance (Allmendinger & Lombreglia, 2005), minimized downtime (Grubic & Peppard, 2016), faster service delivery (Marinova et al., 2017), guaranteed availability (Lenka et al., 2017; Lerch & Gotsch, 2015), ownership transfer (Ehret & Wirtz, 2017) or lower risks (Visnjic et al., 2017). On the contrary, providers can escape from fixed product margins, expect more predictability for their business and achieve higher corporate valuations when tapping software-based, recurring revenue streams (Baxter, 2015; Huikkola et al., 2022; McCarthy et al., 2017).

Despite these prospects, many industrial firms embarking on this journey face serious headwinds, not least because they fail to engage their sales force (Chung, 2021; Classen & Friedli, 2021b; Edinger, 2020). However, convincing sales representatives (in the following: sales reps) to sell solutions is challenging for different reasons. First, sales reps may display a low motivation to address solutions in customer conversations due to the higher risk inherent in selling novel, unproven offerings with uncertain value outcomes and inadequate incentives in more complex sales cycles (Ulaga & Loveland, 2014). Second, customers may exhibit high levels of resistance to purchasing solutions, leading to environmental variables that constrain selling opportunities and impede sales reps’ actions (Salonen et al., 2021). Third, sales reps

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<sup>1</sup> Parts of this chapter, in particular the subchapters 1.1 and 1.2, were initially published in Tienken et al. (2023).

may lack the necessary abilities to identify and articulate the solution's value to new, higher-level customer stakeholders (Terho et al., 2012).

Several examples from industrial practice accentuate the difficulties of transitioning toward digital solution selling (DS selling). For the former CEO of tool manufacturer Hilti, obtaining sales force buy-in was the biggest obstacle in the taken shift from products to (digital) services as sales reps “had to learn a much longer sales cycle of a conceptual sale to the executive level of [their] customers that they usually didn't have access to” (Etiemble, 2020). At General Electric, a multinational conglomerate, sales teams initially expressed great concerns “that potential customers would see that GE wasn't even using its own software” (Mann & Gryta, 2020), thereby jeopardizing customer relationships they had painstakingly built up over many years. After initial concerns vanished, GE's sales force, now directed to proactively pitch their new software solutions, was still not “entirely confident about what their product could do” (Mann & Gryta, 2020). While sales reps kept struggling to successfully sell “a deep analytic software platform that was hard to understand and harder to explain” (Mann & Gryta, 2020), revenue targets remained far behind expectations – ultimately causing GE to abandon its bold digital dreams (Mann & Gryta, 2020).

To overcome these challenges, firms transitioning toward DS selling must align their sales strategy and underlying management practices accordingly (Classen & Friedli, 2021b; Hoffmann et al., 2022; Homburg et al., 2019). For example, Honeywell, a building automation company, turbocharged its SaaS business by completely overhauling its sales management instruments; it redeployed, retrained, and remotivated its sales reps by rewarding the selling of multiyear contracts (Diorio, 2021). In the same vein, Microsoft, one of the world's leading tech companies, designed a massive sales transformation program – comprising the introduction of new roles, customer segmentation approaches, training modules, and rewards – that served to ensure sales reps' adoption of their new cloud-based software solutions (Chung, 2020). In summary, firms that fail to adapt their sales management instruments risk impeding their DS transformation efforts by inhibiting associated revenue growth opportunities and leaving behind a largely frustrated sales force with high fluctuation rates.

## **1.2 Theoretical relevance**

Already some time ago, scholars began to observe a service transition in industrial firms. In this context, they introduced the term “servitization” to describe the strategic shift toward more service-oriented offerings (Kindström, 2010; Kowalkowski et al., 2017; Oliva & Kallenberg, 2003). More recently, research on “digital servitization” has gained momentum to accommodate the growing importance of IoT-enabled digital technologies in the development of new services that increasingly become integral parts of customer solutions

(Kohtamäki et al., 2019; Paschou et al., 2020; Sjödin, Parida, Kohtamäki, & Wincent, 2020). However, commercial success with these novel offerings is not guaranteed. In fact, industrial firms oftentimes experience a “digitalization paradox” (Gebauer, Fleisch, et al., 2020) as they fail to capitalize on high investments made in digitalization. Following recent studies (Chung, 2021; Classen & Friedli, 2021b; Edinger, 2020; Guenzi & Nijssen, 2023), one major root cause of this paradox is concerned with the sales function which is responsible for realizing revenue and meeting associated growth targets.

Indeed, extant literature has recognized that sales reps play a key role in selling such solutions and implementing new sales strategies associated with service growth (La Rocca et al., 2016; Storbacka et al., 2011; Töllner et al., 2011). Although prior studies have shown that sales reps’ solution involvement is positively related to increases in sales performance (Panagopoulos et al., 2017), there is broad consent among scholars that sales reps “do not automatically enact strategies simply because they are instructed to do so” (Johnson & Sohi, 2017, p. 137). For example, Ulaga and Reinartz (2011) found that only about a third of industrial sales reps master the transition toward more solution-centric offerings due to the risk, uncertainty, and effort inherent in solution selling (Ulaga & Kohli, 2018; Ulaga & Loveland, 2014). Building on the seminal work of Atuahene-Gima (1997), sales reps’ solution selling engagement can be viewed as a two-stage adoption process that is contingent on “the degree to which [sales reps] accept and internalize the goals of a new [solution] (i.e., commitment) and the extent to which [sales reps] work smart and hard (i.e., effort) to achieve these goals” (p. 500). Therefore, commitment refers to the attitudinal adoption of solutions which describes sales reps’ emotional engagement to accept the solution and make it a success (House & Mitchell, 1975; Mathieu & Zajac, 1990; Meyer & Allen, 1991). In contrast, effort refers to the behavioral adoption of solutions which describes sales reps’ energy and persistence put into solution selling tasks to achieve the desired outcome (Brown & Peterson, 1994; Sujana, 1986; Tannenbaum, 1982). Both commitment and effort are subject to dysfunctional selling behavior which occurs when sales reps refrain from selling solutions and instead engage in activities that stimulate their self-interest, thereby hampering the solution’s sales performance in the long run (cf. Atuahene-Gima, 1997). This can, for example, involve sales reps misrepresenting value propositions or not even discussing novel solutions to make quick short-term sales with traditional products (Classen & Friedli, 2021b; Ulaga & Loveland, 2014).

The occurrence of dysfunctional selling behavior draws particular attention to sales management and the various instruments employed by sales managers to implement solution selling strategies. To date, sales management research has extensively studied the right configuration of different sales management instruments, such as the selection, support, control, and compensation of sales reps, to induce selling behaviors that result in superior

sales performance (Chung et al., 2021; Magnotta et al., 2020; Miao & Evans, 2013; Wotruba & Rochford, 2013). In this context, however, scholars have noted that “there is little research that details and categorizes the capabilities and management practices pertinent to the effective management of a solution business model” (Storbacka, 2011, p. 700). Furthermore, extant sales literature has paid remarkably little attention to emerging digital technologies that shape DS and gradually pervade existing solution selling strategies. Despite the strategic importance of DS, only a handful of studies (Boldsova, 2020; Classen & Friedli, 2021b; Guenzi & Nijssen, 2023; Koponen et al., 2019) have yet examined the necessary adaptations in sales management to successfully engage the sales force in DS selling.

### 1.3 Research gaps and purpose

A literature review, summarized in Figure 1, revealed four research gaps. First, individual-level obstacles to the transition toward DS selling are poorly understood. Despite emerging research in this domain (Böhm et al., 2020; Krämer et al., 2022; Panagopoulos et al., 2017), we<sup>2</sup> are not aware of any study bringing this discussion to the digital age. This is surprising considering that the all-encompassing digital transformation revolutionizes how solutions create value (Bond et al., 2020), thereby necessitating managerial intervention to align sales reps’ behavior with organizational-level transformational goals (Alavi et al., 2022). Understanding the different barriers to sales reps’ engagement in DS selling is important to make the right modifications in underlying sales management instruments. The motivation-opportunity-ability (MOA) framework provides a suitable foundation to examine the interrelation between sales reps’ motivation, opportunity, and ability in the transition toward DS selling (Guenzi & Nijssen, 2023). Against this backdrop, this thesis is among the first to investigate individual sales rep behavior by combining different perspectives from research on organizational behavior, digital servitization, and Business-to-Business (B2B) sales.

Second, launching DS to a firm’s sales force demands the utmost attention from sales managers who must facilitate sales reps’ attitudinal and behavioral adoption of these novel offerings (Ahearne, Rapp, et al., 2010; Fraenkel et al., 2016). Sales scholars even agree that sales reps need to be treated as the first albeit internal customers that must “buy” into these new offerings (Anderson & Robertson, 1995; Atuahene-Gima, 1997; Malshe & Sohi, 2009). In this regard, diffusion theory has highlighted that new innovations oftentimes need several years from their introduction to the point where they are widely adopted by a social system (Rogers, 1976, 1983). Consequently, the launch of DS can be compared to a complex diffusion process in which an innovation is communicated to the sales force, thereby

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<sup>2</sup> The personal pronouns “we”, “our”, and “us” are used in this thesis to acknowledge team members’ help in crafting the paper Tienken et al. (2023).

endowing sales reps with sufficient support, such as knowledge or skills, to sell DS profitably. Scrutinizing the underlying nature of sales support in the context of DS selling has merit as extant research has yet failed to identify both the degree of communication that is most conducive to sales reps' engagement in solution selling tasks (Schaarschmidt et al., 2022) and sales reps' knowledge and skills required for selling new service solutions (Jong et al., 2014).

Third, a conflict of goals can emerge when sales managers, seeking to increase DS revenue, engage sales reps who are reluctant to sell DS or who entirely refrain from selling DS. These tensions point to the principal-agent model, which has served to explain such conflicts for decades (Basu et al., 1985; Waiser, 2021). Although noticeably absent from DS literature, the model nevertheless remains useful to examine the barriers to sales reps' engagement in DS selling. In this regard, extant literature has emphasized the importance of formal sales control systems in solving agency problems (Joseph & Thevaranjan, 1998). However, many firms struggle to develop the "right" portfolio of controls (S. K. Kim & Tiwana, 2016) since knowledge about control design is limited in generic sales settings (Katsikeas et al., 2018) and almost nonexistent for DS (Wielgos et al., 2021). This is disconcerting because DS selling not only demands new abilities from sales reps but also involves different activities that result in different outcomes, such as time-lagged revenues (Classen & Friedli, 2021b). Therefore, a better understanding of appropriate sales controls would provide managers with a blueprint that facilitates the transition toward DS selling, and researchers with a conceptual foundation for scale development.

Fourth, sales reps' motivation to engage in solution selling tasks is largely affected by incentives offered in return for achieving assigned sales targets or quotas. Sales scholars have examined the selection and configuration of suitable incentives for different contexts, such as the selling of new products or service innovations (Beuk et al., 2014; Wotruba & Rochford, 2013). However, extant literature so far only offers limited guidance on the design of sales targets and incentives for DS selling. Developing knowledge about sales targets and incentives that stimulate DS sales is important due to sales reps' low motivation to sell DS and the fundamentally different revenue model characteristics of DS in comparison to transactional purchase models (Bonnemeier et al., 2010; Classen & Friedli, 2021a; Gebauer, Arzt, et al., 2020; Linde et al., 2021). Therefore, more research is needed on sales management instruments that drive selling success of service innovations (Alavi et al., 2022) as well as multidimensional incentives in CRM-related settings where sales reps manage customer acquisition and maintenance activities (M. Kim et al., 2019; A. Rapp et al., 2020). The contingency theory (Hickson et al., 1971) serves as a theoretical framework to develop a more fine-grained understanding of the different levers that sales managers can pull to motivate their sales force to sell DS.

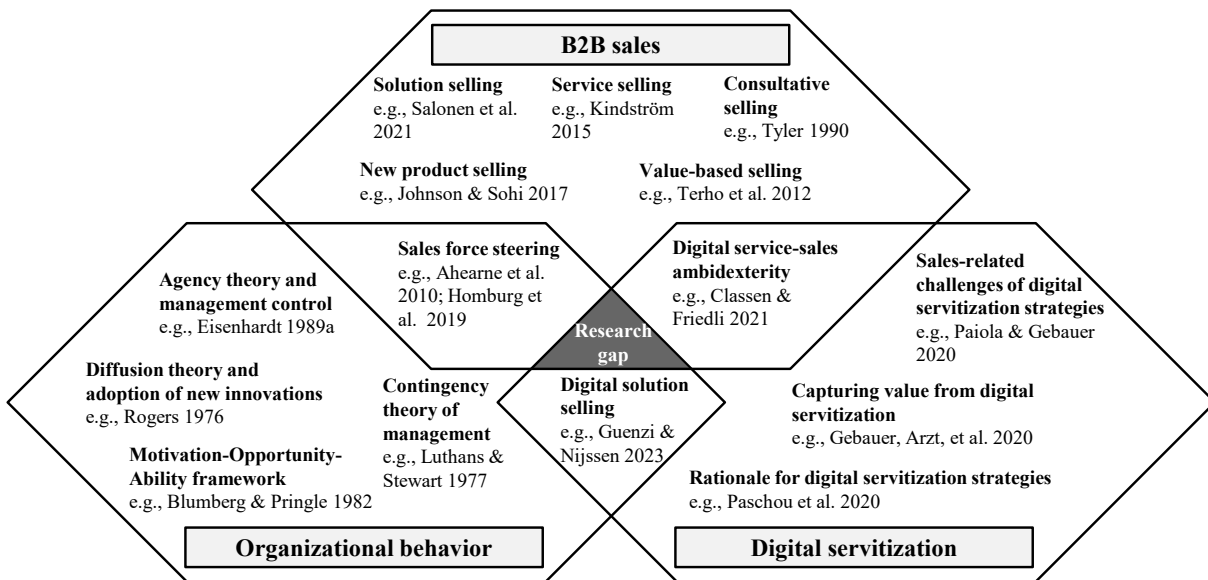


Figure 1: Literature summary and research gap

To address these gaps, the purpose of this thesis is to examine how sales managers of industrial firms can engage their sales force in DS selling. The main research question (MRQ) can be divided into two sub-research questions (SRQs), which are outlined in Table 1. SRQ1 serves to investigate the different barriers to sales reps' engagement in DS selling. SRQ2 aims at identifying necessary adaptations in sales management instruments to overcome these barriers. To answer this question, three sub-questions are derived. SRQ2.1 scrutinizes the role of sales support in facilitating sales reps' adoption of DS. SRQ2.2 investigates the potential design of sales control systems fostering DS sales. Finally, SRQ2.3 examines sales targets and incentives that stimulate DS sales.

Table 1: Research questions

#	Research Question (RQ)
MRQ	How can sales managers of industrial firms engage their sales force in digital solution selling?
SRQ1	What are the different barriers to sales reps' engagement in digital solution selling?
SRQ2	How can sales managers overcome these barriers to boost digital solution sales?
SRQ2.1	What is the nature of sales support facilitating sales reps' adoption of digital solutions?
SRQ2.2	How can sales control systems be designed to foster digital solution sales?
SRQ2.3	How can sales targets and incentives be designed to stimulate digital solution sales?

The interplay of different concepts used in this thesis is depicted in a conceptual framework that guides the underlying research (see Figure 2). The different terms constituting this framework are further defined and operationalized in the theoretical background chapter.

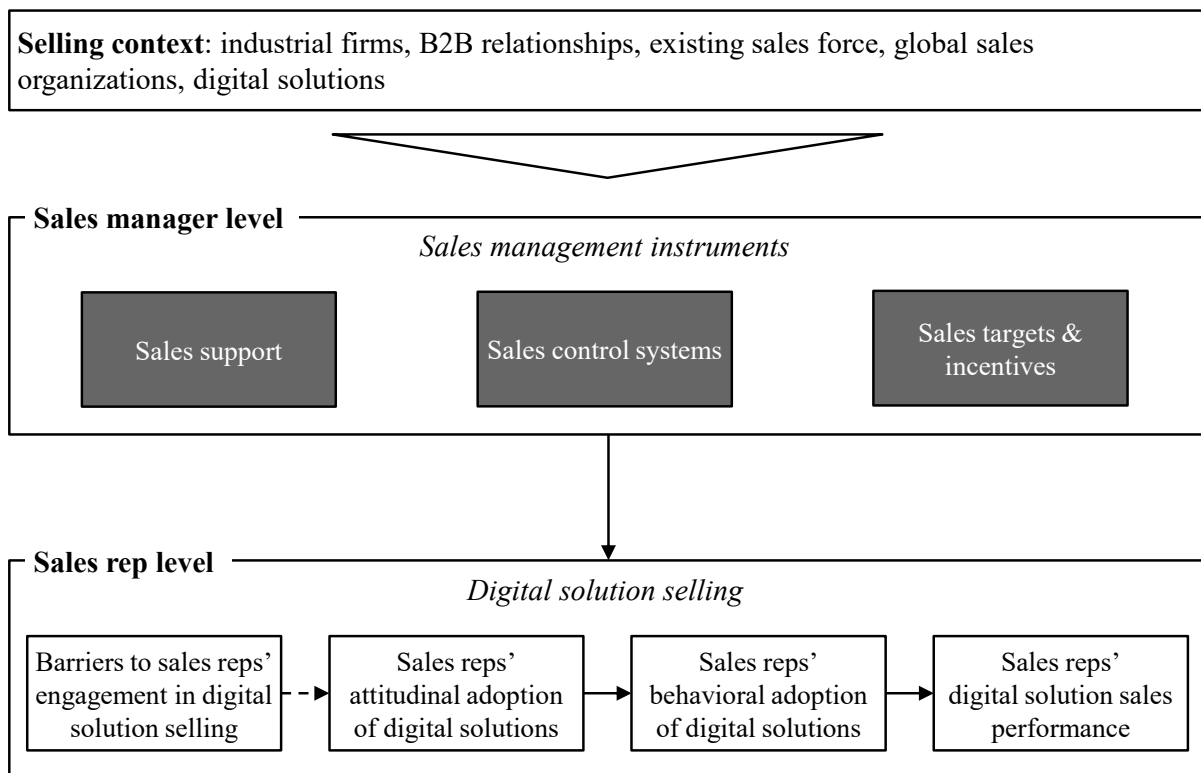


Figure 2: Research framework

## 1.4 Ontological and epistemological stance

This thesis adopts a relativistic ontological perspective. Therefore, it follows the notion of Hugly and Sayward (1987) who state that “the relativist denies that there is objective set-theoretic truth. Within the framework of model theory this amounts to a denial of the existence of a total model” (p.279). Against this backdrop, this thesis rests on a large and diverse empirical data set and employs multiple theories to holistically examine the phenomenon. Furthermore, this thesis applies a constructivist epistemological view. In doing so, it builds on Crotty (2015) who explains that knowledge is created “out of our engagement with the realities of our world. There is no meaning without a mind. Meaning is not discovered, but constructed” (pp. 8-9). This stance is consequently affecting the chosen research design.

## 1.5 Research design

The research design of this thesis is driven by an iterative research process (see Figure 3). A careful review of extant service and sales literature forms the basis of this thesis. At the beginning of the overall research process, explorative interviews with practitioners and scholars were used to develop a better theoretical understanding of the overall research gap. By gradually linking literature gaps and practical problems, four different research questions were derived.

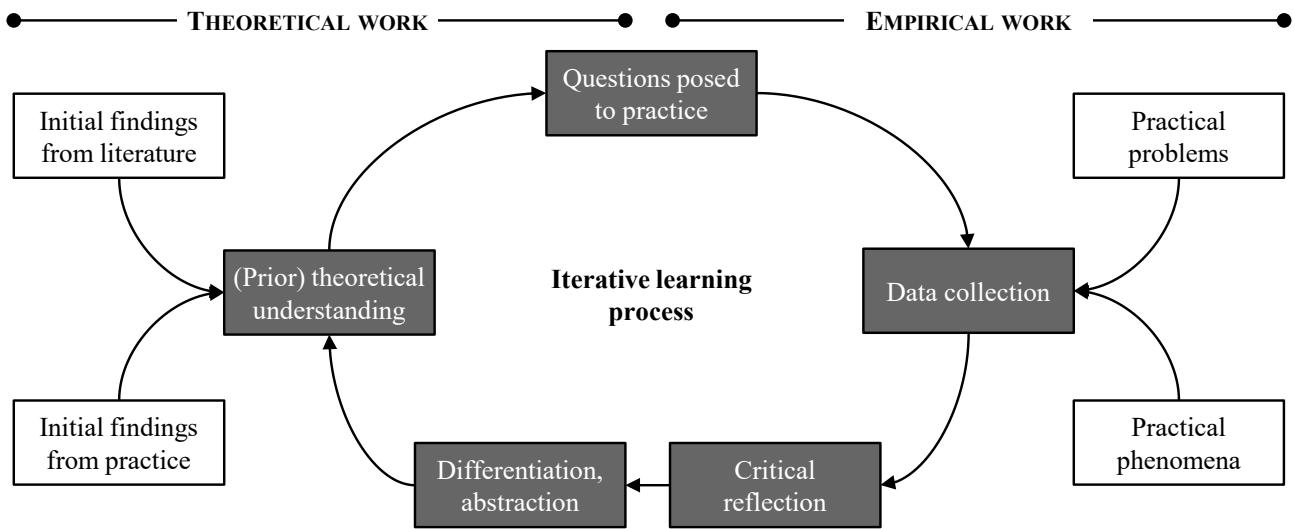


Figure 3: Iterative research process (adapted from Gassmann, 1997; Kubicek, 1977; Tomczak, 1992)

To answer the defined research questions, this thesis includes three different studies which were implemented over a period of 29 months. All studies rely on a qualitative, inductive research approach for two reasons. First, DS just recently emerged, so evidence on investigated concepts is still in its infancy. Second, existing literature lacks operational perspectives on the impact of DS at the individual sales rep level, which necessitates a thorough understanding of the resulting phenomena. To support the objective of building theory in an underexplored research area, data are collected from in total over 100 informants that work in multiple business contexts. The selection of informants and cases follows a purposeful strategy to develop an in-depth understanding of the research context based on insights into firms that are both more and less successful with DS selling. This research approach is chosen because it is most suitable for answering “how” and “what” questions that address contemporary and emerging phenomena (Eisenhardt, 1989b). To increase the analytical rigor and validity of this thesis, different measures, illustrated in Table 2, are applied (Lincoln & Guba, 2007).

Table 2: Trustworthiness of the research process (adapted from Storbacka, 2011)

Criteria	Measures applied
<p><b>Pre-understanding</b> The extent to which the researchers were familiar with the empirical phenomena</p>	<ul style="list-style-type: none"> <li>Conducting a research project focusing on “Value-based Marketing and Sales of Smart Services” and a focus group addressing “Smart Service Innovation”</li> </ul> <p><i>Goal: Develop a deep understanding of the research problem before starting the different studies</i></p>
<p><b>Credibility</b> (internal validity, authenticity)</p>	<ul style="list-style-type: none"> <li>Continuous and iterative exchange with informants through focus group meetings and bilateral follow-up discussions</li> <li>Triangulation of data by using secondary data, such as company presentations, organizational diagrams, etc.</li> </ul>

The extent to which the results appear to be an acceptable representation of the data

- Presentation of findings in additional webinars and workshops to new and unbiased informants
- Goal: Gain continuous feedback on findings to critically discuss and adjust them*

**Transferability**  
(external validity, fittingness)

The extent to which the findings can be applied to other contexts

- Over 60 multinational firms with different industry backgrounds are part of the studies
  - Over 100 industry experts working in different marketing, sales, or product management functions serve as informants
  - Application of theoretical sampling to select informants/cases
- Goal: Obtain cross-industry and firm size-independent feedback to increase the generalizability of findings*

**Dependability**

(reliability, auditability)

The extent to which there is a consistency of explanations

- Interviews are audio-taped with the informant's permission
  - Informants and workshop participants are proactively asked to write down and share critical feedback based on previous experiences made
- Goal: Lay the foundation for a robust and reliable data analysis that ensures consistency in explanations*

**Conformability**  
(objectivity)

The extent to which interpretations are the result of the participants and the phenomenon as opposed to researcher biases

- Findings are not only presented to informants involved in ongoing projects but also to a broader audience that is not part of a project-oriented relationship
  - Exchange in focus group meetings helps to construct knowledge collaboratively
  - Discussion with other researchers to obtain unbiased feedback
- Goal: Increase the level of objectivity throughout the research process*

**Integrity**

The extent to which interpretations are influenced by misinformation from participants

- A positive and trustful atmosphere in interviews is ensured
  - Anonymous data analysis allows for sharing of necessary insights
  - Focus group participants are selected on a non-competitive basis to ensure openness in discussions
- Goal: Ensure appropriate and comfortable surrounding conditions to get the necessary information that answers the research questions sufficiently*

**Understanding**

The extent to which participants buy into results as possible representations of their worlds

- Informants are asked to provide honest feedback on the findings presented
  - Study 2 has been published in the European Journal of Marketing and thus builds on rich feedback from a peer-review evaluation
- Goal: Use feedback from both researchers and practitioners to continuously hone (preliminary) findings*

**Utilization**

(applicability, action orientation)

The extent to which the findings are relevant and can be used to benefit the participants

- Research findings are summarized in a management presentation to visualize and communicate managerial implications
  - Feedback from industry experts is gathered continuously regarding the usefulness of the presented findings
- Goal: Ask informants if and how findings can be used in their daily business practices*

## **1.6 Thesis structure**

This introduction is followed by three chapters. Chapter 2 presents the theoretical background of this thesis. In doing so, it involves a description of the chosen theories on organizational behavior, a conceptualization of DS selling, a detailed examination of the different barriers to sales reps' engagement in DS selling, an overview of the existing body of knowledge about focal sales management instruments to address these barriers, and a description of the resulting consequences for the empirical research. Chapter 3 features the theoretical framing, methodology, findings, and discussion sections of three empirical studies focusing on sales support, sales control systems, as well as sales targets and incentives. Chapter 4 contains a general, integrative discussion that summarizes the theoretical and managerial implications of all three studies. To conclude, limitations and future research directions are delineated.

## 2 Theoretical background<sup>3</sup>

This chapter reviews the current state of research on organizational behavior, digital servitization, and B2B sales to define all concepts that are relevant to the different empirical studies of this thesis.

### 2.1 Organizational behavior and employee engagement

The theoretical foundation of this thesis is rooted in organizational behavior which refers to the “study of the impact that individuals, groups, and organizational structure and processes have on behavior within organizations” (Ivancevich & Konopaske, 2014, p. 8). To define the scope of this nascent research field, Ivancevich and Konopaske (2014) made six propositions: First, behavior can be analyzed at the individual, group, and organizational level. Second, organizational behavior has evolved from multiple disciplines. Consequently, studies on organizational behavior are not grounded in one idiosyncratic theoretical foundation but rather draw on existing theories and concepts from other disciplines. Third, organizational behavior involves a humanistic orientation that considers “people and their attitudes, perceptions, learning capacities, feelings, and goals” (p.8). Fourth, organizational behavior is closely related to performance orientation. In doing so, underlying research is concerned with management practices, systems, and processes leading to increased on-the-job performance. Fifth, scientific methods that originally emanate from Taylor’s scientific management philosophy (cf. Taylor, 2004) lay the foundation for research endeavors on organizational behavior. Sixth, organizational behavior is application-oriented, thereby seeking to provide “useful answers to questions that arise in the context of managing organizations” (p.8).

Since this thesis is focusing on the individual-level behavior of sales reps that arises from the transition toward DS selling, the concept of employee engagement – which describes “how individuals employ themselves in the performance of their job” (Saks, 2006, p. 602) – plays an important role. In this context, the work of Ludwig and Frazier (2012) has underscored the importance of properly managing organizational behavior “to create an engaged workforce and culture” (p.75). Therefore, the design of appropriate management systems based on environmental conditions is crucial to establish a work environment that allows employees to unfold their full potential in job-related tasks.

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<sup>3</sup> Parts of this chapter, in particular the subchapters 2.1.3, 2.2, 2.3, and 2.4.2, were initially published in Tienken et al. (2023).

Considering the multidisciplinary nature of research on organizational behavior, this thesis employs a multi-theory approach to scrutinize sales management instruments that align sales rep behavior with the strategic goals of DS selling. All theories are described in the following sections.

### 2.1.1 Motivation-Opportunity-Ability framework

For a long time, scholars struggled to grasp distinct predictors of job performance. Since research on job performance has focused either on abilities or motivation, prior studies have failed to show surfacing interaction effects between the different predictors. In addition, most of these studies entirely neglected exogenous factors that discourage individuals from better job performance (Siemsen et al., 2008). To address this issue, Blumberg and Pringle (1982) proposed a three-dimensional interactive model of job performance. This *motivation-opportunity-ability (MOA) framework* represents an adequate conceptual foundation to examine all relevant predictors of job performance. According to the framework, three overarching dimensions, depicted in Table 3, can affect job performance.

Table 3: Dimensions of job performance

Dimension	Description
Motivation (willingness to perform)	“[The] psychological and emotional characteristics that influence the degree to which an individual is inclined to perform a task. In addition to motivation [...], willingness represents the effect on behavior of job satisfaction, personality, attitudes, norms, values, status, anxiety, task characteristics, job involvement, perceived role expectations, self-image, need states, and closely related concepts.” (Blumberg & Pringle, 1982, p. 563)
Opportunity	“[The] particular configuration of the field of forces surrounding a person and his or her task that enables or constrains that person’s task performance and that are beyond the person’s direct control.” (Blumberg & Pringle, 1982, p. 565)
Ability (capacity to perform)	“Capacity refers to the physiological and cognitive capabilities that enable an individual to perform a task effectively. In addition to ability, capacity represents the effects of the individual’s knowledge, skills, intelligence, age, state of health, level of education, endurance, stamina, energy level, motor skills, and similar variables.” (Blumberg & Pringle, 1982, p. 563)

Given the context of this thesis, these three dimensions form a suitable structure to holistically investigate the different barriers to sales reps’ engagement in DS selling. Only by aligning sales reps’ motivation, opportunity, and ability can sales managers successfully engage their sales force in DS selling to achieve superior DS sales performance and ensure the commercial success of DS.

### 2.1.2 Diffusion theory

Although many technologists believe that novel innovations sell themselves because of their technological superiority and obvious benefits to customers, there is ample evidence that new ideas oftentimes take several years from their initial introduction to their adoption by a particular population (Bass et al., 2001; Rogers, 1976, 1983). Building on this observation, diffusion theory has shown that “most innovations [...] diffuse at a surprisingly slow rate” (Rogers, 1983, p. 7). Therefore, the theory is considered an established framework to scrutinize the difficulties arising from the adoption of new innovations. Given its origin in consumer behavior research (Arndt, 1967; Silk, 1966), the theory points to the crucial role of communication processes in informing selected target groups about new ideas to facilitate their adoption. Therefore, research on innovation diffusion is concerned with “the process by which (1) an *innovation* (2) is *communicated* through certain *channels* (3) over *time* (4) among the members of a *social system*” (Rogers, 1983, p. 10). These four elements constitute a diffusion model.

*Innovation* refers to an “idea, practice, or object that is perceived as new by an individual [...]” (Rogers, 1983, p. 13). The novelty of an innovation can cause considerable uncertainty among potential adopters who must evaluate the benefits of a new idea and decide whether it is a better alternative in comparison to the previous one. This evaluation phase constitutes the basis for the innovation-decision process that describes “information-seeking and information-processing [activities] in which the individual is motivated to reduce uncertainty about the advantages and disadvantages of the innovation” (Rogers, 1983, p. 13). To successfully reduce uncertainty, communication strategies should focus not only on explaining how innovations work but also on their outcomes in terms of benefits for potential adopters.

*Communication channels* serve as the necessary vehicle to exchange relevant information about a new idea. In doing so, they connect “an individual or other unit of adoption that has knowledge of, or experience [in] using, the innovation [with] another individual or other unit that does not yet have knowledge of the innovation” (Rogers, 1983, p. 17). Choosing the right communication channels is important as they help to influence and change the attitude of individuals toward a new idea and thus ensure an effective transfer of innovations (López & Sicilia, 2013; Rogers, 1983). Considering that recipients of an innovation can only adopt a new idea if they understand all relevant aspects, weaknesses in the information exchange between two parties consequently slow down the entire innovation diffusion process (Rogers, 1983).

*Time* plays an important role in the diffusion of innovations in three different ways. First, it pervades the innovation-decision process which refers to a five-step “mental process through which an individual (or another decision-making unit) passes from first knowledge of an innovation to forming an attitude toward the innovation, to a decision to adopt or reject, to [the] implementation of the new idea, and to [the] confirmation of this decision” (Rogers, 1983, p. 36). Second, time is inherent “in the innovativeness of an individual or other unit of adoption – that is, the relative earliness/lateness with which an innovation is adopted – compared with other members of a system” (Rogers, 1983, p. 20). Third, time determines the diffusion success in terms of “[...] an innovation’s rate of adoption in a system, usually measured as the number of members of the system that adopt the innovation in a given time period” (Rogers, 1983, p. 20).

A *social system* describes “a set of interrelated units that are engaged in joint problem solving to accomplish a common goal” (Rogers, 1983, p. 24). The different structures of a system furthermore determine the boundary conditions in which innovations can diffuse (Rogers, 1983). Within a social system, two distinctive roles seek to drive the adoption of new ideas. First, change agents seek to influence potential adopters’ innovation decisions according to the proclaimed direction of a change agency. Consequently, they are responsible for developing effective communication strategies to successfully promote a new idea and convince the different members of a social system of its adoption (Rogers, 1983). Second, opinion leaders act as influential persons within a social system who can influence the attitude of individuals to a certain degree (Iyengar et al., 2011; Nejad et al., 2014; Rogers, 1983). Therefore, opinion leaders can – depending on their attitude toward an innovation – either support or inhibit diffusion endeavors of change agents (Rogers, 1983). Against this backdrop, change agents aim at persuading opinion leaders to leverage their diffusion campaigns.

Although diffusion theory has predominantly focused on the adoption of new innovations on the end-customer side, it also represents a useful conceptual framework to accurately examine the diffusion of DS within a sales force. This view would follow the logic of Atuahene-Gima (1997) and Anderson and Robertson (1995) who recommend treating sales reps as the first customers who need to be convinced of the innovation’s benefits before they start engaging in corresponding selling activities.

### **2.1.3 Agency theory**

Agency theory has proved to be a suitable lens through which to examine conflicts originating from relationships where an agent acts on the principal’s behalf (Bergen et al., 1992). These conflicts can emerge when cooperating parties prefer

different courses of action due to diverging goals or risk attitudes (Eisenhardt, 1989a). To resolve such conflicts, this theory aims at identifying the most efficient contract, thereby considering the characteristics of both contracting parties (Nilakant & Rao, 1994).

Agency relationships rest on three assumptions. First, both principles and agents are motivated by self-interest, leading each party to maximize their own profits (Bergen et al., 1992). Second, principles lack complete information when selecting agents based on their characteristics and abilities or when evaluating agents' performance based on job-related activities. Self-interested agents can exacerbate this information asymmetry as they tend to hide relevant information or intentionally share false information (Bergen et al., 1992). Agency theory, therefore, views information as a "purchasable commodity" which can be obtained through information-gathering strategies (Jensen & Meckling, 1976). Third, environmental uncertainty, such as economic developments or competitors' actions, influence realized outcomes in agency relationships and are beyond the control of both contracting parties (Bergen et al., 1992). Environmental factors may change over time and cannot be reliably predicted, thereby making it difficult to determine contracts that consider all possible contingencies (Eisenhardt, 1989a).

In a sales context, agency models assume a risk-neutral sales manager (principal) who seeks to select suitable candidates for the selling task and to control the actions of risk-averse and effort-averse sales reps (agents) by monitoring their actions and/or offering incentive pay (Basu et al., 1985; Joseph & Thevaranjan, 1998). Two types of problems surface in these agency relationships. On the one hand, adverse selection – that refers to precontractual problems in which agents misrepresent their motivation or ability – arises from the principal's inability to properly verify the agents' aptitude for specific selling tasks prior to their selection (Eisenhardt, 1989a). Sales managers can cope with adverse selection in three different ways: acquiring more information about sales reps while screening them throughout the selection process, prospecting for agents' actions that signal desirable attributes, or implementing self-selection mechanisms that may prevent unmotivated sales reps from applying for more tasking positions (Bergen et al., 1992).

On the other hand, moral hazard – which refers to postcontractual problems in which agents do not take the actions agreed upon with their principals – arises from the principal's inability to accurately monitor the agents' actions (Holmstrom, 1979). Sales managers can cope with moral hazard in two different ways: "purchasing" more information about individual activities to offer a contract that rewards sales reps based

on their behavior or offering a contract that rewards sales reps based on their realized outcome, which is closely aligned with the sales managers' goals (Bergen et al., 1992).

#### **2.1.4 Contingency theory**

Contextual factors affect the configuration of management systems and practices that are employed at the organizational and individual level. Contingency theory is addressing this phenomenon and postulates that there is no best or universal way to organize and lead a corporation (Hickson et al., 1971). Instead, the ideal course of action, i.e., the chosen management style, is contingent on both the internal and external situation (Kast & Rosenzweig, 1972; P. R. Lawrence & Lorsch, 1967). Other than the universal approach, the situational approach is rooted in the idea of open systems thinking (Child, 1974) and seeks to “identify functional relationships between environmental, management, and performance variables” (Luthans & Stewart, 1977, p. 183). Contingency perspectives are applied in different fields of research. However, two applications stand out in this regard. First, the contingency lens is frequently used to examine the most appropriate design of organizations and organizational structures in response to environmental variables (P. R. Lawrence & Lorsch, 1967; Woodward, 1970). Second, contingency approaches are adopted for leadership and behavior applications. For example, the seminal work of Fiedler (1964) proposes a contingency model of leadership in which group performance is seen as the result of the interaction between leadership style and situational favorableness.

Although contingency-oriented research is predominantly used in the organizational design context, the theory has also become increasingly relevant to the marketing and sales domain. In this regard, scholars acknowledged the potential impact of external and internal factors on management systems and practices in marketing and sales organizations (e.g., Ramaswami, 1996; Weitz, 1981). For example, prior studies have highlighted the need to examine idiosyncratic conditions that shape a firm's business environment when designing sales-related management systems, such as control (Baldauf et al., 2005; Malek et al., 2018) or compensation systems (Balkin & Gomez-Mejia, 1987; John & Weitz, 1989). The contingency-theoretic lens, therefore, represents an appropriate framework to investigate sales targets and incentives for DS selling according to the different selling contexts in which firms operate. Examining the applicability of these steering instruments, taking into account the most important influencing factors, is essential to properly attract, motivate, and retain sales reps in DS selling.

## 2.2 Digital solution selling

Given their enormous value creation potential (Baltuttis et al., 2022), the IoT and other disruptive digital technologies are gradually transforming the development and delivery of traditional customer solutions (Sawhney, 2006; Tuli et al., 2007). Although Galbraith (2002) initially defined solutions as bundles of products, services, and software, the solution selling literature remains largely silent on the emerging role of digital technologies. Nevertheless, the described phenomenon has attracted considerable scholarly attention in recent years, thereby giving rise to the emerging field of research on “digital servitization” (Favoretto et al., 2022; Paschou et al., 2020; Tronvoll et al., 2020). In this context, scholars have indeed observed a transition toward “smart product-service-software systems” (Hsuan et al., 2021; Kohtamäki et al., 2019) where providers embed software applications, sensors, and microprocessors in products to collect data and add connectivity components to exchange data between the product and a data cloud (Kamalaldin et al., 2020; Ng & Wakenshaw, 2017). Data analytics, including machine learning, big data, and artificial intelligence are used to process and analyze the data (Opresnik & Taisch, 2015). This technology stack seeks to ensure a permanent connection with customers and enables new functionalities, such as remote monitoring, control, optimization, or autonomous functions (Gebauer, Arzt, et al., 2020).

To capture their share of the continuously created value, providers rely on recurring revenue models (RRMs) that grant access to DS in exchange for periodically recurring fees (Classen & Friedli, 2021a; Hochstein et al., 2021; McCarthy et al., 2017). RRM rests on a pre-defined contractual relationship between providers and customers and link the amount and timing of payments to the realized value by customers (Frandsen et al., 2019; Sawhney, 2006; Töytäri et al., 2015). Providers may therefore charge fixed or variable fees based on the duration and quantity of usage or the quality of customer outcomes (Sawhney, 2006). In addition, fees can be waived temporarily (the “free trial” model; H. Li et al., 2019) or permanently for a lower-end version of the DS (the “perpetual freemium” model; Shi et al., 2019). The rationale for employing RRM is compelling. RRM substitute customers’ large upfront investments with lower recurring fees (Hochstein et al., 2021; Sawhney, 2006). Reducing entry barriers by decreasing the cost of experimenting with a product that lacks quality signals – as many new DS do – should grow the customer base (Classen & Friedli, 2021a; Tidhar & Eisenhardt, 2020). Satisfied customers generate positive word-of-mouth feedback, which attracts new customers (Kamada & Öry, 2020; Shi et al., 2019). These dynamics create network externalities and drive revenue (Boudreau et al., 2017; Katz & Shapiro, 1985). If customers are served profitably, retaining them is rewarded with higher lifetime value

(CLV) and, ultimately, firm value (Gupta et al., 2004). RRM typically include a termination option allowing customers to cancel the underlying contract at any time if dissatisfied (Sawhney, 2006). Since customers face lower switching costs than with traditional solutions or transactional purchase models, churn is an important concern of DS (Hochstein et al., 2021; Janzer, 2017).

To accommodate these new opportunities for creating and capturing value, this thesis defines DS as a technological and commercial evolution of the traditional customer solution concept (Tuli et al., 2007) which includes at least one software element that facilitates continuous value creation through a permanent digital connection between the customer and the provider and a recurring revenue model that allows for continuous value capture by granting temporary solution access in exchange for periodically recurring fees. The collected data originate from connectivity components that are embedded in hardware products and allow for the provision of three different types of DS (see Table 4). The first type refers to IoT-enabled software applications that feature their own revenue model and are thus offered as a stand-alone solution. In the second type, these software solutions are combined with physical or remote services, such as maintenance or remote troubleshooting. Both portfolio elements are integrated into a single revenue model that is offered to customers. The third type integrates all portfolio elements, i.e., the software applications, the physical or remote services, and the equipment itself, in a single revenue model.

Importantly, extant solution selling literature has highlighted that customer solutions are more than mere bundles of integrated products and services (Salonen et al., 2021). Building on the notion of Tuli et al. (2007), they involve a set of customer-provider relational processes in which sales reps act as boundary spanners to orchestrate the interface between provider and customer stakeholders (La Rocca et al., 2016; Macdonald et al., 2016; Storbacka, 2011). In the different relational stages, sales reps are likely to encounter conflicting stakeholder requirements that impede solution evolution and implementation (Johnson & Sohi, 2017). Consequently, solution selling is considered a complex selling task with sales cycles lasting up to two years (Dhar et al., 2004; Tuli et al., 2007). Considering the customers' reluctance and the resulting effort inherent in solution selling, sales managers need to ensure sales reps' engagement in corresponding selling tasks to successfully sell solutions. This applies especially to DS where technological and commercial innovations increase the complexity for both customer and provider stakeholders. Following Atuahene-Gima (1997), this thesis, therefore, conceptualizes sales reps' engagement in DS selling as the degree to which

they accept and internalize the goals of a new DS (attitudinal adoption) and the extent to which they work smart and hard (behavioral adoption) to achieve these goals.

To evaluate the results of sales reps' engagement in DS selling, sales managers must define how to measure DS sales performance. Unfortunately, extant research yet lacks studies that operationalize DS sales performance. However, the work of Bolander et al. (2021) proposes a suitable concept to measure sales performance with objective, secondary data stemming from Enterprise Resource Planning (ERP), or Customer Relationship Management (CRM) systems. This perspective allows for greater transparency of the sales process and thus considers "inputs and outputs of effort quantity and quality" (Bolander et al., 2021, p. 464). Against this backdrop, this thesis adopts the notion of Bolander et al. (2021) who operationalize salesperson performance as a four-dimensional construct in which sales reps are evaluated according to activity-based, conversion-based, outcome-based, and customer relationship-based metrics. Consequently, DS sales performance can be measured by applying these four dimensions to the selling of the different types of DS. Figure 4 depicts this approach.

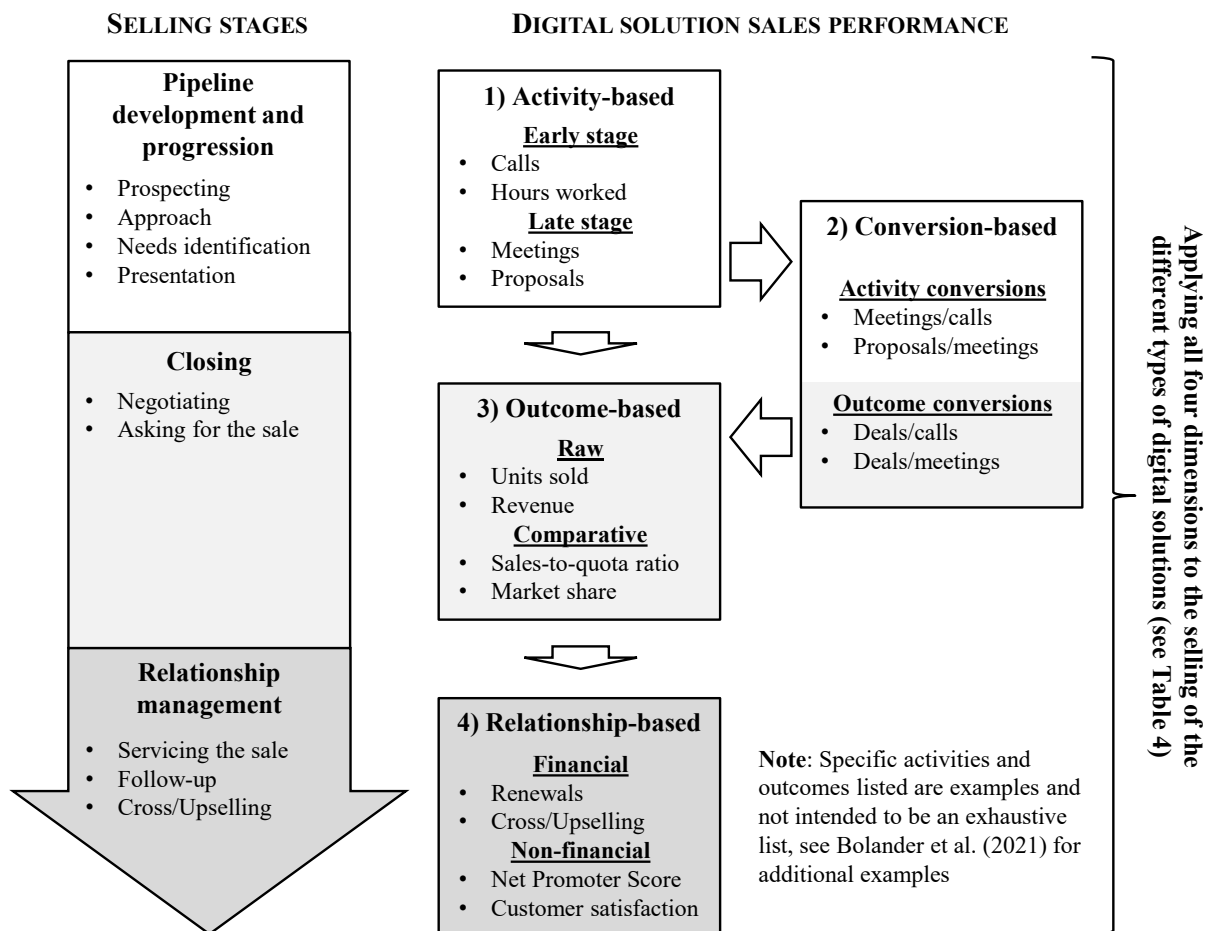


Figure 4: Operationalization of DS sales performance (adapted from Bolander et al., 2021)

Table 4: Taxonomy of DS (Tienken et al., 2023)

Type of DS	Description	Generic names	Industry examples	Exemplary RRM
1 Software solution	On-premise or cloud-based, IoT-enabled software applications that augment the value equipment creates	Software application stack (Gebauer, Arzt, et al., 2020), web applications (Coreynen et al., 2017), IoT-based solutions and services (Baltuttis et al., 2022)	<ul style="list-style-type: none"> <li>• SICK IntegrationSpace Digital Services<sup>1</sup></li> <li>• Hilti ON!Track Cloud Software<sup>2</sup></li> <li>• Siemens Xcelerator Building X SaaS Apps<sup>3</sup></li> </ul>	License model, subscription model, freemium model, pay-per-consumption
2 Integration of software and service	Software-supported remote and/or physical services that restore or augment the functionality of the equipment	Asset efficiency and process support services (Uлага & Reinartz, 2011), remote monitoring and optimization (Paiola & Gebauer, 2020)	<ul style="list-style-type: none"> <li>• Trumpf Laser Condition Monitoring<sup>4</sup></li> <li>• ABB Ability Predictive Maintenance Service<sup>5</sup></li> <li>• Sulzer BLUE BOX Pump analytics services<sup>6</sup></li> </ul>	Subscription model, Service-Level-Agreement (SLA), remote support contracts
3 Integration of software, service, and equipment	Value-creating bundle of IoT-enabled software applications, remote and/or physical services, and equipment	Outcome-based contracts (Ng et al., 2013), performance or availability guarantees (Gebauer, Arzt, et al., 2020)	<ul style="list-style-type: none"> <li>• Heidelberg Print Site Contracts<sup>7</sup></li> <li>• Caterpillar Customer Value Agreements<sup>8</sup></li> <li>• DMG MORI PAYZR Equipment-as-a-Service<sup>9</sup></li> </ul>	Pay-per-use, pay-produced-part, pay-for-availability, pay-for-performance

Sources (all retrieved on 4 September 2022): <sup>1</sup><https://integrationspace.sick.com>; <sup>2</sup><https://www.hilti.com/content/hilti/W1/US/en/business/business/equipment/on-track.html>; <sup>3</sup><https://new.siemens.com/global/en/products/buildings/building-x.html>; <sup>4</sup>[https://www.trumpf.com/en\\_GB/products/services/services-for-lasers/monitoring-analysis/condition-monitoring-for-lasers/](https://www.trumpf.com/en_GB/products/services/services-for-lasers/monitoring-analysis/condition-monitoring-for-lasers/); <sup>5</sup>[https://new.abb.com/service/motion/data-and-advisory-services/predictive-maintenance-for-motors-and-generators#:~:text=ABB%20Ability%20Predictive%20Maintenance%20optimizes,create%20the%20optimal%20maintenance%20program.](https://new.abb.com/service/motion/data-and-advisory-services/predictive-maintenance-for-motors-and-generators#:~:text=ABB%20Ability%20Predictive%20Maintenance%20optimizes,create%20the%20optimal%20maintenance%20program.;); <sup>6</sup><https://go.sulzer.com/bluebox>; <sup>7</sup>[https://www.heidelberg.com/global/en/services\\_and\\_consumables/print\\_site\\_contracts\\_1/subscription\\_agreements/subscription\\_1.jsp](https://www.heidelberg.com/global/en/services_and_consumables/print_site_contracts_1/subscription_agreements/subscription_1.jsp); <sup>8</sup>[https://www.cat.com/en\\_US/support/maintenance/customer-value-agreements/construction-cvas.html](https://www.cat.com/en_US/support/maintenance/customer-value-agreements/construction-cvas.html); <sup>9</sup><https://en.dmgmori.com/news-and-media/news/flexibility-planning-security-with-subscription-all-in-emo-2021>

### 2.3 Barriers to sales reps' engagement in digital solution selling

To adjust their sales management instruments, sales managers first need to understand the rationale for sales reps' disengagement from DS selling. Therefore, multiple literature streams are screened to identify potential barriers to sales reps' attitudinal and behavioral adoption of DS. In addition to the solution selling literature, and because of their conceptual similarity, literature on service selling, value-based selling, consultative selling, and new product selling is reviewed. The MOA framework (see section 2.1.1), which captures the link between motivation, opportunity, and ability and its interaction effects on behavior, structures the analysis. The results, shown in Table 6, reveal two important implications for sales managers seeking to engage sales reps in DS selling.

First, DS transcend traditional customer solutions. In this context, six idiosyncratic characteristics, summarized in Table 5, shape DS and the different barriers to sales reps' engagement in DS selling.

Table 5: Characteristics of DS

Characteristics of DS	Description
Data uncertainty	Customers fear data connections due to security concerns and data abuse
Immaturity	DS rely on co-creation and require substantial time to work flawlessly
Intangibility	Given the intangibility of software, neither sales reps nor customers can grasp the functionality and value of DS in the beginning
Novelty	Neither sales reps nor customers are aware of DS as IoT-enabled software applications oftentimes complement the traditional selling portfolio consisting of hardware products and services
Outcome uncertainty	Customers are uncertain if DS will hold their value promises and sales reps are uncertain if their time investment in DS selling pays off
Role ambiguity	Roles and responsibilities may change in DS selling
Value ambiguity	Sales reps struggle to identify, quantify, and communicate the customer value which can significantly differ from the actual value in use

Second, the complications caused by DS deter sales reps from engaging in corresponding selling tasks for three reasons. Sales reps may (1) display a low *motivation* as they are inadequately compensated for taking higher risks, (2) face constrained *opportunities* due to their lack of time to overcome higher customer-induced barriers, or (3) lack the necessary *abilities* to sell DS because of their inadequate personal disposition, missing knowledge, or skills. In this context, Table 6 also shows that deficiencies in sales management lead to seven barriers inhibiting sales reps' engagement in DS selling.

Table 6: Barriers to sales reps' engagement in DS selling (adapted from Tienken et al., 2023)

Barrier	Prior sales research	Complications through DS	Deficiencies in sales management
Motivation	<p>Sales reps' higher perceived risk</p> <ul style="list-style-type: none"> <li>Sales reps lack confidence in selling novel products which are more tasking (Atuahene-Gima, 1997) despite lower perceived attractiveness (Fu et al., 2010)</li> <li>Sales reps do not believe in a new product's success (Hultink <i>et al.</i>, 2000) and avoid testing immature products with customers, fearing to deteriorate the relationship (Anderson &amp; Robertson, 1995)</li> <li>Sales reps face uncertain solution outcomes, questioning the customer value and their own benefits (Uлага &amp; Kohli, 2018; Uлага &amp; Loveland, 2014)</li> <li>To secure a product sale at risk, sales reps are tempted to give away service for free (Uлага &amp; Loveland, 2014; Uлага &amp; Reinartz, 2011)</li> </ul>	<ul style="list-style-type: none"> <li>DS are often highly immature at launch, prompting customers to share complaints earlier if the realized value remains below initial expectations (Edinger, 2020)</li> <li>Sales reps, critical of DS, are unwilling to withstand the "J-curve" of initial losses set off by long-term profits (Edinger, 2020; Kelley, 2021)</li> <li>Outcome uncertainty increases since customers can easily cancel or churn if DS perform below expectations (Kelley, 2021)</li> <li>Trial and freemium models – enabled by digital service delivery – lower barriers for sales reps to provide DS at zero price (Classen &amp; Friedli, 2021a)</li> </ul>	<ul style="list-style-type: none"> <li>Sales reps avoid the risk of mentioning unproven DS to customers</li> <li>Sales reps are afraid of leaving their comfort zone when addressing new topics</li> <li>Sales reps prefer selling proven-to-work offerings or give away DS for free to win large transactional one-time deals</li> <li>Sales reps under-invest time in carving out a clear value proposition for DS or making immature DS work</li> </ul>
	<p>Sales reps' inadequate financial compensation</p> <ul style="list-style-type: none"> <li>Incentives do not encourage solution selling (Kindström et al., 2015; Uлага &amp; Loveland, 2014)</li> </ul>	<ul style="list-style-type: none"> <li>Difficult to define sales targets or quotas for DS given unknown market demands (Hatami et al., 2018; Kauppila et al., 2010) and heterogeneous levels of motivation and ability among sales reps (Classen &amp; Friedli, 2021b)</li> </ul>	<ul style="list-style-type: none"> <li>Sales reps under-invest time in selling DS as they are mostly rewarded for large transactional one-time deals</li> </ul>

		<ul style="list-style-type: none"> <li>• Incentive pay inadequately compensates the incremental effort and risk of selling a potentially unsuccessful product (Ahearne, Rapp, et al., 2010; Alavi et al., 2022)</li> </ul>	<ul style="list-style-type: none"> <li>• Digital solutions' uncertain, time-lagged, and underwhelming financial results (Classen &amp; Friedli, 2021a) depend on customer retention subject to adverse selection (M. Kim et al., 2019)</li> </ul>	<ul style="list-style-type: none"> <li>• To attain sales quotas, sales reps may acquire customers where DS create only limited value, leading to high churn rates</li> </ul>
Opportunity	Higher customer-induced barriers	<ul style="list-style-type: none"> <li>• Sales reps struggle to convince customers who are: <ul style="list-style-type: none"> <li>○ unable to understand complex value propositions (Töytäri <i>et al.</i>, 2017)</li> <li>○ unwilling to outsource certain resources or capabilities (Ulaga &amp; Reinartz, 2011)</li> <li>○ hesitant to buy services where estimated and effective value-in-use differ (Kindström <i>et al.</i>, 2015)</li> </ul> </li> <li>• Sales reps must access previously unknown decision-makers of the customer buying center who can better understand the solutions' value-in-use (Terho et al., 2017)</li> </ul>	<ul style="list-style-type: none"> <li>• Typically, novel DS: <ul style="list-style-type: none"> <li>○ are intangible, unproven, and unknown prior to their adoption (Genzlinger <i>et al.</i>, 2020)</li> <li>○ take over customers' resources or capabilities (Klein <i>et al.</i>, 2018)</li> <li>○ raise customer concerns in terms of losing control over information or unclear legal status of data ownership (Klein <i>et al.</i>, 2018)</li> </ul> </li> <li>• New stakeholders, such as Chief Technology Officers, need to be approached with novel topics, such as data center issues (Edinger, 2020; Paiola &amp; Gebauer, 2020)</li> </ul>	<ul style="list-style-type: none"> <li>• Sales reps are either unaware which customers and stakeholders to target with DS or avoid the necessary, substantial effort of identifying promising customers</li> <li>• Sales reps are unwilling or unable to convince (skeptical) customers with oftentimes larger and more professionalized buying centers</li> </ul>
	Sales reps' lack of time	<ul style="list-style-type: none"> <li>• Sales reps lack time to assimilate all new product information due to shortened product development cycles (Atuahene-Gima, 1997)</li> </ul>	<ul style="list-style-type: none"> <li>• Accelerated DS innovation processes using agile co-creation and sprints (Sjödin, Parida, Jovanovic, &amp; Visnjic, 2020) aggravate information overload</li> </ul>	<ul style="list-style-type: none"> <li>• Sales reps allocate little time to learning how DS create customer value due to their given quotas</li> </ul>

Ability	Sales reps' inadequate personal disposition	<ul style="list-style-type: none"> <li>• Closing a deal requires substantial time investments for: <ul style="list-style-type: none"> <li>○ understanding the customer's business model (Terho <i>et al.</i>, 2012)</li> <li>○ identifying, quantifying, and communicating the customer value opportunity (Töytäri <i>et al.</i>, 2015)</li> </ul> </li> <li>• After closing a deal, sales reps: <ul style="list-style-type: none"> <li>○ are involved in post-deployment activities (Tuli <i>et al.</i>, 2007)</li> <li>○ must commit to a long-term relationship in which their profits grow as their customers' do (Tyler, 1990)</li> </ul> </li> <li>• Not all sales reps present necessary new product/solution selling, proactivity, as well as learning, long-term, and team orientation (Beuk <i>et al.</i>, 2014; Böhm <i>et al.</i>, 2020; Salonen <i>et al.</i>, 2021; Ulaga &amp; Loveland, 2014)</li> </ul>	<ul style="list-style-type: none"> <li>• Analysis of the customer's digital maturity (Hsuan <i>et al.</i>, 2021); identification of new customer pools and value propositions (Chung, 2020) necessitate value-based discussions, which tend to be even more challenging and time-consuming (Classen &amp; Friedli, 2021a, 2021b; Padmos <i>et al.</i>, 2021)</li> <li>• Commercial success hinges on customer retention, which requires more extensive post-deployment activities (Hochstein <i>et al.</i>, 2021; Padmos <i>et al.</i>, 2021) and additional effort to sustain relationships with customers who may easily churn (Chung, 2021)</li> <li>• DS require a stronger learning, long-term, and team orientation because: <ul style="list-style-type: none"> <li>○ outcomes are fuzzy in the beginning and materialize over time (Kelley, 2021);</li> <li>○ additional roles – such as customer success managers or cloud solution architects – participate in the sales process (Chung, 2021)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Product-oriented or service-oriented sales reps are more effective and efficient in selling existing offerings, these sales reps consequently tend to allocate available time to offerings they know best</li> <li>• Absent adequate hiring procedures are often insufficient to weed out “lone wolf” sales reps unlikely to engage in team-oriented DS sales processes</li> <li>• Short-term-oriented and incentive-driven sales reps tend to attain quotas with well-known portfolio elements rather than DS</li> </ul>
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Sales reps' missing knowledge	<ul style="list-style-type: none"> <li>• Sales reps who only partially understand how solutions create customer value are reluctant to mention them (Kindström <i>et al.</i>, 2015)</li> </ul>	<ul style="list-style-type: none"> <li>• DS are more difficult to understand, given:             <ul style="list-style-type: none"> <li>○ Integrated sensors, actuators, connectivity, or data analytics causing issues around ownership of data and algorithms (Klein <i>et al.</i>, 2018)</li> <li>○ Different value outcomes (Baltuttis <i>et al.</i>, 2022) linked to new value capture mechanisms (Classen &amp; Friedli, 2021a)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Sales reps lack the necessary knowledge to sell DS and answer upcoming questions</li> <li>• Sales reps are likely to exert selling effort on offerings they know better than DS</li> </ul>
Sales reps' missing skills	<ul style="list-style-type: none"> <li>• Heightened demands placed on sales reps' selling skills (Dunn <i>et al.</i>, 1981; Koponen <i>et al.</i>, 2019; Krämer <i>et al.</i>, 2022; Storbacka, 2011)</li> <li>• Sales reps lack sufficient selling experience (Salonen <i>et al.</i>, 2021) or training (Hultink &amp; Atuahene-Gima, 2000) to build up skills on their own; and face a scarcity of peers experienced in selling a new product (Atuahene-Gima, 1997) who could teach appropriate selling skills (Fu <i>et al.</i>, 2010)</li> <li>• Sales reps lack the necessary level of trustworthiness and expertise to be perceived as a valued advisor who can obtain private information from customers to help them achieve their business objectives (A. H. Liu &amp; Leach, 2001; Tyler, 1990)</li> </ul>	<ul style="list-style-type: none"> <li>• Advanced communication, technical and teamworking skills are necessary (Chung, 2021; Solbach <i>et al.</i>, 2022)</li> <li>• Training for DS is more complex due to its focus on consulting and problem-solving (Chung, 2021); and requires specialized experts, coaches, or “champions” with profound DS selling experience (Classen &amp; Friedli, 2021b) to ensure DS selling success on a global scale</li> <li>• Higher levels of trust and expertise are required for DS selling due to increased customer concerns regarding data privacy violations and data security (Klein <i>et al.</i>, 2018)</li> </ul>	<ul style="list-style-type: none"> <li>• Sales reps lack the necessary selling skills to successfully engage in DS selling and achieve desired DS sales outcome</li> <li>• Sales reps lack high-performing role models in their organization who can demonstrate successful DS selling approaches or techniques</li> </ul>

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## 2.4 Sales management instruments for digital solution selling

Sales literature has long recognized that deficiencies in sales management originate from inadequate sales management instruments, which curb sales reps' motivation, opportunity, and ability to sell solutions (Alavi et al., 2022; Chung, 2021; Salonen et al., 2021; Ulaga & Loveland, 2014). Furthermore, scholars agree that this issue and the challenge it poses also persist with DS (Classen & Friedli, 2021b; Guenzi & Nijssen, 2023). To overcome sales reps' low motivation, constrained opportunities, and lacking abilities, sales managers must properly select, train, steer, and motivate sales resources (Fraenkel et al., 2016). In this context, three specific sales management instruments characterize sales managers' scope of action to engage their sales reps in DS selling.

First, novel DS require extensive *sales support* and communication to prepare both internal and external stakeholders for DS selling tasks (Ahearne, Rapp, et al., 2010; Easingwood & Harrington, 2002). From an internal perspective, sales managers employ training and internal marketing activities to provide sales reps with the necessary knowledge, skills, feedback, and role expectations that facilitate DS sales (Fu et al., 2010; Hultink & Atuahene-Gima, 2000). From an external perspective, customer education serves to transport the right messages to target customer groups, thereby explaining potential benefits and ultimately reducing customers' reluctance to purchase solutions (Eng & Quaia, 2009).

Second, prior studies have underscored the importance of *sales control systems* in influencing sales rep behavior (Anderson & Oliver, 1987; Stathakopoulos, 1996). These control systems allow sales managers to (1) select suitable candidates for a selling task, and (2) control sales reps' capabilities, activities, and outcomes by monitoring and evaluating their performance with the help of information systems (Darmon & Martin, 2011; Malek et al., 2018).

Third, several scholars have shown that *sales targets and incentives* – which are essential elements of sales performance management – play a significant role in motivating sales reps to sell new innovations (Alavi et al., 2022; Kindström et al., 2015; Ulaga & Loveland, 2014). Sales reps' compensation in DS selling is particularly important because DS require more effort in the sales process and yield time-lagged and lower revenues in comparison to traditional products and services, which is why sales reps frequently question the need to engage in DS selling (Classen & Friedli, 2021b).

The following sections elaborate on these three sales management instruments in greater detail and indicate relevant shortcomings in the context of DS selling.

### 2.4.1 Sales support

Industrial firms are reliant on successful market introductions of novel products, services, and solutions to achieve future growth and revenue targets (Di Benedetto, 1999; Frattini et al., 2013). However, many new offerings underperform or fail despite their anticipated market potential and technological superiority (Hultink & Robben, 1995; Zablah et al., 2012). In view of the foregoing, sales scholars have highlighted that new offerings generally “do not sell themselves” (Zablah et al., 2012, p. 73), thereby pointing to the different challenges that arise from the last stage of the new product development (NPD) process (Calantone & Di Benedetto, 2012; Kuester et al., 2012). Prior studies have shown that success in this commercialization stage largely hinges on the sales reps’ attitude toward a new selling task, which further affects their behavior and effort put into customer visits (Atuahene-Gima, 1997; van den Berg et al., 2014). In contrast to normative approaches, in which sales managers may unintentionally reduce sales reps’ selling intentions by strictly enforcing selling tasks (Fu et al., 2010; van der Borgh & Schepers, 2018), attitudinal changes are – especially in the early stages of a market launch – seen as a more effective lever to increase sales reps’ motivation and effort put into the presentation of a new offering (van den Berg et al., 2014). Therefore, sales managers first aim at influencing sales reps’ attitude toward a new offering to subsequently increase their self-efficacy, thereby changing sales reps’ selling intentions and behaviors (Fu et al., 2010).

To shape sales reps’ initial attitude toward a new selling task, sales managers employ dedicated sales support through which they communicate a new offering to relevant stakeholders (Atuahene-Gima, 1997). Such communication activities can be complex and lengthy if new offerings significantly differ from the established selling portfolio (Kindström et al., 2015; Terho et al., 2012). Given sales reps’ knowledge and skills related to existing portfolio elements, sales managers are required to rethink the degree of communication inherent in sales support to build sales reps’ capabilities for solution-oriented selling tasks (Schaarschmidt et al., 2022). To gain first insights into how sales managers implement sales support for selling novel offerings, relevant literature on selling new products, services, and innovations is screened. The results of this analysis, shown in Table 7, point to five overarching sales support elements that sales managers use to facilitate sales reps’ adoption of new selling tasks.

First, *customer education* describes the various marketing activities applied to raise awareness for new offerings on the customer side (Eng & Quaia, 2009). The information communicated is supposed to simplify the decision-making process in the customer’s buying center, thereby generating initial demand for new offerings (Frattini et al., 2013).

Customer interest stemming from demand generation can represent an important signal to sales reps to engage in corresponding selling tasks (Wotruba & Rochford, 2013).

Second, *internal marketing* builds on the “employee as customer” concept (Berry, 1981), in which “internal customers [here: sales reps] desire to have their needs satisfied” (Ahmed & Rafiq, 2003, p. 1177). In the context of this thesis, internal marketing refers to internal communication activities that inform and persuade sales reps of novel offerings (Varey, 1995; Varey & Lewis, 1999). These activities govern the question regarding what and how information is communicated to sales reps, thereby attuning them to the firm’s strategic goals (Gummesson, 1987).

Third, *management involvement* pertains to activities that sales managers conduct to proactively support sales reps during the sales process of novel offerings (Atuahene-Gima, 1997). Sales management involvement in the early stages of a launch is important because it helps to underline the importance of a strategic shift (cf. Beuk et al., 2014). Moreover, sales managers can both obtain first-hand feedback on their sales strategy and give valuable feedback to frontline sales reps, thereby encouraging them to adopt new offerings (Fu et al., 2009).

Fourth, *role definition* includes the clarification of roles and responsibilities for selling novel offerings. In doing so, sales managers communicate clear role expectations to avoid role ambiguity, which refers to a blurring of responsibilities (Atuahene-Gima, 1997). The role definition seeks to inform sales reps about internal coordination mechanisms that are necessary to implement novel offerings (Ulaga & Loveland, 2014).

Fifth, *training* is used to build up sales reps’ capabilities for selling new offerings (Fraenkel et al., 2016). Since internal marketing mainly concentrates on raising awareness of a new offering, training refers to relevant knowledge and skills provided by sales managers to achieve desired outcomes in the sales process (Homburg et al., 2019; Storbacka et al., 2011). Designing training programs requires a careful selection of appropriate content and formats to ensure messages resonate with sales reps.

Although extant literature already contains multiple recommendations regarding the nature of sales support facilitating novel selling tasks, two important shortcomings remain. On the one hand, prior studies predominantly focus on hardware products, such as new product lines (Beuk et al., 2014) or improvements to existing products (Fu et al., 2010; Wotruba & Rochford, 2013). In doing so, they neglect the specific characteristics of DS. On the other hand, sales managers lack clear guidance on how to integrate the plethora of concepts and themes, emerging from Table 7, in a proper sales support program that facilitates sales reps’ adoption of DS.

Table 7: Literature review on sales support for DS selling

<b>Type of sales support</b>	<b>Theme</b>	<b>Suggested recommendations</b>	<b>Indicative references</b>
Customer education	Message to customers	<ul style="list-style-type: none"> <li>Disseminate information about a new product to communicate its distinctive characteristics and dissolve negative customer perceptions</li> <li>Create successful customer reference stories</li> </ul>	Eng and Quaia (2009), Frattini et al. (2013), Keränen et al. (2020), Terho et al. (2017)
	Message to sales reps	<ul style="list-style-type: none"> <li>Implement marketing activities, such as campaigns or telemarketing assistance, to demonstrate sales rep support and generate customer demand</li> </ul>	Terho et al. (2017), Wieseke et al. (2008), Wotruba and Rochford (2013)
	Selection of channels	<ul style="list-style-type: none"> <li>Identify channels and touchpoints that buying center members use to search for information on their business problems</li> <li>Consider more digital materials as customers tend to be more self-informed</li> </ul>	Alamäki and Korpela (2021), Keränen et al. (2020)
Internal marketing	Communication style	<ul style="list-style-type: none"> <li>Develop marketing messages that are objective and contain rational arguments</li> <li>Do not present new products alongside other products but rather “in a stand-alone mode”</li> <li>Maintain internal communication activities and do not stop them immediately after a product launch</li> <li>Ensure that sales reps have sufficient time to “digest” new solutions presented</li> </ul>	Ahearne, Rapp, et al. (2010), Fraenkel et al. (2016), Fu et al. (2009), Fu et al. (2010), Malshe and Sohi (2009), Salonen et al. (2021), van der Borgh et al. (2023)
	Constituent elements	<ul style="list-style-type: none"> <li>Highlight the benefits of a new product to sales reps by communicating incentives and how new product attributes translate into extra sales or better sales performance in the long term</li> <li>Highlight the benefits of a new product to the firm by communicating the rationale for the development of the new product, the research behind it, the market potential, and the fit to the firm’s strategic objectives</li> <li>Explain how customers can benefit from a new product</li> </ul>	Atuahene-Gima (1997), Fraenkel et al. (2016), Fu et al. (2009), Fu et al. (2010), Fu (2015), Hultink and Atuahene-Gima (2000), Sharma and Sagar (2018), Wieseke et al. (2008)
	Link to sales process	<ul style="list-style-type: none"> <li>Communicate how solutions can be integrated into daily selling activities</li> <li>Provide customer prioritization methodologies</li> <li>Tailor communication strategies to geographical regions, industries, and the different members of a customer buying center</li> </ul>	Boldosova (2020), Malshe and Sohi (2009), Terho et al. (2015), Töllner et al. (2011)

	Marketing materials	<ul style="list-style-type: none"> <li>• Develop intuitive sales literature to accompany a new product launch, such as catalogs, print advertising, direct mail advertising, or video programs</li> </ul>	Classen and Friedli (2021b), Wotruba and Rochford (2013)
	Raising awareness	<ul style="list-style-type: none"> <li>• Involve sales reps early in the new product development process and offer them the opportunity to engage in strategic discussions</li> <li>• Highlight the attractiveness of selling a new product and create a positive attitude to overcome sales reps' doubts about a lacking customer demand</li> </ul>	Ernst et al. (2010), Fu et al. (2010), Malshe and Sohi (2009), Wieseke et al. (2008)
	Visibility and tangibility	<ul style="list-style-type: none"> <li>• Develop value quantification and visualization tools to help both sales reps and customers grasp and understand the value of solutions more clearly</li> <li>• Use showrooms to present digital services in a more tangible way</li> </ul>	Classen and Friedli (2021b), Y. Liu and Zhao (2021), Terho et al. (2012), van der Borgh et al. (2023)
Management involvement	Giving feedback	<ul style="list-style-type: none"> <li>• Provide high-quality and frequent feedback to stimulate effective learning</li> <li>• Show empathy with and support to sales reps during the early stages of a launch</li> <li>• Reinforce success expectations by maintaining enthusiasm and momentum also during the later stages of a launch</li> </ul>	Atuahene-Gima (1997), Beuk et al. (2014), Fu et al. (2009)
	Obtaining feedback	<ul style="list-style-type: none"> <li>• Increase supervisor travel to obtain feedback on the new product sales strategy</li> <li>• Conduct regular workshops to develop an understanding of sales reps' challenges related to service sales</li> </ul>	Mustak et al. (2023), Wotruba and Rochford (2013)
Role definition	Expectation management	<ul style="list-style-type: none"> <li>• Communicate clear and realistic role expectations including objectives, responsibilities, procedures, and behaviors</li> <li>• Ensure sales reps have sufficient information to perform their assigned role effectively</li> </ul>	Atuahene-Gima (1997), Salonen et al. (2021), Ulaga and Kohli (2018)
	Internal coordination	<ul style="list-style-type: none"> <li>• Communicate how sales reps can manage complex networks in both the customer's and the supplier's organization to implement solutions</li> </ul>	Y. Liu and Zhao (2021)
Training	Knowledge-related content	<ul style="list-style-type: none"> <li>• Provide training on new product, service, and technology knowledge</li> <li>• Provide training on customer knowledge to approach new customers and high-level decision-makers, and to understand customer's business model, customer's operations, and customer's buying behavior</li> <li>• Present relevant competitive offerings</li> </ul>	Atuahene-Gima (1997), Böhm et al. (2020), Fu et al. (2010), Høgevold et al. (2021), Kindström et al. (2015), Wotruba and Rochford (2013)

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Skill-related content	<ul style="list-style-type: none"> <li>• Provide training on value selling capabilities, such as identifying, estimating, quantifying, visualizing, and communicating the value of intangible services</li> <li>• Provide training on solution selling capabilities, such as financial acumen, risk analysis and management, key account management, legal skills, information management, innovation management, and portfolio management</li> <li>• Teach customer valuation skills to better prioritize customers and prospects that are more likely to purchase service offerings</li> </ul>	<p>Guenzi and Nijssen (2023), Høgevold et al. (2021), Kindström et al. (2015), Krämer et al. (2022), Pöyry et al. (2021), Salonen et al. (2021), Storbacka (2011), Terho et al. (2012), Terho et al. (2015)</p>
Modus operandi	<ul style="list-style-type: none"> <li>• Offer mandatory and optional training and let sales reps decide when and how much they want to learn beyond the mandatory elements</li> <li>• Tailor training content to sales reps' personality type and career stage</li> <li>• Provide written training materials or training videos</li> <li>• Conduct training in regular intervals and with role plays that clarify the customer value and use cases of novel features</li> <li>• Establish memory interaction systems to promote the sharing of specialized knowledge in sales teams</li> <li>• Ensure that training is perceived as proactive support rather than "micromanagement"</li> <li>• Focus on problem-solving capabilities for the customer instead of product attributes</li> </ul>	<p>Atuahene-Gima (1997), Anderson and Robertson (1995), Classen and Friedli (2021b), Fraenkel et al. (2016), Fu (2015), Y. Liu and Zhao (2021), Hultink and Atuahene-Gima (2000), Wotruba and Rochford (2013)</p>

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### 2.4.2 Sales control systems

To align sales reps' behavior with organizational goals, sales scholars recommend the use of formal control systems based on written, management-initiated policies (Malek et al., 2018). Managers can apply formal controls prior to, during, or after selling activities: using input, behavior, or outcome controls, respectively (Malek et al., 2018). Input controls include selection criteria, recruiting, or training (Jaworski, 1988). Through behavior controls, managers direct and monitor sales reps accurately – while simultaneously holding them responsible for certain prescribed processes or tasks – without considering the outcome (Anderson & Oliver, 1987). Managers usually employ behavior controls when they know exactly which tasks sales reps should accomplish. Outcome controls allow sales reps to choose their own methods of achievement, while being held accountable only for results (Anderson & Oliver, 1987).

Controls should reflect the heterogeneous work and task environment of selling activities (Lo et al., 2011; Malek et al., 2018). Our literature review identified seven parameters that shape the design of sales control systems (see Table 8).

Table 8: Control system parameters in the context of DS selling (adapted from Tienken et al., 2023)

<b>Selected control system parameter</b>	<b>Parameter value for DS selling<sup>4</sup></b>	<b>Rationale</b>
Selling task complexity	High	Selling task complexity is expected to increase as sales reps face higher levels of customer resistance to DS and more complex decision-making processes (Klein et al., 2018; Paiola & Gebauer, 2020)
Knowledge of the transformation process <sup>5</sup>	Low	Knowledge of the transformation process is expected to decrease as firms lack sufficient DS selling experience to determine or teach suitable selling behaviors that lead to desired outcomes (Fu et al., 2010)
Product novelty and technological uncertainty	High	Product novelty and technological uncertainty are expected to increase as DS rely on totally new technologies and pricing models (Gohad et al., 2013)
Product demand and sales cycle uncertainty	High	Product demand and sales cycle uncertainty are expected to increase as DS lack sufficient market and customer feedback due to their novelty (Edinger, 2020)

<sup>4</sup> Describes how the different control system parameters – reflecting the circumstances of the overall selling environment – change when introducing DS.

<sup>5</sup> Describes the process wherein prescribed activities, such as certain rules, become outcome (cf. Ouchi, 1979).

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Outcome measurability	Low	Outcome measurability is expected to decrease as RRM with flexible termination options inhibit sales outcome predictability at the point of closing a deal, thereby reducing the availability of suitable outcome measures (Kelley, 2021)
Measurability of sales reps' individual outcome contribution	Low	Measurability of sales reps' individual outcome is expected to decrease as team-based selling approaches essential to DS conceal individual sales reps' contribution to commonly achieved outcomes (Hatami et al., 2018; Kauppila et al., 2010)
Sales reps' perceived risk	High	Sales reps' perceived risk is expected to increase as DS augment the uncertainty and complexity of the sales process, and as agency theory assumes risk-averse sales reps (Bergen et al., 1992; Eisenhardt, 1989a)

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In the context of DS selling, these parameters manifest as high (e.g., selling task complexity is high, given strong customer resistance against DS) or low (e.g., outcome measurability is low, given the difficulty of predicting the lifetime revenue generated by DS sales).

Our review of extant studies (see Table 9) provides conflicting evidence regarding the appropriate type of control system to improve sales performance, given these parameter values. Although the literature suggests the use of hybrid controls to monitor, direct, evaluate, and compensate sales reps for specific selling tasks (Anderson & Oliver, 1987; Darmon & Martin, 2011; Hohenberg & Homburg, 2016), it is vague on their exact design. For example, Ahearne, Rapp, et al. (2010) and Hultink and Atuahene-Gima (2000) find that behavior control is negatively related to new product sales performance because it limits sales reps' discretion and ability to appropriately allocate effort across their customer base. Both studies recommend outcome controls due to the perceived autonomy and flexibility given to sales reps, boosting new product sales. Atuahene-Gima (1997), by contrast, suggests that outcome controls put too much pressure on sales reps selling new products. Sales reps whose income solely depends on outcome cannot afford bad sales periods and avoid selling new products with unproven success (Atuahene-Gima, 1997). Since recommendations on the design of hybrid controls are incomplete and inconsistent with generic sales settings, they are nonexistent for DS selling. Therefore, the design of systems to select and steer sales reps selling DS intrigues both sales researchers and managers.

Table 9: Applicability of sales control systems for DS selling (Tienken et al., 2023)

Control system parameter	Parameter value for DS selling	Behavior controls			
		Input controls	Activity controls	Capability controls	Outcome controls
Selling task complexity	High	+ (Schepers et al., 2012)	+ (Katsikeas et al., 2018; M. Li et al., 2020; Ulaga & Loveland, 2014)	+ (M. Li et al., 2020; Ulaga & Loveland, 2014)	+ (Katsikeas et al., 2018)
Knowledge of the transformation process	Low	n/a	n/a	n/a	+ (Jaworski, 1988; Jaworski & Macinnis, 1989; Krafft, 1999; Oliver & Anderson, 1995; Ouchi, 1979; Stathakopoulos, 1996)
Product novelty and technological uncertainty	High	n/a	+ (Atuahene-Gima, 1997; Hohenberg & Homburg, 2016; Kauppila et al., 2010)  - (Ahearne, Rapp, et al., 2010; Hultink & Atuahene-Gima, 2000)	+ (Atuahene-Gima, 1997; Hohenberg & Homburg, 2016; Kauppila et al., 2010)  - (Ahearne, Rapp, et al., 2010; Hultink & Atuahene-Gima, 2000)	+ (Ahearne, Rapp, et al., 2010; Hohenberg & Homburg, 2016; Hultink & Atuahene-Gima, 2000)  - (Atuahene-Gima, 1997)
Product demand and sales cycle uncertainty	High	n/a	+ (Anderson & Oliver, 1987; Krafft, 1999; M. Li et al., 2020)	+ (Anderson & Oliver, 1987; Krafft, 1999; M. Li et al., 2020)	n/a
Outcome measurability	Low	n/a	+ (Anderson & Oliver, 1987)	+ (Anderson & Oliver, 1987)	n/a
Measurability of sales reps' individual outcome contribution	Low	n/a	+ (Anderson & Oliver, 1987; Jaworski, 1988; M. Li et al., 2020)	+ (Jaworski, 1988; M. Li et al., 2020)	+ (Anderson & Oliver, 1987; Jaworski, 1988; M. Li et al., 2020)
Sales reps' perceived risk	High	n/a	+ (Cravens et al., 1993) O (Krafft, 1999)	+ (Cravens et al., 1993) O (Krafft, 1999)	n/a

**Explanation:**

- + Sales control is expected to increase sales performance given the control system parameter value for DS selling
- Sales control is expected to decrease sales performance given the control system parameter value for DS selling
- O Sales control has no impact on sales performance given the control system parameter value for DS selling

### 2.4.3 Sales targets and incentives

The different barriers to sales reps' engagement in DS selling show that incorrect sales targets and incentives hamper DS selling efforts. Although scholars have developed a wealth of knowledge about the role of targets and incentives in influencing sales reps' selling intentions (cf. Magnotta et al., 2020; Pullins, 2001), the review of corresponding literature (see Table 10) shows that so far there are only scattered solution approaches on how to properly motivate sales reps to sell DS. In addition, the idiosyncratic characteristics of DS question the validity of prior research for three different reasons. First, the data uncertainty, immaturity, and novelty of DS significantly lower sales reps' motivation to sell DS. Consequently, sales managers seek measures that increase sales reps' motivation and stimulate DS sales, e.g., by providing non-monetary (cf. Bartol, 1999; Joseph & Kalwani, 1998; Pullins, 2001; Wotruba & Rochford, 2013) or monetary incentives (cf. Ahearne, Rapp, et al., 2010; Atuahene-Gima, 1997). Second, if monetary incentives are provided, the outcome uncertainty and value ambiguity of DS affect sales force compensation strategies. More specifically, RRM – that build on multiyear contracts – substantially differ from transactional purchase models and thus call for a change in the structure and time horizon of incentive pay-outs (cf. Classen & Friedli, 2021b; A. Rapp et al., 2020). Additionally, sales targets for DS selling are more difficult to define due to unproven market demands, missing DS selling experience (cf. Hatami et al., 2018; Kauppila et al., 2010), and new KPIs that become important to embrace the long-term value of DS (cf. Lamprecht et al., 2022). Third, the role ambiguity inherent in DS selling might necessitate team-based selling approaches (cf. Chung, 2021; Solbach et al., 2022) in which multiple sales reps work together on dedicated opportunities. In this new sales approach, sales reps no longer get compensated based on individual targets but rather on the overall sales team performance.

Furthermore, sales managers need to consider external and internal factors when defining suitable sales targets and incentives that aim at motivating sales reps to sell DS. Table 11 provides a detailed overview of such contingency factors and points to five overarching dimensions, i.e., characteristics of sales reps, selling tasks, sales managers, sales organizations, and the selling environment, that are relevant to the design of sales targets and incentives. However, given the multitude of influencing factors, their exact relevance and impact on sales targets and incentives for DS selling remains unclear.

This thesis seeks to address the abovementioned shortcomings by identifying and incorporating relevant contingency factors into the design of sales targets and incentives that increase sales reps' motivation to sell DS and thus stimulate DS sales.

Table 10: Literature review on sales targets and incentives for DS selling

<b>Characteristics of DS</b>	<b>Resulting sales rep behavior</b>	<b>Implications for sales management</b>	<b>Findings from prior research addressing the corresponding implications</b>
Data uncertainty, immaturity, novelty	Sales reps may display a low motivation to sell DS due to their technological complexity	Sales managers need to select suitable non-monetary incentives to motivate sales reps to sell DS	<ul style="list-style-type: none"> <li>• Provide coaching, feedback, acknowledgment of effective behaviors, supplementary training opportunities, better sales territories, and additional resources (Bartol, 1999; Wotruba &amp; Rochford, 2013)</li> <li>• Provide additional benefits related to work, family, or career development (Joseph &amp; Kalwani, 1998)</li> <li>• Offer positions that are interesting and challenging (Pullins, 2001)</li> <li>• Establish honor clubs for high performers (Brown &amp; Peterson, 1994)</li> <li>• Introduce contests, awards, and effort-based recognition (Brown &amp; Peterson, 1994)</li> </ul>
	Sales reps may not respond to financial incentives for DS as they fear insecure and immature DS that put existing customer relationships at risk	Sales managers need to decide if monetary incentives should be provided for DS selling	<ul style="list-style-type: none"> <li>• Fixed compensation and behavioral control can foster sales of new products (Oliver &amp; Anderson, 1994)</li> <li>• The share of variable compensation increases work effort and selling success (Alavi et al., 2022)</li> </ul>
Outcome and value uncertainty	Sales reps may be skeptical about DS with RRMs where revenue is time-lagged, threatened by customer churn, possibly unclear at the time of contract signing, and oftentimes lower in comparison to transactional purchase models	Sales managers need to decide how to incentivize variable fees in RRMs where estimation of future revenue is difficult	<ul style="list-style-type: none"> <li>• Weight acquired customers by CLV and thereby tying incentives to forecasts of future retention and revenues is not feasible (M. Kim et al., 2019)</li> <li>• Hold sales reps responsible for future retention once payments have been made based on forecasts is not recommended (M. Kim et al., 2019)</li> </ul>

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	Sales reps may discount DS heavily or give away DS for free to win hardware or service deals	Sales managers need to ensure that DS are neither discounted heavily nor given away for free	<ul style="list-style-type: none"> <li>• Add a pricing KPI to the variable-compensation equation (Liozu, 2018)</li> <li>• Limit delegation of pricing authority to sales reps or tie a portion of sales reps' incentive pay to the profitability (gross margin) of his/her sales (Frenzen et al., 2010)</li> </ul>
	Sales reps may display a low motivation to renew DS contracts	Sales managers need to decide how to incentivize renewals of DS contracts	<ul style="list-style-type: none"> <li>• Leverage CRM systems to follow up on expiring contracts (Classen &amp; Friedli, 2021b)</li> </ul>
	Sales reps may lack realistic targets for DS selling	Sales managers need to define appropriate sales targets	<ul style="list-style-type: none"> <li>• Define strategic objectives for DS revenue and installed base connectivity as a starting point to break down sales targets (Classen &amp; Friedli, 2021b)</li> <li>• Sales targets should be difficult but attainable, specific, and measurable and include a time limit (Bartol, 1999)</li> </ul>
	Sales reps that are incentivized based on traditional KPIs, such as volume or revenue, may neglect DS selling	Sales managers need to choose and incentivize new or different KPIs to properly motivate sales reps to sell DS	<ul style="list-style-type: none"> <li>• Introduce multidimensional incentives (M. Kim et al., 2019)</li> <li>• Consider activity-based, outcome-based, conversion-based, and relationship-based metrics (Bolander et al., 2021)</li> <li>• Emphasize the growth potential of DS (Classen &amp; Friedli, 2021b)</li> </ul>
Role ambiguity	Sales reps may be unable to sell DS on their own	Sales managers need to decide if team-based incentives should be provided for DS selling	<ul style="list-style-type: none"> <li>• Effort decisions in group-based incentives increase significantly when members socialize before committing effort (Lim &amp; Chen, 2014)</li> <li>• Group incentives shouldn't be too large (Lim &amp; Chen, 2014)</li> </ul>

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Table 11: Contingency factors affecting sales targets and incentives

<b>Dimension</b>	<b>Contingency factor</b>	<b>Impact on sales targets and incentives</b>	<b>Indicative reference</b>
Sales rep characteristics	Intrinsic motivation and organizational commitment	The more sales reps are intrinsically motivated and committed to an organization and its goals, the more targets and incentives should be based on behavior and fixed compensation	Cravens et al. (1993), Cravens et al. (2004), Oliver and Anderson (1994)
	Long-term orientation	The more sales reps are long-term oriented, the more targets and incentives should be based on fixed compensation	John and Weitz (1989)
	Risk aversion	The more risk-averse sales reps are, the more targets and incentives should be based on behavior and fixed compensation (salary)	Anderson and Oliver (1987), Cravens et al. (1993), Krafft (1999)
	Selfishness	The more sales reps tend to be selfish, the more targets and incentives should be based on behavior and fixed compensation	Zoltners et al. (2012)
	Selling experience (age and educational/skill level)	The more experience sales reps have, the more targets and incentives should be based on outcome and variable compensation	Ahearne, Rapp, et al. (2010), Basu et al. (1985), Krafft (1999)
	Willingness to socialize	The more sales reps are willing to socialize, the better group incentives tend to work	Lim and Chen (2014)
Selling task characteristics	Behavior observability	The higher the behavior observability, the more targets and incentives should be based on behavior	Stathakopoulos (1996)
	Costs of performance measurement	The higher the costs of performance measurement, the more targets and incentives should be based on behavior	Anderson and Oliver (1987)
	Outcome measurability (performance documentation and output measurement)	The higher the outcome measurability, the more targets and incentives should be based on outcome	Agarwal (1996), Agarwal and Ramaswami (1993), Anderson and Oliver (1987), Jaworski and Macinnis (1989), Krafft (1999)
	Product advantage and superiority	The more advantageous products are, the more targets and incentives should be based on fixed compensation	Basu et al. (1985), John and Weitz (1989)

	Product maturity	The more mature products are, the more targets and incentives should be based on variable compensation	John and Weitz (1989)
	Selling portfolio	The larger the selling portfolio, the more sales reps either tend to focus on offerings that they know best, or which entail the highest rewards	Anderson and Robertson (1995)
	Selling task/product complexity	The more complex the product and selling task, the more targets and incentives should be based on behavior and fixed compensation	Bello and Gilliland (1997), Cravens et al. (1993), Jaworski et al. (1993), John and Weitz (1989)
	Territory development	The higher the level of territory development, the more targets and incentives should be based on fixed compensation	John and Weitz (1989)
Sales management characteristics	Innovative and supportive culture	The more a culture is innovative and supportive, the more targets and incentives should be based on behavior	Oliver and Anderson (1994)
	Procedural knowledge (task programmability)	The higher the procedural knowledge of sales managers, the more targets and incentives should be based on behavior	Agarwal (1996), Jaworski and Macinnis (1989)
	Necessity for team-oriented selling	The greater the need for team-oriented selling, the more targets and incentives should be based on fixed compensation	Basu et al. (1985), John and Weitz (1989)
Sales organization characteristics	Firm reputation	The better a firm's reputation, the more targets and incentives should be based on fixed compensation	Basu et al. (1985), John and Weitz (1989)
	Marketing and prospecting support	The higher the level of marketing support, the more targets and incentives should be based on fixed compensation	Basu et al. (1985), John and Weitz (1989)
	Sales force size	The larger the sales force, the more targets and incentives should be based on outcome	Jaworski et al. (1993), John and Weitz (1989), Krafft (1999)
	Responsibility in the sales process (customer acquisition vs. customer maintenance)	The more sales reps are involved in customer service activities, the more targets and incentives should be based either on fixed compensation or multidimensional compensation schemes	Basu et al. (1985), John and Weitz (1989), M. Kim et al. (2019)

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	Type of customers served	The more diverse a customer base is, the more targets and incentives should be aligned with the customer size served by sales reps	Ryals and Rogers (2005)
Selling environment characteristics	Competitive intensity/pressure	The higher the competitive intensity/pressure, the more targets and incentives should be based on behavior and fixed compensation	Anderson and Oliver (1987), Jaworski (1988)
	Country-specific culture	The more regions and countries are covered, the more targets and incentives should be aligned with the cultural setting of each region and country	Hohenberg and Homburg (2016)
	Customer newness and demand	The newer customers are and the more difficult it is to predict customer demand, the more targets and incentives should be based on behavior	Fu et al. (2008), Wieseke et al. (2008) Fu et al. 2008, Wieseke et al. 2008
	Uncertainty (environmental uncertainty and sales volatility)	The higher the uncertainty and the more factors are beyond sales reps' control, the more targets and incentives should be based on behavior and fixed compensation	Basu et al. (1985), John and Weitz (1989), Krafft (1999)

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## 2.5 Resulting consequences for empirical research

The analysis of relevant literature revealed several research implications for this thesis (see Table 12). In summary, industrial firms combine software applications, services, and hardware products to create and capture superior customer value with DS. The technological and commercial innovations inherent in DS not only transcend the traditional customer solution concept but also significantly complicate the underlying sales process. Against this backdrop, sales reps tend to refrain from selling DS because of their low motivation, constrained opportunities, or missing abilities. Instead, they prefer selling well-known portfolio elements. To ensure sales reps' engagement in DS selling, sales managers must facilitate their attitudinal and behavioral adoption of DS. However, this objective necessitates adjustments to relevant sales management instruments, i.e., sales support, sales control systems, as well as sales targets and incentives. Given the limited knowledge about the instruments' applicability for DS selling, this thesis serves to examine how sales managers can increase DS sales performance by properly supporting, steering, and motivating their sales reps.

Table 12: Summary of preliminary research implications for this thesis

#	Category	Implications
1	Digital solutions	<ul style="list-style-type: none"> <li>DS can be categorized into three different types that represent different portfolio combinations of software applications, services, and hardware products</li> <li>All types of DS can be viewed as a technological and commercial evolution of the traditional customer solution concept allowing for continuous value creation and value capture</li> </ul>
2	Sales rep behavior	<ul style="list-style-type: none"> <li>Sales reps prefer selling well-known portfolio elements and refrain from selling DS due to their low motivation, constrained opportunities, or missing abilities</li> <li>Sales reps' engagement in DS selling can be viewed as a two-stage process in which sales managers must facilitate sales reps' attitudinal and behavioral adoption of DS</li> </ul>
3	Sales management instruments	<ul style="list-style-type: none"> <li>To ultimately ensure sales reps' attitudinal and behavioral adoption of DS, sales managers must adjust their sales management instruments in terms of sales support, sales control systems, as well as sales targets and incentives</li> <li>Extant literature lacks detailed guidance on the appropriate design of these sales management instruments to overcome the identified barriers inhibiting sales reps' engagement in DS selling</li> </ul>

These implications furthermore stress the need for the empirical research that underpins this thesis. In this context, the different barriers to sales reps' engagement in DS selling (identified in subchapter 2.3) serve as the starting point to further explore

focal sales management instruments that help overcome these barriers. Table 13 describes how the different concepts and theories introduced in this chapter are combined and used for the subsequent empirical studies.

Table 13: Derivation of the need for further empirical research

<b>Focal research topic</b>	<b>Study 1: Sales support</b>	<b>Study 2: Sales control systems</b>	<b>Study 3: Sales targets and incentives</b>
Identified research gap	Lack of knowledge about the nature of sales support that facilitates the diffusion, i.e., sales reps' adoption, of DS within a sales force	Conflicting evidence on the applicability of sales control systems for DS selling and lack of guidance on their exact operationalization	Missing understanding of how to properly motivate sales reps to sell DS with suitable sales targets and incentives
Underlying research question	What is the nature of sales support facilitating sales reps' adoption of digital solutions?	How can sales control systems be designed to foster digital solution sales?	How can sales targets and incentives be designed to stimulate digital solution sales?
Chosen theoretical lens	Diffusion theory	Agency theory	Contingency theory
Rationale for the chosen theoretical lens	Novel innovations, such as DS, gradually diffuse within a sales force and require sufficient sales support until they become widely adopted by sales reps	Adverse selection and moral hazard pervade the relationship between sales managers and sales reps in DS selling and can be mitigated through sales control systems	Different contingency factors affect the design of sales targets and incentives that serve to increase sales reps' motivation to sell DS
Corresponding thesis chapter	3.2	3.3	3.4

Based on the results of this chapter, the structure of the subsequent empirical studies is organized as follows: all studies are covered in a separate subchapter addressing the three specific research topics. At the outset, each subchapter starts with a theoretical framing section to create a link between the focal research topic and the chosen theoretical perspective. The methodology section draws on relevant literature and theoretical concepts – both reviewed in this chapter – to systematically collect and analyze interview data. Afterward, the findings are presented and discussed. Every subchapter includes a separate discussion section to position and relate each study's findings to the corresponding literature of the research domains presented above.

The general discussion chapter at the end of this thesis consolidates the findings of all three studies and closes the loop regarding the barriers identified in subchapter 2.3 by illustrating different levers that ensure sales reps' engagement in DS selling.

### 3 Empirical studies

#### 3.1 Overview of the studies

This thesis comprises three qualitative studies which were implemented between 2020 and 2023 (see Table 14). The novelty of DS, their still largely unknown impact on sales organizations, and the scarcity of research on relevant sales management instruments justify the qualitative focus of this thesis. To answer the different SRQs of this thesis, the three empirical studies rely on an inductive research approach and thus aim at building theory on DS selling.

Table 14: Overview of empirical studies

#	Objective	Data collection period	SRQs addressed
1	Scrutinize the nature of sales support that facilitates sales reps' adoption of DS	05/2022 – 04/2023	2.1
2	Investigate the design of sales control systems that foster DS sales	12/2020 – 10/2021	2.2
3	Examine the design of sales targets and incentives that stimulate DS sales	01/2021 – 04/2023	2.3

The primary data source consisted of three different research projects which were conducted in the abovementioned period. The first – publicly-funded – project “Designing Business Models for the Internet of Things” included eight industrial firms and focused on the development and commercialization of Equipment-as-a-Service offerings. The second – third-party funded – consortium project “Pricing Digital Products” included 12 industrial firms and focused on the implementation of value-based pricing and selling. The third – third-party funded – consortium project “Successful Commercialization of Smart Services” included nine industrial firms and focused on marketing and sales-related success factors in the commercialization of DS. Each participating firm had a dedicated project manager who ensured access to further firm stakeholders that could provide more detailed insights into the different management practices relevant to each research question. To allow for the triangulation of data (Jick, 1979) beyond the projects' scope, additional interviews with various industrial firms venturing into DS selling were conducted. The different methodology sections provide a more detailed overview of the respective sample constituting each study.

## 3.2 Study 1: Sales support

### 3.2.1 Theoretical framing

Extant research has shown that the transition toward solution selling takes a lot of time due to the magnitude of change involved, and the high level of resistance displayed by sales reps (Terho et al., 2012; Ulaga & Loveland, 2014). The identified barriers to sales reps' engagement in DS selling indicate that sales managers can expect even more resistance from their sales reps and thus longer time intervals when transitioning toward DS selling. From an innovation diffusion perspective (Rogers, 1983), the introduction of DS in sales organizations can, therefore, be described by an innovation-decision process in which members (i.e., sales reps) of a social system (i.e., the sales force) gradually adopt an innovation (DS). Figure 5 depicts this diffusion model and highlights the distinctive stages of the innovation-decision process as well as the different barriers that need to be tackled during this process.

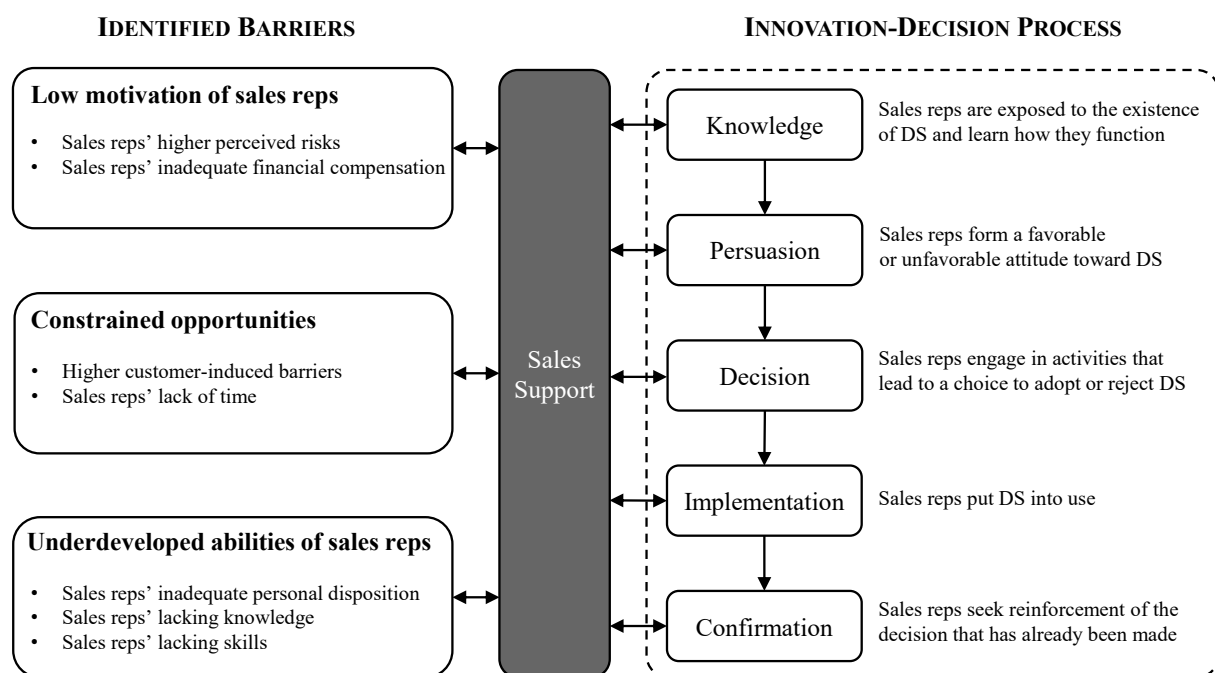


Figure 5: Diffusion model for DS

Although diffusion theory predominantly focuses on the process of how end customers or consumers adopt or reject innovations (López & Sicilia, 2013; Nejad et al., 2014), it remains a suitable framework to investigate the diffusion of DS within a sales force. In particular, the theory-grounded process view provides a suitable foundation to explore the nature of sales support that facilitates sales reps' attitudinal and behavioral adoption of DS.

### 3.2.2 Methodology

A qualitative, inductive research approach is applied to gain detailed insights into the innovation-decision process for DS and underlying sales support elements used to facilitate sales reps' adoption of DS. Two different reasons motivate the choice of this methodology:

- (1) Given the novelty and maturity of DS, there is a lack of understanding of how sales managers can facilitate sales reps' adoption of DS
- (2) Existing literature falls short of capturing real-life experiences from practitioners that are responsible for launching DS and training sales reps for DS selling

To build theory in this nascent and underexplored area of research, a multiple case study design is chosen (Eisenhardt, 1989b). Case study research is particularly useful for obtaining contextual, in-depth knowledge about emerging phenomena with a yet limited understanding (Eisenhardt & Graebner, 2007). The selection of cases was based on purposive sampling (Palinkas et al., 2015) and followed three criteria. First, all case companies recently launched DS, thereby allowing informants to share their first experiences with more and less successful sales support approaches for DS selling. Second, cases should accommodate different industries and firm sizes to increase validity and reliability. Third, access to key informants who worked together with sales reps on DS selling opportunities was necessary to obtain additional insights into the underlying research topic through follow-up interviews. In total, seven cases – representing Western European equipment manufacturers – were selected. Appendix A1 provides an overview of the different case companies. Five of them (AsepticFillingAlpha Co, Compressor Co, MaterialHandling Co, MedicalDeviceAlpha Co, MedicalDeviceBeta Co) participated in a focus group that served to identify marketing and sales-related success factors in the commercialization of DS. The two remaining case companies were part of other projects. MachineTool Co participated in a consortium project focusing on how to build up pricing capabilities for DS. Lastly, AspecticFillingBeta Co participated in an Innosuisse project that aimed at developing and launching new digital offerings based on IoT-technology.

To strengthen the theoretical contributions, this study furthermore adopts a theory-guided case study design that builds on the essential constructs of diffusion theory (see section 3.2.1) and the findings identified in prior research on sales support (see section 2.4.1). Following the methodological approach of Yin (2018), these theoretical propositions, therefore, guide this study's research design as well as the collection and analysis of data.

### 3.2.2.1 Data collection

Data were collected from two main sources. On the one hand, four focus group meetings – which took place between May 2022 and April 2023 – served as the primary data source. To get multiple perspectives on the defined research topic, the focus group consortium encompassed product management, marketing, sales, and service roles from different hierarchy levels. The four different workshop meetings followed a clear structure. In the first meeting, participants explained various challenges their sales organizations have faced in the transition toward DS selling. The subsequent meetings aimed at addressing these obstacles in an organized manner. The second meeting focused on the internal and external communication processes that are necessary to facilitate sales reps' adoption of DS. The third meeting featured discussions on suitable revenue models for DS that can be understood by both internal and external stakeholders. In the last meeting, the focus shifted toward the different roles in marketing and sales departments that were introduced to spread and share relevant information about DS. All meetings included both input presentations from case companies on the corresponding topic of the workshop day and dedicated breakout sessions to carve out surfacing success factors.

On the other hand, in-depth interviews with one or more informants from participating case companies were conducted. These follow-up interviews served to develop a better contextual understanding by delving deeper into specific aspects that remained unclear during the four focus group meetings. The interview guideline (see Appendix A2) was informed by prior research on diffusion theory and sales support. In the beginning, informants were asked to introduce themselves by highlighting their responsibilities and explaining their firm's digital portfolio and sales organization. To study sales reps' adoption of DS from a process perspective, subsequent interview questions were organized according to the five different stages of the innovation-decision process inherent in diffusion theory (Rogers, 1983). The *knowledge stage* included questions about the specifics of internal and external communication activities related to the launch of DS. The *persuasion* and *decision stage* focused on practices that were employed to convert initial information received by sales reps into DS selling activities. Lastly, the *implementation* and *confirmation stage* involved questions about the execution of the sales process and the scaling of DS to a broader customer base. Interviews were conducted either virtually or in-person with corresponding informants from all focus group companies – aside from AsepticFillingAlpha Co– and lasted between 60 to 90 minutes. The interview process ceased until data saturation was

reached due to redundant information or lacking data novelty (Boyatzis, 2009; Palinkas et al., 2015).

Informants from AsepticFillingAlpha Co participated in a two-day workshop to discuss the interview questions in greater detail. All conversations were audio-recorded and transcribed verbatim.

To ensure a high level of trustworthiness throughout the research process, three measures were applied. First, data were triangulated with secondary data from underlying case companies, such as website information, marketing materials, or conceptual frameworks shared in focus group presentations. Second, case companies and informants were chosen based on different industries and backgrounds, thereby allowing for the transferability of results. Third, the documentation of single focus group meetings helped not only to recap and reflect on ideas and findings but also to obtain continuous feedback from informants. To overcome informant bias and to ensure the applicability of results in industrial practice, the preliminary findings were presented at two *HSG Subscription Sales Summit* events, one taking place in May 2022 and the other one taking place in November 2022. These two-day events set the stage for getting critical and objective feedback by presenting the latest research insights to marketing and sales experts from additional companies that were not part of the focus group. This approach enabled the continuous improvement of developed concepts.

### 3.2.2.2 Data analysis

The process started with a cross-case analysis in which documented workshop findings and interview transcripts were coded using ATLAS.ti. Following the approach of Tuli et al. (2007), codes were selected if (1) they can be applied beyond a specific context, (2) multiple informants mention the idea, and (3) they allow for non-obvious, interesting, and useful conclusions. Given these criteria, the identification of relevant statements yielded 196 in-vivo or descriptive codes describing the nature of sales support facilitating sales reps' adoption of DS. At first, these codes closely adhered to the informants' terms and language (Gioia et al., 2013). To derive first-order concepts, initial codes with a high degree of similarity were iteratively grouped into 35 categories. In the next step, fragmented concepts were subsequently consolidated. The search for both meaningful relationships between codes and reoccurring patterns allowed for the building of second-order themes. Finally, all themes were sorted into chronological order to create aggregate dimensions that reflect the different stages of the innovation-decision process inherent in diffusion theory (Rogers, 1983). Table 15 illustrates the data structure.

Table 15: Study 1 - Data structure

<b>First-Order Concepts</b>	<b>Second-Order Themes</b>	<b>Aggregate Dimensions</b>	<b>Process Stage<sup>1</sup></b>
<ul style="list-style-type: none"> <li>• Building on sales reps' involvement in the DS innovation process</li> <li>• Identifying key promoters</li> <li>• Ensuring "trickle-down" effect of messages</li> </ul>	Defining an appropriate target audience	Imparting relevant knowledge about DS	Knowledge
<ul style="list-style-type: none"> <li>• Elucidating sales reps' areas of discomfort</li> <li>• Highlighting the multidimensional benefits of DS</li> <li>• Making sense of the complexity of DS</li> <li>• Enhancing clarity and consistency</li> </ul>	Crafting simple and digestible messages		
<ul style="list-style-type: none"> <li>• Getting sales reps' attention</li> <li>• Seeking a bidirectional exchange</li> <li>• Intensifying communication cadence</li> </ul>	Choosing conducive formats		
<ul style="list-style-type: none"> <li>• Developing an understanding of sales reps' daily challenges</li> <li>• Doing interactive exercises in presence</li> <li>• Integrating DS in existing sales cycle workflows</li> </ul>	Diving deeper into the sales process with smaller groups	Initiating calls-to-action	Persuasion
<ul style="list-style-type: none"> <li>• Obtaining commitment to targets and KPIs</li> <li>• Converting commitment into selling activities</li> <li>• Reviewing DS sales pipeline progress regularly</li> </ul>	Activating sales reps for DS selling		
<ul style="list-style-type: none"> <li>• Creating tangibility with videos and demos</li> <li>• Reducing preparation efforts through launch kits and sales playbooks</li> <li>• Leveraging price discussions through calculation tools</li> </ul>	Simplifying the sales process with suitable sales collaterals		
<ul style="list-style-type: none"> <li>• Embedding DS in yearly marketing activities</li> <li>• Arousing the interest of customers through suitable promotion strategies</li> <li>• Nudging sales reps with qualified DS selling leads</li> </ul>	Triggering sales reps with customer demand for DS	Facilitating the decision to adopt DS	Decision
<ul style="list-style-type: none"> <li>• Integrating DS selling skills in role-based learning journeys</li> <li>• Increasing sales reps' willingness to learn</li> <li>• Providing coaching skills for sales managers</li> </ul>	Enabling sales reps to become a door opener		

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<ul style="list-style-type: none"> <li>• Showing local presence</li> <li>• Resolving emerging role ambiguities</li> <li>• Familiarizing sales reps with team selling</li> <li>• Overcoming capacity constraints of digital champions</li> <li>• Expanding sales reps' comfort zone</li> </ul>	<p>Creating proximity to sales reps with digital champions</p>	<p>Establishing implementation support for DS</p>	<p>Implementation</p>
<ul style="list-style-type: none"> <li>• Nurturing the appearance of dedicated communities</li> <li>• Stimulating exchange through digital communication channels</li> <li>• Identifying best practice approaches</li> <li>• Sharing success stories and learnings continuously</li> <li>• Translating the success of DS into personal benefits for sales reps</li> </ul>	<p>Augmenting sales reps' support ratio gradually</p>	<p>Collecting feedback systematically</p>	<p>Increasing the visibility of DS through success</p>
	<p>Communicating field experiences openly</p>		<p>Confirmation</p>

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**Explanation:**

<sup>1</sup> Based on the innovation-decision process defined by Rogers (1983)

### 3.2.3 Case descriptions

This section provides a brief overview of the different case companies chosen for this study. Since a specific business context influences data analysis and resulting interpretations (Yin, 2009), the case descriptions seek to increase the confirmability of the various findings derived from empirical data.

*AsepticFillingAlpha Co* is a manufacturer of aseptic filling machines and cartons. The company serves different customer segments in the beverage industry, ranging from large dairies to mid-sized juice producers and smaller contract manufacturers that fill cartons on behalf of large food store chains. Major parts of the company's revenue are generated by selling cartons and closures. To grow outside of its traditional business, *AsepticFillingAlpha Co* has continuously extended its service portfolio. In addition to its maintenance and repair services, the company recently introduced two new DS. The first one is a remote service that allows for remote access to fix machine failures without on-site visits of service technicians. c. The sales organization is structured according to relevant functions. Therefore, customers (except key accounts) talk to different sales reps that are responsible for either selling cartons, equipment, or service contracts. To launch and implement their DS in the different global regions, *AsepticFillingAlpha Co* relies on service product managers who work together with regional sales reps on selected selling opportunities.

*AsepticFillingBeta Co* is a manufacturer of aseptic filling machines, cartons, and bag-in-box packages. The company serves the same customer segments as *AsepticFillingAlpha Co* and employs a similar business model in which carton and closure sales represent the major income stream. *AsepticFillingBeta Co* has an extensive service portfolio that consists of maintenance, repair, and training services. The digital portfolio includes three DS offerings. The first one is a remote service through which customers can – via phone or video – get support from dedicated service experts. The second one is a line monitoring system that depicts production KPIs in real time. The third one is a condition monitoring solution that seeks to reduce unplanned downtime of filling machines. The sales organization is separated into five strategic regions. Customers (except key accounts) talk to different sales reps: one is responsible for equipment and carton sales, and the other one is responsible for service and DS sales. Given the low progress of DS implementation efforts, the company has introduced digital transformation managers in each sales region. These roles are supposed to increase the share of DS in customer projects.

*Compressor Co* is a provider of reciprocating compressor technologies and services. The company serves customers in the chemical, petrochemical, gas, and energy industry and has separated its organization into a systems and services division. The services division offers a broad range of services both for their own compressors and third-party equipment. Given the strong growth of the installed base over the last three years and the limited capacity of globally dispersed service technicians, Compressor Co started to launch a remote support service. In the nearer future, the company also plans to deploy asset management and predictive maintenance services, which are currently in a pilot phase. The services division relies on service sales engineers in different regions to drive sales of spare parts and service contracts. To implement the remote support service, Compressor Co assigned a global product portfolio manager who is responsible for corresponding product training and answering unclear questions stemming from frontline sales engineers.

*MachineTool Co* is a manufacturer of milling, EDM, laser micromachining, and additive manufacturing machines. The company serves customers in the aerospace, automotive, and medical device industry. To make the service business more profitable, the management team recently decided to separate the sales organization into equipment sales and service sales. This shift involved the development of new service contracts which aim at taking over different maintenance activities from customers. All digital business activities are steered by one department within the company. Given the potential of digitalization, the company already introduced a remote support service which is delivered through a customer portal. This customer portal is continuously upgraded with new DS, such as a process tracker and a condition monitoring app. Based on the organizational structure, MachineTool Co approaches customers with equipment sales reps and service sales reps. To implement solutions, the company also employs automation experts that support existing sales reps. With the launch of their new DS, digital champions were hired for each sales region to support local sales reps in the sales process.

*MaterialHandling Co* is a manufacturer of material handling equipment and intralogistics solutions. The company is present in a broad range of industries, ranging from logistics and transportation to warehouses and other manufacturing companies that need to manage material flows. The sales organization is separated into key account managers (direct sales) and dealers (indirect sales) that are present in different regions all over the world to both sell the company's entire portfolio and deliver corresponding services. A few years ago, the company made the strategic decision to equip all new products with a telematics box that allows for the provision of new DS. Based on the

large amount of data that was collected, MaterialHandling Co developed a cloud-based fleet management solution that enables operators to manage their fleets more efficiently. Considering the independence of dealers, the company hired digital experts all around the world to extensively train dealerships for DS selling, thereby building up the necessary capabilities in their sales network to progress with digitalization efforts.

*MedicalDeviceAlpha Co* is a manufacturer of surgical instruments and microscopes. Therefore, customers are public and private hospitals. To cope with declining margins on hardware products, the company started to develop a fleet management solution that guarantees the availability of surgical instruments. In the meantime, Medical DeviceAlpha Co has enhanced its service portfolio with a new DS that serves as a digital instrument management system. In the future, the company also plans to develop new DS for surgical microscopes, including workflow optimization and asset management services. To bring DS to the market, MedicalDeviceAlpha Co initiated a digital channel management department. Dedicated digital channel managers are responsible for launching DS to the different sales regions, whereas business development managers ensure the implementation of DS in their corresponding regions. The sales organization has sales companies all over the world. In a few countries, the company is also collaborating with sales agents and dealers. Customers frequently show a high reluctance to share data in the cloud due to the highly regulated healthcare markets.

*MedicalDeviceBeta Co* is a manufacturer of surgical microscopes and ophthalmic devices. With its products and services, the company serves neurosurgeons and ophthalmologists all over the world. MedicalDeviceBeta Co identified digitalization as a key growth driver and therefore conducted several acquisitions of smaller software companies over the last years. These acquisitions have led to a separate digital unit that develops, operates, and maintains DS. The different DS offerings focus on platform services around asset health and clinical workflow improvements. Digital product managers are responsible for launching DS to the global sales network. Depending on the country, the company has either a direct sales approach or collaborates with dealers, especially in the US. Two DS were already introduced to the market. The first one is a remote service solution for the newest generation of surgical microscopes. The second one is a health data platform to improve the clinical management of patients. Given the strong regulations in the industry and conservative customers, the company hired dedicated connectivity managers who are assigned to country organizations and drive the share of connected devices. Until today, discussions with the hospital IT department are extremely challenging when it comes to connecting devices and using different types of data for the provision of novel DS.

### 3.2.4 Findings

Sales managers seek to facilitate sales reps' attitudinal and behavioral adoption of DS by providing concerted sales support throughout the different stages of the innovation-decision process inherent in diffusion theory. Figure 6 shows that 12 specific sales support elements, representing the second-order themes of the data analysis, shape the resulting innovation-decision process for DS in which sales reps decide whether to adopt and thereby sell these offerings.

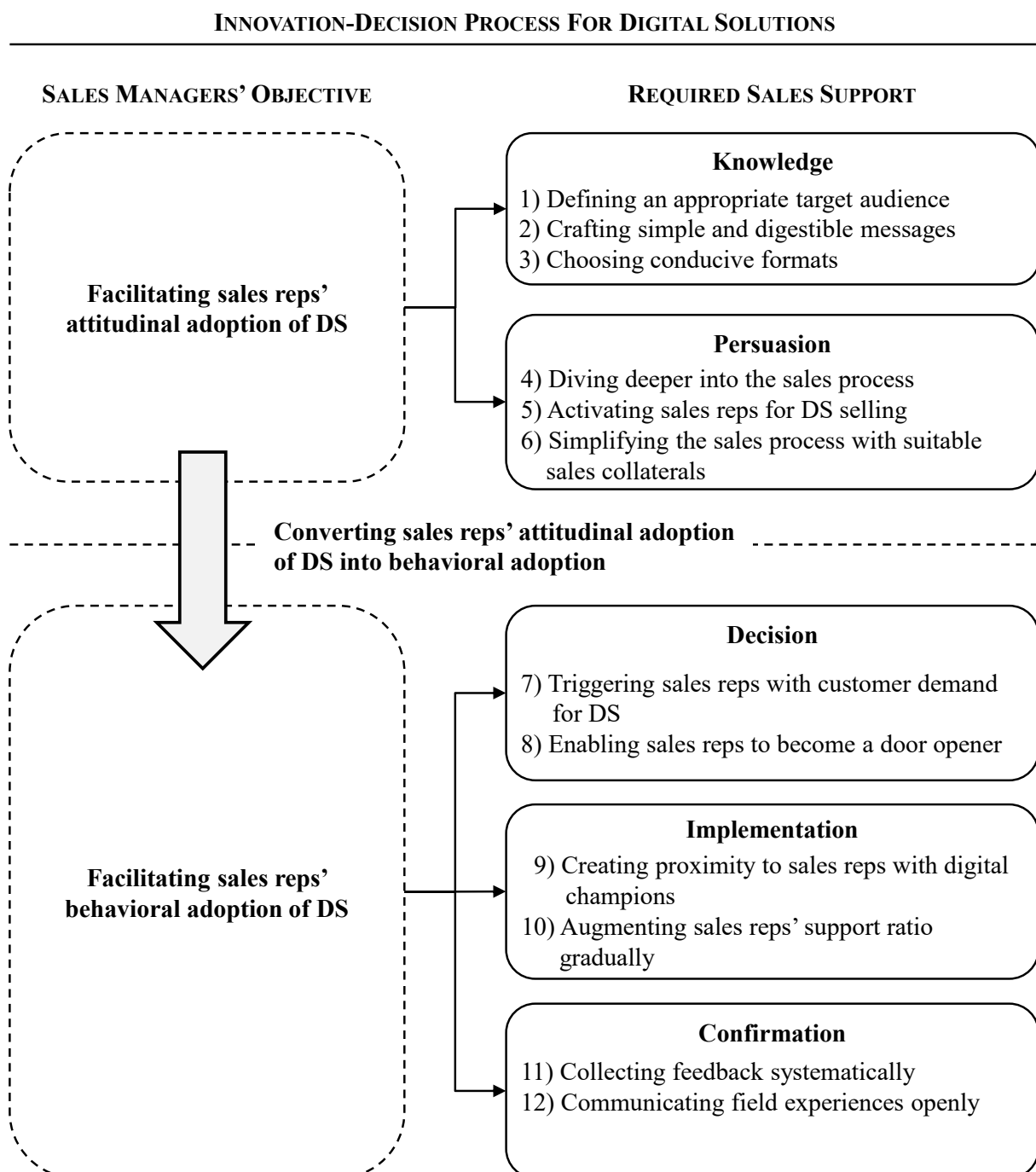


Figure 6: Study 1 - Conceptual model

### 3.2.4.1 *Imparting relevant knowledge about DS*

When sales managers begin to introduce DS into their sales organizations, they first seek to build up sales reps' knowledge about these new offerings. In doing so, sales managers determine to whom they want to communicate, what information they want to convey with their messages, and how they want to convey these messages.

#### 3.2.4.1.1 *Defining an appropriate target audience*

Given the size and the heterogeneity of their sales force, case study participants emphasized the importance of defining an appropriate target audience that is most receptive to the new and complex messages related to DS. The definition of an appropriate target audience is driven by three factors.

First, sales managers tend to involve selected sales reps and their corresponding country organizations in DS innovation activities. Although this approach is not always appreciated by all sales reps since they need to sacrifice valuable selling time, the early – and oftentimes mandatory – innovation immersion increases the belief that higher initial selling efforts pay off at a later date. Consequently, sales managers *build on sales reps' involvement in the DS innovation process* when they define a target audience for their DS selling messages:

Basically, you must involve sales reps relatively early [...] in the development process [of DS]. And not only individual people but also the associated country organization. And if you have their buy-in, that's half the battle, because then you do not have to do all this persuasion work. Therefore, we are already trying to involve relevant countries in the late ideation phase. [...] These are the design and key markets which we define... And they must reserve some of their resources for these activities. This also means that they reduce their profits and have a high interest that this investment pays off at a later stage. (Head of Digital Channel Management, Zeta)

Second, individuals differ regarding their attitude toward innovations and DS respectively. Based on the experiences made with sales reps' involvement in DS innovation activities, sales managers try to *identify key promoters* in their sales organizations that are more likely to adopt DS and thus can act as opinion leaders who convincingly share their positive beliefs with other colleagues:

What makes sense is to reach out to early adopters. That's where we have had the most success so far. In other words, people who have a very high level of intrinsic motivation, perhaps also a high affinity with digital tools, who are

simply keen to do such things, and, above all, who then also recognize relatively quickly the added value for the organization, but also the personal added value. And these questions are then completely different [...] because they ultimately have the drive and see the goal, how a digital solution will benefit the sales organization. (Head of Digital Channel Management, Zeta)

Third, the spread of messages related to DS selling requires a horizontal and vertical dispersion within a sales organization. Consequently, key promoters are not only established at the sales rep level but also the various sales management levels. Finding promoters on a higher hierarchy level is vital when defining a target audience since they ultimately *ensure that messages “trickle-down”* to their sales teams and single sales reps:

I think the mistake we initially made was that we mainly talked to the sales management of our regions. And that was extremely difficult because they are far away and then even if you try and get the regional Vice President on board and train him of how [the remote service] should be sold, then you’ve got the middle management and their sales teams... And by the time it trickles down through the organization, you have lost it again. Essentially, we didn’t ensure that our messages really filter through to the sales teams and single sales reps. (Global Product Portfolio Manager, Gamma)

#### 3.2.4.1.2 *Crafting simple and digestible messages*

In the next step, sales managers craft suitable messages to influence their selected target audience. Given the novelty and complexity of DS, case study participants reported that sales reps are oftentimes overwhelmed by the sheer amount of information that is shared for DS selling purposes. To overcome sales reps’ resulting aversion to DS, sales managers try to develop messages that are easy to understand and digest.

In the beginning, communication efforts thus concentrate on eliminating sales reps’ negative perceptions of DS. In this context, data security concerns appeared to be a key issue inhibiting sales reps’ DS selling engagement. On the one hand, hardware-focused sales reps are particularly afraid of losing face when being exposed to data-related questions in conversations with IT stakeholders from the customer side. On the other hand, sales reps fear cyberattacks or malfunctions of DS since they can easily put long-established customer relationships at risk. Therefore, sales managers *elucidate sales reps’ areas of discomfort* to increase their confidence in selling DS, for example, by emphasizing compliance with security requirements:

Many sales colleagues are still not comfortable with digitalization. Why? Because every time they present a digital solution, they directly come to the IT aspects, for example, security proposals and that's a very hard topic to answer. [...] They are a bit frustrated that digital solution sales are not going so easily due to IT constraints. [...] Therefore, we sensitize our sales teams that our equipment has an [...] IT certification. That means every two years, there is an association coming to us and doing a penetration test. During this test, they check if no one can perform a cyberattack on our machines. And if this test was successful, they give us a special certification which serves as a proof of confidence. [...] And I always highlight this certification when it comes to the messages that we share with our sales guys because they need to have the confidence of the security in their hearts when they are selling. (Head of Software Business, Delta)

When initial concerns of sales reps start to fade, sales managers *highlight the multidimensional benefits of DS*. Since many sales reps generally show skepticism about new ideas stemming from product management or marketing, the benefits of DS are explained in three different steps. First, sales reps want to know the benefits for the provider company and the rationale behind the strategic shift. Explaining the overall strategy related to DS helps sales managers to create a common understanding of new technologies and revenue streams:

Many people, even in our management, underestimate what it means to offer digital solutions. [...] For example, how do the margin mechanics of digital solutions work? These are all things that we as an organization first must learn. And then we share and communicate these learnings, especially with our salespeople. But it takes longer than you think for everyone to understand these aspects. (Head of Digital Channel Management, Zeta)

Second, sales reps want to know how their customers and respective buying center members benefit from DS. Consequently, DS require a clear value proposition with a proven customer value. These value propositions can differ between customer stakeholders, segments, and regions. To avoid a "one-size fits all" approach, sales managers consider customer personas, local customer needs, and prevailing industry regulations in underlying communication activities.

Third, sales reps want to understand how they can personally benefit from DS sales. Given the higher effort necessary to sell DS, they oftentimes question such time investments due to missing financial rewards for taking higher risks. Therefore, sales managers develop an "internal" value proposition that is exclusively geared toward sales

reps. These “internal” value propositions typically showcase how DS help sales reps to sell more of what they are used to sell. Not surprisingly, many sales reps tend to refrain from selling DS until they recognize and internalize their personal benefits. Against this backdrop, sales managers accurately carve out the resulting benefits of DS for single sales reps:

Sales reps need to see the benefit somewhere and they need to have some sort of pain. That’s a special situation, of course. So, for example, we have a sales country organization that has far too few salespeople for the size of the country. And the colleagues are now appreciating the possibility to integrate a digital solution into the offering because then they do not have to drive to every single outlying hospital like in the past, but they can always look at the workflows of their hospitals remotely... And they can always call at the right time when the customers need something. So, in the end, they totally understood our digital tool and for them, it is a personal incentive, so to speak, if they can use this digital solution in such a way that it makes their daily work easier and allows them to sell more of what they are used to sell. (Head of Digital Channel Management, Zeta)

To explain the technical and commercial details of DS, sales managers seek to keep messages as simple as possible. However, this represents a major challenge due to the various aspects that are shared in addition to the various benefits of DS, such as information on target customers, features, pricing models, financing options, legal requirements, data security topics, billing options, commissioning, and service delivery concepts. In this regard, case study participants highlighted the need to *make sense of the complexity of DS* in communication activities. This can be achieved through a simplified solution design in terms of predefined packages, modules, or bundles that link customer pain points with value propositions, features, and prices.

Before communication activities take place, sales managers ensure consistent names, messages, and explanations to avoid misunderstandings and confusion within the sales force. For example, during the triangulation process, one participant reported that their sales reps were skeptical about a new cloud-based software solution. Although major parts of this software solution included sensors that the company was selling for several years, it was branded as a pure software product and thereby reduced sales reps’ selling intentions. Simply by integrating sensors and renaming the software solution “smart sensor”, more sales reps started to adopt this offering because they were already familiar with the term “sensor”. Therefore, sales managers aim at *enhancing clarity and consistency in their communication* activities:

Consistency in the marketing approach is key. Even if it is a very simple digital service, everyone in our organization must mention it with the same name. It sounds very simple and stupid, but it does help a lot. (Product Owner Digital Customer Solutions, Epsilon)

#### 3.2.4.1.3 *Choosing conducive formats*

Communication efforts not only hinge on the target audience and the content of messages but also the chosen formats. Before selecting such a format, sales managers first develop a thorough understanding of how sales reps learn. For example, case study participants reported severe issues to *get sales reps' attention* in meetings that are geared toward DS selling. On the one hand, sales reps quickly become impatient when content is not presented in the local language or too far away from their daily problems faced. On the other hand, a missing presence of senior managers that can convey messages much more convincingly often lowers sales reps' attention span:

You take the hierarchical cudgel with you. In our case, this is a Vice President who explains how good and important the topic is, and who brings up the arguments why you should do that. Of course, if an important person says something, it will be noticed and heard. That's always the first step. (Head of Digital Channel Management, Zeta)

In addition, case study participants mentioned several problems arising from online formats that were used to introduce sales reps to new DS. Although such formats have become more popular due to the COVID pandemic and corresponding travel restrictions, virtual exchanges only represent a one-dimensional way of communication in which sales reps do not listen carefully or are afraid of asking questions. Against this backdrop, sales managers *seek a bidirectional exchange* – ideally in physical presence – to ensure that sales reps direct their full attention to the presentation about DS. This format allows for a proactive involvement of sales reps and thus helps to provoke questions that further enhance sales reps' understanding of DS:

It's very hard to change the mindset of sales guys, especially remotely. I think in-person you might have a little bit more influence, so you have a three-day workshop and go through some exercises and really try and change their mindset. And very importantly, you can trigger questions and give answers. But when you just have a two-hour online meeting, some people are not listening, and others are too shy to ask questions in these big rounds. We had 90% of it just presenting one way. And you're not going to change the way

they sell with this type of format. (Global Product Portfolio Manager, Gamma)

Since messages rarely resonate with sales reps after one single meeting, sales managers tend to *intensify their communication cadence* by exploiting virtual formats and follow-up documentations:

We do webinars regularly. [...] So that means we have a platform that we use internally. We log the invitation into it, so we know exactly who is coming. And we also have a Q&A session at the end. So that means with this Q&A session, we extract all questions from this webinar, and we answer each of them through a paper that we share with the participants of this community. (Head of Software Business, Delta)

### 3.2.4.2 *Initiating calls-to-action*

To capitalize on communication activities for DS selling, sales managers persuade sales reps to seize suitable DS selling opportunities. Even when sales reps are equipped with initial DS selling knowledge, they tend to stay inactive due to the missing link to their individual sales process which is often characterized by a very heterogenous customer base and greatly varying purchasing preferences.

#### 3.2.4.2.1 *Diving deeper into the sales process with smaller groups*

To establish such a link, case study participants emphasized the importance of a deep dive into the sales process with a smaller group of sales reps. The discussions that emerge from those meetings provide an appropriate platform for a mutual exchange with a high interaction degree. Creating this atmosphere is important to first *develop an understanding of sales reps' daily challenges*, thereby showing appreciation for their hard work in the field:

So, my way is not to present so much, but rather to ask how everyday life is out there. Getting sales reps' feedback, taking it seriously, and really implementing it. That's even better – not just listening to sales reps, but also doing something with their feedback. That's what the training is for. It has always been very, very useful. So, it's all about the mood out there, to appreciate the salespeople... I mean, these are the experts, they know the customers best. And it's not about the ignorant sales reps who have the great pleasure to sit in my training and hear something about the new digital world. That has very rarely worked. (Product Owner Digital Customer Solutions, Epsilon)

Once sales reps open up and become more involved in the discussion on how to sell DS, *interactive exercises* are used to cope with their actual challenges in the sales process. In collaboration with dedicated DS experts, sales reps can work out a standard sales approach to address concerns that different customer stakeholders might raise when they intend to purchase DS:

I did an exercise. It worked very well. Together with my target group, we created customer personas and said: here, this is the one who buys the forklift, this is the work council, and the IT contact person. Please write down: what does the customer want from us? Why does he want to talk to us about fleet management? And then you also write down what you want from him and what objections might come. Which arguments could come? [...] They worked out all these aspects for themselves. And then they were prepared for the sales talk. So, they were able to give answers to the standard questions and didn't have to pull in experts immediately. They really figured out how they can survive such a day, and how they can survive these 10 critical minutes [of challenging questions]. (Digital Transformation Manager, Beta)

In addition to the different problems that occur at the customer interface, sales reps are also very sensitive to changes in existing systems, tools, and back-end processes, which they know from prior work routines. Sales managers, therefore, *integrate DS in existing sales cycle workflows* to reduce adaptation efforts and increase the level of familiarity:

If you really want to bring digital solutions to the commercial team, you need to use the existing workflows and avoid creating a separate workflow because then it causes a lot of time and effort. So, what I tried to find out is how is the sales cycle. I integrated the different digital solutions into our existing sales cycle for staging. So, today it is available in our salesforce CRM system: discover, engage, develop, proof, negotiate, and close. And we have a clear definition for each phase. (Digital Transformation Manager, Beta)

#### 3.2.4.2.2 *Activating sales reps for DS selling*

The deep dive into the sales process furthermore provides new opportunities to activate sales reps for DS selling. Sales managers enable sales reps' actions in three different steps. First, they seek to *obtain commitment to targets and KPIs*, ideally from all hierarchy levels:

Even if it's hard but you need to get management and the frontline people behind this shift. They need to commit to numbers and KPIs. Otherwise, there will be no action at all. (Global Product Portfolio Manager, Gamma)

Second, the customers served by single sales reps are assessed precisely to convert *commitment into subsequent selling activities*. For example, this can be done with a customer mapping through which sales reps evaluate and select target customers for DS selling:

At the end of the workshop, we finish the agenda with two hours of working together. There we do a mapping of customers. So, we create a matrix in which we allocate sales reps' customers according to their digital capability and business potential. And then we do a product targeting where we select the top three important customers in this matrix. There we say: okay, now these are the top three, top four customers, what are the relevant digital products for them? So, we can say maybe nothing in 2022 but in 2023 this product for this customer, and this product for this customer, and then we define the next steps. This is also translated into our CRM system, and we expect our sales reps to work on these opportunities. (Digital Transformation Manager, Beta)

Third, monitoring of mutually defined targets is required to underline the necessity of DS selling engagement. Consequently, sales managers aim at *reviewing the DS sales pipeline progress regularly* – together with dedicated experts – to learn more about an opportunity status and offer support in case of setbacks:

We have a bi-monthly exchange with our sales reps. We look into the pipeline and then we see: okay, now we have this opportunity... What is the status? What are the next steps? Where is support needed? (Digital Transformation Manager, Beta)

#### 3.2.4.2.3 *Simplifying the sales process with suitable sales collaterals*

To lower sales reps' entry barriers for addressing DS in customer conversations, sales managers try to simplify the sales process as much as possible. In this context, the provision of suitable sales collaterals is instrumental. Three promising types of collaterals surfaced during the interview process with case study participants.

First, *videos and demos are frequently used to create tangibility* for non-tangible DS. Furthermore, this digital content can easily be presented during customer visits and allows for a simple explanation of DS, which sales reps often cannot deliver:

What we have done is, we have made the documentation very simple and easy to understand. We created the analogy of a tool cart so that the digital solutions are like individual tools. The salesperson only needs the first three drawers, which we have already packed for him. So, we made very short videos with three added values each. In the end, the salesperson just needs to show the video and remember the three arguments. (Product Owner Digital Customer Solutions, Epsilon)

Second, because sales reps' preparation time for customer visits is limited, sales managers seek to reduce preparation efforts in two different ways. Specific *launch kits* are developed to provide sales reps with the necessary DS marketing materials:

Our kit usually consists of a product presentation and customer presentations in the sense that they are modified a bit, also to the customer's problem. Then we usually make flyers that describe relatively simply and clearly on two pages what our digital solutions are all about. If the solution is larger and we want to go to several markets, we make photo shoots that are then used for key visuals. [...] In addition, we also provide a generic framework for marketing campaigns. (Head of Digital Channel Management, Zeta)

Furthermore, *sales playbooks* are introduced as a step-by-step guide on how to lead sales conversations. These playbooks usually go beyond the technical and commercial aspects of DS and rather focus on value-oriented sales methodologies and questioning techniques to be applied, especially in the early stages of a sales process:

We developed a playbook for our salespeople to better prepare for a visit. Basically, it's a conversation guide to understand customer needs, customer goals, key stakeholders and decision-makers, their expectations, and challenges. We want our salespeople really to figure out: what does value mean to a customer, what is the solution that we can create, how do we differentiate... and what are the next steps to discuss in this regard. [...] So, the essence of this playbook is a list of questions or questioning techniques that our salespeople are supposed to apply in customer conversations. (Head of Sales Effectiveness, Delta)

Third, discussions with customers oftentimes get stuck on commercial aspects, such as the determination of prices. Case study participants mentioned that these *price discussions can be leveraged through calculation tools* that precisely link the prices for DS to the customer value created:

One of the first things my sales colleagues immediately want to know is: what is the price model for this digital product? And I can tell you, it's a challenge

to explain these new subscription-based price models. Everyone is thinking of transactional revenue, there was so much resistance coming from the sales reps... I decided to create kind of a value calculator. This tool helps me to internally demonstrate how we derived the prices based on the potential reduction in unplanned downtime. And sales reps can now also use a different version of this tool to better convince customers of these prices. (Global Product Portfolio Manager, Gamma)

### 3.2.4.3 *Facilitating the decision to adopt DS*

Two major factors impact the success of DS sales processes. On the one hand, the level of customer awareness – that is the degree to which customers are aware of and understand DS – eases sales reps' DS selling activities. On the other hand, sales reps' selling skills drive the desired outcome of difficult customer conversations. Sales managers consider both factors to facilitate sales reps' decision to adopt DS, which is furthermore important to convert their attitude toward DS into desired selling behaviors.

#### 3.2.4.3.1 *Triggering sales reps with customer demand for DS*

Although focal marketing activities mainly embrace traditional products and services, there is evidence that DS more and more become an integral part of the overall marketing strategy. In this context, case study participants noted that customers who show a high interest in DS are usually one of the biggest motivating factors for sales reps to engage in DS selling activities. To generate customer demand for DS, sales managers first start to *embed DS in their yearly marketing activities*:

We must avoid annoying the customer with too much marketing content and pushing in too much information because otherwise, they will not buy it. So, what we do, is we have a marketing communication team, and this marketing communication team is planning and aligning the promotion activities for every single year at an early stage. So, we decide, we will launch two products this year and these two products will have a dedicated marketing campaign. And then I need to convince them, to get one of these spots for the digital solution. (Head of Software Business, Delta)

Once DS are part of the yearly marketing activities, *suitable promotion strategies are necessary to successfully arouse customers' interest*. Such strategies include both inbound activities, where customers become aware of DS through their online search on websites, and outbound activities, which proactively inform customers about DS through newsletters, webinars, tradeshow, or social media posts. In this context,

customers most appreciate content describing how peer group members or competitors became more successful through the implementation of DS:

And with this tool [digital pathology] that we have... There we initiated a peer-to-peer discussion in Italy. That's now really taking off. They are doing very well because they are taking all their prospects through the clinics in Milan, and they can experience this software solution live and in color and then also exchange information with their peers, the surgeons. And we are now in the process of rolling this out globally. So, ideally, we will soon have such local reference sites everywhere in the largest markets, where customers or prospects can be brought [...] to really experience, test, and question our solution firsthand. (Senior Business Manager, Eta)

Since customers increasingly tend to be more self-informed in buying decisions, sales managers also exploit digital marketing channels on company websites to provide whitepapers or case studies on DS. When customers leave a footprint, e.g., by downloading content in exchange for providing contact information, lead scoring models are used to evaluate such contact persons and *nudge sales reps with qualified DS selling leads*:

It's also extremely difficult to get customers to sign a contract for a digital product completely online. But at least we receive more and more contact information online, from customers visiting our website and downloading our digital product whitepapers. [...] And then, it's also important to handover or forward these leads to the responsible salesperson. We even do these handovers in personal meetings to ensure that we follow up appropriately on these leads. (Product Owner Digital Customer Solutions, Epsilon)

#### 3.2.4.3.2 *Enabling sales reps to become a door opener*

If customers are unaware of DS, enablement of sales reps is necessary to start the sales process by initiating discussions about DS. As missing skills significantly impede sales reps' intentions to initiate such discussions, dedicated enablement or training programs are introduced to cope with these shortcomings. Given the complexity of the DS sales process, sales managers avoid building up sales reps' selling skills to a point where they can handle every step of the sales process on their own. Instead, sales reps are rather enabled to a point where they can open the door for additional DS experts once customers express serious intentions to purchase DS. These experts can then start more targeted discussions with customers, for example about data security or data hosting issues. However, this "door opening" process might be easy for some, and difficult for

others. Considering the age, experience, digital affinity, and customer account sizes served, sales managers *integrate DS selling skills in role-based learning journeys*:

I always try to tailor my training program according to the target group. So, what do they really want to know? For example, the more experienced sales guys are, the less they care about the look and feel of our solution. They want to know how this digital solution helps them in their daily job, to sell more forklifts. And that is what it's all about... To emphasize the advantages for them, and to give them the tools in a bite-sized form. So that we can say: we have built a website for you here, you can go to it, you can go through with customers from the top to the bottom, for example. Or here is a presentation, you can insert it in your pitch deck as the last slide. When you have presented the new forklift, this is your last slide. Then you can simply show videos that are no longer than two minutes, so they fit into every half-hour appointment at the end. [...] And then we train the salesperson to identify where the customer shows interest and how to proceed with a follow-up appointment. (Product Owner Digital Customer Solutions, Epsilon)

Since DS selling skills are developed over time, sales reps continuously need to engage in learning activities. Given the fact that such investments reduce effective selling time, sales reps' motivation to participate in training programs usually remains at a low level. Consequently, sales managers seek to *increase sales reps' willingness to learn* in three different ways. First, they incorporate gamification elements in training programs to subsequently exploit sales reps' intrinsic motivation by highlighting the ease of use and fun inherent in the different learning opportunities. Second, sales managers enforce learning activities when sales reps repeatedly refrain from underlying training programs:

We have an E-learning platform for training and some training sessions are mandatory for employees who are in a sales position. In this context, we introduced a mandatory digital awareness session with a quiz at the end. The quiz is 25 questions. And we can see directly who passed and who didn't pass. So, if you didn't pass, you train again yourself... And if you fail three times, you will get an unpleasant appointment with your direct supervisor. That's how we set it up. (Head of Software Business, Delta)

Third, sales managers reward learning efforts. Case study participants explained that the successful completion of certain programs is rewarded with special badges or certificates. These certificates are designed in collaboration with the human resources

department and thus can represent an advantage for sales reps that strive for the next promotion.

Unfortunately, sales reps frequently tend to fall back into their old behavioral patterns. As a result, sales managers must continuously teach and sustain desired selling skills and behaviors in their sales teams. Consequently, they are *provided with the necessary coaching skills* to adequately supervise and lead sales reps in DS selling:

The big challenge that we had with this value selling approach, in the beginning, was: sales management really needs to believe in it, and they must be the first ones doing it. [...] We made a big training. We went out to everybody. So, you train the sales manager, and you train the salespeople at the same time. And then you don't give the extra skills to the sales manager so that he's able to coach his people. [...] The role of the sales manager is extremely important because salespeople soon realize: if your boss is not believing in it, why should you believe in it? (Head of Sales Effectiveness, Delta)

#### **3.2.4.4 *Establishing implementation support for DS***

Since DS sales processes can soon become very complex due to technical discussions on data-related topics or unclear contract terms, sales reps are rarely able to successfully convince customers and close such deals on their own. Case study participants noted that implementation support of technical experts is vital to navigate through the more challenging discussions of the DS sales process.

##### **3.2.4.4.1 *Creating proximity to sales reps with digital champions***

To support the global implementation of DS, additional sales resources – oftentimes referred to as digital champions – are introduced. These digital champions act as change agents that underline the organization's overall willingness to drive DS selling. Moreover, they serve to increase sales reps' confidence during the critical stages of the DS sales process. Case study participants highlighted the need to establish dedicated sales resources who *show local presence* to both support communication activities and work together with sales reps on DS selling opportunities:

You need to have the patience to deal with people. It takes a long time for them to internalize these products and their benefits. And you must be close to the action. It doesn't help much to think about possible improvements from afar. Instead, you must be out there with the salespeople and customers a lot

and listen because then you can create trust and confidence. (Senior Business Manager, Eta)

However, new resources joining the sales process might dilute DS selling responsibilities. Sales managers thus seek to *resolve emerging role ambiguities* by communicating expectations clearly:

We have defined and communicated the sales process quite clearly: the salesperson is supposed to bring up the solution in the conversation with the customer, to see if they are interested. In the next step, the salesperson can pull in our digital experts who talk to other contacts on the customer side, most likely IT experts. Then there are two streams, so to speak, one is focusing on the vehicle configuration and the other one is focusing on the software provision. (Product Owner Digital Customer Solutions, Epsilon)

Once such sales models multiply and scale, sales reps realize that they are no longer a one-man show. To gradually implement this change, sales managers *familiarize sales reps with team selling*:

Our salespeople are responsible for selling the entire portfolio. And the competence required to sell all these different offerings professionally is immense. And oftentimes salespeople, due to their pride, try to convince the customers' stakeholders of our digital products on their own. But very rarely, they are successful with this approach. [...] It is a big challenge for them to accept that they are no longer a one-man show but rather a team that approaches the customer. In fact, it is a very big change that we implemented over the last few years, and it is far from over. (Product Owner Digital Customer Solutions, Epsilon)

#### 3.2.4.4.2 *Augmenting sales reps' support ratio gradually*

When sales reps increasingly start to adopt DS, digital champions can soon become overwhelmed with the various DS selling opportunities that require further support. The successful implementation of DS, therefore, hinges on the support ratio, which defines the number of sales reps that are supported by one digital champion. When DS selling activities gain traction, sales managers aim at *overcoming capacity constraints of digital champions* to provide sales reps with sufficient implementation support:

I was getting involved in the sales process a lot. So, someone actually mentioned the [remote service] to a customer and they showed interest. Then [the local sales reps] always called me into the conversation... which I tried

to stop because I was running around a bit like being a salesman. For this reason, I pushed the idea to hire dedicated resources that support local selling activities. (Global Product Portfolio Manager, Gamma)

Sufficient implementation support is furthermore necessary to create an image that portrays the successful execution of projects. These messages are important to continuously *expand sales reps' comfort zone* in DS selling:

As soon as the salespeople notice: hey, there is someone, meaning our digital expert, who catches the ball and takes care of all the software specifications until the vehicle has been delivered... Then they realize: hey, I can do that again and I can tell everyone about it. So, the salespeople become curious, they all test it out to see if it works. And every successful project is increasing their confidence. (Product Owner Digital Customer Solutions, Epsilon)

### **3.2.4.5 Increasing the visibility of DS through success**

Considering that DS still represent only a minor part of the overall business, sales reps' underlying attention can easily fade over time. To keep sales reps' awareness at a high level, sales managers seek to continuously increase the visibility of DS by confirming and sharing success stories.

#### *3.2.4.5.1 Collecting feedback systematically*

To build up these success stories, feedback on prior selling experiences is collected systematically. In this context, sales managers *nurture the appearance of dedicated communities*. On the one hand, these communities serve as a platform for experts to drive future developments of DS and to determine the strategic direction regarding DS:

We have set up a so-called digitization working group, which consists of these digital experts. This is like a forum to exchange ideas about new future developments regarding our digital products. We can discuss and challenge new ideas through a reality check by people who have direct customer contact much more frequently than our internal employees. (Product Owner Digital Customer Solutions, Epsilon)

On the other hand, such communities can be created with local sales teams to *stimulate a quick and easy exchange through digital communication channels*:

Basically, I started to set up a group via Microsoft Teams in which I invited all the salespeople who are supposed to sell our digital solutions. And we now see that there is a vivid exchange. So, we really have created a community.

And this format has proven its worth because you can share and exchange information very easily. (Head of Digital Channel Management, Zeta)

The continuous exchange with sales reps and digital champions furthermore allows for quick adaptations in the DS sales process. Case study participants mentioned that a proper learning culture is inevitable due to the dynamic nature of DS selling. Consequently, the feedback received is used to *identify best practice approaches* from initial experiences:

We usually do pilots with selected sales partners in different markets. During these pilots, we gather a lot of information, and this will be used for training material, whether it is a reference guide or any other type of marketing material that can be used. (Senior Business Manager, Eta)

#### 3.2.4.5.2 *Communicating field experiences openly*

To finally confirm sales reps' adoption of DS, identified *success factors and learnings are continuously shared* among the different community members. Importantly, this also includes the different failures made in DS selling:

We work a lot with customer references. So, good projects get around with the salespeople quickly. Therefore, we share the anatomy of the most successful deals. And it is not uncommon that digitization tips the scales in favor of winning such deals. If this is the case, salespeople suddenly become very interested. [...] From a sales management perspective, we also do these win-loss analyses regularly, so that we can identify weaknesses in the sales approach for our digital solutions. And of course, we also need to share our mistakes and failures because otherwise we wouldn't be able to improve. (Product Owner Digital Customer Solutions, Epsilon)

Although success stories help to draw particular attention to DS, sales reps oftentimes tend to distrust those messages until they can ultimately grasp the benefits for their daily business. Consequently, sales managers clearly communicate how DS selling success translates into personal benefits for sales reps:

With this best practice sharing, salespeople were still skeptical because before they didn't necessarily talk to each other. They were like: what do I have to do with them? It's not my area, not my customer. But when we started to highlight how our fleet management solution helped to increase the share of wallet by winning vehicles from the competition... Then they started to listen and learn because they realized how these salespeople became more

successful with digital solution sales. (Product Owner Digital Customer Solutions, Epsilon)

### **3.2.5 Discussion**

Despite obvious advantages for both providers and customers, new innovations take time until they become widely adopted by a target population. This phenomenon also surfaces when firms begin to introduce DS in their sales organizations. To address sales reps' low motivation, constrained opportunities, and underdeveloped abilities in DS selling, sales managers seek to facilitate their attitudinal and behavioral adoption of DS. By drawing on diffusion theory, this study develops a better understanding of the different stages that shape this two-stage adoption process. In doing so, it provides rich implications for both theory and practice.

#### **3.2.5.1 Theoretical implications**

This study makes three contributions to the literature on innovation diffusion and personal selling. First, the qualitative research approach that served to operationalize the innovation-decision process for DS delivers a novel and dynamic perspective on the adoption of innovations within a sales force. Since prior studies have extensively focused on obtaining sales reps' adoption based on behavioral measures, such as control systems (Ahearne, Rapp, et al., 2010) or incentives (Alavi et al., 2022; Beuk et al., 2014), extant research falls particularly short of illustrating how sales managers can facilitate sales reps' attitudinal adoption of new selling tasks. Although sales scholars keep raising this issue constantly (Fu et al., 2010; Malshe & Sohi, 2009; van der Borgh & Schepers, 2018), there is yet a lack of studies that capture the process-related dynamics of adopting new selling tasks. Therefore, this study is the first to investigate the requirements that facilitate sales reps' attitudinal adoption of DS. In this context, the findings underline the crucial role of internal marketing in explaining the benefits of DS, especially to sales reps and their served customers. There is evidence that sales reps' attitude toward DS selling is likely to remain at a poor level until they recognize how DS translate either into additional sales in the short term or more efficient sales in the long term. These observations are in line with Atuahene-Gima (1997), Fu et al. (2009), and Hultink and Atuahene-Gima (2000) who suggest communicating sales reps' benefits, e.g., financial incentives, for new selling tasks. The various sales support elements presented in this study also address calls for more research on the type of knowledge and skills required for implementing customized (service) solutions (Jong et al., 2014). Furthermore, this study sheds light on how to convert sales reps' attitude into desired behavior. In doing

so, it advances prior knowledge about customer segmentation and prioritization methodologies for value-based (Terho et al., 2015) and solution selling tasks (Böhm et al., 2020) by developing a more fine-grained understanding of this critical stage in the innovation-decision process for DS.

Second, this study provides detailed insights into the nature of communication that facilitates the transition toward DS selling. Against this backdrop, it addresses recent calls for more research investigating the degree of communication to build up sales reps' knowledge and skills in the context of solution selling (Schaarschmidt et al., 2022). To overcome the different barriers to sales reps' engagement in DS selling, the findings underline the importance of clear and consistent communication strategies which define to whom, what, and how messages are communicated. In this context, traditional ways of communication get increasingly replaced by virtual formats and digital media. Although physical meetings remain important during the early stages of a market launch, this study points to the emergence of virtual formats that allow for quicker, simplified, and more frequent interaction. These formats also serve to accommodate agile and co-creation-oriented software development processes more easily (Sjödín, Parida, Jovanovic, & Visnjic, 2020). In addition, digital media that have been mentioned only incidentally in more recent research (Boldosova, 2020; Classen & Friedli, 2021b), are gaining importance in making DS more tangible for both sales reps and customers.

Third, this study contributes to the existing solution selling literature by drawing a clearer picture of the role played by sales managers and solution champions, as well as their interaction with sales reps. The findings reveal that sales managers represent an important vehicle in the transition toward DS selling. On the one hand, they act as well-respected opinion leaders who can support and reinforce the diffusion of complex and novel messages. On the other hand, they guide, coach, and enable their sales teams to continuously practice desired selling behaviors. Because sales managers may lack such skills for DS selling, sales enablement programs oftentimes differentiate between sales reps and sales managers to provide the latter with additional coaching structures that facilitate sales reps' adoption of DS. Consequently, these observations acknowledge prior literature examining the role of sales managers in solution selling, in particular when it comes to management involvement practices (Böhm et al., 2020; Storbacka et al., 2011) or encouragement behavior (Hoffmann et al., 2022). Furthermore, this study advances the common understanding of necessary roles in the context of solution selling. As already indicated by Salonen et al. (2021), sales managers introduce dedicated champions in their organizations to establish change agents that can drive the transition toward DS selling. These digital champions (Classen & Friedli, 2021b) are often located

in different sales regions to sustain headquarter-driven communication efforts and to work together with sales reps on DS selling opportunities. The findings suggest that DS selling success depends on the support ratio of such champions due to arising capacity constraints and sales reps' missing abilities to drive the outcome of challenging conversations in the later stages of the DS sales process. Finally, this study demonstrates that both sales managers (in their role as opinion leaders) and digital champions (in their role as change agents) represent essential cornerstones in the transition toward DS selling. Therefore, the findings question the results of Salonen et al. (2021) who state that champion support can substitute management support.

### **3.2.5.2 Managerial implications**

This study entails several recommendations for sales managers that seek to introduce DS in their sales organizations. First, sales managers must carefully plan and execute communication activities to build up the necessary level of DS selling knowledge at the individual sales rep level. Importantly, underlying communication efforts should also be geared toward sales management as the diffusion of messages might fail without sufficient support from sales managers. From a temporal perspective, sales managers must furthermore decide when to raise sales reps' initial awareness for DS. Early involvement in DS innovation activities might reduce sales reps' effective selling time but helps to establish key promoters in the sales force who can later become digital champions that drive the transition toward DS selling. To influence sales reps' attitude toward DS, sales reps need to understand – based on simple and digestible messages – how these new offerings function and how they ultimately create benefits for their customers and for themselves. In this context, sales managers are well-advised to develop a distinct value proposition for sales reps that goes beyond the mere provision of financial incentives. For example, the connectivity shaping DS and resulting insights into product condition and utilization might enable the strengthening of customer relationships. This further implies an enhanced service delivery and a data-driven sales approach which is employed to better target customers with suitable offerings, thereby increasing sales reps' effectiveness and efficiency in the sales process.

Second, sales managers must define a clear strategy on how to convert sales reps' attitude into desired selling behaviors. To date, many companies tend to launch DS by providing overwhelming technical information, thereby neglecting the necessary selling knowledge and skills. Against this backdrop, sales managers must ensure that they explain how DS can be sold, ideally by doing interactive exercises with role plays and Q&A sessions. In this regard, sales reps also need to understand what type of customers

they should approach with DS. To close this knowledge gap, sales managers must revisit customer segmentation criteria and think about customers more strategically, e.g., by considering their digital maturity or maintenance capabilities. Such segmentation and prioritization tasks can be used to define – together with sales reps – initial DS selling opportunities.

Third, sales managers should not underestimate the role of marketing in the transition toward DS selling. Considering the characteristics of DS, such offerings are in great need of explanation for internal and external stakeholders and thus require special attention from the marketing function. Sales reps and customers may struggle to grasp the functionality and the value of intangible software solutions. Consequently, sales managers need to ensure that sales reps have the right content and tools to engage in DS selling activities. The findings indicate that – with the digitalization of solutions – marketing materials and tools also become more digital. For example, videos and demos appeared to be a common instrument to initially familiarize sales reps and customers with DS. This is an important recommendation for sales managers that still rely on rather traditional marketing concepts for DS selling.

Fourth, sales managers must be aware that DS selling success hinges on their willingness to share DS-related information and their ability to teach corresponding DS selling skills. Consequently, DS sales strategies need to be defined and executed both at a vertical and horizontal level. As sales reps' attention to DS might easily fade after a launch, sales training programs should include “extra” content for sales managers to facilitate sales reps' adoption of DS in the long term.

Fifth, sales managers should consider introducing new sales resources to drive DS selling. If sales reps are afraid of being asked questions they cannot answer properly, subject matter experts, such as digital champions, can take over such leads to discuss more complex or technical topics. In doing so, they drive the progress of DS sales processes. The different sales models that emanate from the introduction of such champions not only give sales reps a sense of security and comfort but also have implications for the large-scale provision of sales training programs. Once the number of digital champions in the sales organization reaches a critical mass, sales managers should only train their sales reps to the point where they can open the door for experts to subsequently lead the DS sales process. Rather than training every single sales rep to succeed in the DS sales process independently, more targeted training on lead generation and team-based selling could be a less expensive and more effective way to boost DS sales.

### 3.3 Study 2: Sales control systems<sup>6</sup>

#### 3.3.1 Theoretical framing

The different types of DS, introduced in Table 4, either complement or substitute the goods and services industrial firms provide. As a result, sales reps face difficult effort allocation choices in which they must divide their selling activities between well-known products or services and DS. In this regard, prior analysis of service and sales literature (see Table 6) revealed two insights. First, sales reps display a low motivation, face more constrained opportunities, or lack the necessary abilities to sell solutions. Second, the characteristics of DS reinforce these barriers as the increased risk, complexity, and time intensity of DS selling augment the likelihood that sales reps refrain from corresponding selling tasks. While sales reps allocate less time to DS selling than expected by their managers, who want to increase DS revenue, a conflict of goals can emerge, ultimately resulting in two agency problems, shown in Figure 7.

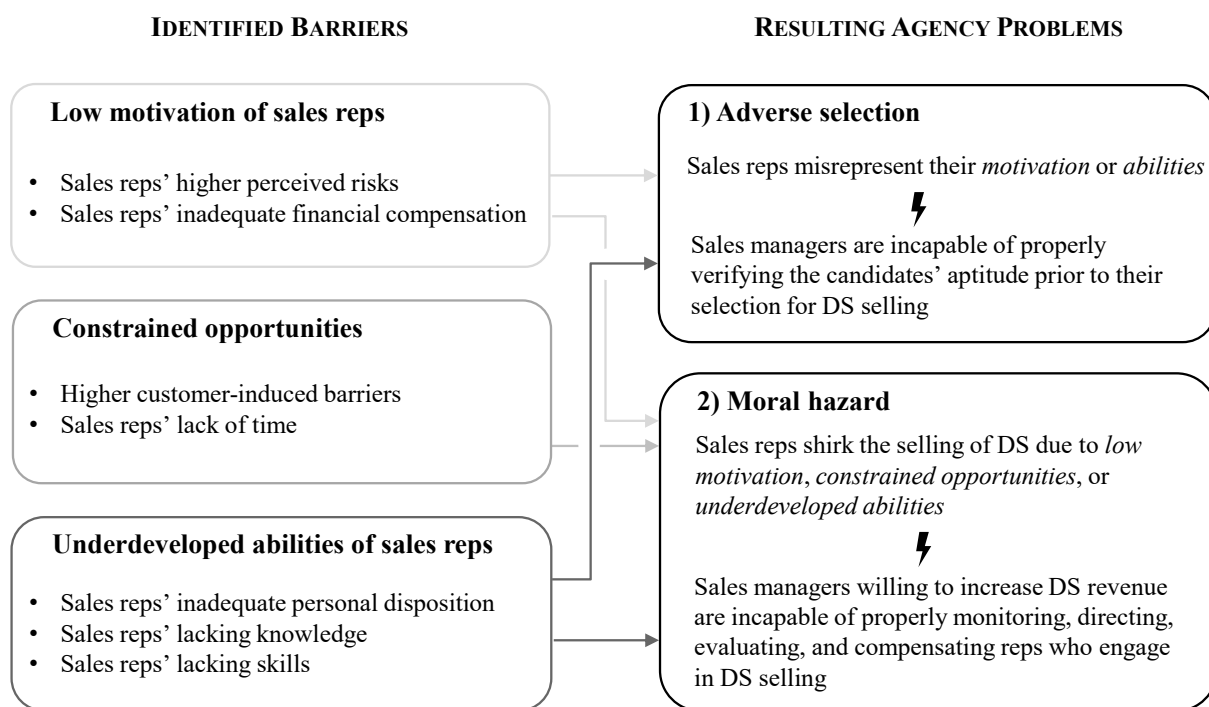


Figure 7: Agency problems in the context of DS selling

Adverse selection occurs when sales managers are unable to appoint suitable sales reps to DS selling tasks, given their inability to verify the candidates' motivation and ability

<sup>6</sup> Parts of this chapter, in particular the subchapters 3.3.2, 3.3.3, 3.3.4, were initially published in Tienken et al. (2023).

prior to their selection. Moral hazard appears when sales managers are incapable of properly monitoring, directing, evaluating, and compensating sales reps who shirk the selling of DS.

### **3.3.2 Methodology**

To examine how sales managers can engage their sales force in DS selling by overcoming these agency problems, we relied on a qualitative, inductive research approach for two specific reasons:

- (1) since DS only emerged recently, evidence on appropriate sales controls is sparse; and
- (2) existing literature lacks references to operational DS sales controls, thus necessitating a thorough understanding of the phenomenon.

To attain our research objective, we collected data through in-depth interviews with informants from multiple business contexts. This choice enhances confidence in our study's ability to build theory in an underexplored research area (Edmondson & Mcmanus, 2007).

#### **3.3.2.1 Data collection**

We used theoretical sampling (Glaser & Strauss, 1967) of informants. Our online screening ensured that potential informants worked in Europe-based firms of different sizes, industries, product offerings and DS maturity; and that, according to their marketing and sales functions, they are tasked with DS selling. We contacted those who passed the screening via e-mail and requested them to participate in our study, offering a short management report in return. All authors assessed the DS maturity independently – based on a qualitative scale from one to four – and agreed on a final score. As shown in Appendix A3, our sample comprises firms with heterogeneous DS maturity, thereby allowing us to study control systems deployed at different stages of the transition toward DS selling.

Our primary data source consisted of online interviews. Between December 2020 and October 2021, we interviewed 72 managers from 53 industrial firms transitioning toward DS selling. The interviews, of 45 to 120 min duration, were audio-recorded and transcribed verbatim. Our semi-structured interview guideline (see Appendix A4) was informed by extant literature and the underlying research question. It featured open-ended questions to facilitate the emergence and probing of naturally occurring data (Creswell, 2012). Initially, we sought to understand how DS were sold, what types of

problems occurred, and why they occurred. Thereafter, we shifted our focus to the different controls applied to resolve these problems. We conducted interviews until we reached a point of saturation where redundant information began to appear frequently (Corbin & Strauss, 2008).

We took several measures to increase the analytical rigor and validity (Lincoln & Guba, 2007) of our study. To enrich our contextual understanding, we triangulated (Jick, 1979) our interview data with secondary data such as company presentations, strategic plans, organizational diagrams, or training material. Moreover, we ensured transferability and dependability by using theoretical sampling, studying firms from different industries, and presenting verbatim quotes. Finally, we improved accuracy, relevancy, and applicability by presenting our emerging findings to managerial audiences – specifically to elicit feedback during the study – in several workshops, seminars, and steering group meetings. The ongoing exchange allowed us to recognize the crucial role of input controls for selecting, organizing, and allocating DS sales resources and to gradually narrow down the multiple selection criteria and outcome metrics related to DS.

### **3.3.2.2 Data analysis**

We analyzed our data in three steps, using ATLAS.ti. In the first step, we read interview transcripts multiple times to flag quotes describing controls that alleviate agency problems. The first author labeled the controls that emerged during the analysis with *in vivo* or descriptive codes (Corbin and Strauss, 2008). As the data analysis progressed, we revised our codes iteratively, considering existing and new data to build first-order concepts (Gioia et al., 2013). Before continuing, both leading authors had to agree on the definition and number of first-order concepts.

In the second step, we shifted our focus to conceptual abstraction. We compared the first-order concepts with one another to identify relationships and thematic patterns, which we used to elaborate second-order categories.

In the third step, we identified theoretical dimensions. We explored the relational dynamics between the second-order categories, using sales controls literature as a theoretical grounding (Jaworski, 1988; Malek et al., 2018). After multiple iterations, we identified four aggregate dimensions reflecting different control types that resolve adverse selection and moral hazard problems. Figure 8 depicts our data structure.

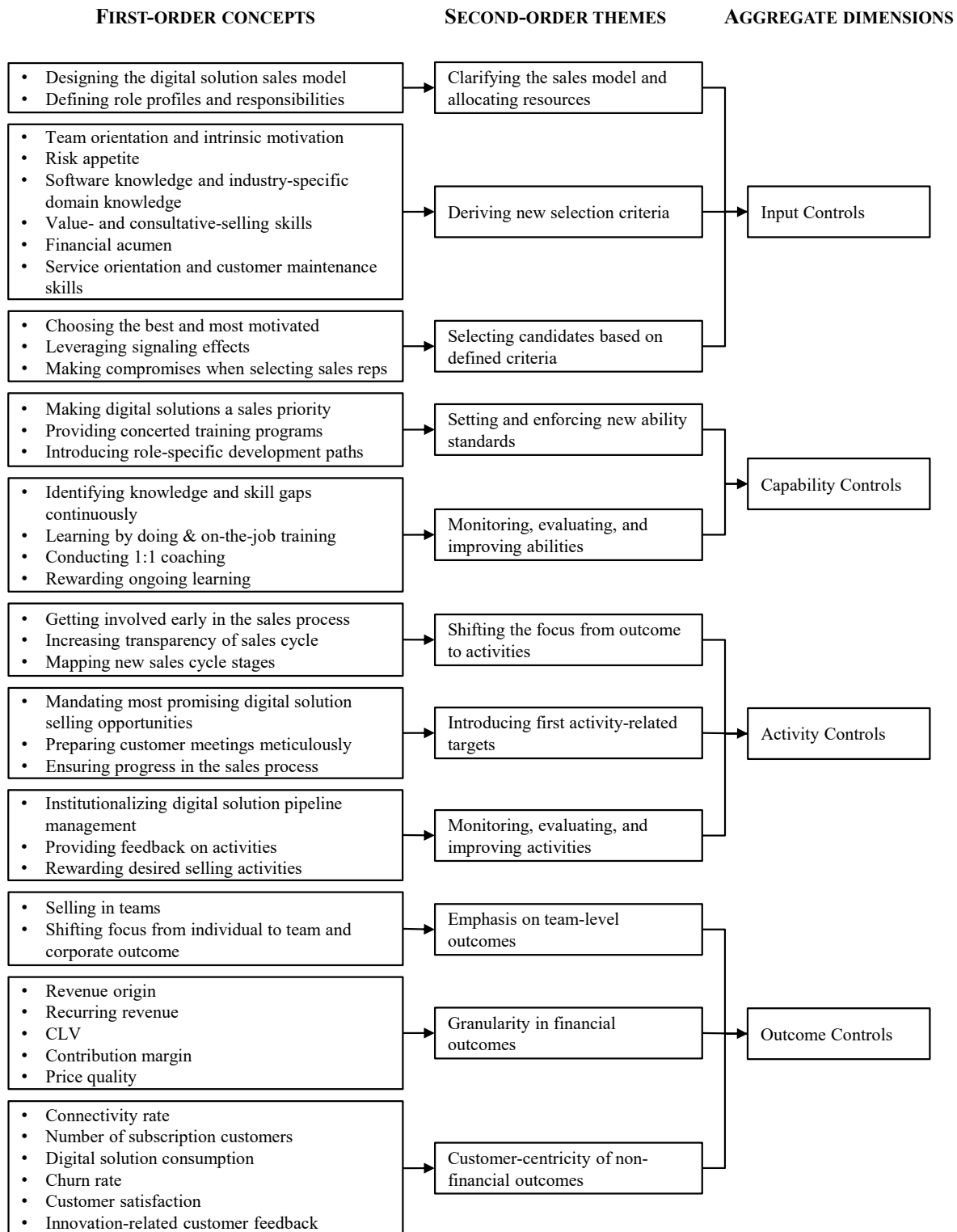


Figure 8: Study 2 - Data structure (Tienken et al., 2023)

### 3.3.3 Findings

We found that sales managers rely on different types of formal controls, illustrated in Figure 9, to overcome agency problems in DS sales. Input controls mitigate adverse selection by ensuring the selection of suitable candidates for DS selling. Capability

controls, activity controls, and outcome controls serve to overcome moral hazard, which occurs when sales reps shirk the selling of DS.

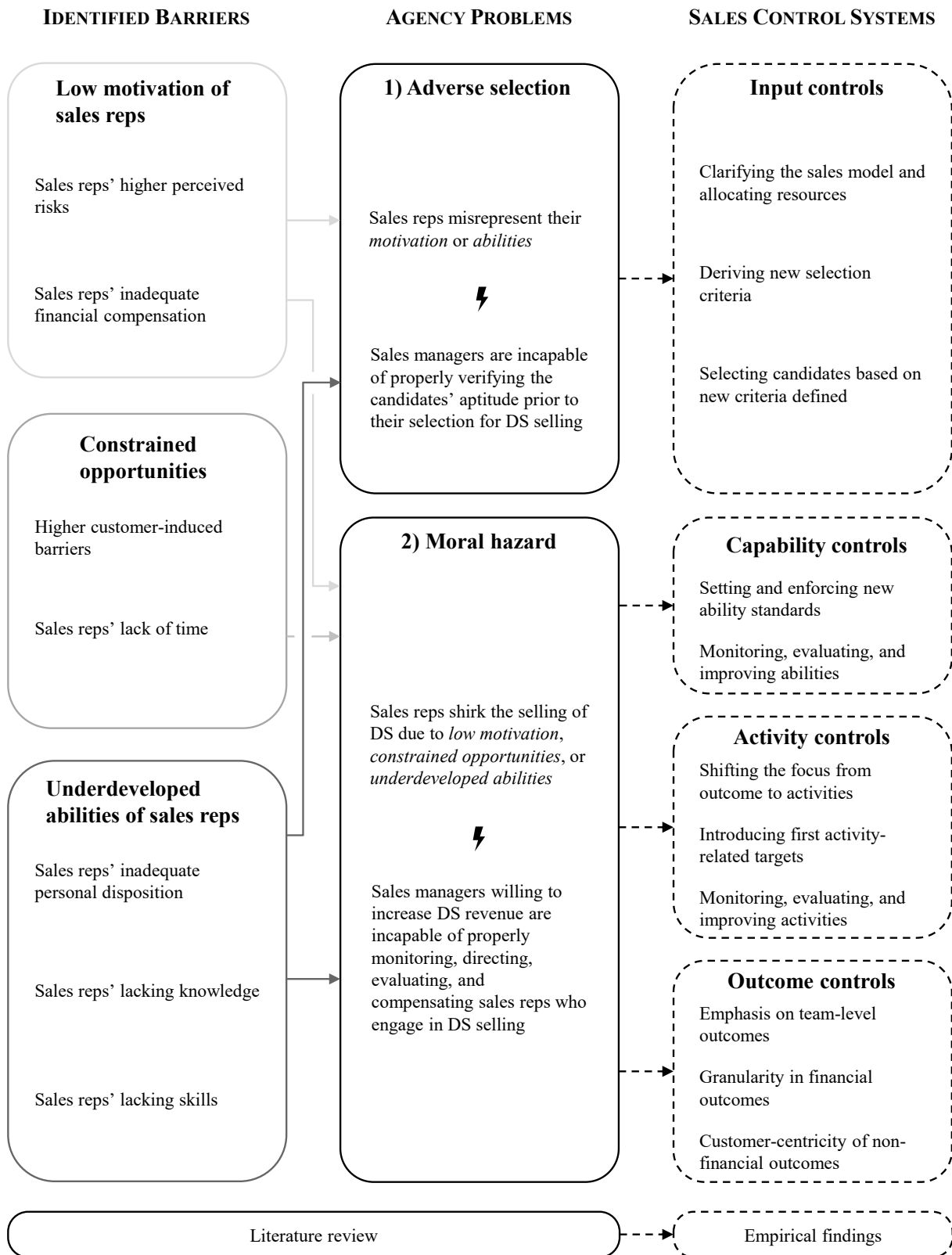


Figure 9: Study 2 - Conceptual model (adapted from Tienken et al., 2023)

### 3.3.3.1 *Solving adverse selection with input controls*

The assignment of DS selling responsibilities suffers from the adverse selection of candidates who misrepresent their motivation or ability. To ascertain whether sales reps have the necessary aptitude for DS selling, sales managers use input controls prior to any selling activity.

To decrease role ambiguity, sales managers first clarify the overall sales model and allocate resources to DS sales processes. In doing so, they determine whether existing frontline roles, specialized roles, or sales teams with multiple roles sell DS:

We first redefined our sales coverage model [...] to focus on strategically important customers, basically bigger accounts [...]. Then we introduced account managers who take care of these accounts and who are supported by additional roles. The entire team that works with the customer, therefore, consists of inside sales specialists responsible for new customer acquisition, dedicated sales experts responsible for either products, services, or software applications, and lastly, customer success managers who take over when contracts are signed to manage customer satisfaction and renewals. (Billy)

The sales model defines clear role profiles and responsibilities and articulates specific tasks and requirements for DS selling. Internal and external stakeholders gain a better understanding and awareness of new sales roles:

These are really IIoT [Industrial Internet of Things] consultants now. So, we even gave them the title. They no longer go out like traditional salespeople. They don't sell anything at all. They only advise customers [on] where they can generate high added value. (Samuel)

As a next step, sales managers use these role profiles to derive new selection criteria for DS selling candidates. When screening internal or external candidates, sales managers look for fundamental personal dispositions conducive to DS selling, such as team orientation and intrinsic motivation. These attributes are necessary to foster collaboration between specialized roles in complex DS sales processes:

I don't want any sales hunters in my team. [...] I really don't want to have those salespeople who just look at their bank account and say: "That's my bonus for this month'. [...] When it comes to the selection of my staff, I believe that you also need to have team players. [. . .] The structure of the team is more important to me than [...] striking first success. (Andrew)

To succeed in lengthy and volatile DS sales cycles, candidates should also embrace risks. Furthermore, sales managers look out for four distinct abilities needed in DS sales teams. First, candidates should be able to combine software and industry-specific domain knowledge. Second, candidates should be able to deploy consultative and value selling skills in discussions that frequently involve customers' top management. Third, financial acumen is necessary to translate customer value into financial figures that decision-makers can easily decode. Fourth, RRM-driven, long-term customer relationships require a strong service orientation and customer maintenance skills:

We focused on certain skills when salespeople were onboarded. [...] The typical sales reps must now have a certain competence in software and service. [...] [The] typical sales rep [...] goes to a plumber at the municipal utilities and then talks to them about meters and sells them that [...] Unfortunately, it is no longer enough these days. [...] Our sales reps must now possess new skills and competencies. And that is exactly the point: Knowledge about software, also knowledge about how software works and how software must be priced, and how the business model behind it works. And of course, [...] service. (Jason)

In the final step, candidates are selected based on defined criteria. To ignite DS selling, sales managers often rely on past sales performance and thus select the best and most motivated candidates from their sales force:

In the ramp-up phase, we [...] started with 20–30 people. [...] We selected the best [who] had a certain affinity and interest, and where we also knew that they have a certain willingness to do pioneering work [...] I must say, this was a good decision. (Sebastian)

Initial sales success has an important signaling effect on new candidates. Sales managers exploit this momentum to create a work environment that puts customer value and joy of work at the center of selling. Sharing success stories attracts more candidates intrinsically motivated to sell DS:

To find [...] people who just lick blood and [who] have understood the principle [...] They never want to leave the team again because they are so happy that they no longer must explain pure technology to anyone. [...] The orders are coming in right now and others see, learn, and listen: "How did you do that?" This [arouses] interest. [Sales reps] really enjoy it, it excites them, [...] and they see that they can also earn good money with it. [...] And that's why now people are queuing up in front of my door and say: "I would also like to join". [...] They see this hype, they see the success of the other

colleagues and then they come to me and say: “Hey, [...] I want the same”.  
(Samuel)

Nonetheless, sales managers make compromises when selecting candidates. On the one hand, they prioritize either software or industry-specific domain knowledge. On the other hand, trade-offs are made between younger, more innovative candidates and older, more experienced candidates. Sales managers ponder both compromises carefully, considering their impact on team structures and subsequent upskilling programs.

### ***3.3.3.2 Reducing moral hazard with behavior and outcome controls***

The selection of suitable candidates can significantly enhance DS sales performance. However, with a growing number of individuals involved in DS selling, the difficulty of observing behavior accurately and preventing sales reps from shirking their responsibilities increases. Accordingly, sales managers use capability, activity, and outcome controls to mitigate moral hazard.

#### *3.3.3.2.1 Capability controls*

Capability controls serve to enhance the knowledge and skills of those selected for DS selling. Sales managers try to discourage shirking behavior by setting and enforcing new ability standards that foster DS sales. Consequently, to highlight the need of developing the necessary abilities, they make DS a top priority of the overall sales strategy. Given the compromises made during the selection process, concerted training programs allow sales reps to catch up on missing knowledge and skills, and to familiarize themselves with their new role in team-oriented DS sales processes:

Our salespeople now go through a special training program, where they really learn: How do I prepare for such appointments? How do I approach other customer groups? How do I conduct a value analysis? How do I present value to customers? How do I calculate value? [...] And we also do dry runs [before important customer visits] where we define everyone’s role and contribution to the conversation. (Danny)

In addition, role-specific development paths are introduced to motivate sales reps to acquire new skills and be promoted:

The most important thing for me is to offer a perspective for professional development. When hiring every employee, I immediately think about where I want to develop them. [...] That’s why I introduced different hierarchy levels against the will of others. And I also built a pyramid for the positions.

[...] So, you can tell people: “Come on, take it a step further, so that you reach the next hierarchy level”. (Andrew)

In the next step, sales managers monitor and evaluate how sales reps perform against these standards. Weaknesses emerging at this point enable sales managers to improve sales rep abilities. To provide tailored upskilling and training programs, sales managers monitor knowledge and skill gaps continuously:

The starting point is [...] a holistic skill mapping at the individual sales rep level, where we discover where the colleague already excels and which [...] the skills [are] where we see a need for activating further training modules [...] to close these gaps, [...] also related to the various sales functions. (Sean)

To close remaining gaps, sales managers encourage learning-by-doing and on-the-job training. This is essential because theoretical concepts from virtual or classroom teaching must still be applied in practice:

It’s a bit like: “If you and I learn coding, we are not yet good coders because you must be able to apply this knowledge”. And that’s what [it] is all about. So, we provide a basis that can be acquired through e-learning and other training concepts. And the rest then very often comes through on-the-job training and working with the appropriate experts. (Kyle)

Sales managers also provide individual sales reps with continuous and direct feedback on their DS sales performance in 1:1 coaching sessions. This helps to articulate technical and personal development opportunities:

If you see that anyone has no pipeline, then you must go back one step [...] and ask: Okay, what is the root cause [of] this? My experience shows that we can do certain things with basic training sessions but, in the end, it’s a very strong 1:1. I must find out how [they approach] the customer, how [they present] cases [...]. So, there’s nothing like 1:1 coaching, otherwise, I have a hard time imagining how we would be able to manage it. (Sebastian)

Finally, sales managers reward the effort that sales reps invest in ongoing learning and training programs to achieve sales targets for DS selling.

### 3.3.3.2.2 *Activity controls*

Activity controls are used to monitor and evaluate, against prescribed processes, how sales reps perform. When guiding sales reps in the uncertain DS selling environment, sales managers increasingly shift the focus from outcome to activities. At the initial

stage, they are involved in the DS sales process to explore reasons why sales targets are missed, thereby discouraging shirking behavior and putting sales reps back on track:

In the past three years, we have been very, very focused on results. In other words, we've seen [to it that] revenue is there, [that] everything is okay. But we quickly noticed: we must get in earlier. So, we said, okay, we must track the order intakes, because that's tomorrow's revenue. And then we saw again [that] when you book incoming orders, you can already book revenue two to three weeks later. That means there is no more time to intervene. You still must get in earlier [...] and these are really the activities [involving] the customers. And not just the number of customer visits, but what is the quality of the customer visit? How do you get out of a customer visit? What are the next steps? Do you have a deal and so on? [...] It is now the task of the sales managers who lead the teams in the countries to control and steer their people based on their daily activities. (Ethan)

Implementing activity control requires sales managers to increase transparency throughout the sales cycle. Many sales managers use information systems, such as CRM systems, to gain more detailed insights into daily selling activities and sales reps' actual effort put into selling DS. CRM systems also allow a mapping of the DS sales process and its sales cycle stages:

That's the beauty with Microsoft Dynamics. I can create my own sales process [...]. I will soon have mapped my entire value-selling process in the CRM system. [...] [The sales process in the CRM system] is exactly for [...] the IIoT business model, and the customer touchpoints [...] that represent the customer journey. (Samuel)

Increased sales process transparency further helps to introduce first activity-related targets. Nevertheless, expanding activity-related targets is particularly difficult at the outset because sales managers still do not know how best to sell DS. Moreover, team-based selling can be costly, calling for concerted efforts across the sales cycle. Consequently, sales managers are careful to mandate activities for recently launched DS. Sales managers prescribe only the most promising selling opportunities sales reps should pursue, alongside the other opportunities that CRM systems automatically create, e.g., for upcoming service interventions, service contract renewals, or the expiration of the guarantee period. Sales managers also ensure that sales reps are well-prepared for the first customer visit to avoid entrenched selling behaviors and to overcome initial customer reluctance:

Why don't we get through the customers' door? [...] My equipment sales engineers recently told me: "The IIoT solution that we offered caused the customer to immediately stop our conversations". Therefore, I told them: "Yes, of course, it did. But why? [...] You come to me and tell me: This guy still didn't understand it. But I tell you: No, we did it wrong, you didn't convey the right message. You arrive and tell the customer straight: I'll [propose] a solution to automate the extremely complex machine that has 17,000 assembly groups and I will install just as many sensors. [...] You don't know who the customer is, what pain points they have, what hurdles we must pass.' Of course, we kick ourselves out of the sales process if we [...] do not ask the right questions. (Alexander)

As decision-making processes for DS are typically lengthy and involve multiple stakeholders, sales managers ensure that sales processes progress on a permanent basis. Doing so always enables sales reps to define the next steps at the end of a meeting, to move one step forward toward closing a deal. Once the sales processes are transparent and the first activity-related targets are in place, sales managers seek to monitor, evaluate, and improve selling activities for DS. Sales managers start to institutionalize DS pipeline management after the first selling experiences are made and customer feedback is clearer:

Another point is also the different stages in digital sales, where I can simply say with the CRM sales process in place: "You must bring so many of your customers to a certain stage within six months", for example. It is now a measurable KPI again, and people know exactly what they must do, with whom they need to work together, where they need to be, and what support they need to achieve this target. (Samuel)

Sales managers continuously engage in exchanges with sales reps to drive the pipeline progress. Sales managers provide regular feedback on DS selling activities and chart a path toward successful sales outcomes. When they recognize the success of the prescribed selling processes and tasks, they begin to reward specific selling activities:

We run marketing campaigns for our new software applications, and once a customer wants to receive more information, we create an opportunity in the CRM system for the sales rep in the corresponding region. We further expect the sales rep to work on the opportunity quickly, accurately, and efficiently. We have defined our most important sales cycle stages, such as customer interest verified, product demo made, or quotation sent... And the higher the velocity of fulfilling all these stages, the [larger] the bonus [of] the sales rep. (Steven)

### 3.3.3.2.3 *Outcome controls*

Outcome controls address moral hazard in multiple ways. Sales managers place a stronger emphasis on team-level outcomes because of the fragmented nature of the abilities and roles in teams selling DS. Progressive firms define corporate-level, annual recurring revenue (ARR) targets that trickle down to teams and individuals:

We have a lot of goals. One of our goals – that everyone in our company has – is ARR. [...] Something that our CEO said to shareholders [is] that we are focusing on building a kind of baseline in terms of ARR. [...] We all have this one goal. That means, everyone pulls together, even the absolute hardcore hardware [sales rep]. This person also has an ARR target. Is that fair? Yes, because he talks to his customers and maybe hears something and can help. And we partially solve this in sales teams. This means that everyone has a goal and when the team has reached it [...], then everyone gets what is due to them. (Patrick)

Sales managers strive for granularity in financial outcomes to gain accurate insights into DS revenue and profitability. To do so, revenue is disaggregated by origin and recurrence. Two distinctions are made concerning the revenue origin. The first is between the portfolio elements of DS contracts. Equipment, service, and software revenues are reported separately for management accounting purposes. However, customers frequently obtain solutions with a single price tag that masks internal revenue origins. The second separates acquisition from renewal sales revenue. To drive DS adoption in initial stages, sales managers use outcome controls that emphasize renewal sales. Selling contract renewals is less effortful than closing new deals since sales reps can build on established customer relationships:

[Renewal sales are] less incentivized, but [they are] incentivized [...] And that's good because then you keep an eye on it. [...] Let's assume we get to a Microsoft situation where [SaaS sales] run like a machine [...] – then [the incentive scheme] doesn't have to contain a renewal [target] anymore. Then you can only run it on new sales, which is also possible. But in the kind of boost situation, we're in right now, you still need this overlap [of acquisition and renewal sales]. (Kyle)

Concerning the recurrence, outcomes are disaggregated between one-time and recurring revenues. The disaggregation is necessary because DS could necessitate non-recurring payments for hardware, deployment, installation, and other costs. Accordingly, sales managers expand outcome controls with new measures to predict future cash inflows from multiyear DS contracts. Specific profitability measures matter

in this context. The first is customer lifetime value (CLV). Following the recurring revenue logic, CLV estimates customer profitability by comparing the average contract revenue to customer acquisition cost. The second is contribution margin, which reflects DS' higher profitability than traditional goods and services:

Software is supposed to be more profitable than other solutions. So, if you incentivize people on the sort of total wall-to-wall margin, to sell software, salespeople can do better. (Stephanie)

However, profitability is difficult to predict. DS delivery costs often depend on service demand and cloud storage costs, which are typically degressive. Both factors are interdependent and hard to predict before contracts commence. Therefore, the third profitability measure is price quality. Sales managers monitor all prices sales reps realize across customer segments and regions. The resulting average prices and price corridors serve as benchmarks for future customer negotiations. Sales managers also use this information to reward sales reps for realizing higher-than-average prices.

In addition, some controls include metrics that emphasize customer centrality of nonfinancial outcomes. When introducing new DS, two metrics are of utmost importance: the connectivity rate – because hardware connectivity generates permanent customer insights and DS up-selling opportunities; and the absolute number of DS subscribers – to track growth. DS consumption, if monitored using IoT and cloud technology, measures adoption and uncovers customer behavior. It also indicates cross-selling and up-selling opportunities for additional DS and service modules. Moreover, it predicts the churn rate, which diminishes CLV. Accordingly, DS consumption gauges sales reps' efforts to create enduring customer value:

When [the customer] sees the value of the product, he will renew it. I would therefore consider the consumption model to be more of a challenge. [...] It must be used, and the added value must be recognized. Only then the subscription model will be renewed. In a product sales model – when you sell it, you have realized the profit. In a subscription model – you [must] always [...] make sure that the subscription continues. [...] If you no longer see the value, [and] no longer need the product, then you are prone to cancel it overnight. But the more services you use, the more you benefit from the product, [and] the more likely you will build on the product [in the future]. (Sam)

Customer satisfaction, expressed by the net promoter score (NPS), is another leading indicator of churn. Since only satisfied customers renew contracts, sales managers monitor NPS regularly:

The first thing we did [...] was to start a very simple query. Just satisfaction, quality. [...] There were [...] five questions. Now, they are triggered quarterly to managing directors, department heads, and even the guys in the print shop of the customer. But they can also [make] this query at any time via our online tool. (Christian)

Additional nonfinancial outcome controls serve to enhance DS. Innovation-related metrics motivate sales reps to continuously collect customer feedback, which contributes to enduring value creation through solution improvement.

### **3.3.4 Discussion**

Firms increasingly use DS to create continuous, superior customer value, of which they aim to capture a share through their sales force. Nonetheless, sales researchers and managers remain puzzled about how to select and steer sales reps in DS selling. To address this issue, this study identified control systems that aim at resolving agency problems, i.e., adverse selection and moral hazard, which emanate from the different barriers to sales reps' engagement in DS selling.

#### **3.3.4.1 Theoretical implications**

This study makes a twofold contribution to the sales literature. First, we provide an agency-theoretic rationale for sales reps' disengagement from DS selling. Although extant research has noted issues associated with convincing sales reps to sell DS (Klein et al., 2018; Paiola & Gebauer, 2020), our understanding of the underlying causes remains embryonic. This study is the first to build on agency theory to examine these causes in depth. Both generic agency problems discussed in the literature (Lo et al., 2011) – adverse selection and moral hazard – surfaced in our research. Using the MOA framework, we extend prior agency models in sales with seven barriers that spur misalignment between individual rep behavior and organizational goals. This misalignment is not solely due to the agent's self-interest (J. M. Lawrence et al., 2021) or lack of intrinsic motivation (Homburg et al., 2019), as observed in earlier DS sales literature (Classen & Friedli, 2021b; Töytäri et al., 2018). Instead, our findings suggest that a conjuncture of low motivation, constrained opportunities, and underdeveloped abilities fuels dysfunctional selling behavior of sales reps, which furthermore involves

the emergence of agency problems. The resulting conceptual model complements prior studies of singular problems in solution selling, such as unsuitable capabilities (Ulaga & Loveland, 2014) or incentives (Alavi et al., 2022), with a more holistic explanation of the origins of agency problems that curb value creation and capture.

Second, we are among the first to explain how firms deploy and combine sales controls to capture a share of the value DS create. Although the four sales control dimensions – input, capability, activity, and outcome – are well-established in literature (Malek et al., 2018), they have yet to be operationalized for DS. In doing so, we contribute to the emerging digital controls literature (Wielgos et al., 2021). We address the limited knowledge about input controls (Malek et al., 2018) by describing how selection mechanisms mitigate adverse selection and facilitate large-scale, early-stage sales force transformations (Salonen et al., 2021; Schepers et al., 2012). Success stories, shared by frontrunner sales reps, function as legitimizing signals (Magnotta et al., 2020) that reduce other sales reps' reservations about DS. Moreover, we enhance the prior understanding of capability controls by “digitally updating” existing solution selling capability descriptions (Böhm et al., 2020; Salonen et al., 2021) with necessary software and RRM knowledge and with additional sales and service skills. Our description of different training approaches contributes to a more nuanced understanding of this often-overlooked sales control (Chung, 2021). Furthermore, as our findings suggest, we shift the focus of the activity control literature from intrusive micromanagement (i.e., monitoring the number of calls or visits; Ahearne, Rapp, et al., 2010; Hultink & Atuahene-Gima, 2000) to enablement (consisting of proactive managerial intervention, feedback, and support) that sales reps appreciate. These findings are consistent with those of Hoffmann et al. (2022), who recommend that sales managers adopt in-role encouragement behavior when introducing solution-centered or value-centered business models. Finally, we add DS-specific metrics to the outcome controls literature. Recent studies have found that sales reps evade DS selling because compensation plans penalize comparatively low initial revenues (Classen & Friedli, 2021b) and that firms increasingly use ARR to monitor DS' financial success (Lamprecht et al., 2022). Our findings indicate a causal link between both phenomena; sales reps face a “dynamic intertemporal tradeoff” of effort allocation (M. Kim et al., 2021) in which they weigh present payoffs from equipment sales against future payoffs from DS sales. The firmwide implementation of ARR outcome controls, observed in this study, not only serves to gauge the firm's DS maturity (Lamprecht et al., 2022) but also deters sales reps from shortsighted, opportunistic behavior (Beuk et al., 2014).

These insights begin to answer the question on the appropriateness of specific controls to engage the sales force in DS selling. Our literature review – aimed at identifying suitable controls given the task environment of DS selling – generated conflicting results. Our empirical findings suggest that different controls resolve distinct agency problems, which – depending on a firm’s stage in the transition toward DS selling – are more relevant or less relevant. At the beginning of the transition, sales managers must choose between suitable candidates drawn mainly from their legacy sales force. Adverse selection may occur, thus necessitating input controls to mitigate this problem. With a growing DS sales force, individual sales rep behavior becomes more difficult to observe and moral hazard arises. Sales managers combine capability and activity controls to reduce role ambiguity, thereby inducing the desired behavior. This observation bolsters the quantitative results of Miao and Evans (2012). Finally, since stable RRM cashflows are the lifeblood of DS selling, firms with a mature DS business are “beyond the J-curve”. Sales managers emphasize outcome controls to motivate sales rep behavior conducive to customer retention and recurring revenues. Taken together, these findings illustrate the sequential complementarity of control mechanisms (S. K. Kim & Tiwana, 2016) in DS sales; as the firm’s transition toward DS selling progresses, the initial use of input controls increases the performance returns of other controls deployed subsequently.

### **3.3.4.2 Managerial implications**

Our study’s findings have distinct managerial implications. First, sales managers must rethink candidate selection for DS selling. Typically, DS selling is complex and costly due to longer sales cycles and substantial resources being simultaneously tied up in team-based selling. The difficulty of achieving the desired DS sales outcomes and the resulting cost of unsuccessful selling attempts force sales managers to select suitable candidates. However, traditional input controls tend to emphasize selection criteria that focus on extensive product knowledge and industry experience, thereby hampering DS selling. Because some individuals struggle to embrace software and IoT technology, leaders ought to rethink what a strong “digital” sales force looks like. Leaders should shift their recruiting focus accordingly, for example, to the software industry, seeking team-oriented and intrinsically motivated candidates willing to take risks.

Second, sales managers should provide tech, solution selling, and on-the-job training. Because traditional capability controls are tailored to established products and services, most sales reps lack some of the required knowledge and skills to sell novel DS. To close these gaps, sales managers should mandate training around specific

themes. First, training on software and IoT technology to recognize DS selling opportunities. Second, training on solution and value selling to promote skills to solve customer-specific problems, explain long-term saving opportunities, and succeed in value-oriented C-level negotiations. Third, on-the-job training that complements traditional, theory-focused training concepts. This will allow sales reps to hone their DS selling skills while opportunities multiply.

Third, sales managers should update activity controls to better direct and enable sales reps. Established activity controls typically allocate little time to learning how DS create customer value. Consequently, risk-averse sales reps are prone to omit DS in conversations with skeptical customers, fearing to degrade their valuable relationship. To prevent this neglect, sales managers must gain their own DS selling experience to decipher activities that lead to desired DS sales outcomes. Moreover, the adoption of CRM systems is essential to shed light on the root causes of suboptimal DS sales results, notably on dysfunctional selling behavior. Furthermore, sales managers should exploit the improved transparency of the DS sales process by carefully setting and monitoring risk-reducing activity targets. Sales managers also must ensure that activity targets are perceived as helpful enablement and proactive support and not as top-down regimentation.

Fourth, sales managers must revamp financial and nonfinancial metrics. Traditional outcome controls feature sales metrics such as revenue, volume, or order intake, which tend to promote large transactional one-time deals, and thus pressurize sales reps engaging in long-term, outcome-uncertain DS selling activities. To prevent sales reps from shirking and, instead, accommodate DS' continuous value creation and capture, sales managers should shift their focus to more appropriate metrics, including ARR, CLV, contribution margin, the NPS, and the churn rate. Because DS selling is increasingly team-based, outcomes should also be evaluated on a team level. More broadly, sales managers must revamp compensation plans to incentivize outcomes congruent with the overall objective of selling DS. For example, if new DS generate negligible revenue, sales managers could combine fixed compensation and behavioral control to encourage sales reps to experiment with new products (Oliver & Anderson, 1994).

### 3.4 Study 3: Sales targets and incentives

#### 3.4.1 Theoretical framing

The analysis of barriers to sales reps' engagement in DS selling has shown that sales reps' low motivation significantly hampers DS selling success. To resolve this issue, sales managers seek measures that increase sales reps' intrinsic and extrinsic motivation (Mallin et al., 2017). In doing so, they create an interesting work environment in which sales reps can fulfill their internal desires (Pullins, 2001) or they provide monetary and non-monetary incentives to induce desired selling behaviors (Alavi et al., 2022).

The findings from section 2.4.3 highlight that the definition of sales targets and incentives for DS selling is particularly challenging, especially due to their dependence on various contingency factors (see Table 11). Although sales managers are well-advised to incorporate all of the factors identified, two of them have a remarkably large impact on the design of sales targets and incentives for DS selling. First, *selling task characteristics* are important because novel DS are often immature, thereby increasing sales reps' selling task complexity. In addition, DS might – depending on the sales reps' responsibility in the DS sales process – extend their selling portfolio. Both factors enlarge sales reps' effort allocation choices and promote dysfunctional selling behavior in the context of solution selling (c.f. Mullins et al., 2023). Second, *sales organization characteristics* are important because sales management instruments might differ between roles that are responsible for both acquiring and maintaining customers and roles that are responsible for only one of these activities (cf. Hochstein et al., 2021; A. Rapp et al., 2020). Considering the characteristics of these two contingency factors, the objective of this study is to develop a contingency model (Otley, 1980) that links these variables to organizational design and effectiveness. Figure 10 depicts this approach.

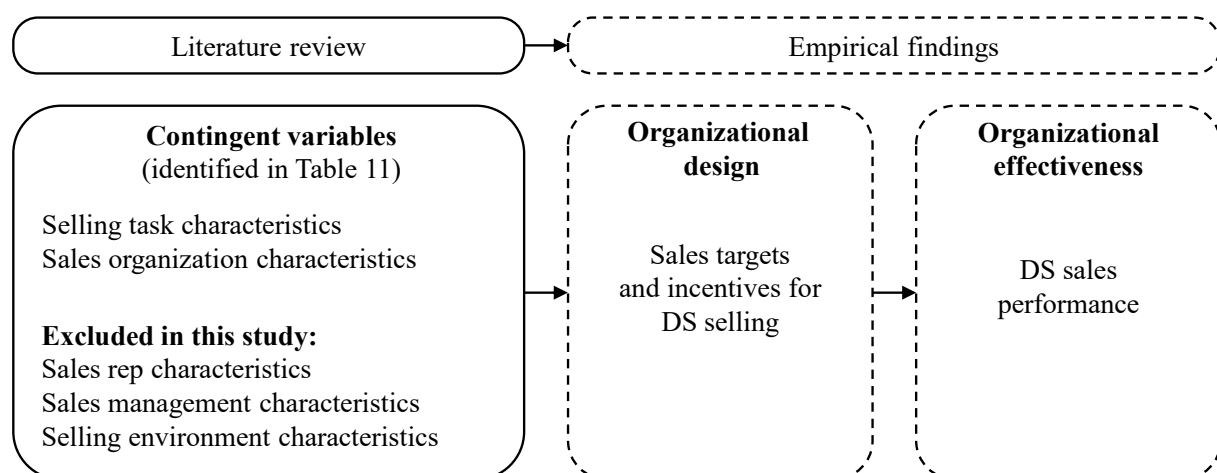


Figure 10: Contingency model of sales targets and incentives for DS selling

### 3.4.2 Methodology

This study adopts a qualitative, inductive research approach to identify surfacing patterns of sales targets and incentives that stimulate DS sales. Three different reasons motivate the chosen research design. First, prior studies have predominantly focused on quantitative examinations of the relationship between sales force compensation and sales performance (e.g., Bartol, 1999; M. Kim et al., 2019). In doing so, they fall short of precise managerial recommendations for specific selling contexts. Second, many studies to date have ignored the relevance of contingency factors in designing sales management instruments. Therefore, the exact link between roles, selling tasks, and reward structures often remains obscure. Third, sales reps' low motivation to sell DS and the novelty of RRM necessitate a thorough understanding of incentive and reward mechanisms (Guenzi & Nijssen, 2023), which so far have focused primarily on transactional purchase models. By specifically interviewing companies that already offer DS with these new revenue model characteristics, this study outlines how sales managers can stimulate DS sales based on suitable sales targets and incentives.

#### 3.4.2.1 Data collection

The collection of data was informed by theoretical sampling (Glaser & Strauss, 1967). Initial screening of informants ensured that contacted companies differed in terms of size, industry, and type of DS offering. Since the second study underlined the importance of different stages in the transition toward DS selling, the DS maturity assessment criterion is also applied in the context of this study. To obtain detailed information about sales targets and incentives for DS selling, sales managers and executives from different hierarchy levels served as interviewees. If access to sales roles was impossible, other commercial functions were contacted. In this case, the informants were provided with the interview guideline prior to the meeting to collect all relevant information from their sales colleagues.

All interviews were conducted online between January 2021 and April 2023. In total, 44 managers from 36 industrial firms were interviewed (see Appendix A5). The interviews lasted between 45 to 60min. Given the informants' approval, the meetings were audio-recorded and transcribed verbatim. The semi-structured interview guideline (see Appendix A6) was organized according to the study's theoretical framework. Therefore, the first part aimed at identifying the characteristics of relevant contingency factors before investigating the focal sales management practices. The interview process ended when surfacing patterns began to reappear (Corbin & Strauss, 2008).

Three different measures were implemented to enhance the analytical rigor and validity of this study (Lincoln & Guba, 2007). First, data triangulation was used to expand emerging findings based on additional company documents. Furthermore, topic-related whitepapers, webinars, videos, and podcasts served as another fruitful source to continuously question interview data. Second, the interview sample comprised diverse company backgrounds and thus ensured transferability and dependability. In addition, learnings from prior interviews were presented to new interviewees. The critical feedback resulting from this iterative approach helped to enhance the relevancy and applicability of the study's results.

### **3.4.2.2 Data analysis**

Data analysis included three different steps. In the first step, interview transcripts and notes were read several times to better understand the impact of selling task and sales organization characteristics on the design of sales targets and incentives for DS selling. The examination of selling task characteristics revealed that the maturity and superiority of products (hereinafter: the DS maturity) significantly affect the design of sales targets, whereas sales reps' selling portfolio has a major influence on the design of sales incentives. The examination of sales organization characteristics furthermore pinpointed that sales reps' responsibility in the sales process (hereinafter: sales reps' responsibility in the DS sales process) strongly impacts the design of sales incentives. Thereafter, the analysis progressed by identifying the relationship between the characteristics of each contingency factor and its consequences on sales targets and incentives.

In the second step, the focus was shifted toward the definition of sales targets. Based on the different DS maturity levels, interview data were analyzed to develop a better understanding of the process of how companies implement sales targets for DS selling at different hierarchy levels. Afterward, interview data were screened to identify relevant types of targets and KPIs, as well as their link to compensation strategies.

In the third step, monetary and non-monetary incentives were examined in detail. By considering sales reps' selling portfolio and their responsibility in the DS sales process, data were analyzed to find common practices describing how sales managers motivate sales reps to sell DS through compensation plans and non-monetary incentives.

To structure surfacing patterns and themes more consistently, numerous quotes stemming from interview data were flagged with codes (Corbin & Strauss, 2008). The different codes were iteratively adapted and categorized to reach the necessary level of conceptual abstraction.

### 3.4.3 Findings

The findings indicate that sales managers define sales targets and incentives for DS selling by following two steps and considering three contingent variables (see Figure 11). At first, they define sales targets to shift the focus of the sales strategy toward DS selling by considering the (1) DS maturity. In doing so, sales managers create a coherent and clear vision for DS selling. Thereafter, sales managers conduct top-down and bottom-up sales planning activities for DS selling to further implement regional sales strategies. In the second step, sales managers reevaluate sales incentives to increase sales reps' motivation to sell DS by considering (2) sales reps' selling portfolio and their (3) responsibility in the DS sales process. Against this backdrop, they assess the role-specific variable compensation ratio and implement changes in the measurement of sales performance. These changes can entail further adaptations of incentive payout curves and payment cycles. Lastly, sales managers provide additional non-monetary incentives.

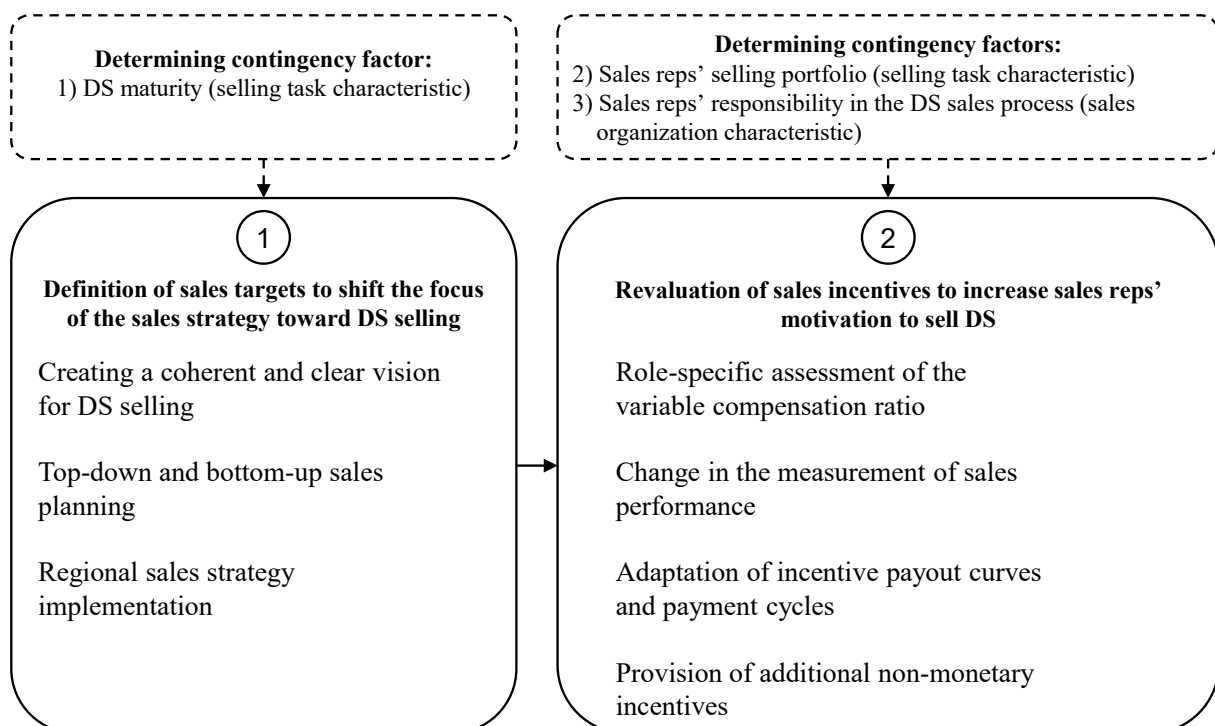


Figure 11: Study 3 - Conceptual model

#### 3.4.3.1 *Creating a coherent and clear vision for DS selling*

The definition of the overall sales strategy marks the starting point to derive sales targets and incentives for DS selling. However, integrating DS into a sales strategy poses a major challenge to sales managers for multiple reasons. On the one hand, it is difficult

to explain the need to change ingrained selling behaviors when the financial performance of the traditional hardware business is already at a very high level:

When you are successful and you want to implement a change, the question is always why? And we are very successful. We have a great history and an excellent reputation in the industry... But we somehow also struggle with these aspects because it is clearly more difficult to focus on the new topics [...]. Now let's take the last year with COVID. You can't travel, you can't visit the customer and you still have a record year. Then you think: hey, there's really no reason to change anything because we are so successful with the products that we sell. (Kilian)

On the other hand, most company stakeholders oftentimes lack a clear understanding of DS and their respective impact on the strategic direction of a firm. In this context, the established short-term orientation originating from transactional purchase models is likely to impair the emergence and evolution of DS:

If we now talk about subscription or as-a-service, it is initially rather negative in terms of cash flow. Let me take a classic approach: I sell a product for €7,000 and after the initial invoice, I have €7,000. With subscription it is quite different: The customer often has no pre-investment at all, but pays monthly, for example. And if the customer signs a subscription contract on December 1, he or she may not pay anything at all this year. This means that this year, even though I have closed a deal, I have no income stream, and on top, I have huge costs because I must provide the hardware, I must carry out a certain integration, and I must offer a consulting service. So, I have a high block of initial costs and I have zero cashback... Of course, it takes a long breath to understand: Okay, it takes three or four years until I'm at the level where I would be if I was selling the product in a transactional way. So, we have a lot of skeptics that we need to convince when moving in this direction. (Kilian)

To overcome these obstacles, sales managers aim at developing strong arguments that support the DS selling transition. These arguments are particularly important for creating a vision that can be understood and digested by sales reps. For example, shrinking product margins jeopardizing business success or enhanced customer relationships serve as possible anchor points for embedding DS in sales strategies:

Everyone is aware that it won't work without solution sales. Why is that? It's obvious. For the most parts, we are talking about PC components, which have a certain weight, so you can compare them. A good buyer will take our product apart and tell you exactly: what does a CPU cost, and so on. Then he

will already dictate what he is willing to pay in the end. Just to look at the history, our products had a price tag of roughly €6,000 in the past. Today, large customers pay around €2,000. So, this price decline that we are seeing is dramatic. And of course, we also must protect ourselves against competitors. And that only works if we offer solutions. And that also has something to do with our sales position. Only if we have solutions, we can offer customers the value proposition. [...] And then we suddenly come out of a completely different discussion. The customer will still not pay €6,000 for a scale, that's clear. But maybe he will pay €2,200 or €2,400 for it, which is 10 to 20% more. And that helps us of course to secure our business. (Dominic)

With these arguments in place, sales managers set the focus for DS selling in their overall sales strategy. The interviews revealed that the DS maturity highly affects the chosen focus. Companies with a low DS maturity first seek to lay the foundation for offering DS by embracing the connectivity of their hardware products. Two different channels are used to increase the share of connected hardware products. First, sales managers address new equipment sales to ensure that a high share of new products being installed at the customers' premises features connectivity to the internet, thereby allowing for remote access and data transfer to the provider company. Second, sales managers address the installed base, that is service sales, to offer retrofits and upgrades of old products that help to increase the total share of connected products.

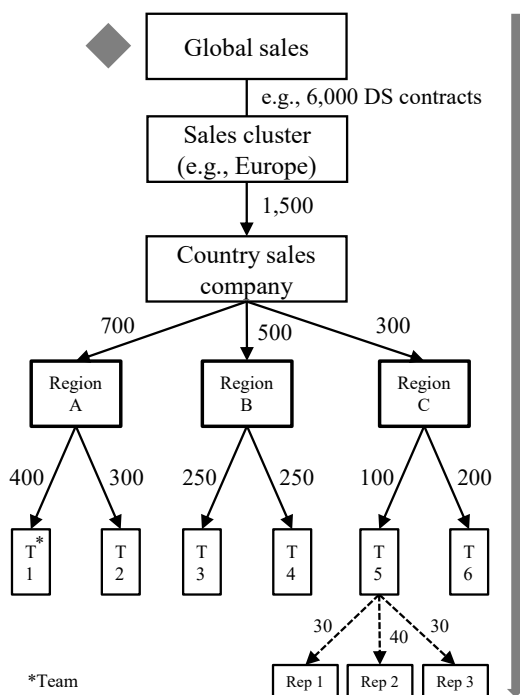
These connected products furthermore enable the provision of DS. Therefore, companies with a high share of connected products aim at covering their installed base with service contracts that include DS. Sales managers introduce both total and relative growth targets to gradually implement more DS in the field. When the DS maturity has reached a higher level, the focus is shifted toward financial metrics. To establish a dedicated business for DS, sales managers oftentimes create a sales vision by defining a recurring revenue target. Such recurring revenue targets illustrate the long-term benefits of DS and help to emphasize the strategic direction more clearly:

In our company, we talk about massive opportunities that are strategically important for us, and also to position ourselves well in the future. Ten opportunities have been defined on this agenda, and we are number two in the overall company context. The goal is to generate a certain share of sales from recurring revenues by 2025. We see this as a very big driver. [...] We set this target, although it's not a very high number... But we needed to start somewhere, and it helps to get everyone on board. (Simon)

### 3.4.3.2 Top-down and bottom-up sales planning

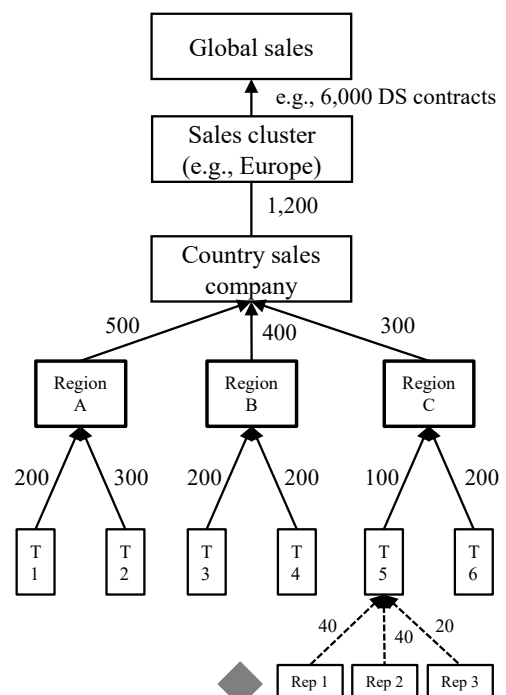
Based on the initial sales vision created, sales managers integrate DS into their annual sales planning activities. However, the first steps toward deriving the right sales targets for DS selling are particularly difficult for companies with a low DS maturity due to the lack of selling experience and historic sales data. Two generic approaches, shown in Figure 12, are used to integrate DS into the overall sales targets.

#### ① TOP-DOWN APPROACH



**Note:** numbers are exemplary

#### ② BOTTOM-UP APPROACH



◆ Starting point for the definition of sales targets

Figure 12: Exemplary sales planning approaches

The top-down approach starts at the upper management level and usually rests on a defined budget that needs to be achieved in a fiscal year. This budget is allocated to global sales regions and corresponding sales companies. In the next step, sales company managers are required to break down the assigned budget to their areas, sales teams, and single sales reps. The top-down approach is concerned with two specific problems when it comes to the consideration of sales targets for DS selling. First, the defined budget is oftentimes linked to order intake or revenue. Consequently, DS – which tend to have a rather low annual revenue – are likely to get neglected in sales planning activities.

Second, the interviews underlined that regional and sales company managers possess a high degree of freedom in terms of how they want to achieve their budget. Therefore, the missing influence on local sales targets can significantly inhibit DS sales.

To break away from the strong revenue and order intake focus, dedicated volume targets – addressing the total number of DS contracts – are initially introduced in companies with a low DS maturity. In the beginning, such targets often remain with regional sales leaders who tend to refrain from further target delegation because the customer potential for offering DS might be too heterogenous regarding sales reps' areas or accounts served. In addition, the selling portfolio of sales reps might be too large to focus on isolated sales targets for DS selling, especially when different business units in the background push account managers to particularly sell their portfolio elements:

We have clear order intake and revenue targets, but also unit targets per technology. And therefore, we have a global target [for our digital solutions], which, for example, defines that we want to sell 75 units of our new software technology in one year. [...] Of course, we think about giving our account managers digital targets in their quota, but this is extremely difficult because we have over 800 salespeople who already must sell a huge portfolio. And if now every technology area says you must sell 15 of these technologies and 13 of these technologies and then five digital tools... That is not realistic. So, on a large scale, we give a total number for the volume per region. (Luke)

Nevertheless, progressive companies with a high DS maturity apply sophisticated sales planning processes to precisely determine sales targets for DS selling by using a top-down approach. This methodology cascades down to single sales reps and thus helps to create a link to individual sales compensation plans:

We have set a strategy for where we want to be by 2025... with a proven market potential. We call it the potential addressable market. And of course, you can say, the market is growing between 2%, 3%, or 4%. [...] That's why we're saying, we're going to create nine billion by 2025. [...] How do I break this down to the employee in each country, in each region? So, of course, I look at the penetration we have in each market, and what kind of customer structure we have in a market. We may have markets that are heavily weighted toward mechanical engineering, which we serve with different offers, and which have certainly different acceptance rates than other markets. Therefore, I must look at how we are positioned there. And that's what the customers have accepted so far, also considering the size of the customers. [...] And then I try to incorporate all those factors. The bottom

line is that I also must make sure that every employee meets a minimum quota or if I put someone below the minimum quota because I say they're in a certain market that just hasn't reached the maturity level yet, then I must give someone else more. And this also must be moderated well. (Kyle)

The bottom-up approach complements top-down target planning and starts at the individual sales rep level. Sales managers expect their sales reps to evaluate future DS selling opportunities carefully. As a result, sales reps are supposed to propose a volume or revenue target indicating their expected future sales with DS. Furthermore, the bottom-up approach facilitates sales reps' commitment as they begin to think about potential customers that are most likely to purchase DS in the nearer future. To institutionalize this rather strategic way of selling, sales managers implement detailed account plans which help to define sales targets in close coordination with sales reps:

What we have as a requirement are so-called account plans, where our sales guys must write down: this is the customer, this is where we are today, this is our potential, not the hardware potential but our full offer potential... And with these activities, we want to be at a certain level in two years. And there, they must define a position based on qualitative and quantitative factors. [...] Importantly, they must derive activities for these accounts that describe how an account manager seeks to collaborate with other internal departments, including my team, to grow with these customers. (Liam)

In the end, both planning approaches are integrated to agree on realistic and attainable sales targets for DS selling.

### ***3.4.3.3 Regional sales strategy implementation***

Sales strategy implementation efforts ultimately hinge on the different sales regions that carry out local selling activities on behalf of the headquarter. Given their strong focus on the established business, it is oftentimes difficult to obtain their buy-in for novel DS. To introduce sales targets for DS selling in sales regions, extensive communication, precise explanation, and a deep understanding of the market are required in the first step:

And then, of course, there is always a clash: the guys from the headquarter try to dictate everything and they have no idea what's going on here in the country. That's why it's extremely important to build relationships, to talk to different partners, and to understand how the markets work. (Simon)

The discussions with regional sales leaders aim at defining sales targets for a corresponding region to achieve more buy-in from local sales reps for DS selling:

I'm working on it right now and that's also what I've been fighting for two years, that we really integrate sales of our new business models into the goals of the regional managers, then of the branch managers and the sales reps in the field. We're not there yet. I hope we get it done. It's a bit of a struggle, to be honest. The fact that it's not in there yet doesn't make sense from a corporate strategy point of view either. Unfortunately, it really depends on singular people in our company. But I want to go there, and it would be an extremely high added value to have these targets. (Simon)

The consequences for missing such sales targets differ and are strongly dependent on the DS maturity. Companies with a low DS maturity initially introduce and use these targets to get to a situation in which regional sales leaders at least must justify themselves when they miss the given targets:

We define a software target for a region. So, a certain control effect is already there, and the region must also justify itself if they have a revenue target of, let's say, €10 million, and they only deliver €6 million. This is also something where we go back into a review. (Luke)

In the final instance, companies with a high DS maturity make the regional sales leader's bonus dependent on their achieved DS sales performance. These bonus-relevant targets ensure that sales managers start thinking about how they can attain certain goals. In doing so, they motivate their sales teams to proactively sell DS:

We are aware that incentives have a very strong influence on behavior, but we must do it in a smart way. We have a Head of Global Sales, and he develops the global sales strategy which needs to be implemented in the different regions. He wants the regional heads to work in a certain way and therefore designs their balanced scorecards and incentives accordingly. And if they don't achieve their targets, their bonus will be affected, they simply will not benefit from highly attractive bonus programs. So, we must have this cascade, starting at the top and going down to the field. If the balanced scorecard from upper management contains different targets than the balanced scorecard from sales reps, then it clearly wouldn't work. (Seth)

The existence of such sales targets is also communicated to the entire sales force. This level of transparency turns the spotlight on DS selling and creates the necessary pressure for sales managers that tend to disregard their given sales targets:

The understanding is there and we're growing steadily. You can see how important [our new business model] is in our company. For example, we have a so-called 'State of the World' exchange, where you can view the OKRs

from the Board. This is something that very few companies do in this form, but overall, we have a very high transparency level, and we discuss and communicate important topics very openly. Especially these strategic initiatives are continuously emphasized. And that's why everyone is aware of the standing that we have with this business model. Accordingly, the branch managers also push this when they realize that not much is happening in their areas because they don't want to look foolish in front of the Head of Sales in Germany. (Simon)

To prevent regional sales leaders from continuing to ignore DS selling, the headquarter additionally provides global frameworks for designing incentives at the individual sales rep level. These frameworks serve as guidelines through which regional sales leaders can manage their sales teams:

In the past, our sales companies were almost independent, they could do what they wanted, to put it bluntly. And now we are going to create a framework in which the countries can move. [...] It is supposed to offer flexibility, but the flexibility is – I would say limited – because the current ratio from 8% variable compensation in one country to 65% in other countries is simply too large. So, 8% is not healthy for sales employees and 65%... the question should be allowed, to what extent is this healthy as well. And that's where we have already defined guard rails. Now we will also involve the countries. We will again get their input. But the goal is clearly to establish global guidelines through a top-down approach. (Kilian)

#### **3.4.3.4 *Role-specific assessment of the variable compensation ratio***

Given the existence of such frameworks, the first step toward providing suitable incentives for DS selling at the individual sales rep level always involves the decision about the ratio between salary and variable compensation. The interviews revealed that a high share of variable compensation can cause two specific problems that further impede DS selling.

First, “hardware-oriented” sales KPIs that serve as the assessment basis for the variable compensation component will prompt sales reps – that are responsible for selling the entire company portfolio – to only address those products and services which bring them closer to their target achievement and yield higher incentives. Consequently, sales reps refrain from selling DS:

A salesperson is always driven by order intake. And that means incoming orders, and volume because his goals are always linked to volume. And

accordingly, it is incredibly difficult to tell them: Hey, why don't you sell a subscription contract for €20,000 or €30,000 a year? Then he says: Hey, I would rather sell an on-premise software solution that costs €200,000 or I sell a machine or a line with even higher prices. In other words, how do you get him to focus on these strategically important issues? And I'm convinced that the only way to do that is through incentives because otherwise, the salesperson will say: Hey, I'm not interested in selling a subscription software solution for €20,000 a year. (Matthew)

Second, a high variable compensation ratio pressurizes sales reps to make quick and easy sales. Although DS usually entail much more complex and lengthy sales cycles, one type of DS can surprisingly trigger sales reps' activities. Companies offering "Equipment-as-a-Service" solutions (see Table 4) reported that numerous sales reps tried to sell these offerings shortly after their market introduction. The reason for this behavior was rooted in sales reps' incorrect interpretation of target customers. While sales reps were under the impression that they could easily rent out assets to customers due to the financing or leasing clauses included in this business model, they quickly filled up the DS sales pipeline. However, the provider company realized that no opportunities met the financial requirements for closing a deal. Therefore, sales reps with a high variable compensation ratio also run the risk of attracting the wrong customers for certain types of DS:

Salespeople must understand this business model and the potential target customers. In our case, we failed to explain all these aspects in detail. [...] So, what happened was that our sales force, of course looking for the next big deal to meet their sales targets, approached every single customer where they were unable to close a transactional deal in the last two years. As a result, our pipeline was filled with plenty of opportunities quite soon... but when we started to work on these opportunities, we realized that no one passed the credit check, which was required for signing the final contract. So insufficient explanation and sales reps' strong incentive orientation at the same time can also represent a big issue. (Christian)

These problems require sales managers to carefully choose an appropriate ratio for the variable compensation component in the context of DS selling. Although the chosen qualitative research design does not allow for determining an "ideal" ratio that increases DS sales performance, two important conclusions can be drawn from the interview data. On the one hand, sales managers seek to keep the variable compensation component rather low for supportive sales resources, such as subject matter experts, that are introduced to support existing sales reps in the DS sales process.

We do not have any incentives in my team. All my colleagues have a 100% fixed salary. What we have is a quarterly discussion between sales managers and their sales reps, where they track that sales reps work together with us based on defined account plans. This ultimately flows into a performance review at the end of the year and of course, becomes relevant to the overall compensation. Broken down to the individual sales reps, there is an overall sales target in terms of revenue and there is a target of working with my team via the account plans, but currently without a separate target for subscription sales, for example. (Liam)

On the other hand, sales managers tend to rely on the established variable compensation ratio for their existing sales reps. The ratio itself depends on several factors, such as the country-specific sales culture, the sales experience, or the amount of (marketing) support. Therefore, the ratio is oftentimes chosen for each role individually:

Well, in our business it's more like an 80-20 [salary to variable compensation] ratio. And that's not only due to the software but also due to the complexity of our products. And because we always work as a team, so to speak. You evaluate it individually, but essentially, it's not based on individual performance. Of course, we have some more experienced roles, where the ratio sometimes goes in the direction of 75-25, but we are not the company, which you easily leave with a big paycheck after an extremely successful year. But you never crash either. We generally have a good balance in our complex sales environment. (Joshua)

#### **3.4.3.5 *Change in the measurement of sales performance***

A high variable compensation ratio focusing on traditional sales performance metrics, such as revenue or order intake, can trigger dysfunctional selling behavior when sales reps neglect DS selling due to insufficient remuneration for increased selling efforts. Therefore, sales managers carefully configure the variable compensation component. In this context, three layers are important (see Figure 13).

First, the hierarchy level of sales targets defines the organizational level at which targets are measured and incentivized. Such targets typically include corporate targets, department or team targets, and individual targets. In particular, the role of team targets gains in importance for DS selling:

We have a big team component [in our incentive structure] because in the phase we're in right now, knowledge must be shared. And I don't want to have lone warriors who are perhaps the best salespeople, but otherwise,

poison the atmosphere and don't share their learnings. That's why there's a large team component, one part is based on deal closures, and one part is based on CLV. And what we also have as a factor in our team target is the development of the NPS. (Simon)

Second, the target dimensions determine the different parameters of how the sales performance is measured. Since corporate and team targets predominantly focus on outcome metrics, individual targets oftentimes involve activity and capability-related targets as well.

Third, sales performance metrics are the different KPIs against which sales reps are measured, evaluated, and rewarded. These metrics are derived from the abovementioned target dimensions.

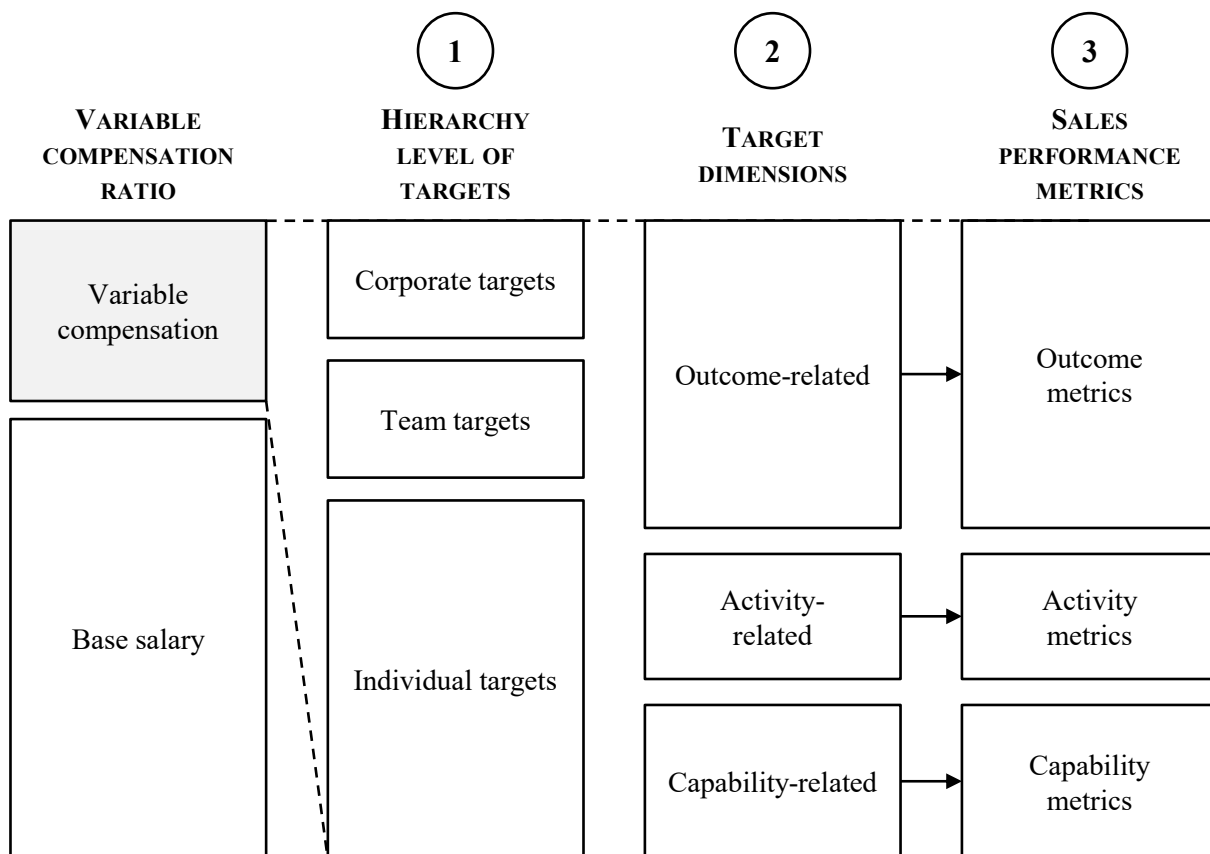
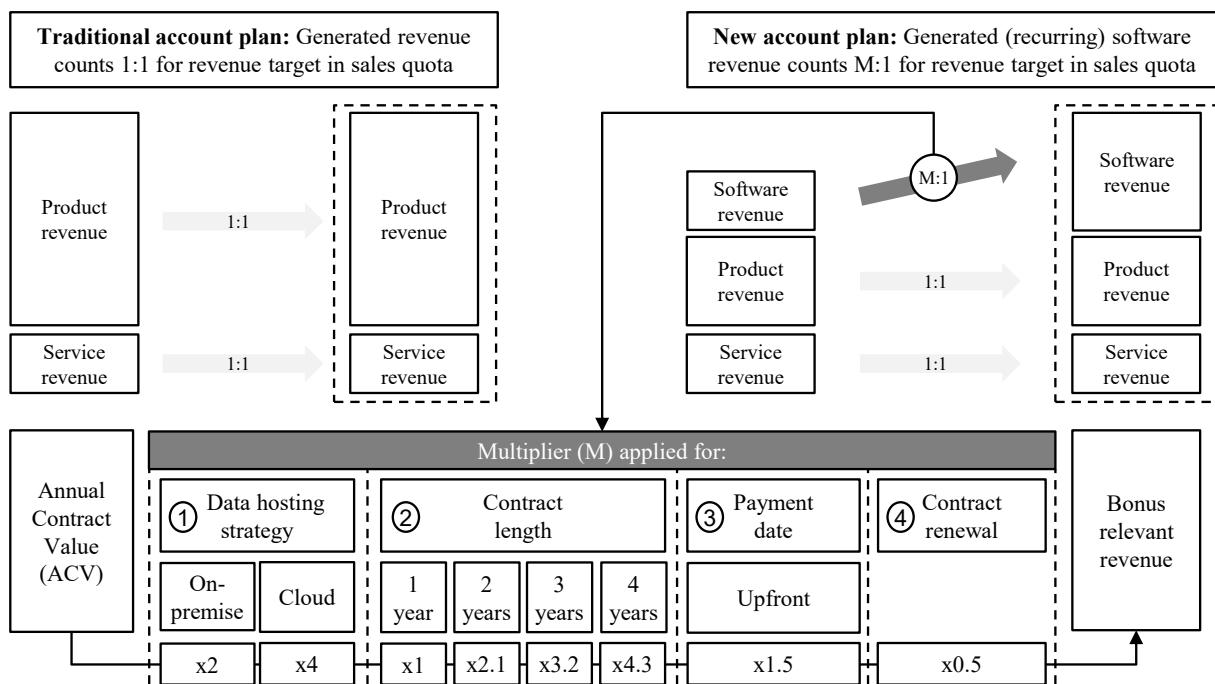


Figure 13: Layers of the variable compensation component

Given the qualitative research design, the interview data does not allow for an investigation of the correlation between the weighting of the different layers and the resulting DS sales performance. Nevertheless, the findings uncover detailed insights into the changing nature of sales performance metrics used for DS selling. According to the interview data, sales managers choose between five specific changes in sales

performance measurement to shift sales reps’ focus toward DS selling (see Table 16). The different changes are contingent on the sales reps’ selling portfolio and their responsibility in the DS sales process.

First, sales managers *keep the existing outcome-oriented target system and make DS outcome* – in terms of revenue or order intake – *more interesting* when their sales reps both have a large selling portfolio and are evaluated by outcome only. This measure aims at preventing sales reps from offering only the most favorable products which they can sell easily and for which they receive the highest incentives. To overcome the issue of lower and time-lagged DS revenue in comparison to other portfolio elements, sales managers introduce multipliers that increase DS revenue by a certain factor. The use of multipliers is a common approach when companies seek to drive sales of SaaS offerings through account managers that only have plain revenue targets. These factors depend on the data hosting strategy (on-premise vs. cloud offering), the contract length, the payment date (upfront payment vs. subscription payment), and the differentiation between new sales or renewal sales. Since cloud-based DS are oftentimes more difficult to sell than on-premise offerings, sales managers implement a higher multiplier for cloud-based DS. In addition, higher multipliers are implemented when customers sign a multiyear contract or pay their fees upfront at the beginning of the year. Renewal sales are given a factor smaller than one because contract renewals build on existing customer relationships. Figure 14 illustrates the idea of such multipliers.



Note: numbers are exemplary

Figure 14: Illustrative example of revenue multipliers for DS selling

Another opportunity to make DS more interesting represents the provision of specific discounts. This measure is often used in indirect sales channels to convince sales partners to engage in DS selling. In this context, sales managers provide higher discounts on the list price of spare parts or hardware products when sales partners meet specific sales targets that are linked to DS sales, e.g., the total number of DS contracts sold in a given period or the activation quota of vehicle telematics services. In doing so, sales partners can purchase traditional hardware products significantly cheaper and thereby realize higher margins. Linking DS sales performance to higher discounts on list prices of established products, therefore, increases sales reps’ motivation to sell DS.

Second, sales managers *specify the revenue or order intake origin of outcome metrics and thereby enforce sales of the entire selling portfolio* when their sales reps have a large selling portfolio. This measure seeks to draw attention to those types of offerings that are typically neglected by sales reps who pursue aggregated revenue or order intake targets. To address this issue, sales managers define the revenue origin of offerings and break down such targets for each portfolio element. In doing, they embed targets for hardware, service, and software revenue in sales quotas. Depending on the sales performance evaluation cycle, the software targets are divided into new sales and renewal sales and measured either in monthly or annual recurring revenue. Only when sales reps achieve all targets, they can benefit from certain bonus programs. Such portfolio completion incentives boost sales reps’ motivation to sell DS. Another lever to enforce portfolio sales represents the definition of strategically important offerings, such as DS, that are linked to specific bonus factors. In this context, sales managers set a revenue target that can only be achieved through a bonus factor, which in turn hinges on the DS sales performance. Figure 15 explains the functionality of such bonus factors.

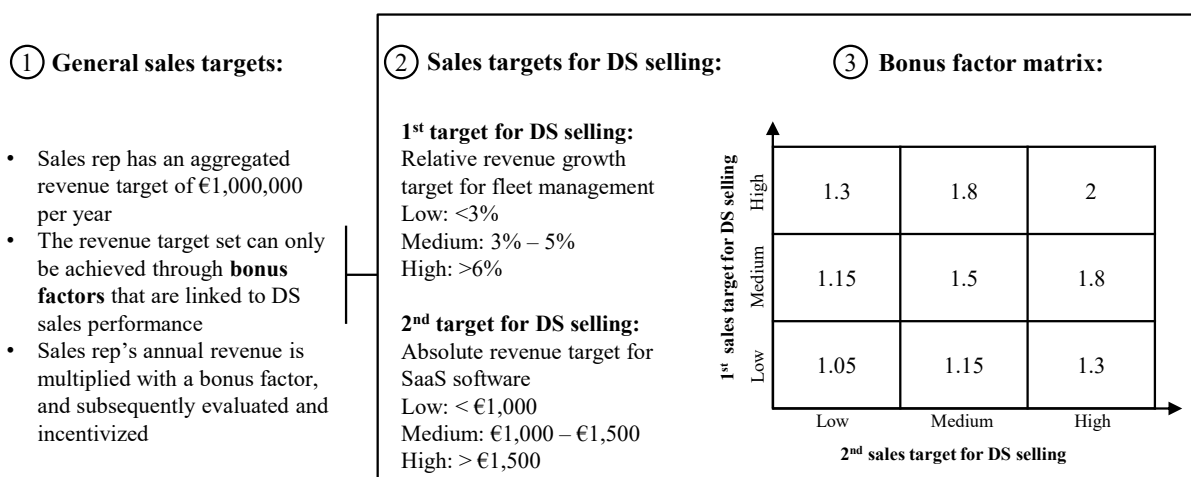


Figure 15: Illustrative example of sales-related bonus factors for DS selling

Third, sales managers *shift outcome metrics toward profitability*. Instead of focusing solely on top-line targets, margin indicators are used to foreground KPIs where DS oftentimes perform much better than established hardware products with fixed margins. The higher margins of DS oftentimes originate from a superior scalability and deployment potential of software solutions or simply taking higher risks when offering novel value propositions. If sales performance is measured based on profitability metrics, sales reps can attain their quota more quickly when they successfully sell DS. However, adding profitability metrics in sales quotas can also cause problems. On the one hand, sales reps need to manage the cost structure of different offerings which are oftentimes out of their control, e.g., when purchasing prices increase. Therefore, margin-based incentives can significantly increase the pressure on sales reps to perform well. On the other hand, it may be too expensive or difficult to measure and track the profitability at the individual sales rep level. Against this backdrop, margin-oriented KPIs are rather incentivized at the senior management level because executives can exert a greater influence on the realization of profitability metrics.

Fourth, sales managers seek to *avoid extensive discounting of DS* when sales reps try to win hardware deals by giving away DS for free. Although DS can represent an add-on to the hardware product, sales managers seek to separate these offerings from each other more clearly. In doing so, they implement so-called “price realization factors” which track the derivation from given list prices or regional benchmarking prices. Depending on the average derivation, sales reps’ revenue is multiplied by a certain factor and subsequently evaluated to provide appropriate incentives. This measure serves to “teach” sales reps not to give away DS for free by enticing them with slightly higher incentives for above-average price realization factors.

Fifth, sales managers *add specific behavior metrics to direct sales reps more closely toward DS selling*. Based on the implementation of sales control systems (see Study 2), sales performance measurement in DS selling is oftentimes seen as a multidimensional framework, thereby not only relying only on outcome but also on activity and capability metrics. For example, increasing sales process transparency allows for defining and tracking pipeline or sales-cycle management targets, such as the number of customers brought into a certain stage in the DS sales process. In addition, sales managers drive upskilling efforts of sales reps by providing dedicated incentives for participating in training courses on DS selling. Incentives that are tied to the fulfillment of such qualitative targets can motivate sales reps to put more effort into arising DS selling opportunities.

Table 16: Changes in sales performance measurement

Possible changes in the measurement of sales performance	Exemplary Quotes
Keep the existing outcome-oriented target system and make DS outcome more interesting	<p>“The account manager has everything in his portfolio, but we try to value specific parts of the portfolio higher through certain multipliers. Let’s say – just hypothetically – he gets a multiplier of five on top of every software dollar. Then he sees: It’s only €250,000, but it’s valued or recognized at €1.25 million. [...] Then he will engage with this opportunity more closely. [...] For example, we use [multipliers] to make it more interesting for our sales force to convince their customers to sign multiyear contracts, ideally for two, three, or five years. And then there are also certain accelerators for that. In other words, the customer signs up for €100,000 per year but for two years. Then he gets corresponding accelerators: the total contract value is calculated with 1,1 or if he signs a contract for three or five years... the factor increases even more. So, when account managers can sign a five-year contract, they can almost get twice the total contract value to achieve their revenue targets. Therefore, the account managers should convince the customer that it makes sense to commit to several years.” (Kyle)</p>
Separated or reduced incentives for renewal sales	<p>“So, I pay x % on renewals. [...] You have a client, you have a relationship. They’ve used your software for 10 years. It’s not that hard to get the next year’s renewal. Yes, there are some renewals where there’s competitive pressure. And so, it balances out, because you have that existing relationship, you have contacts, you know the stakeholders, you know their budget situation, you know when the contract is going to renew. A lot of factors are known. So inherently that’s a bit easier. Therefore, I will pay less money, but I will pay a commission for selling a renewal. If you increase the value of our contract, then I will pay a higher percentage on that increased portion. And then if you sell new stuff, I will pay a very high number. So, I’m trying to drive behavior toward the hardest thing, which is also worth the most to the company.” (Tyler)</p>
Higher discounts on spare parts (for sales partners)	<p>“One topic is certainly performance-based warranty reimbursement. If our vehicle has a failure within the statutory warranty period, the sales partner is reimbursed for spare parts and repair costs. We have introduced a few performance indicators into this cost reimbursement rate, including the activation of our telematics services.” (Mason)</p>
Higher discounts on list prices of hardware products (for sales partners)	<p>“Each of our sales partners has its own discount structure. Because originally, we have very high list prices. When the sales partner sells the device to the customer, he usually just shows the list price and then adds his labor costs. Everybody has a discount factor there. Depending on how much revenue he makes with us, this factor is higher or lower. But he also has so-called future points, for example, and the Heating-as-a-Service business model significantly contributes to this, because if the sales partner signs a lot of contracts with this</p>

Specify the revenue or order intake origin of outcome metrics and enforce sales of the entire selling portfolio	Dedicated sales targets for specific portfolio elements	business model, he will get a lot of future points which further result in a higher discount on the list price of the hardware products. This in turn means also more margin for the sales partner.” (Simon)
	Dedicated bonus factors for strategically important DS	“Where do we come from? We are a traditional equipment manufacturer: dear salesman, you must bring €15 million in sales this year. Then he sells five machines, and depending on the equipment, he already knows for the entire year to whom he can sell them. Once he has sold them, he has a vacation for the rest of the year... but the profitable business, such as service and consumables, is somehow left behind. Because he thinks: I have my goal, everything is fine, I get my commission. Don’t bother me. You must get away from that, and that’s only possible with intelligent incentive programs. Because that can imply: I don’t expect €15 million in sales in total from you, but I expect a subscription contract with a minimum volume of x € and I expect €10 million in equipment from you and then I expect an additional €5 million in consumables. This can be one way, so specifically enforcing the portfolio to be sold by the sales force.” (Seth)
	ARR and annual contract value (ACV) sales targets	“We work with matrices where we say how large the population is today in terms of the power tool fleet and the asset management software. Then we derive a growth target from that. So, the larger the population, the smaller the percental growth target for the fleet. And our asset management software has a fixed growth target because this business is not yet so developed. These two dimensions are then displayed in a matrix. So, you can achieve your target – theoretically speaking – purely through fleet growth or purely through software growth, and of course, in combination it’s easier to get a good bonus. So that’s a matrix that consists of factors in our case. [...] And the revenue target of an account manager is so high that you cannot achieve it without selling either the fleet management solution or the asset management software. You really need to have a good factor to achieve this target.” (Sebastian)  “To date, it is also the case that not every customer always responds equally to all parts of our portfolio. And accordingly, you also must give the account manager a certain amount of flexibility: How does he do business with his customers? But we are also trying to make our account managers more and more aware of prioritizing ARR. Importantly, ARR is not just software. ARR can also be services – recurring services that you can also buy in such a subscription model. [...] At the individual level, we always break it down to the ACV, i.e., the annual contract value. But if a customer still buys a license, then we have a conversion factor of 0.4. So, the account manager sells a license for €100,000, then he gets €40,000 of it credited as ACV. This is what the model says. There is always a conversion to ACV and the account manager has a clear target for this KPI.” (Kyle)

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	Portfolio completion incentives or accelerators	“We have an incentive system that consists of four pillars. One pillar is newly launched products, these are products that have been launched in the last two or three years. And this pillar also includes all these digital products, for which we have defined a target that affects the incentive. [...] Only when this target has been achieved, the sales guy will be able to benefit from special bonuses.” (Elijah)
Shift outcome metrics toward profitability and long-term orientation	Contribution margin performance indicator	“One of our criteria is the absolute contribution margin. So, if I promise you 10% more salary, you’ll be happy about it. You can be sure that if someone promises me 10% more salary, I’ll be happier about it when we compare the absolute. That’s why I always say: Please don’t look at percentages, look at real life: What is 10% for you? And if you now get three percentage points from a 30% contribution margin [of our products] or if you get three percentage points from a 130% contribution margin of our solutions accredited for your incentive... That’s a big difference, and so it becomes quite interesting [to sell digital solutions].” (Samuel)
Avoid discounting of DS	Price realization factor	“We have price realization factors in our incentive schemes. So, we measure the execution of prices, which means their derivation from given list prices for every single region. And our sales reps can get an additional x % on their revenue if they are above this defined benchmark price. So, it’s like a factor that is bigger than one for prices above the benchmarking price and smaller than one for prices below the benchmarking price. If they want to go below a certain threshold, they also need to ask for approval from their managers. This helps to prevent sales reps from giving large discounts, especially when it comes to our digital solutions that are attached to hardware deals.” (Aiden)
Add specific behavior metrics to direct sales reps more closely toward DS selling	Sales-cycle management incentives	“We run marketing campaigns for our new software applications, and once a customer wants to receive more information, we create an opportunity in the CRM system for the sales rep in the corresponding region. We further expect the sales rep to work on the opportunity quickly, accurately, and efficiently. We have defined our most important sales cycle stages, such as customer interest verified, product demo made, or quotation sent... And the higher the velocity of fulfilling all these stages, the [larger] the bonus [of] the sales rep.” (Steven, quote adopted from Study 2)
	Innovation-related incentives	“What you can also incentivize is encouraging a different kind of collaboration. So, when you come from the customer, for example, you always must bring a piece of information to the next level, what the customer would like to see generated from the software in terms of functionality, in terms of added value, or how a dashboard should look. All these things then take us a step further in our development.” (Samuel)
	Capability-related incentives	“We measure the training effort or the willingness to learn of our sales reps. So, how much time do they invest in developing their capabilities to achieve defined sales targets? This is an important topic because here I must reward ongoing learning.” (Samuel)

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### 3.4.3.6 *Adaptation of incentive payout curves and payment cycles*

The different changes in sales performance measurement have several implications for incentive payout curves and payment cycles. Depending on the target achievement rate of sales quotas, sales managers decide how much they want to pay, and in which payment cycle they want to distribute bonuses. The interviews revealed that DS selling calls for adaptations of both incentive payout curves and payment cycles.

The incentive payout curve reflects the structure of how bonuses are paid when sales reps meet specific sales targets. In this context, sales managers deploy incentive accelerators and caps to induce desired selling behaviors. Incentive accelerators are used to disproportionately reward superior sales performance. When sales targets are ambitious and include DS, sales managers tend to provide much higher bonuses for sales reps that overfulfill their targets. However, caps oftentimes limit the distribution of bonuses. Since DS selling is considered more complex, risky, and time-consuming in comparison to transactional product selling, sales managers seek to stretch existing caps to further boost sales reps' motivation to sell DS:

I have sales reps who earn significantly more than I do. But that doesn't matter to me at all. At the end of the day, they make me successful. So, if one of my people closes a big software deal... And if he gets a very high bonus, then he deserves it. Because we as a company earn much more. [...] So, in our organization, it's like this: if an employee doesn't reach 60%, he doesn't get a bonus at all. So, they are capped at the top, but also capped at the bottom. That means that they must jump over the hurdle before they get anything at all. But basically, we cap certain bonuses at 200 or 300%, but some are capped at 500%. And that creates an extra motivation for many sales reps to go the extra mile. (Jonathan)

To make desired adaptations of incentive payout curves, sales managers not only need to consider the measurability of underlying sales targets but also the potential resistance of work councils who represent the interests of employees. If sales reps lose income or when company-wide salary structures destabilize due to the changes in incentives, work councils can ultimately prohibit such managerial interventions:

So, I can only share my personal preference on this. When the project acquisitions require longer sales cycles, capping bonuses is deadly in terms of sales rep commitment and motivation. If you cap it, then you will lose a lot of good people. [...] The main problem is, when you start to discuss these aspects with the work council, then you have no chance of making a fundamental change. It is frightening to see when you want to do something

good for sales reps and offer them even a fixed percentage that is not capped at the top... Then they say: no, that's not possible. (Anthony)

Based on the defined payout curves, sales managers furthermore decide on suitable incentive payment cycles. In this regard, the main question deals with the proper alignment of DS cash flows and incentives. Given the fact that DS rely on RRM, new opportunities arise for sales managers to influence sales rep behavior according to sales reps' responsibility in the DS sales process. In summary, the different incentive payment cycles used for DS selling can be categorized into three approaches (see Figure 16).

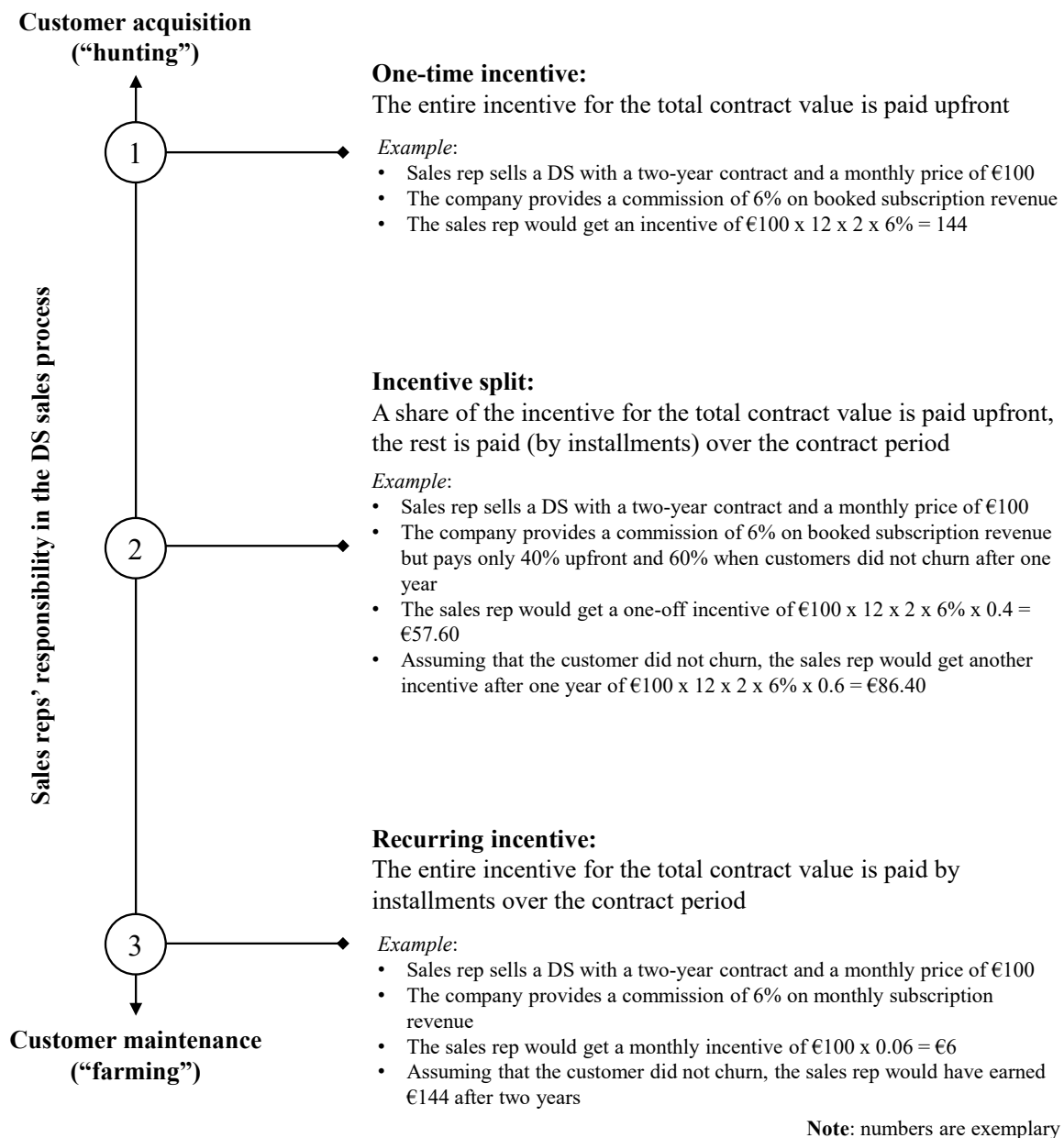


Figure 16: Overview of incentive payment cycles for DS selling

The first approach refers to *one-time incentives*. This incentive payment cycle is geared toward customer acquisition – also known as “hunting” (DeCarlo & Lam, 2016, p. 415) – and draws sales reps’ full attention to closing deals. The implementation of one-time incentives typically requires a strong service or customer success organization that takes care of the customer when the contract is signed to ensure customer satisfaction over the entire contract period. Sales managers provide a one-time incentive to immediately reward the hard work of sales reps. Furthermore, the complexity of this approach remains at a low level and thereby helps to increase sales reps’ commitment to DS selling:

For me, the role of sales is hunting and converting. So, it’s a one-time incentive that they get for selling. Sales guys are sales guys... You don’t want to complicate them too much. We just tell them; you will make a dollar selling this and they will sell it. [...] As soon as things start to get complex, they will leave an organization and go to another company where it’s easier to make money by selling simple things – that is a typical sales guy of every company. So, my recommendation is: make it simple, but at the same time keep them hungry. If you don’t keep them hungry, you don’t grow. (Billy)

The second approach refers to *incentive splits*. In this case, one part of the overall incentive is paid shortly after a deal has been closed, whereas the other part is paid over the contract period. This approach is used when sales managers want their sales reps to focus more on post-sales activities. For example, when DS contracts can be canceled easily, customer churn becomes a major concern and thus calls for dedicated activities to drive DS adoption. Furthermore, incentive splits are implemented for Equipment-as-a-Service solutions, where companies sell their asset to financing partners in a transactional way and charge monthly service fees in a recurring manner:

And if he now sells our [Equipment-as-a-Service] solution and we use an external financing partner, then he gets the commission on the financial equivalent of the asset that is part of the external financing agreement because this is like revenue or a sale for us. And on the other hand, he also gets a commission – which we have created as an additional incentive – based on the monthly installment that we charge the customer. So, the sales reps get a one-time commission at the time of the sale and then, when the systems are in operation, they get a commission on the monthly installments, which are the ongoing service fees that we charge to the customers. (Danny)

The third approach refers to *recurring incentives*. Recurring incentives seek to promote a long-term orientation of sales reps and draw their attention to customer

maintenance – also known as “farming” (DeCarlo & Lam, 2016, p. 415). Sales managers align DS cash flows with incentive payment cycles and only distribute bonuses when customers make their monthly or annual payments according to the signed contract. In addition, this approach holds sales reps responsible for the promises made during the negotiation process. In doing so, sales reps bear the entire risk of DS sales processes:

I know a few people who changed employers because of this... they made a big deal and knew exactly that there could be a risk and that they could leave quickly. They bagged the bonus and left. And that's the problem with a lot of IIoT companies. These so-called consultants or sales reps – if they are paid based on large one-time incentives, they're just travelers or renegades and they're always trying to catch the big fish. And you can avoid that by setting up a smart incentive system. I always give my sales reps an annual share [of the entire contract value] and if it's not there at the end of the year [because the customer canceled the contract], they don't get their annual share out of it. We pay out the incentives monthly. This can be mapped in the system, and we also discussed whether we should do it quarterly or annually. In the meantime, however, everyone is convinced that monthly is better. (Samuel)

In summary, the three approaches represent different philosophies of how to influence sales rep behavior. Sales reps' responsibility in the DS sales process plays a key role in determining the ideal payment cycle for incentives that stimulate DS sales. Sales managers that pursue ambitious growth targets rather rely on one-time incentives and establish organizational support structures for customer maintenance activities. On the contrary, sales managers that expect their sales reps to work much more long-term oriented, e.g., by conducting certain types of services, rather tend to provide recurring incentives. Regardless of the chosen payment cycle, the simplicity of underlying incentives is important to keep sales reps committed to their selling tasks, thereby reducing frustration and fluctuation in the sales force.

#### **3.4.3.7 Provision of additional non-monetary incentives**

Considering the difficulties of making changes in existing sales targets and incentives, sales managers provide additional non-monetary incentives to further increase sales reps' motivation to sell DS. The interview data points to six different types of non-monetary incentives, summarized in Table 17, that are used for DS selling.

First, sales managers offer superior *career opportunities* for sales reps that succeed in DS selling. If sales targets for DS selling are embedded in quotas, sales managers evaluate and compare the sales reps' performance to promote especially those that have

achieved an outstanding performance in comparison to their peers. Consequently, sales reps can develop into more senior roles and increase their responsibilities much faster. Linking future promotions to DS selling success helps to increase sales reps' motivation to sell DS, especially if they are still at an early stage in their career.

Second, *rewards and certificates* are awarded when sales reps have achieved superior DS sales performance or when they showed extraordinary effort in the DS sales process. Creating such rewards or certificates is a simple way to show appreciation to sales reps that are willing to go the extra mile for DS selling success.

Third, sales managers establish *sales contests* to motivate more sales reps to engage in DS selling. In doing so, either the best-performing sales reps in terms of DS sales or selected, that is peer-nominated, sales reps are put on a podium. During the ceremony, sales leaders hold an honorific speech and provide additional rewards depending on the sales reps' level of target achievement. Sales reps' willingness to stand out against peers at this event increases due to the mandatory participation of all sales reps and the high management attention.

Fourth, sales reps receive *special gifts* from their sales managers when they have closed challenging DS deals. These gifts may involve vouchers for a nice restaurant or even additional holidays to be spent together with a partner of choice.

Fifth, *stack rankings* are employed to leverage sales reps' competitiveness. If sales managers can measure and track DS sales performance at an individual or team level, they create rankings that uncover the position of single sales reps or sales teams in comparison to their peers. The ranking is based on selected KPIs and typically includes volume or revenue targets for DS selling. The created transparency in terms of DS sales performance serves to increase sales reps' motivation to sell DS because no one wants to be part of the last quartile. Stack rankings are oftentimes combined with sales contests, where results are presented in front of a larger audience.

Sixth, *team events* seek to enhance team spirit in sales teams. Sales managers establish dedicated team events to discuss internal challenges, or to celebrate particularly successful years. Given the fact that DS selling relies on team efforts, team events are gaining in importance. Some sales managers even use these events, to include specific sales training sessions on DS selling.

In summary, the different non-monetary incentives are necessary supplements to traditional sales management instruments. The implementation of the abovementioned measures has a major impact on the overall work culture in sales organizations and thus contributes to DS selling success.

Table 17: Overview of non-monetary incentives for DS selling

Types of non-monetary incentives	Exemplary Quotes
Career opportunities	“For me, it’s also about recruiting people in sales, in some cases also young graduates from universities, whom we can offer a great perspective. So, when someone joins us in sales, he should be able to develop and grow with the company. Like many companies, we are currently growing and expanding. And of course, many doors are opening, so we can offer a lot of interesting perspectives.” (Dominic)
Rewards and certificates	“There are also other incentives... Many of our sales reps have never been to a subscription workshop before, and when they first see what’s going on there and what’s expected, they think it’s great. And if you just call them afterward and say: Hey, you were just there, you did a great job... They’re extremely happy. [...] In the US, there’s a system where I can give employees a certificate via the intranet if I think someone has done a great job. It’s an e-mail with a small certificate: “Great job”. And that’s all. In some cases – when your director approves it – you can also include a voucher worth €30. [...] I did the certificate thing once, just sending the certificate and the reaction was fascinating. So, the guy printed it out, it was hanging in his cubicle, and he was very proud of it. And those are the little things, I think, that make life easier or where you can simply say: I also feel appreciated.” (Christian)
Sales contests	“The colleagues who have done a great job are the ones we want to highlight. Not in monetary terms, but when we have our annual sales meeting in Central Europe, all of them come on stage. And the colleagues nominate each other for it. Which I personally find good, because then it regulates itself. For example, I can say: Well, you and you, you just did a good job there. That was okay. But one of you really did an outstanding job. Yes, this is important. You don’t always have to put everyone on the podium.” (Liam)
Special gifts	“We have introduced a sales competition, where you can win a holiday in the Maldives or something like that. A lot of sales reps get motivated by that, and they can take their wife and eat good food for two weeks to go to a nice place. And that’s the gift they can get for an outstanding sales performance.” (Dylan)
Stack rankings	“What I did this year is that we visited each branch, [...] there we showed them how they performed [in terms of DS selling] in the last year. So, it’s a small ranking – they are all competitive, all salespeople. That’s how you stand in the region, you don’t want to be at the bottom, you want to at least move up into the midfield, or you’re currently second, then go and grab the first place now. Then you promise them a box of wine if they achieve that by the end of the year, or you invite them to Berlin, you make it a bit nice and charming. And most sales reps like the idea.” (Simon)
Team events	“The fun factor is extremely important. Every two years, we fly to Las Vegas, where we have a big team event, combined with training sessions [related to DS selling]. And I know that everyone is totally excited about this event.” (Jonathan)

### 3.4.4 Discussion

Sales managers seek to overcome sales reps' low motivation to sell DS by introducing sales targets and incentives that stimulate DS sales. However, they struggle to define suitable sales targets and incentives for DS selling due to the novelty of underlying selling tasks and the fundamentally different revenue model characteristics of DS. This study draws on contingency theory to identify multiple levers that sales managers can pull to increase sales reps' motivation to sell DS.

#### 3.4.4.1 *Theoretical implications*

This study contributes to the literature on sales force compensation and sales force motivation in five different ways. First, the findings advance the prior understanding of target definition processes for solution-oriented selling tasks (Storbacka et al., 2011) by highlighting important steps in establishing sales targets for DS selling in global sales organizations. Although extant research has recognized that goals, stakeholders, and outcomes differ in service and solution selling (Ulaga & Loveland, 2014), there is yet a lack of studies that holistically examine how sales managers can induce this shift. In this context, the DS maturity serves as an important contingency factor affecting the definition of sales targets for DS selling. Even if sales managers are willing to define corresponding sales targets, such as DS revenue or installed base connectivity targets (Classen & Friedli, 2021b), only companies with a high DS maturity embed these targets in sales quotas and make them relevant to compensation. Companies with a low DS maturity refrain from defining individual sales targets for DS selling due to the increased pressure put on sales reps and the lack of measurability (Bartol, 1999). To still start the transition toward DS selling, sales managers instead introduce these targets at a higher management level. Consequently, DS selling becomes a team effort (Lim & Chen, 2014) in which regional sales leaders must drive DS selling efforts proactively with their sales teams to receive certain bonuses. These findings thus support Kohli et al. (1998) who suggest that supervisor behavior influences sales reps' performance orientation.

Second, this study sheds light on the role-specific ratio between salary and variable compensation in the context of DS selling. Although the chosen research design does not allow for any propositions on the most favorable variable compensation ratio stimulating DS sales, there is evidence that sales reps' selling portfolio affects the variable compensation ratio. The variable compensation is rather high for sales reps that sell DS in addition to other portfolio elements. Sales managers make use of this variable compensation component to incentivize sales reps to sell DS (Alavi et al., 2022). On the contrary, more specialized roles – that act as supportive resources in DS selling – have

a rather low variable compensation component to better focus on mastering complex DS sales processes without a high performance pressure (Oliver & Anderson, 1994).

Third, this study addresses recent calls for more research on compensation strategies that consider the different outcomes of service innovations (Alavi et al., 2022) and DS respectively (Classen & Friedli, 2021b; Guenzi & Nijssen, 2023). While prior studies suggest building up separate sales teams for solution selling to avoid sales reps' disengagement from corresponding selling tasks (Salonen et al., 2021; Terho et al., 2012; Ulaga & Loveland, 2014), the findings reveal that traditional sales reps oftentimes serve as account owners who need to initiate selling activities. If these sales reps are instructed to sell DS in addition to other products and services, adaptations in their incentive plans are essential to increase their motivation to sell DS. Although prior studies have recognized this problem (Classen & Friedli, 2021b; Kindström et al., 2015; Ulaga & Loveland, 2014), scant empirical attention has been paid to the different opportunities that exist to make DS sales more interesting in comparison to the rest of sales reps' selling portfolio. This study advances extant knowledge of prior research in this domain by carving out how sales managers incentivize DS sales at the individual sales rep level. In doing so, it specifies which sales performance metrics fit compensation plans that stimulate DS sales. The findings are in line with Bolander et al. (2021) and Liozu (2018) who suggest the provision of incentives based on multidimensional metrics, including profitability (Frenzen et al., 2010) as well as behavioral indicators (Rao et al., 2021), such as the quality of DS selling activities.

Fourth, the findings provide new insights into the payment cycle of multidimensional incentives and thus contribute to the literature on customer relationship management (DeCarlo & Lam, 2016; Gupta & Lehmann, 2008). The different revenue model characteristics of DS offer new ways to incentivize customer acquisition and maintenance activities of sales reps. Although maintenance incentives, as suggested by M. Kim et al. (2019), are used in some cases, their implementation in practice remains difficult due to sales reps' short-term orientation. Therefore, the findings indicate that customer maintenance incentives require sales reps' that also take over post-sales activities. However, when sales reps only receive customer acquisition incentives, dedicated service or customer success managers are oftentimes necessary to ensure customer satisfaction over the contract period, which in turn might be harmed by short-sighted sales reps that only want to close deals to get high incentives.

Fifth, this study also addresses inquiries for more research on the different types of non-monetary incentives that boost sales reps' motivation to sell services and solutions (Alavi et al., 2022). In doing so, the findings underscore the importance of such

incentives in motivating sales reps to sell DS through supportive feedback and acknowledgment (Bartol, 1999; Wotruba & Rochford, 2013), superior career development opportunities (Joseph & Kalwani, 1998; Pullins, 2001), or dedicated sales contests and rewards (Brown & Peterson, 1994).

#### **3.4.4.2 *Managerial implications***

This study has several implications for sales managers who struggle to define suitable sales targets and incentives for DS selling. First, sales managers should operationalize DS sales strategies by developing dedicated sales targets for DS selling. These targets are important to create a vision for sales reps that they can easily understand and follow. To derive the right sales targets, sales managers must professionalize and adapt their sales planning processes accordingly. Bottom-up planning should complement top-down target delegation to involve regional sales teams more closely in the execution of DS sales strategies. Such feedback from local sales reps on customer or territory potential is vital for defining sales targets because DS require new ways to segment and approach customers, which are often omitted in headquarter-driven top-down planning approaches. In addition, sales managers need to decide at which hierarchy level they want to embed sales targets for DS selling. In many cases, it might be difficult to assign targets to single sales reps, which further calls for team targets that cover a broader scope of potential DS selling opportunities. Sales managers must also understand that sales targets and incentives of regional sales leaders strongly affect sales reps' DS selling engagement. If these sales leaders lack sales targets for DS selling that affect their overall incentive, they are likely to incentivize their sales teams in a way that DS selling is not interesting at all. On the contrary, sales leaders that have such incentive-relevant sales targets for DS selling might be more interested and motivated to engage their sales teams in corresponding selling activities. Therefore, sales managers should ensure that sales targets for DS selling are initially introduced at a higher hierarchy level, which can then serve as a starting point to gradually break down targets to individual sales reps.

Second, sales managers should rethink the way how sales performance is measured in DS selling. The different outcomes inherent in DS require adjustments to relevant KPIs that are chosen for the provision of sales incentives. To overcome sales reps' tendency to rather sell established products and services than novel DS, different measures can be applied. When revenue or order intake targets are the most dominating KPIs in sales quotas, sales managers can use specific multipliers for DS revenue to make these types of offerings more interesting for sales reps. Given the fact that DS are concerned with higher profitability, adding a profitability metric in sales quotas can also

help to shift sales reps' focus more toward DS selling. Furthermore, sales managers can specify the origin of revenue or order intake targets, e.g., by deriving individual recurring revenue targets, and thus enforce portfolio sales. Finally, price realization factors that serve to avoid extensive discounting of DS, and behavioral metrics that are linked to specific DS selling activities or capabilities further support sales managers in inducing the desired behavioral changes of sales reps.

Third, sales managers should consider linking incentive payout curves and payment cycles to sales reps' achieved DS sales performance. In this context, the adjustment of payout curves should reflect the increased complexity of DS sales processes. Multidimensional quotas in which incentives are tied to both outcome and behavior help to better steer sales reps in uncertain and lengthy sales processes. Although DS oftentimes only yield little and time-lagged cash flows, their impact on other parts of the business can still be significant. Therefore, sales managers should not be blinded by the impression that traditional incentives sufficiently motivate sales reps to sell DS. They must be aware that sales reps who attain or even exceed defined sales targets for DS selling require disproportionately high incentives, which are often detached from recurring cash flows. To align sales rep behavior with the strategic goals of DS selling, sales managers must carefully decide whether sales reps' focus should be more on customer acquisition or maintenance and adapt incentive payment cycles accordingly. One-time incentives, which are provided based on forecasted or committed DS revenue, serve to immediately reward sales reps for their acquisition effort. If sales managers choose this option, they are well-advised to build up strong service or customer success capabilities to avoid high customer churn rates. On the contrary, both split and recurring incentives expect sales reps to maintain customer relationships over the entire DS contract period. In doing so, these payment cycles give sales reps a stake in future DS cash flows. If sales managers choose one of these two options, they must be aware that short-term-oriented sales reps are likely to neglect DS selling activities even more.

Fourth, sales managers should consider introducing additional non-monetary incentives to further increase sales reps' motivation to sell DS. In doing so, they should establish a performance-oriented sales culture that strongly incorporates DS sales. Sales managers can realize this cultural change by providing dedicated rewards or gifts, implementing stack rankings or sales contests, or offering superior career opportunities for sales reps that have achieved an outstanding DS sales performance. These non-monetary incentives can significantly leverage sales reps' motivation to sell DS and should, therefore, complement the provision of monetary incentives.

## 4 General discussion

### 4.1 Engaging the sales force in digital solution selling

Intensifying competition and rising customer expectations are putting industrial firms and their established business models under increasing pressure. To strengthen their market position, industrial firms more and more offer DS that serve to create superior customer value. Despite numerous benefits for providers and customers, many industrial firms struggle to sell DS profitably because they fail to engage their sales force in DS selling. Although research on service and solution selling has gained momentum in the last few years, two major research gaps remain. On the one hand, there is a lack of knowledge about the different barriers that arise from the transition toward DS selling at the individual sales rep level. On the other hand, research lacks a clear understanding of sales management instruments, i.e., sales support, sales control systems, sales targets, and sales incentives, that ensure sales reps' engagement in DS selling. Developing this understanding is important to pull the right managerial levers that align sales rep behavior with the strategic goals of DS selling, thereby securing the commercial success of DS. Against this backdrop, the purpose of this thesis was to examine how sales managers of industrial firms can engage their sales force in DS selling. To answer the different research questions, three empirical studies were implemented.

*What are the different barriers to sales reps' engagement in digital solution selling?*

Seven different barriers originating from sales reps' low motivation, constrained opportunities, and lacking abilities inhibit their engagement in DS selling.

Sales reps may display a low motivation to sell DS as they are (1) inadequately compensated for taking (2) higher risks. Incorrect incentives can spur sales reps' low motivation to sell DS when their compensation is focused on large transactional one-time deals. However, they can also trigger selling behaviors that lead to high churn rates when incentive-driven sales reps acquire customers where DS create only limited value. In addition, sales reps fear the risk of novel and immature DS. Consequently, they are afraid of leaving their comfort zone by mentioning unproven and complex offerings where outcomes are highly uncertain before signing the contract.

Furthermore, sales reps may face constrained opportunities due to their (3) lack of time to overcome (4) higher customer-induced barriers. Considering the novel value propositions shaping DS, the participation in explanatory training sessions and the identification of promising target customers call for substantial time investments, which short-term-oriented and incentive-driven sales reps avoid due to their given sales quotas.

More professionalized customer buying centers comprising new stakeholders, such as C-level executives or IT experts, aggravate the sales process and thereby decrease sales reps' motivation to sell DS. Consequently, sales reps tend to allocate available selling time to offerings and stakeholders they know best.

Finally, sales reps may lack the necessary abilities to sell DS because of their (5) inadequate personal disposition, (6) missing knowledge, or (7) skills. The absence of adequate hiring procedures attracts sales reps with undesirable personal dispositions that hamper DS sales. If sales reps refrain from training sessions, they are unable to build up sufficient DS selling knowledge which helps them to deal with difficult questions in the sales process, such as data-security topics. In addition, sales reps lack the necessary selling skills or techniques to identify, quantify, and communicate the customer value created by DS.

*What is the nature of sales support facilitating sales reps' adoption of digital solutions?*

The nature of sales support facilitating sales reps' adoption of DS involves 12 specific elements that relate to the five idiosyncratic stages underpinning the innovation-decision process inherent in diffusion theory.

The first stage serves to build up sales reps' knowledge required for DS selling. The (1) definition of an appropriate target audience ensures that sales reps become aware of novel DS. Early involvement in the solution design phase helps to increase sales reps' overall awareness of DS. Furthermore, key promoters both at the sales rep and sales management level, are required to allow a horizontal and vertical flow of information in global sales organizations. When information is provided to sales reps, (2) simple and digestible messages are vital to reduce the complexity of DS. In this context, sales reps need to understand how DS benefit the customer, the own company, and themselves. Clarity and consistency in the marketing approach further increase sales reps' understanding of DS. To impart DS selling knowledge, (3) conducive formats are chosen. Sales reps pay more attention to messages when top managers are present at important meetings to share the vision and strategy behind DS. Moreover, physical launch meetings that allow for a bidirectional exchange give sales reps more opportunities to follow up on presented content in comparison to online meetings. Furthermore, sales reps are often unable to understand all DS-related topics in one single meeting. Against this backdrop, sales managers intensify the communication cadence, especially during the launch phase.

The second stage aims at initiating calls-to-action through which sales reps persuade DS selling opportunities more effectively. Workshops and interactive exercises in

presence are used to (4) dive deeper into the sales process with smaller groups. During these sessions, sales reps share their daily challenges and commonly develop techniques for answering the toughest questions arising from customer negotiations. Thereafter, sales reps are getting (5) activated for DS selling. In doing so, sales managers obtain a commitment from their sales reps to targets and KPIs. DS selling activities are defined based on common discussions which ultimately result in an individual DS sales pipeline for each sales rep. Furthermore, (6) sophisticated sales collaterals, such as demos, videos, playbooks, or price calculation tools are provided to make DS more tangible, thereby simplifying the sales process.

The third stage is focusing on facilitating sales reps' decision to adopt DS. On the one hand, additional marketing support is used to (7) trigger sales reps with customer demand for DS. If DS are embedded in yearly marketing activities, customer awareness and interest is generated through dedicated promotion strategies, such as email campaigns. Based on customers' interest in campaigns, sales managers can nudge their sales reps with qualified DS selling leads. On the other hand, sales managers offer more organizational support which (8) enables sales reps to become a door opener for DS selling. Consequently, selling skills are upgraded only to a certain degree that allows sales reps to make the initial contact for entering the subsequent and more complex stages of the DS sales process. This contact is then handed over to subject matter experts who drive the progress of the DS sales process. Role-based learning journeys, oftentimes integrated into E-learning modules, seek to enhance sales reps' DS selling skills. In addition, sales managers are provided with a different training program that teaches coaching skills to successfully implement the DS sales strategy over the long term.

The fourth stage serves to establish implementation support for DS. (9) Creating proximity to sales reps with digital champions sends an important signal to the sales force as additional sales resources not only support the DS sales process but also ensure the successful implementation of DS at the customer site. When these roles are more established and DS selling activities gain momentum, sales managers (10) augment sales reps' support ratio gradually. In doing so, they overcome the capacity constraints of digital champions and expand sales reps' comfort zone when they recognize that sufficient support for DS selling is provided.

The fifth stage seeks to confirm sales reps' adoption of DS by sharing learnings and success stories. Feedback from different projects is (11) collected systematically to establish a knowledge base for DS selling. In this context, sales managers introduce communities based on digital communication channels to promote exchanges between sales reps on DS selling topics. Based on this feedback, (12) field experiences are openly

communicated to highlight particularly successful reference cases. Importantly, these success stories include explanations of how DS sales turned into personal benefits for the corresponding sales rep.

*How can sales control systems be designed to foster digital solution sales?*

All types of formal sales control systems which include input, capability, activity, and outcome controls, foster DS sales by resolving agency problems that arise from the transition toward DS selling.

Input controls are employed to alleviate adverse selection through the selection of suitable candidates for DS selling tasks. To attain this goal, sales managers first clarify the overall sales model by allocating resources for the DS sales process. In doing so, responsibilities are defined for customer acquisition and maintenance activities. Based on the defined responsibilities, new selection criteria are derived that describe required role profiles. In this context, sales managers expect candidates to feature characteristics that match the new DS selling role profile. Such characteristics involve team orientation, intrinsic motivation, risk appetite, software knowledge, industry-specific domain knowledge, value and consultative selling skills, financial acumen, service orientation, and customer maintenance skills. If candidates are selected from the existing sales force, sales managers initially rely on the best-performing and most motivated sales reps. These sales reps serve as role models who can create and share success stories, thereby attracting more candidates to join DS sales teams. Importantly, the selection of candidates is subject to two compromises. On the one hand, sales managers choose between candidates with software knowledge or industry-specific domain knowledge. On the other hand, sales managers choose between younger, more innovative candidates or older, more experienced candidates. Existing team structures and the availability of training programs inform the decision on the selection of the most suitable candidate.

Capability, activity, and outcome controls are used to address moral hazard, which originates from sales reps that shirk the selling of DS. Capability controls serve to build up sales reps' DS selling abilities. Given the defined selection criteria for candidates engaging in DS selling, new ability standards are set and gradually enforced. To cope with the compromises made during the selection process, sales managers introduce mandatory training programs which close existing knowledge and skill gaps. In addition, role-specific development paths are attached to the new positions created for DS selling. If sales reps perform well and achieve their given targets, these paths offer promising perspectives and faster promotions to more senior roles. Furthermore, the new ability standards are monitored, evaluated, and improved continuously. In this context,

learning-by-doing and on-the-job training are implemented because theoretical concepts from training sessions require practical application in real-life customer meetings. Individual coaching sessions in which sales managers provide detailed feedback to sales reps on their sales approach and selling skills complement capability controls. Finally, sales managers provide capability-related rewards to emphasize the need to continuously develop knowledge and skills for DS selling.

Activity controls serve to direct and monitor sales reps according to pre-defined processes or tasks. Sales managers shift focus from outcome to activities and thus get involved earlier in the sales process. To gain more detailed insights into sales reps' actual effort put into DS selling, information systems, such as CRM systems, are employed. The increased sales process transparency further allows for defining all relevant sales cycle stages that constitute the DS sales process. These cycle stages enable sales managers to introduce initial activity-related sales targets against which DS sales performance can be measured. Considering the lack of DS selling experience and the high costs of team-based selling approaches, activity-related targets are set by mandating only the most promising DS selling opportunities. To achieve the desired progress in lengthy and complex DS sales processes, sales managers ensure sufficient preparation for important meetings. As DS selling experiences grow, sales managers institutionalize DS pipeline management to monitor, evaluate, and improve sales reps' activities more closely. These initiatives provide sales reps with detailed feedback on past and future selling activities. Finally, the achievement of activity-related targets is rewarded by sales managers to promote desired selling behaviors more strongly.

Outcome controls determine desired DS sales outcome, which is evaluated at the individual and team level and measured using financial and nonfinancial metrics. Instead of focusing solely on individual outcomes, more emphasis is placed on team-level outcomes to accommodate the increasing importance of teamwork in DS selling. Corporate outcomes, such as the aggregated annual recurring revenue, further help to increase the visibility of DS to internal and external stakeholders. To measure DS revenue and profitability, sales managers seek to enhance granularity in financial outcomes. In this context, five metrics are considered. First, revenue origin differentiates between both the portfolio elements of DS contracts – by separately measuring sales of equipment, service, and software solutions – and acquisition or renewal sales. Second, recurring revenue differentiates between one-time and recurring revenue outcomes. Third, CLV serves to predict customer profitability by comparing the average contract revenue to customer acquisition cost. Fourth, the contribution margin is important because DS are typically more profitable than traditional products or services. Fifth, the

price quality measures list price derivations of DS and thus prevents sales reps from granting generous discounts on DS to win large hardware deals. Furthermore, sales managers accentuate customer centricity of nonfinancial outcomes. Six different metrics matter in this context. First, the connectivity rate indicates the overall market potential for offering DS. Second, the number of subscription customers measures growth. Third, the DS consumption reveals how customers adopt new solutions. Fourth, the churn rate measures the number of customers leaving subscription contracts over a specific period. Fifth, customer satisfaction indicators, such as the NPS, are used to predict customer churn at an early stage. Sixth, innovation-related customer feedback obtained from sales reps serves to improve DS continuously. These metrics lay the foundation for the provision of incentives that align sales rep behavior with DS sales outcome.

*How can sales targets and incentives be designed to stimulate digital solution sales?*

Three contingency factors determine the design of sales targets and incentives that stimulate DS sales.

Depending on the (1) DS maturity, sales managers set different priorities in their sales strategies. When the DS maturity is low, sales targets for DS selling focus on growing the share of connected assets. These targets are broken down into equipment and service sales channels. Subsequently, total and relative growth targets are introduced to gradually increase the DS contract coverage in the installed base. Only when DS have reached a superior maturity level will sales managers define corresponding financial targets, such as specific ARR, ACV, or profitability targets. To embed these targets in their sales organizations, sales managers implement bottom-up and top-down planning approaches. In this context, management targets are compared with sales reps' estimations of potential DS selling opportunities to agree on specific numbers. Importantly, sales targets for DS selling are not necessarily delegated down to the individual sales rep level. Given the organizational set-up of global sales organizations, two difficulties can occur when implementing regional sales strategies. On the one hand, the DS maturity might be too low to strictly enforce targets. On the other hand, such targets might unnecessarily increase the performance pressure on sales reps. Against this backdrop, sales targets for DS selling remain at a higher management level, such as regional sales leaders or managing directors of sales companies. In this context, these sales leaders are motivated to achieve these targets, especially when their incentives are linked to DS sales performance. If the DS maturity is high, sales targets for DS selling are integrated into the sales quotas of individual sales reps.

The provision of incentives for DS selling is contingent on (2) the sales reps' selling portfolio and (3) their responsibility in the DS sales process. Sales managers initially assess the ratio between variable compensation and salary. No changes are typically made for sales reps who own existing customer accounts. More specialized sales roles, such as digital champions, who focus exclusively on DS and support sales reps in DS sales processes, are paid a higher fixed salary and lower variable compensation due to the uncertainty and risk of the selling task.

To better consider the long-term benefits of DS in underlying incentive schemes, sales managers choose between five different changes in the measurement of sales performance. First, sales managers keep the existing outcome-oriented target system and make DS outcome – in terms of revenue or order intake – more interesting when sales reps are responsible for selling the entire company portfolio. Second, sales managers specify the revenue or order intake origin of outcome metrics and thereby enforce sales of the entire portfolio when sales reps can choose from a broad range of portfolio elements. Third, sales managers shift outcome metrics toward profitability to foreground KPIs where DS oftentimes perform much better than established hardware products with fixed margins. Fourth, sales managers seek to avoid extensive discounting of DS through price realization factors when sales reps try to win large hardware deals by granting generous discounts on DS or even giving away DS for free. Fifth, sales managers add specific behavior metrics to direct sales reps more closely in DS selling.

If sales reps meet their sales targets, incentive payout curves determine how bonuses are paid. In this context, sales managers introduce incentive accelerators which kick in when sales reps overfulfil given targets for DS selling. In addition, caps that limit the distribution of incentives are lifted or even removed to increase sales reps' motivation to engage in more complex and time-consuming selling tasks. Depending on the sales reps' responsibility in the DS sales process, sales managers decide on suitable incentive payment cycles. The first approach refers to one-time incentives that immediately compensate sales reps for closing DS selling opportunities and thus draw their attention to customer acquisition and deal-closing activities. The second approach refers to incentive splits where one part of the overall incentive is paid shortly after a deal has been closed and the other part is paid over the contract period. The third approach refers to recurring incentives which align sales reps' compensation with DS cash flows and thus draw their attention to customer maintenance activities and long-term orientation.

Furthermore, sales managers provide additional non-monetary incentives, such as superior career opportunities, rewards, certificates, sales contests, special gifts, stack rankings, and team events are provided to better motivate sales reps to sell DS.

## 4.2 Summary of theoretical implications<sup>7</sup>

This thesis contributes to the existing literature on organizational behavior, digital servitization, and B2B sales in five different ways.

First, this thesis expands the solution selling literature with a DS concept grounded in traditional customer solutions (Tuli et al., 2007); a concept that reflects the increasing importance of software and RRMs in value creation and capture. In doing so, it accommodates recent demands to update the “solution” definition by considering the digital transformation pervading industrial companies (Bond et al., 2020). The taxonomy-based definition of DS advances existing solution typologies (Galbraith, 2002; Sawhney, 2006; Tuli et al., 2007). It also provides scholars with a new conceptual foundation to further explore the interplay between solution selling, digital technologies, and the relational processes involved. Such joint exploration is necessary to understand how DS change sales organizations – something that previous studies only examined for “traditional” solutions (Levihn & Levihn, 2016; Marcos Cuevas, 2018).

Second, this thesis advances prior knowledge about dysfunctional selling behavior by pinpointing seven different barriers to sales reps’ engagement in DS selling. These barriers unveil a complex interplay of low motivation, constrained opportunities, and underdeveloped abilities which deters sales reps from selling DS. Since prior research on solution selling has either examined organizational practices (Storbacka et al., 2011; Ulaga & Loveland, 2014) or single steering instruments, such as compensation strategies (Alavi et al., 2022), this thesis is the first to provide a more holistic view on managerial challenges that surface at the individual sales rep level when transitioning toward DS selling. In doing so, it confirms the usability of the MOA framework (Blumberg & Pringle, 1982), particularly by considering the opportunity dimension. Including this dimension is important in the context of new product selling because customers might be highly uncertain about new and unproven offerings (Wieseke et al., 2008), thereby limiting sales reps’ chances of DS selling success and questioning the effectiveness of sales management instruments. Consequently, the different barriers to sales reps’ engagement in DS selling lay the foundation to better examine the role of sales management in inducing selling behaviors that boost DS sales.

Third, this thesis contributes to the new product selling literature by operationalizing the innovation-decision process for DS. In this context, the findings are in line with Atuahene-Gima (1997) who underscores the importance of sales support in facilitating

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<sup>7</sup> Parts of this chapter, in particular the second and fifth passage, were initially published in Tienken et al. (2023).

sales reps' adoption of new products. Although sales scholars have scrutinized various sales management instruments to control sales rep behavior during the introduction of new products (e.g., Ahearne, Rapp, et al., 2010; Hohenberg & Homburg, 2016; Homburg et al., 2019), there is so far scant empirical research that elucidates how sales managers can positively influence sales reps' attitude toward novel selling tasks (Wieseke et al., 2008). The derived innovation-decision process for DS fills this void by developing a more detailed understanding of the different sales support elements that facilitate sales reps' attitudinal and behavioral adoption of DS. The findings, grounded in diffusion theory, confirm the view that sales reps' engagement in DS selling can be seen as a two-stage process in which sales managers first need to overcome sales reps' poor attitude to subsequently implement the desired behavioral changes in their sales force (Anderson & Robertson, 1995; Atuahene-Gima, 1997; Malshe & Sohi, 2009). To convert sales reps' attitudinal adoption of DS into behavioral adoption, two roles, that is sales managers who serve as opinion leaders and dedicated sales champions who serve as change agents, become important. In this context, sales managers' leadership behavior, which manifests itself through involvement (Böhm et al., 2020; Storbacka, 2011) and encouragement (Hoffmann et al., 2022), is conducive to DS selling.

Fourth, this thesis contributes to the literature on sales control systems and agency models in sales by presenting sales controls that alleviate arising agency problems in the transition toward DS selling. The findings indicate that sales reps' low motivation, constrained opportunities, and underdeveloped abilities result in adverse selection and moral hazard, which hamper DS selling success. Against this backdrop, this thesis advances prior knowledge about the occurrence of sales-related agency problems (Bergen et al., 1992; Eisenhardt, 1989a) by creating a more granular understanding of sales rep behavior in the context of solution selling (Salonen et al., 2021). Furthermore, the identified sales control systems address recent calls for more research on digital controls which help executives "in managing the digital business transformation more capably" (Wielgos et al., 2021, p. 769). While extant research has primarily focused on quantitatively assessing the right choice between outcome and behavior controls (e.g., Hohenberg & Homburg, 2016; Katsikeas et al., 2018), this thesis underlines the importance of input controls to achieve superior sales performance. Despite their widespread disregard in sales research, adequate hiring procedures not only resolve adverse selection problems by selecting suitable candidates for DS selling tasks but also reduce the residual risk of sales reps shirking the selling of DS. To overcome moral hazard in DS selling, the findings suggest adapting capability, activity, and outcome controls accordingly. Sales managers integrate DS selling skills in capability controls

and invest in sophisticated information systems to better direct and enable sales reps in complex DS sales processes based on activity controls. However, activity steering in DS selling is still in its infancy due to the lack of selling experience, the difficulty of obtaining sales process transparency, and the cost of monitoring, which caused authors of prior studies to favor outcome controls over behavior controls (e.g., Jaworski, 1988; Jaworski & Macinnis, 1989; Krafft, 1999). The findings uncover that many sales managers indeed rely on outcome controls and thus change underlying sales performance metrics to better accommodate DS with RRM. By operationalizing all three control elements, this thesis illustrates their equal relevance in DS selling and thus complements extant sales control literature, which predominantly seeks to identify the optimal choice of control to achieve superior sales performance for a given selling context (e.g., Ahearne, Rapp, et al., 2010; Ahmad et al., 2022).

Fifth, this thesis advances the existing literature on sales force compensation by taking a contingency-theoretic perspective on the design of sales targets and incentives that stimulate DS sales. The findings illustrate that sales managers tend to refrain from introducing individual-level sales targets for DS selling if the DS maturity is low due to unproven customer demand and missing selling experience. Instead, sales targets are defined at a higher management level to obtain sales leaders' buy-in for DS selling. In doing so, sales targets are considered team targets that sales leaders must achieve together with their sales teams. These observations support the increasing importance of team targets for more complex selling tasks (Ahearne, Mackenzie, et al., 2010; T. L. Rapp et al., 2014). However, the study's findings suggest that individual targets for DS selling gain in importance with increasing DS maturity levels. Furthermore, two additional contingency factors affect incentives for DS selling. On the one hand sales reps' selling portfolio determines the share of variable compensation. Even if the study's findings suggest that new specialized roles – which exclusively focus on DS selling – have a rather low variable compensation, there is evidence that sales managers keep the existing variable compensation ratio for their existing sales reps. This observation also confirms the need for service innovation incentives (Alavi et al., 2022). In this context, this thesis acknowledges prior studies that recommend a multidimensional approach to sales performance measurement by considering margin (Liozu, 2018), pricing metrics (Frenzen et al., 2010), as well as complementary activity or customer-relationship-based metrics (Bolander et al., 2021). On the other hand, sales reps' responsibility in the DS sales process affects the incentive payment cycle. Sales managers choose between one-time, split, or recurring incentive payment cycles, depending on whether they want sales reps to focus on customer acquisition or maintenance. However, recurring incentive

payment cycles, in which sales reps “get a stake in future cash flows from customers” (M. Kim et al., 2019, p. 750) are only applied when sales reps support customers after a contract has been signed. Finally, the findings underline the key role of non-monetary incentives, such as supportive feedback and acknowledgment (Bartol, 1999; Wotruba & Rochford, 2013), superior career development (Joseph & Kalwani, 1998; Pullins, 2001), and sales contests (Brown & Peterson, 1994) in motivating sales reps to sell DS.

### 4.3 Summary of managerial implications

To successfully engage their sales force in DS selling, sales managers must overcome seven different barriers which originate from sales reps’ low motivation, constrained opportunities, and underdeveloped abilities. This thesis proposes 15 managerial levers (see Table 18) that seek to ensure sales reps’ engagement in DS selling, thereby boosting DS sales.

*How should sales managers reduce sales reps’ higher perceived risks in DS selling?*

Sales managers should (1) implement targeted communication strategies to debunk prevailing myths – which are often shared by sales reps – about DS, such as their insecurity, error-proneness, lacking customer acceptance, or non-functioning business model. These communication strategies should accurately explain how DS create value for the provider company, customers, and sales reps. In addition, sales managers should (2) introduce new supportive roles to better assist sales reps in the DS sales process. For example, DS sales champions that take over generated leads or answer difficult customer questions significantly reduce the risk for sales reps to engage in DS selling activities.

*How should sales managers adjust sales reps’ inadequate financial compensation?*

Sales managers should (3) professionalize sales target definition processes to operationalize their DS sales strategy in a targeted manner. If sales managers struggle to agree on individual targets, they should at least introduce higher-level team targets. Furthermore, sales managers should (4) rethink sales performance measurement and select metrics that better match the profitability and recurring revenue logic of DS. To reward sales reps’ engagement in more complex and risky DS sales processes, sales managers should also (5) align incentive payout curves and payment cycles accordingly.

*How should sales managers address higher customer-induced barriers?*

Sales managers should (6) segment customers more precisely to better direct sales reps and increase their chances of DS selling success. Consequently, sales reps should avoid approaching potential DS customers without sufficient preparation and research.

Instead, new segmentation criteria, such as the digital maturity, should be carefully evaluated prior to sales pitches. Furthermore, (7) marketing support is key to promoting DS and informing customers about their existence. Targeted campaigns should be implemented to generate DS selling leads, thereby triggering sales reps' activities.

*How should sales managers address sales reps' lack of time?*

Sales managers should (8) provide sophisticated materials and tools to help sales reps become more efficient and effective in the DS sales process. For example, self-explanatory videos and demos, price calculation tools, or standardized contractual frameworks can significantly enhance sales reps' efficiency in DS selling. In addition, sales managers should consider (9) exonerating sales reps from unpopular tasks so that sales reps can better focus on their core competencies. This may include the introduction of inside sales units that generate DS selling leads via phone calls or customer success managers who onboard DS customers after a contract has been signed.

*How should sales managers cope with sales reps' inadequate personal disposition?*

Sales managers should (10) select the right sales reps for DS selling and be aware that underlying selling tasks require fundamentally different skill sets. To find digitally savvy candidates, sales managers should, therefore, consider (11) shifting the recruiting focus for new sales reps to the software industry.

*How should sales managers build up sales reps' missing knowledge?*

Sales managers should (12) keep messages simple and consistent when onboarding sales reps on DS selling topics. This refers to naming, branding, value proposition, offer structure, or pricing models. To sustainably build up the necessary DS selling knowledge, sales managers should further enhance the communication cadence and offer formats that sales reps can easily access. In addition, they should (13) provide initial aid in the DS sales process, e.g., by discussing the territory or customer potential for DS with local sales teams to commonly define initial DS sales pipelines.

*How should sales managers build up sales reps' missing skills?*

Sales managers should (14) enable sales reps to become door openers for dedicated subject matter experts that can better drive progress in DS sales processes. To successfully open doors, sales reps should be provided with structured questioning techniques that help them to systematically convert customer value into financial figures. Finally, sales managers should (15) enable their colleagues to become good coaches because sales reps can only adopt desired selling behaviors when sales managers are willing to train, coach, and reinforce respective selling skills over time.

Table 18: Summary of managerial implications

<b>Managerial lever</b>	<b>Description</b>	<b>Addressed barrier</b>	<b>M<sup>1</sup></b>	<b>O<sup>2</sup></b>	<b>A<sup>3</sup></b>
1	Implement targeted communication strategies	<ul style="list-style-type: none"> <li>• Debunk prevailing myths about DS and demonstrate how they create value for the provider company, customers, single buying center members, and sales reps</li> <li>• Involve senior managers in important launch meetings and make sure that messages trickle down to individual sales reps</li> </ul>	Reps' higher perceived risk	✓	
2	Introduce new supportive roles	<ul style="list-style-type: none"> <li>• Establish key promoters, subject matter experts, or DS sales champions in sales regions to support sales reps in difficult stages of the DS sales process</li> <li>• Increase the support ratio of new roles gradually when DS selling gains traction</li> </ul>	Reps' higher perceived risk	✓	
3	Professionalize sales target definition processes	<ul style="list-style-type: none"> <li>• Start introducing sales targets for DS selling at a higher management level, such as regional sales leaders, to increase their motivation to sell DS</li> <li>• Integrate sales targets for DS selling in sales quotas of individual sales reps with an increasing DS maturity</li> </ul>	Reps' inadequate financial compensation	✓	
4	Rethink sales performance measurement	<ul style="list-style-type: none"> <li>• Use multipliers, more granular revenue targets, profitability metrics, or price quality indicators to measure the sales performance in DS selling</li> <li>• Integrate specific capability and activity targets in sales performance measurement</li> </ul>	Reps' inadequate financial compensation	✓	
5	Adjust incentive payout curves and payment cycles	<ul style="list-style-type: none"> <li>• Reward overachievement of sales targets disproportionately high, lift or remove incentive caps, and provide non-monetary incentives to stimulate greater DS selling appetite</li> <li>• Set sales reps' selling focus on customer acquisition or maintenance by selecting incentive payment cycles accordingly</li> </ul>	Reps' inadequate financial compensation	✓	
6	Segment customers more precisely	<ul style="list-style-type: none"> <li>• Conduct customer research regarding digital capabilities to identify target customers and stakeholders for DS</li> <li>• Prepare important sales pitches meticulously before approaching customers</li> </ul>	Higher customer-induced barriers		✓
7	Offer marketing support	<ul style="list-style-type: none"> <li>• Raise customer awareness for DS through dedicated campaigns and promotion activities</li> <li>• Generate DS selling leads and trigger sales reps' activities with pre-qualified leads</li> </ul>	Higher customer-induced barriers		✓
8	Provide sophisticated materials and tools	<ul style="list-style-type: none"> <li>• Create self-explanatory videos and demos that sales reps can show in customer meetings without any major selling efforts</li> <li>• Develop calculation tools that quickly yield prices and establish standardized contractual frameworks for DS</li> </ul>	Reps' lack of time		✓

9	Exonerate sales reps from unpopular tasks	<ul style="list-style-type: none"> <li>Evaluate weaknesses in the DS sales process and consider introducing additional supportive resources for acquiring customers (e.g., inside sales units for generating leads) or maintaining customers (e.g., customer success managers for onboarding DS customers)</li> </ul>	Reps' lack of time	✓
10	Select the right sales reps for DS selling	<ul style="list-style-type: none"> <li>Select the best and most motivated sales reps for initial DS selling activities</li> <li>Search for team-oriented sales reps and make compromises between industry or software knowledge and younger (more innovative) or older (more experienced) candidates</li> </ul>	Reps' inadequate personal disposition	✓
11	Shift recruiting focus for new sales reps	<ul style="list-style-type: none"> <li>Define clear role profiles for DS selling and offer targeted development paths</li> <li>Evaluate capabilities in existing sales teams and consider recruiting sales reps from the software industry</li> </ul>	Reps' inadequate personal disposition	✓
12	Keep messages simple and consistent	<ul style="list-style-type: none"> <li>Simplify DS-related information as much as possible, especially when it comes to naming, branding, value proposition, offer structure, and pricing models</li> <li>Enhance the communication cadence and offer formats that sales reps can easily access</li> </ul>	Reps' missing knowledge	✓
13	Provide initial aid in the DS sales process	<ul style="list-style-type: none"> <li>Create playbooks with sales arguments for relevant buying center stakeholders</li> <li>Discuss territory or customer potential for DS with local sales teams</li> <li>Define initial DS sales pipelines with sales reps, monitor its progress, and share learnings</li> </ul>	Reps' missing knowledge	✓
14	Enable sales reps to become door openers	<ul style="list-style-type: none"> <li>Provide structured questioning techniques and train the financial acumen of sales reps to convert created customer value of DS into financial figures, savings, and prices</li> <li>Find the right mix between on-the-job training, structured coaching, and formal training</li> </ul>	Reps' missing skills	✓
15	Enable sales managers to become coaches	<ul style="list-style-type: none"> <li>Deploy dedicated sales training for sales managers to build up required coaching skills</li> <li>Establish sales managers as roles models that can show how to achieve successful outcome</li> <li>Provide detailed and continuous feedback on how to improve sales reps' DS selling skills</li> </ul>	Reps' missing skills	✓

**Explanation:**<sup>1</sup> Motivation<sup>2</sup> Opportunity<sup>3</sup> Ability

#### 4.4 Limitations and research directions<sup>8</sup>

Despite its contributions to theory and practice, this thesis suffers from four major limitations which suggest several directions for future research.

Scope-wise, more research is needed on the capabilities, processes, and channels supporting DS sales. Given the broad investigation of sales support elements and control systems, the descriptions of DS selling capabilities remain rudimentary. Prior scholars have accurately examined the required skills for specific selling contexts, such as solution selling (Friend & Malshe, 2016) or key account selling (Hengstebeck et al., 2022). Comparable research endeavors that solely focus on DS selling skills could enhance this understanding, thereby helping sales managers to better select and train sales reps for DS selling. In this context, the knowledge, skills, and abilities framework used in recent studies (Classen & Friedli, 2021b) could serve as a suitable foundation to identify the necessary individual skills to succeed in this new selling environment.

Moreover, a fine-grained mapping of the DS sales process is imperative, especially to understand the integration and evaluation of specialized “digital” roles in team-based or account-oriented selling contexts (Jones et al., 2005). Although extant research on the functional allocation of resources in the sales process has progressed, e.g., when it comes to inside sales units (Homburg et al., 2021) or customer success management (Hochstein et al., 2021; Hochstein et al., 2020), there is yet scarce evidence on how to successfully build up sales models that consistently integrate the different functions and roles.

Furthermore, this thesis mainly focuses on direct sales channels and thus neglects a variety of challenges that may arise from indirect sales channels or online sales channels. To address the increasing importance of digital sales channels (Guenzi & Habel, 2020; Guenzi & Nijssen, 2021), future research could examine the role of web shops and other web-based purchasing platforms in the context of DS selling. These research endeavors promise interesting results because sales management instruments might again require adaptations if customers can inform themselves on websites or purchase DS via web shops without major selling efforts of sales reps.

In addition, researchers could use the identified sales support elements, controls, and incentives to assess which instruments are most effective in steering the selling of different DS types. To explore the effectiveness of sales management instruments, a more detailed understanding of DS sales performance is furthermore necessary. The

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<sup>8</sup> Parts of this chapter, in particular the second, third, fifth, and sixth passage, were initially published in Tienken et al. (2023).

work of Bolander et al. (2021) represents a first foray into this field of research. However, far more research is needed to operationalize DS sales performance because sales force steering and sales performance management are difficult in firms where traditional and digital business models coexist (Ulaga & Loveland, 2014).

Methodology-wise, this thesis mainly relied on static, cross-sectional interview data. Beyond limitations of generalizability, this research design precludes the author from inferring the superiority of one sales management instrument over another. Future quantitative research could compare the identified controls and incentives by using longitudinal, objective sales performance data. Recent research has used advanced theoretical (Jerath & Long, 2020) and empirical modeling (Chung, 2021) to compare control systems and compensation plans in generic B2B sales settings. Moreover, hierarchical linear modeling appears particularly useful to disentangle firm-level (Magnotta et al., 2020), country-level (Hohenberg & Homburg, 2016), and intertemporal (Ahearne, Lam, et al., 2010) effects. Given their maturity and selling experience regarding DS, SaaS companies could provide a fertile ground to further explore the appropriateness and design of sales control systems, as well as sales targets and incentives for DS selling.

Sample-wise, this thesis primarily draws on data from Central and Northern European companies. Future studies in this field should include other geographical areas to increase the generalizability of the findings. This is an important shortcoming because cultural aspects heavily affect sales management instruments, such as control systems and incentives (Hohenberg & Homburg, 2016). Given the focus of this thesis, empirical data mainly rest on managerial insights and therefore largely neglect the sales rep perspective. Consequently, future studies should also incorporate the sales rep perspective to a greater extent, e.g., to examine their reaction to and satisfaction with different sales management instruments in DS selling.

Theory-wise, future research on DS selling could also benefit from an attention-based view perspective (Ocasio, 1997) to investigate and understand how decision-makers in sales organizations channel and distribute attention to DS selling tasks. Given the crucial role of sales managers in driving the transition toward DS selling, future studies could examine how much importance they attach to DS selling alongside other strategically important sales topics, such as the development of digital sales channels (e.g., Fischer et al., 2023) or the introduction of new sales tools (e.g., Mullins & Agnihotri, 2022; Rusthollkarhu et al., 2022).

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## References

- Agarwal, S. (1996). Consequences of marketing controls among sales and nonsales marketing personnel. *Industrial Marketing Management*, 25(5), 411–420. [https://doi.org/10.1016/0019-8501\(96\)00041-7](https://doi.org/10.1016/0019-8501(96)00041-7)
- Agarwal, S., & Ramaswami, S. N. (1993). Marketing controls and employee responses: The moderating role of task characteristics. *Journal of the Academy of Marketing Science*, 21(4), 293–306. <https://doi.org/10.1007/BF02894522>
- Ahearne, M., Lam, S. K., Mathieu, J. E., & Bolander, W. (2010). Why Are Some Salespeople Better at Adapting to Organizational Change? *Journal of Marketing*, 74(3), 65–79. <https://doi.org/10.1509/jmkg.74.3.065>
- Ahearne, M., Mackenzie, S. B., Podsakoff, P. M., Mathieu, J. E., & Lam, S. K. (2010). The Role of Consensus in Sales Team Performance. *Journal of Marketing Research*, 47(3), 458–469. <https://doi.org/10.1509/jmkr.47.3.458>
- Ahearne, M., Rapp, A., Hughes, D. E., & Jindal, R. (2010). Managing Sales Force Product Perceptions and Control Systems in the Success of New Product Introductions. *Journal of Marketing Research*, 47(4), 764–776. <https://doi.org/10.1509/jmkr.47.4.764>
- Ahmad, B., Da Liu, Akhtar, N., & Siddiqi, U. I. (2022). Does service-sales ambidexterity matter in business-to-business service recovery? A perspective through salesforce control system. *Industrial Marketing Management*, 102, 351–363. <https://doi.org/10.1016/j.indmarman.2022.02.007>
- Ahmed, P. K., & Rafiq, M. (2003). Internal marketing issues and challenges. *European Journal of Marketing*, 37(9), 1177–1186. <https://doi.org/10.1108/03090560310498813>
- Alamäki, A., & Korpela, P. (2021). Digital transformation and value-based selling activities: seller and buyer perspectives. *Baltic Journal of Management*, 16(2), 298–317. <https://doi.org/10.1108/BJM-08-2020-0304>
- Alavi, S., Böhm, E., Habel, J., Wieseke, J., Schmitz, C., & Brüggemann, F. (2022). The ambivalent role of monetary sales incentives in service innovation selling. *Journal of Product Innovation Management*, 39(3), 445–463. <https://doi.org/10.1111/jpim.12600>
- Allmendinger, G., & Lombreglia, R. (2005). Four Strategies for the Age of Smart Services. *Harvard Business Review*, 83(10), 131–134.
- Anderson, E., & Oliver, R. L. (1987). Perspectives on Behavior-Based versus Outcome-Based Salesforce Control Systems. *Journal of Marketing*, 51(4), 76–88. <https://doi.org/10.1177/002224298705100407>

- 
- Anderson, E., & Robertson, T. S. (1995). Inducing Multiline Salespeople to Adopt House Brands. *Journal of Marketing*, 59(2), 16–31.  
<https://doi.org/10.2307/1252070>
- Arndt, J. (1967). Role of Product-Related Conversations in the Diffusion of a New Product. *Journal of Marketing Research*, 4(3), 291–295.  
<https://doi.org/10.2307/3149462>
- Atuahene-Gima, K. (1997). Adoption of New Products by the Sales Force: The Construct, Research Propositions, and Managerial Implications. *Journal of Product Innovation Management*, 14(6), 498–514.  
<https://doi.org/10.1111/1540-5885.1460498>
- Baldauf, A., Cravens, D. W., & Piercy, N. F. (2005). Sales Management Control Research—Synthesis and an Agenda for Future Research. *Journal of Personal Selling & Sales Management*, 25(1), 7–26.  
<https://doi.org/10.1080/08853134.2005.10749044>
- Balkin, D. B., & Gomez-Mejia, L. R. (1987). Toward a contingency theory of compensation strategy. *Strategic Management Journal*, 8(2), 169–182.  
<https://doi.org/10.1002/smj.4250080207>
- Baltuttis, D., Häckel, B., Jonas, C. M., Oberländer, A. M., Röglinger, M., & Seyfried, J. (2022). Conceptualizing and Assessing the Value of Internet of Things Solutions. *Journal of Business Research*, 140, 245–263.  
<https://doi.org/10.1016/j.jbusres.2021.10.063>
- Bartol, K. M. (1999). Reframing Salesforce Compensation Systems: An Agency Theory-Based Performance Management Perspective. *Journal of Personal Selling & Sales Management*, 19(3), 1–16.  
<https://doi.org/10.1080/08853134.1999.10754178>
- Bass, F. M., Gordon, K., Ferguson, T. L., & Githens, M. L. (2001). Directv: Forecasting Diffusion of a New Technology Prior to Product Launch. *Interfaces*, 31(3), 82–93. <https://doi.org/10.1287/inte.31.3s.82.9677>
- Basu, A. K., Lal, R., Srinivasan, V., & Staelin, R. (1985). Salesforce Compensation Plans: An Agency Theoretic Perspective. *Marketing Science*, 4(4), 267–291.  
<https://doi.org/10.1287/mksc.4.4.267>
- Baxter, R. K. (2015). *The membership economy: Find your superusers, master the forever transaction, and build recurring revenue*. McGraw-Hill Education.
- Bello, D. C., & Gilliland, D. I. (1997). The Effect of Output Controls, Process Controls, and Flexibility on Export Channel Performance. *Journal of Marketing*, 61(1), 22–38. <https://doi.org/10.2307/1252187>

- Bergen, M., Dutta, S., & Walker, O. C. (1992). Agency Relationships in Marketing: A Review of the Implications and Applications of Agency and Related Theories. *Journal of Marketing*, *56*(3), 1–24. <https://doi.org/10.2307/1252293>
- Berry, L. L. (1981). The Employee as Customer. *Journal of Retail Banking*, *3*(1), 33–40.
- Beuk, F., Malter, A. J., Spanjol, J., & Cocco, J. (2014). Financial Incentives and Salesperson Time Orientation in New Product Launch: A Longitudinal Study. *Journal of Product Innovation Management*, *31*(4), 647–663. <https://doi.org/10.1111/jpim.12157>
- Blumberg, M., & Pringle, C. D. (1982). The Missing Opportunity in Organizational Research: Some Implications for a Theory of Work Performance. *Academy of Management Review*, *7*(4), 560–569. <https://doi.org/10.5465/amr.1982.4285240>
- Böhm, E., Eggert, A., Terho, H., Ulaga, W., & Haas, A. (2020). Drivers and outcomes of salespersons' value opportunity recognition competence in solution selling. *Journal of Personal Selling & Sales Management*, *40*(3), 1–18. <https://doi.org/10.1080/08853134.2020.1778484>
- Bolander, W., Chaker, N. N., Pappas, A., & Bradbury, D. R. (2021). Operationalizing salesperson performance with secondary data: aligning practice, scholarship, and theory. *Journal of the Academy of Marketing Science*, *49*, 462–481. <https://doi.org/10.1007/s11747-020-00752-0>
- Boldosova, V. (2020). Telling stories that sell: The role of storytelling and big data analytics in smart service sales. *Industrial Marketing Management*, *86*, 122–134. <https://doi.org/10.1016/j.indmarman.2019.12.004>
- Bond, E. U., Jong, A. de, Eggert, A., Houston, M. B., Kleinaltenkamp, M., Kohli, A. K., Ritter, T., & Ulaga, W. (2020). The Future of B2B Customer Solutions in a Post-COVID-19 Economy: Managerial Issues and an Agenda for Academic Inquiry. *Journal of Service Research*, *23*(4), 401–408. <https://doi.org/10.1177/1094670520960230>
- Bonnemeier, S., Buriánek, F., & Reichwald, R. (2010). Revenue models for integrated customer solutions: Concept and organizational implementation. *Journal of Revenue and Pricing Management*, *9*(3), 228–238. <https://doi.org/10.1057/rpm.2010.7>
- Boudreau, K., Jeppesen, L. B., & Miric, M. (2017). Freemium, Network Effects and Digital Competition: Evidence from the Introduction of Game Center on the Apple App Store. *SSRN Electronic Journal*, *2984546*. <https://doi.org/10.2139/ssrn.2984546>

- 
- Boyatzis, R. E. (Ed.). (2009). *Transforming qualitative information: Thematic analysis and code development*. SAGE.
- Brown, S. P., & Peterson, R. A. (1994). The Effect of Effort on Sales Performance and Job Satisfaction. *Journal of Marketing*, *58*(2), 70–80.  
<https://doi.org/10.1177/002224299405800206>
- Calantone, R. J., & Di Benedetto, C. A. (2012). The role of lean launch execution and launch timing on new product performance. *Journal of the Academy of Marketing Science*, *40*(4), 526–538. <https://doi.org/10.1007/s11747-011-0258-1>
- Child, J. (1974). What determines organization performance? - The universals vs. the it-all-depends. *Organizational Dynamics*, *3*(1), 2–18.  
[https://doi.org/10.1016/0090-2616\(74\)90001-1](https://doi.org/10.1016/0090-2616(74)90001-1)
- Chung, D. J. (2020). Commercial Sales Transformation at Microsoft. *Harvard Business School Teaching Note*, (520-038).
- Chung, D. J. (2021). How to Shift from Selling Products to Selling Services. *Harvard Business Review*, *99*(2), 48–52.
- Chung, D. J., Kim, B., & Park, B. G. (2021). The Comprehensive Effects of Sales Force Management: A Dynamic Structural Analysis of Selection, Compensation, and Training. *Management Science*, *67*(11), 7046–7074.  
<https://doi.org/10.1287/mnsc.2020.3853>
- Classen, M., & Friedli, T. (2021a). ‘It’s not like we can charge for everything’: revenue models to capture value from smart services in Pacific Asia. *Asia Pacific Business Review*, *27*(3), 405–430.  
<https://doi.org/10.1080/13602381.2021.1894770>
- Classen, M., & Friedli, T. (2021b). Eight organizational enablers of digital service-sales ambidexterity in industrial firms. *Journal of Business & Industrial Marketing*, *37*(11), 2142–2155. <https://doi.org/10.1108/JBIM-02-2021-0080>
- Corbin, J. M., & Strauss, A. L. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). SAGE.
- Coreynen, W., Matthyssens, P., & van Bockhaven, W. (2017). Boosting servitization through digitization: Pathways and dynamic resource configurations for manufacturers. *Industrial Marketing Management*, *60*, 42–53.  
<https://doi.org/10.1016/j.indmarman.2016.04.012>
- Cravens, D. W., Ingram, T. N., LaForge, R. W., & Young, C. E. (1993). Behavior-Based and Outcome-Based Salesforce Control Systems. *Journal of Marketing*, *57*(4), 47–59. <https://doi.org/10.1177/002224299305700404>

- 
- Cravens, D. W., Lassk, F. G., Low, G. S., Marshall, G. W., & Moncrief, W. C. (2004). Formal and informal management control combinations in sales organizations. *Journal of Business Research*, 57(3), 241–248. [https://doi.org/10.1016/S0148-2963\(02\)00322-3](https://doi.org/10.1016/S0148-2963(02)00322-3)
- Creswell, J. W. (Ed.). (2012). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research* (4th ed.). Pearson.
- Crotty, M. (2015). *The foundations of social research: Meaning and perspective in the research process* (Reprinted.). SAGE.
- Darmon, R. Y., & Martin, X. C. (2011). A New Conceptual Framework of Sales Force Control Systems. *Journal of Personal Selling & Sales Management*, 31(3), 297–310. <https://doi.org/10.2753/PSS0885-3134310307>
- DeCarlo, T. E., & Lam, S. K. (2016). Identifying effective hunters and farmers in the salesforce: a dispositional–situational framework. *Journal of the Academy of Marketing Science*, 44(4), 415–439. <https://doi.org/10.1007/s11747-015-0425-x>
- Dhar, R., Menon, A., & Maach, B. (2004). Toward Extending the Compromise Effect to Complex Buying Contexts. *Journal of Marketing Research*, 41(3), 258–261. <https://doi.org/10.1509/jmkr.41.3.258.35996>
- Di Benedetto, C. (1999). Identifying the Key Success Factors in New Product Launch. *Journal of Product Innovation Management*, 16(6), 530–544. [https://doi.org/10.1016/S0737-6782\(99\)00014-4](https://doi.org/10.1016/S0737-6782(99)00014-4)
- Diorio, S. (2021, March 8). Transforming The Selling Model From Within At Honeywell. *Forbes*. <https://www.forbes.com/sites/stephendiorio/2021/03/08/transforming-the-selling-model-from-within-at-honeywell/?sh=65ab626659e9>
- Dunn, D. T., Thomas, C. A., & Lubawski, J. L. (1981). Pitfalls of consultative selling. *Business Horizons*, 24(5), 59–65. [https://doi.org/10.1016/S0007-6813\(81\)80029-8](https://doi.org/10.1016/S0007-6813(81)80029-8)
- Easingwood, C., & Harrington, S. (2002). Launching and re-launching high technology products. *Technovation*, 22(11), 657–666. [https://doi.org/10.1016/S0166-4972\(02\)00097-4](https://doi.org/10.1016/S0166-4972(02)00097-4)
- Edinger, S. (2020, June 23). How to Convince Your Sales Team to Adopt a Subscription Model. *Harvard Business Review*. <https://hbr.org/2020/06/how-to-convince-your-sales-team-to-adopt-a-subscription-model>
- Edmondson, A. C., & Mcmanus, S. E. (2007). Methodological fit in management field research. *The Academy of Management Review*, 32(4), 1246–1264. <https://doi.org/10.5465/AMR.2007.26586086>

- 
- Ehret, M., & Wirtz, J. (2017). Unlocking value from machines: business models and the industrial internet of things. *Journal of Marketing Management*, 33(1-2), 111–130. <https://doi.org/10.1080/0267257X.2016.1248041>
- Eisenhardt, K. M. (1989a). Agency Theory: An Assessment and Review. *The Academy of Management Review*, 14(1), 57–74. <https://doi.org/10.2307/258191>
- Eisenhardt, K. M. (1989b). Building Theories from Case Study Research. *Academy of Management Review*, 14(4), 532. <https://doi.org/10.2307/258557>
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory Building From Cases: Opportunities And Challenges. *Academy of Management Journal*, 50(1), 25–32. <https://doi.org/10.5465/amj.2007.24160888>
- Eng, T.-Y., & Quaia, G. (2009). Strategies for improving new product adoption in uncertain environments: A selective review of the literature. *Industrial Marketing Management*, 38(3), 275–282. <https://doi.org/10.1016/j.indmarman.2008.01.003>
- Ernst, H., Hoyer, W. D., & RübSaamen, C. (2010). Sales, Marketing, and Research-and-Development Cooperation Across New Product Development Stages: Implications for Success. *Journal of Marketing*, 74(5), 80–92. <https://doi.org/10.1509/jmkg.74.5.80>
- Etiemble, F. (2020, April 27). *Hilti: Shift from a Product to a Service Business Model*. <https://www.strategyzer.com/blog/lessons-from-hilti-on-what-it-takes-to-shift-from-a-product-to-a-service-business-model>
- Favoretto, C., Mendes, G. H., Oliveira, M. G., Cauchick-Miguel, P. A., & Coreynen, W. (2022). From servitization to digital servitization: How digitalization transforms companies' transition towards services. *Industrial Marketing Management*, 102, 104–121. <https://doi.org/10.1016/j.indmarman.2022.01.003>
- Fiedler, F. (1964). A Contingency Model of Leadership Effectiveness. In *Advances in Experimental Social Psychology* (Vol. 1, pp. 149–190). Elsevier. [https://doi.org/10.1016/S0065-2601\(08\)60051-9](https://doi.org/10.1016/S0065-2601(08)60051-9)
- Fischer, H., Seidenstricker, S., & Poeppelbuss, J. (2023). The triggers and consequences of digital sales: a systematic literature review. *Journal of Personal Selling & Sales Management*, 43(1), 5–23. <https://doi.org/10.1080/08853134.2022.2102029>
- Fraenkel, S., Haftor, D. M., & Pashkevich, N. (2016). Salesforce management factors for successful new product launch. *Journal of Business Research*, 69(11), 5053–5058. <https://doi.org/10.1016/j.jbusres.2016.04.079>

- Frandsen, T., Boa, S. Ø., & Raja, J. Z. (2019). Pricing structures for solutions: an exploratory study within the oil and gas industry. *International Journal of Production Research*, *57*(22), 6977–6992.  
<https://doi.org/10.1080/00207543.2019.1572933>
- Frattoni, F., Dell'Era, C., & Rangone, A. (2013). Launch Decisions and the Early Market Survival of Innovations: An Empirical Analysis of the Italian Mobile Value-Added Services (VAS) Industry. *Journal of Product Innovation Management*, *30*, 174–187. <https://doi.org/10.1111/jpim.12070>
- Frenzen, H., Hansen, A.-K., Krafft, M., Mantrala, M. K., & Schmidt, S. (2010). Delegation of pricing authority to the sales force: An agency-theoretic perspective of its determinants and impact on performance. *International Journal of Research in Marketing*, *27*(1), 58–68.  
<https://doi.org/10.1016/j.ijresmar.2009.09.006>
- Friend, S. B., & Malshe, A. (2016). Key Skills for Crafting Customer Solutions Within an Ecosystem: A Theories-in Use Perspective. *Journal of Service Research*, *19*(2), 174–191. <https://doi.org/10.1177/1094670515617154>
- Fu, F. Q. (2015). Motivate to Improve Salesforce Performance: The Sales Training Perspective. *Performance Improvement*, *54*(4), 31–35.  
<https://doi.org/10.1002/pfi.21474>
- Fu, F. Q., Jones, E., & Bolander, W. (2008). Product Innovativeness, Customer Newness, and New Product Performance: A Time-Lagged Examination of the Impact of Salesperson Selling Intentions on New Product Performance. *Journal of Personal Selling & Sales Management*, *28*(4), 351–364.  
<https://doi.org/10.2753/PSS0885-3134280402>
- Fu, F. Q., Richards, K. A., Hughes, D. E., & Jones, E. (2010). Motivating Salespeople to Sell New Products: The Relative Influence of Attitudes, Subjective Norms, and Self-Efficacy. *Journal of Marketing*, *74*(6), 61–76.  
<https://doi.org/10.1509/jmkg.74.6.61>
- Fu, F. Q., Richards, K. A., & Jones, E. (2009). The Motivation Hub: Effects of Goal Setting and Self-Efficacy on Effort and New Product Sales. *Journal of Personal Selling and Sales Management*, *29*(3), 277–292.  
<https://doi.org/10.2753/PSS0885-3134290305>
- Galbraith, J. R. (2002). Organizing to Deliver Solutions. *Organizational Dynamics*, *31*(2), 194–207. [https://doi.org/10.1016/S0090-2616\(02\)00101-8](https://doi.org/10.1016/S0090-2616(02)00101-8)

- 
- Gassmann, O. (1997). *Internationales F&E-Management: Potentiale und Gestaltungskonzepte transnationaler F&E-Projekte*. Oldenbourg Wissenschaftsverlag.
- Gebauer, H., Arzt, A., Kohtamäki, M., Lamprecht, C., Parida, V., Witell, L., & Wortmann, F. (2020). How to convert digital offerings into revenue enhancement – Conceptualizing business model dynamics through explorative case studies. *Industrial Marketing Management, 91*, 429–441. <https://doi.org/10.1016/j.indmarman.2020.10.006>
- Gebauer, H., Fleisch, E., Lamprecht, C., & Wortmann, F. (2020). Growth paths for overcoming the digitalization paradox. *Business Horizons, 63*(3), 313–323. <https://doi.org/10.1016/j.bushor.2020.01.005>
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods, 16*(1), 15–31. <https://doi.org/10.1177/1094428112452151>
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research* (1st ed.). Aldine.
- Gohad, A., Narendra, N. C., & Ramachandran, P. (2013). Cloud Pricing Models: A Survey and Position Paper. In *2013 IEEE International Conference on Cloud Computing in Emerging Markets (CCEM)* (pp. 1–8). IEEE. <https://doi.org/10.1109/CCEM.2013.6684430>
- Grubic, T., & Peppard, J. (2016). Servitized manufacturing firms competing through remote monitoring technology. *Journal of Manufacturing Technology Management, 27*(2), 154–184. <https://doi.org/10.1108/JMTM-05-2014-0061>
- Guenzi, P., & Habel, J. (2020). Mastering the Digital Transformation of Sales. *California Management Review, 62*(4), 57–85. <https://doi.org/10.1177/0008125620931857>
- Guenzi, P., & Nijssen, E. J. (2021). The impact of digital transformation on salespeople: an empirical investigation using the JD-R model. *Journal of Personal Selling & Sales Management, 41*(2), 130–149. <https://doi.org/10.1080/08853134.2021.1918005>
- Guenzi, P., & Nijssen, E. J. (2023). The relationship between digital solution selling and value-based selling: a motivation-opportunity-ability (MOA) perspective. *European Journal of Marketing, 57*(3), 745–770. <https://doi.org/10.1108/EJM-11-2021-0907>

- Gummesson, E. (1987). Using internal marketing to develop a new culture—The case of Ericsson quality. *Journal of Business & Industrial Marketing*, 2(3), 23–28. <https://doi.org/10.1108/eb006032>
- Gupta, S., & Lehmann, D. R. (2008). *Managing customers as investments: The strategic value of customers in the long run* (4. print). Pearson.
- Gupta, S., Lehmann, D. R., & Stuart, J. A. (2004). Valuing Customers. *Journal of Marketing Research*, 41(1), 7–18. <https://doi.org/10.1509/jmkr.41.1.7.25084>
- Hatami, H., Huber, I., Murthy, V., & Plotkin, C. L. (2018, October 19). Sales incentives that boost growth. *McKinsey & Company*. <https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/sales-incentives-that-boost-growth>
- Hengstebeck, B. B., Kassemeier, R., & Wieseke, J. (2022). What comprises a successful key account manager? Differences in the drivers of sales performance between key account managers and regular salespeople. *Industrial Marketing Management*, 106, 392–404. <https://doi.org/10.1016/j.indmarman.2022.09.003>
- Hickson, D. J., Hinings, C. R., Lee, C. A., Schneck, R. E., & Pennings, J. M. (1971). A Strategic Contingencies' Theory of Intraorganizational Power. *Administrative Science Quarterly*, 16(2), 216. <https://doi.org/10.2307/2391831>
- Hochstein, B., Chaker, N. N., Rangarajan, D., Nagel, D., & Hartmann, N. N. (2021). Proactive Value Co-Creation via Structural Ambidexterity: Customer Success Management and the Modularization of Frontline Roles. *Journal of Service Research*, 24(4), 601–621. <https://doi.org/10.1177/1094670521997565>
- Hochstein, B., Rangarajan, D., Mehta, N., & Kocher, D. (2020). An Industry/Academic Perspective on Customer Success Management. *Journal of Service Research*, 23(1), 3–7. <https://doi.org/10.1177/1094670519896422>
- Hoffmann, C., Alavi, S., & Schmitz, C. (2022). Sales manager encouragement behavior in value-centered business models. *European Journal of Marketing*, 57(3), 771–793. <https://doi.org/10.1108/EJM-11-2021-0906>
- Høgevold, N., Rodriguez, R., Svensson, G., & Otero-Neira, C. (2021). B to B Sellers' Skill Level in Sales Performance – Frameworks and Findings. *Journal of Business-to-Business Marketing*, 28(3), 265–281. <https://doi.org/10.1080/1051712X.2021.1974169>
- Hohenberg, S., & Homburg, C. (2016). Motivating Sales Reps for Innovation Selling in Different Cultures. *Journal of Marketing*, 80(2), 101–120. <https://doi.org/10.1509/jm.14.0398>

- 
- Holmstrom, B. (1979). Moral Hazard and Observability. *The Bell Journal of Economics*, 10(1), 74–91. <https://doi.org/10.2307/3003320>
- Homburg, C., Hohenberg, S., & Hahn, A. (2019). Steering the Sales Force for New Product Selling: Why Is it Different, and How Can Firms Motivate Different Sales Reps? *Journal of Product Innovation Management*, 36(3), 282–304. <https://doi.org/10.1111/jpim.12476>
- Homburg, C., Morguet, T. R., & Hohenberg, S. (2021). Incentivizing of inside sales units — the interplay of incentive types and unit structures. *Journal of Personal Selling & Sales Management*, 41(3), 181–199. <https://doi.org/10.1080/08853134.2021.1872381>
- House, R. J., & Mitchell, T. R. (1975). Path-goal theory of leadership. *Washington University Seattle Department of Psychology*.
- Hsuan, J., Jovanovic, M., & Clemente, D. H. (2021). Exploring digital servitization trajectories within product–service–software space. *International Journal of Operations & Production Management*, 41(5), 598–621. <https://doi.org/10.1108/IJOPM-08-2020-0525>
- Hugly, P., & Sayward, C. (1987). Relativism and Ontology. *The Philosophical Quarterly*, 37(148), 278–290. <https://doi.org/10.2307/2220398>
- Huikkola, T., Kohtamäki, M., & Ylimäki, J. (2022). Becoming a smart solution provider: Reconfiguring a product manufacturer's strategic capabilities and processes to facilitate business model innovation. *Technovation*, 118, 102498. <https://doi.org/10.1016/j.technovation.2022.102498>
- Hultink, E. J., & Atuahene-Gima, K. (2000). The Effect of Sales Force Adoption on New Product Selling Performance. *Journal of Product Innovation Management*, 17(6), 435–450. <https://doi.org/10.1111/1540-5885.1760435>
- Hultink, E. J., & Robben, H. S. J. (1995). Measuring New Product Success: The Difference that Time Perspective Makes. *Journal of Product Innovation Management*, 12(5), 392–405. <https://doi.org/10.1111/1540-5885.1250392>
- Ivancevich, J. M., & Konopaske, R. (2014). *Organizational behavior and management* (10th ed.). McGraw-Hill Companies Inc.
- Iyengar, R., van den Bulte, C., & Valente, T. W. (2011). Opinion Leadership and Social Contagion in New Product Diffusion. *Marketing Science*, 30(2), 195–212. <https://doi.org/10.1287/mksc.1100.0566>
- Janzer, A. H. (2017). *Subscription marketing: Strategies for nurturing customers in a world of churn* (2nd ed.). Cuesta Park Consulting.

- Jaworski, B. J. (1988). Toward a Theory of Marketing Control: Environmental Context, Control Types, and Consequences. *Journal of Marketing*, 52(3), 23. <https://doi.org/10.2307/1251447>
- Jaworski, B. J., & Macinnis, D. J. (1989). Marketing Jobs and Management Controls: Toward a Framework. *Journal of Marketing Research*, 26(4), 406–419. <https://doi.org/10.1177/002224378902600403>
- Jaworski, B. J., Stathakopoulos, V., & Krishnan, H. S. (1993). Control Combinations in Marketing: Conceptual Framework and Empirical Evidence. *Journal of Marketing*, 57(1), 57–69. <https://doi.org/10.2307/1252057>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Jerath, K., & Long, F. (2020). Multiperiod Contracting and Salesperson Effort Profiles: The Optimality of “Hockey Stick,” “Giving Up,” and “Resting on Laurels”. *Journal of Marketing Research*, 57(2), 211–235. <https://doi.org/10.1177/0022243719887378>
- Jick, T. D. (1979). Mixing Qualitative and Quantitative Methods: Triangulation in Action. *Administrative Science Quarterly*, 24(4), 602–611. <https://doi.org/10.2307/2392366>
- John, G., & Weitz, B. (1989). Salesforce Compensation: An Empirical Investigation of Factors Related to Use of Salary versus Incentive Compensation. *Journal of Marketing Research*, 26(1), 1–14. <https://doi.org/10.2307/3172665>
- Johnson, J. S., & Sohi, R. S. (2017). Getting business-to-business salespeople to implement strategies associated with introducing new products and services. *Industrial Marketing Management*, 62, 137–149. <https://doi.org/10.1016/j.indmarman.2016.08.006>
- Jones, E., Dixon, A. L., Chonko, L. B., & Cannon, J. P. (2005). Key Accounts and Team Selling: A Review, Framework, and Research Agenda. *Journal of Personal Selling & Sales Management*, 25(2), 181–198. <https://doi.org/10.1080/08853134.2005.10749058>
- Jong, A. de, Verbeke, W., & Nijssen, E. (2014). Introduction to Special Issue: Sales and Innovation. *Journal of Product Innovation Management*, 31(4), 643–646. <https://doi.org/10.1111/jpim.12154>
- Joseph, K., & Kalwani, M. U. (1998). The Role of Bonus Pay in Salesforce Compensation Plans. *Industrial Marketing Management*, 27(2), 147–159. [https://doi.org/10.1016/S0019-8501\(97\)00045-X](https://doi.org/10.1016/S0019-8501(97)00045-X)

- 
- Joseph, K., & Thevaranjan, A. (1998). Monitoring and Incentives in Sales Organizations: An Agency-Theoretic Perspective. *Marketing Science*, 17(2), 107–123. <https://doi.org/10.1287/mksc.17.2.107>
- Kamada, Y., & Öry, A. (2020). Contracting with Word-of-Mouth Management. *Management Science*, 66(11), 5094–5107. <https://doi.org/10.1287/mnsc.2019.3417>
- Kamalaldin, A., Linde, L., Sjödin, D., & Parida, V. (2020). Transforming provider-customer relationships in digital servitization: A relational view on digitalization. *Industrial Marketing Management*, 89, 306–325. <https://doi.org/10.1016/j.indmarman.2020.02.004>
- Kast, F. E., & Rosenzweig, J. E. (1972). General System Theory: Applications for Organization and Management. *Academy of Management Journal*, 15(4), 447–465. <https://doi.org/10.2307/255141>
- Katsikeas, C. S., Auh, S., Spyropoulou, S., & Menguc, B. (2018). Unpacking the Relationship between Sales Control and Salesperson Performance: A Regulatory Fit Perspective. *Journal of Marketing*, 82(3), 45–69. <https://doi.org/10.1509/jm.16.0346>
- Katz, M. L., & Shapiro, C. (1985). Network Externalities, Competition, and Compatibility. *The American Economic Review*, 75(3), 424–440.
- Kauppila, O.-P., Rajala, R., & Jyrämä, A. (2010). Antecedents of salespeople's reluctance to sell radically new products. *Industrial Marketing Management*, 39(2), 308–316. <https://doi.org/10.1016/j.indmarman.2008.11.003>
- Kelley, B. (2021, June 11). Why Sales Teams Need To Adapt To The Subscription Economy. *Forbes*. <https://www.forbes.com/sites/forbestechcouncil/2021/06/11/why-sales-teams-need-to-adapt-to-the-subscription-economy/?sh=4337998f46ef>
- Keränen, J., Salonen, A., & Terho, H. (2020). Opportunities for value-based selling in an economic crisis: Managerial insights from a firm boundary theory. *Industrial Marketing Management*, 88, 389–395. <https://doi.org/10.1016/j.indmarman.2020.05.029>
- Kim, M., Sudhir, K., & Uetake, K. (2021). A Structural Model of a Multitasking Salesforce: Incentives, Private Information, and Job Design. *Management Science*, 68(6), 4602–4630. <https://doi.org/10.1287/mnsc.2021.4079>
- Kim, M., Sudhir, K., Uetake, K., & Canales, R. (2019). When Salespeople Manage Customer Relationships: Multidimensional Incentives and Private Information.

- Journal of Marketing Research*, 56(5), 749–766.  
<https://doi.org/10.1177/0022243719847661>
- Kim, S. K., & Tiwana, A. (2016). Chicken or egg? Sequential complementarity among salesforce control mechanisms. *Journal of the Academy of Marketing Science*, 44(3), 316–333. <https://doi.org/10.1007/s11747-014-0409-2>
- Kindström, D. (2010). Towards a service-based business model – Key aspects for future competitive advantage. *European Management Journal*, 28(6), 479–490. <https://doi.org/10.1016/j.emj.2010.07.002>
- Kindström, D., Kowalkowski, C., & Alejandro, T. B. (2015). Adding services to product-based portfolios. *Journal of Service Management*, 26(3), 372–393. <https://doi.org/10.1108/JOSM-02-2014-0042>
- Klein, M. M., Biehl, S. S., & Friedli, T. (2018). Barriers to smart services for manufacturing companies – an exploratory study in the capital goods industry. *Journal of Business & Industrial Marketing*, 33(6), 846–856. <https://doi.org/10.1108/JBIM-10-2015-0204>
- Kohli, A. K., Shervani, T. A., & Challagalla, G. N. (1998). Learning and Performance Orientation of Salespeople: The Role of Supervisors. *Journal of Marketing Research*, 35(2), 263–274. <https://doi.org/10.1177/002224379803500211>
- Kohtamäki, M., Parida, V., Oghazi, P., Gebauer, H., & Baines, T. (2019). Digital servitization business models in ecosystems: A theory of the firm. *Journal of Business Research*, 104, 380–392. <https://doi.org/10.1016/j.jbusres.2019.06.027>
- Koponen, J., Julkunen, S., & Asai, A. (2019). Sales communication competence in international B2B solution selling. *Industrial Marketing Management*, 82, 238–252. <https://doi.org/10.1016/j.indmarman.2019.01.009>
- Kowalkowski, C., Gebauer, H., & Oliva, R. (2017). Service growth in product firms: Past, present, and future. *Industrial Marketing Management*, 60, 82–88. <https://doi.org/10.1016/j.indmarman.2016.10.015>
- Krafft, M. (1999). An Empirical Investigation of the Antecedents of Sales Force Control Systems. *Journal of Marketing*, 63(3), 120–134. <https://doi.org/10.1177/002224299906300308>
- Krämer, M., Desernot, C., Alavi, S., Schmitz, C., Brüggemann, F., & Wieseke, J. (2022). The role of salespeople in industrial servitization: How to manage diminishing profit returns from salespeople’s increasing industrial service shares. *International Journal of Research in Marketing*, 39(4), 1235–1252. <https://doi.org/10.1016/j.ijresmar.2022.03.001>

- 
- Kubicek, H. (1977). Heuristische Bezugsrahmen und heuristisch angelegte Forschungsdesigns als Elemente der Konstruktionsstrategie empirischer Forschung. In R. Köhler (Ed.), *Empirische und handlungstheoretische Forschungskonzeption in der Betriebswirtschaftslehre* (1st ed., pp. 3–36). Poeschel.
- Kuester, S., Homburg, C., & Hess, S. C. (2012). Externally Directed and Internally Directed Market Launch Management: The Role of Organizational Factors in Influencing New Product Success. *Journal of Product Innovation Management*, 29, 38–52. <https://doi.org/10.1111/j.1540-5885.2012.00968.x>
- La Rocca, A., Moscatelli, P., Perna, A., & Snehota, I. (2016). Customer involvement in new product development in B2B: The role of sales. *Industrial Marketing Management*, 58, 45–57. <https://doi.org/10.1016/j.indmarman.2016.05.014>
- Lamprecht, C., Gebauer, H., Fleisch, E., & Wortmann, F. (2022). A KPI Set for Steering the IoT Business in Product Companies. *Research-Technology Management*, 65(2), 53–63. <https://doi.org/10.1080/08956308.2022.2015951>
- Lawrence, J. M., Scheer, L. K., Crecelius, A. T., & Lam, S. K. (2021). Salesperson Dual Agency in Price Negotiations. *Journal of Marketing*, 85(2), 89–109. <https://doi.org/10.1177/0022242920974611>
- Lawrence, P. R., & Lorsch, J. W. (1967). Differentiation and Integration in Complex Organizations. *Administrative Science Quarterly*, 12(1), 1–14. <https://doi.org/10.2307/2391211>
- Lenka, S., Parida, V., & Wincent, J. (2017). Digitalization Capabilities as Enablers of Value Co-Creation in Servitizing Firms. *Psychology & Marketing*, 34(1), 92–100. <https://doi.org/10.1002/mar.20975>
- Lerch, C., & Gotsch, M. (2015). Digitalized Product-Service Systems in Manufacturing Firms: A Case Study Analysis. *Research-Technology Management*, 58(5), 45–52. <https://doi.org/10.5437/08956308X5805357>
- Levihn, U., & Levihn, F. (2016). The Transition from Product to Solution Selling: The Role and Organization of Employees Engaged in Current Business. *Journal of Business-to-Business Marketing*, 23(3), 207–219. <https://doi.org/10.1080/1051712X.2016.1215739>
- Li, H., Jain, S., & Kannan, P. K. (2019). Optimal Design of Free Samples for Digital Products and Services. *Journal of Marketing Research*, 56(3), 419–438. <https://doi.org/10.1177/0022243718823169>

- Li, M., Peng, L., & Zhuang, G. (2020). Sales Control Systems and Salesperson Commitment: The Moderating Role of Behavior Uncertainty. *Sustainability*, *12*(7), 2589. <https://doi.org/10.3390/su12072589>
- Lim, N., & Chen, H. (2014). When Do Group Incentives for Salespeople Work? *Journal of Marketing Research*, *51*(3), 320–334. <https://doi.org/10.1509/jmr.13.0322>
- Lincoln, Y. S., & Guba, E. G. (Eds.). (2007). *Naturalistic inquiry*. SAGE.
- Linde, L., Frishammar, J., & Parida, V. (2021). Revenue Models for Digital Servitization: A Value Capture Framework for Designing, Developing, and Scaling Digital Services. *IEEE Transactions on Engineering Management*, *70*(1), 82–97. <https://doi.org/10.1109/TEM.2021.3053386>
- Liozu, S. M. (2018). Designing salesforce compensation programs to improve pricing execution. *Journal of Revenue and Pricing Management*, *17*(1), 11–19. <https://doi.org/10.1057/s41272-017-0131-z>
- Liu, A. H., & Leach, M. P. (2001). Developing Loyal Customers with a Value-adding Sales Force: Examining Customer Satisfaction and the Perceived Credibility of Consultative Salespeople. *Journal of Personal Selling & Sales Management*, *21*(2), 147–156. <https://doi.org/10.1080/08853134.2001.10754265>
- Liu, Y., & Zhao, X. (2021). Successful implementation of value-based selling: a value co-creation and dynamic capabilities perspective. *Journal of Business & Industrial Marketing*, *36*(3), 372–389. <https://doi.org/10.1108/JBIM-05-2020-0240>
- Lo, D., Ghosh, M., & Lafontaine, F. (2011). The Incentive and Selection Roles of Sales Force Compensation Contracts. *Journal of Marketing Research*, *48*(4), 781–798. <https://doi.org/10.1509/jmkr.48.4.781>
- López, M., & Sicilia, M. (2013). How WOM marketing contributes to new product adoption. *European Journal of Marketing*, *47*(7), 1089–1114. <https://doi.org/10.1108/03090561311324228>
- Ludwig, T. D., & Frazier, C. B. (2012). Employee Engagement and Organizational Behavior Management. *Journal of Organizational Behavior Management*, *32*(1), 75–82. <https://doi.org/10.1080/01608061.2011.619439>
- Luthans, F., & Stewart, T. I. (1977). A General Contingency Theory of Management. *Academy of Management Review*, *2*(2), 181–195. <https://doi.org/10.5465/amr.1977.4409038>

- 
- Macdonald, E. K., Kleinaltenkamp, M., & Wilson, H. N. (2016). How Business Customers Judge Solutions: Solution Quality and Value in Use. *Journal of Marketing*, 80(3), 96–120. <https://doi.org/10.1509/jm.15.0109>
- Magnotta, S., Murtha, B., & Challagalla, G. (2020). The Joint and Multilevel Effects of Training and Incentives from Upstream Manufacturers on Downstream Salespeople's Efforts. *Journal of Marketing Research*, 57(4), 695–716. <https://doi.org/10.1177/0022243720926176>
- Malek, S. L., Sarin, S., & Jaworski, B. J. (2018). Sales management control systems: review, synthesis, and directions for future exploration. *Journal of Personal Selling & Sales Management*, 38(1), 30–55. <https://doi.org/10.1080/08853134.2017.1407660>
- Mallin, M. L., Gammoh, B. S., Pullins, E. B., & Johnson, C. M. (2017). A New Perspective of Salesperson Motivation and Salesforce Outcomes: The Mediating Role of Salesperson-Brand Identification. *Journal of Marketing Theory and Practice*, 25(4), 357–374. <https://doi.org/10.1080/10696679.2017.1345597>
- Malshe, A., & Sohi, R. S. (2009). Sales Buy-In of Marketing Strategies: Exploration of its Nuances, Antecedents, and Contextual Conditions. *Journal of Personal Selling and Sales Management*, 29(3), 207–225. <https://doi.org/10.2753/PSS0885-3134290301>
- Mann, T., & Gryta, T. (2020, July 18). The Dimming of GE's Bold Digital Dreams. *The Wall Street Journal*, 18. <https://www.wsj.com/articles/the-dimming-of-ges-bold-digital-dreams-11595044802>
- Marcos Cuevas, J. (2018). The transformation of professional selling: Implications for leading the modern sales organization. *Industrial Marketing Management*, 69, 198–208. <https://doi.org/10.1016/j.indmarman.2017.12.017>
- Marinova, D., Ruyter, K. de, Huang, M.-H., Meuter, M. L., & Challagalla, G. (2017). Getting Smart. *Journal of Service Research*, 20(1), 29–42. <https://doi.org/10.1177/1094670516679273>
- Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108(2), 171–194. <https://doi.org/10.1037/0033-2909.108.2.171>
- McCarthy, D. M., Fader, P. S., & Hardie, B. G. (2017). Valuing Subscription-Based Businesses Using Publicly Disclosed Customer Data. *Journal of Marketing*, 81(1), 17–35. <https://doi.org/10.1509/jm.15.0519>

- Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1(1), 61–89. [https://doi.org/10.1016/1053-4822\(91\)90011-Z](https://doi.org/10.1016/1053-4822(91)90011-Z)
- Miao, C. F., & Evans, K. R. (2012). Effects of formal sales control systems: A combinatory perspective. *International Journal of Research in Marketing*, 29(2), 181–191. <https://doi.org/10.1016/j.ijresmar.2011.09.002>
- Miao, C. F., & Evans, K. R. (2013). The interactive effects of sales control systems on salesperson performance: a job demands–resources perspective. *Journal of the Academy of Marketing Science*, 41(1), 73–90. <https://doi.org/10.1007/s11747-012-0315-4>
- Mullins, R., & Agnihotri, R. (2022). Digital selling: organizational and managerial influences for frontline readiness and effectiveness. *Journal of the Academy of Marketing Science*, 50(4), 800–821. <https://doi.org/10.1007/s11747-021-00836-5>
- Mullins, R., Swain, S., & Friend, S. B. (2023). How and should firms motivate salesperson effort across a Multi-Brand Portfolio? *Journal of Business Research*, 158, 113677. <https://doi.org/10.1016/j.jbusres.2023.113677>
- Mustak, M., Ulaga, W., Grohmann, M., & Wangenheim, F. von (2023). Free-to-Fee Transformation of Industrial Services. *Journal of Service Research*, 26(1), 21–43. <https://doi.org/10.1177/10946705211044022>
- Nejad, M. G., Sherrell, D. L., & Babakus, E. (2014). Influentials and Influence Mechanisms in New Product Diffusion: An Integrative Review. *Journal of Marketing Theory and Practice*, 22(2), 185–208. <https://doi.org/10.2753/MTP1069-6679220212>
- Ng, I. C., Ding, D. X., & Yip, N. (2013). Outcome-based contracts as new business model: The role of partnership and value-driven relational assets. *Industrial Marketing Management*, 42(5), 730–743. <https://doi.org/10.1016/j.indmarman.2013.05.009>
- Ng, I. C., & Wakenshaw, S. Y. (2017). The Internet-of-Things: Review and research directions. *International Journal of Research in Marketing*, 34(1), 3–21. <https://doi.org/10.1016/j.ijresmar.2016.11.003>
- Nilakant, V., & Rao, H. (1994). Agency Theory and Uncertainty in Organizations: An Evaluation. *Organization Studies*, 15(5), 649–672. <https://doi.org/10.1177/017084069401500501>

- 
- Ocasio, W. (1997). Towards an Attention-Based View of the Firm. *Strategic Management Journal*, 18(S1), 187–206. [https://doi.org/10.1002/\(SICI\)1097-0266\(199707\)18:1+<187::AID-SMJ936>3.0.CO;2-K](https://doi.org/10.1002/(SICI)1097-0266(199707)18:1+<187::AID-SMJ936>3.0.CO;2-K)
- Oliva, R., & Kallenberg, R. (2003). Managing the transition from products to services. *International Journal of Service Industry Management*, 14(2), 160–172. <https://doi.org/10.1108/09564230310474138>
- Oliver, R. L., & Anderson, E. (1994). An Empirical Test of the Consequences of Behavior-and Outcome-Based Sales Control Systems. *Journal of Marketing*, 58(4), 53–67. <https://doi.org/10.1177/002224299405800405>
- Oliver, R. L., & Anderson, E. (1995). Behavior- and Outcome-Based Sales Control Systems: Evidence and Consequences of Pure-Form and Hybrid Governance. *Journal of Personal Selling & Sales Management*, 15(4), 1–15. <https://doi.org/10.1080/08853134.1995.10754033>
- Opresnik, D., & Taisch, M. (2015). The value of Big Data in servitization. *International Journal of Production Economics*, 165, 174–184. <https://doi.org/10.1016/j.ijpe.2014.12.036>
- Otley, D. T. (1980). The contingency theory of management accounting: Achievement and prognosis. *Accounting, Organizations and Society*, 5(4), 413–428. [https://doi.org/10.1016/0361-3682\(80\)90040-9](https://doi.org/10.1016/0361-3682(80)90040-9)
- Ouchi, W. G. (1979). A Conceptual Framework for the Design of Organizational Control Mechanisms. *Management Science*, 25(9), 833–848. <https://doi.org/10.1287/mnsc.25.9.833>
- Padmos, D. R., Englund, K., & Gautam, R. (2021, October 14). When your customers change how they buy, shouldn't you change how you sell? *Ernst & Young*. [https://www.ey.com/en\\_gl/tmt/when-your-customers-change-how-they-buy-shouldnt-you-change-how-you-sell](https://www.ey.com/en_gl/tmt/when-your-customers-change-how-they-buy-shouldnt-you-change-how-you-sell)
- Paiola, M., & Gebauer, H. (2020). Internet of things technologies, digital servitization and business model innovation in BtoB manufacturing firms. *Industrial Marketing Management*, 89, 245–264. <https://doi.org/10.1016/j.indmarman.2020.03.009>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>

- Panagopoulos, N. G., Rapp, A., & Ogilvie, J. L. (2017). Salesperson Solution Involvement and Sales Performance: The Contingent Role of Supplier Firm and Customer–Supplier Relationship Characteristics. *Journal of Marketing*, *81*(4), 144–164. <https://doi.org/10.1509/jm.15.0342>
- Parida, V., Sjödin, D., & Reim, W. (2019). Reviewing Literature on Digitalization, Business Model Innovation, and Sustainable Industry: Past Achievements and Future Promises. *Sustainability*, *11*(2), 391. <https://doi.org/10.3390/su11020391>
- Paschou, T., Rapaccini, M., Adrodegari, F., & Saccani, N. (2020). Digital servitization in manufacturing: A systematic literature review and research agenda. *Industrial Marketing Management*, *89*, 278–292. <https://doi.org/10.1016/j.indmarman.2020.02.012>
- Pöyry, E., Parvinen, P., & Martens, J. (2021). Effectiveness of value calculators in B2B sales work – Challenges at the sales-call level. *Journal of Business Research*, *126*, 350–360. <https://doi.org/10.1016/j.jbusres.2020.12.047>
- Pullins, E. B. (2001). An Exploratory Investigation of the Relationship of Sales Force Compensation and Intrinsic Motivation. *Industrial Marketing Management*, *30*(5), 403–413. [https://doi.org/10.1016/S0019-8501\(99\)00095-4](https://doi.org/10.1016/S0019-8501(99)00095-4)
- Ramaswami, S. N. (1996). Marketing Controls and Dysfunctional Employee Behaviors: A Test of Traditional and Contingency Theory Postulates. *Journal of Marketing*, *60*(2), 105–120. <https://doi.org/10.2307/1251934>
- Rao, R. S., Viswanathan, M., John, G., & Kishore, S. (2021). Do Activity-Based Incentive Plans Work? Evidence from a Large-Scale Field Intervention. *Journal of Marketing Research*, *58*(4), 686–704. <https://doi.org/10.1177/00222437211020013>
- Rapp, A., Baker, T. L., Hartmann, N. N., & Ahearne, M. (2020). The Intersection of Service and Sales: The Increased Importance of Ambidexterity. *Journal of Service Research*, *23*(1), 8–12. <https://doi.org/10.1177/1094670519892333>
- Rapp, T. L., Bachrach, D. G., Rapp, A. A., & Mullins, R. (2014). The role of team goal monitoring in the curvilinear relationship between team efficacy and team performance. *The Journal of Applied Psychology*, *99*(5), 976–987. <https://doi.org/10.1037/a0036978>
- Rogers, E. M. (1976). New Product Adoption and Diffusion. *Journal of Consumer Research*, *2*(4), 290–301. <https://doi.org/10.1086/208642>
- Rogers, E. M. (1983). *Diffusion of innovations* (3rd ed.). Free Press; Collier Macmillan.

- 
- Rustholkkarhu, S., Toukola, S., Aarikka-Stenroos, L., & Mahlamäki, T. (2022). Managing B2B customer journeys in digital era: Four management activities with artificial intelligence-empowered tools. *Industrial Marketing Management*, *104*, 241–257. <https://doi.org/10.1016/j.indmarman.2022.04.014>
- Ryals, L. J., & Rogers, B. (2005). Sales compensation plans — One size does not fit all. *Journal of Targeting, Measurement and Analysis for Marketing*, *13*(4), 354–362. <https://doi.org/10.1057/palgrave.jt.5740162>
- Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, *21*(7), 600–619. <https://doi.org/10.1108/02683940610690169>
- Salonen, A., Terho, H., Böhm, E., Virtanen, A., & Rajala, R. (2021). Engaging a product-focused sales force in solution selling: interplay of individual- and organizational-level conditions. *Journal of the Academy of Marketing Science*, *49*(1), 139–163. <https://doi.org/10.1007/s11747-020-00729-z>
- Sawhney, M. S. (2006). Going Beyond the Product: Defining, Designing, and Delivering Customer Solutions. In *RF Lusch & SL Vargo The service-dominant logic of marketing: dialog, debate, and direction*. (pp. 365–380). Sharpe.
- Schaarschmidt, M., Walsh, G., & Evanschitzky, H. (2022). Hybrid Offerings Sales Capability: Conceptualization, Scale Development and Validation. *British Journal of Management*, *33*(3), 1560–1583. <https://doi.org/10.1111/1467-8551.12527>
- Schepers, J., Falk, T., Ruyter, K. de, Jong, A. de, & Hammerschmidt, M. (2012). Principles and Principals: Do Customer Stewardship and Agency Control Compete or Complement When Shaping Frontline Employee Behavior? *Journal of Marketing*, *76*(6), 1–20. <https://doi.org/10.1509/jm.11.0112>
- Schneider Electric. (2022, April 30). *EcoStruxure™ Building Advisor | Schneider Electric Global*. <https://www.se.com/ww/en/product-range/39297330-ecostruxure-building-advisor/?parent-category-id=1200&parent-subcategory-id=89159&filter=business-2-building-automation-and-control#overview>
- Sharma, A., & Sagar, M. (2018). New product selling challenges (key insights in the ICT sector). *Journal of Indian Business Research*, *10*(3), 291–319. <https://doi.org/10.1108/JIBR-11-2017-0216>
- Shi, Z., Zhang, K., & Srinivasan, K. (2019). Freemium as an Optimal Strategy for Market Dominant Firms. *Marketing Science*, *38*(1), 150–169. <https://doi.org/10.1287/mksc.2018.1109>

- Siemsen, E., Roth, A. V., & Balasubramanian, S. (2008). How motivation, opportunity, and ability drive knowledge sharing: The constraining-factor model. *Journal of Operations Management*, 26(3), 426–445. <https://doi.org/10.1016/j.jom.2007.09.001>
- Silk, A. J. (1966). Overlap among Self-Designated Opinion Leaders: A Study of Selected Dental Products and Services. *Journal of Marketing Research*, 3(3), 255–259. <https://doi.org/10.2307/3149901>
- Sjödin, D., Parida, V., Jovanovic, M., & Visnjic, I. (2020). Value Creation and Value Capture Alignment in Business Model Innovation: A Process View on Outcome-Based Business Models. *Journal of Product Innovation Management*, 37(2), 158–183. <https://doi.org/10.1111/jpim.12516>
- Sjödin, D., Parida, V., Kohtamäki, M., & Wincent, J. (2020). An agile co-creation process for digital servitization: A micro-service innovation approach. *Journal of Business Research*, 112, 478–491. <https://doi.org/10.1016/j.jbusres.2020.01.009>
- Solbach, J., Möller, K., & Wirnsperger, F. (2022). Break the Link Between Pay and Motivation. *MIT Sloan Management Review*, 63(4), 1–7.
- Stathakopoulos, V. (1996). Sales Force Control: A Synthesis of Three Theories. *Journal of Personal Selling & Sales Management*, 16(2), 1–12. <https://doi.org/10.1080/08853134.1996.10754049>
- Storbacka, K. (2011). A solution business model: Capabilities and management practices for integrated solutions. *Industrial Marketing Management*, 40(5), 699–711. <https://doi.org/10.1016/j.indmarman.2011.05.003>
- Storbacka, K., Polsa, P., & Sääksjärvi, M. (2011). Management Practices in Solution Sales—A Multilevel and Cross-Functional Framework. *Journal of Personal Selling & Sales Management*, 31(1), 35–54. <https://doi.org/10.2753/PSS0885-3134310103>
- Sujan, H. (1986). Smarter versus Harder: An Exploratory Attributional Analysis of Salespeople's Motivation. *Journal of Marketing Research*, 23(1), 41–49. <https://doi.org/10.2307/3151775>
- Tannenbaum, A. S. (1982). J. C. Naylor, R. D. Pritchard, D. R. Ilgen: A theory of behavior in organizations. New York: Academic Press, 1980. *Behavioral Science*, 27(2), 194–195. <https://doi.org/10.1002/bs.3830270212>
- Taylor, F. W. (2004). *Scientific Management*. Routledge. <https://doi.org/10.4324/9780203498569>

- 
- Terho, H., Eggert, A., Haas, A., & Ulaga, W. (2015). How sales strategy translates into performance: The role of salesperson customer orientation and value-based selling. *Industrial Marketing Management*, 45, 12–21. <https://doi.org/10.1016/j.indmarman.2015.02.017>
- Terho, H., Eggert, A., Ulaga, W., Haas, A., & Böhm, E. (2017). Selling Value in Business Markets: Individual and Organizational Factors for Turning the Idea into Action. *Industrial Marketing Management*, 66, 42–55. <https://doi.org/10.1016/j.indmarman.2017.06.015>
- Terho, H., Haas, A., Eggert, A., & Ulaga, W. (2012). ‘It’s almost like taking the sales out of selling’—Towards a conceptualization of value-based selling in business markets. *Industrial Marketing Management*, 41(1), 174–185. <https://doi.org/10.1016/j.indmarman.2011.11.011>
- Tidhar, R., & Eisenhardt, K. M. (2020). Get rich or die trying... finding revenue model fit using machine learning and multiple cases. *Strategic Management Journal*, 41(7), 1245–1273. <https://doi.org/10.1002/smj.3142>
- Tienken, C., Classen, M., & Friedli, T. (2023). Engaging the sales force in digital solution selling: how sales control systems resolve agency problems to create and capture superior value. *European Journal of Marketing*, 57(3), 794–833. <https://doi.org/10.1108/EJM-11-2021-0918>
- Töllner, A., Blut, M., & Holzmüller, H. H. (2011). Customer solutions in the capital goods industry: Examining the impact of the buying center. *Industrial Marketing Management*, 40(5), 712–722. <https://doi.org/10.1016/j.indmarman.2011.06.001>
- Tomczak, T. (1992). Forschungsmethoden in der Marketingwissenschaft - Ein Plädoyer für den qualitativen Forschungsansatz. *Marketing - Zeitschrift Für Forschung Und Praxis*, 2, 77–87.
- Töytäri, P., Rajala, R., & Alejandro, T. B. (2015). Organizational and institutional barriers to value-based pricing in industrial relationships. *Industrial Marketing Management*, 47, 53–64. <https://doi.org/10.1016/j.indmarman.2015.02.005>
- Töytäri, P., Turunen, T., Klein, M., Eloranta, V., Biehl, S., & Rajala, R. (2018). Aligning the Mindset and Capabilities within a Business Network for Successful Adoption of Smart Services. *Journal of Product Innovation Management*, 35(5), 763–779. <https://doi.org/10.1111/jpim.12462>
- Tronvoll, B., Sklyar, A., Sörhammar, D., & Kowalkowski, C. (2020). Transformational shifts through digital servitization. *Industrial Marketing Management*, 89, 293–305. <https://doi.org/10.1016/j.indmarman.2020.02.005>

- Tuli, K. R., Kohli, A. K., & Bharadwaj, S. G. (2007). Rethinking Customer Solutions: From Product Bundles to Relational Processes. *Journal of Marketing*, 71(3), 1–17. <https://doi.org/10.1509/jmkg.71.3.001>
- Tyler, T. T. (1990). Employee Participation through Consultative Team Selling. *Journal of Business & Industrial Marketing*, 5(2), 37–41. <https://doi.org/10.1108/EUM0000000002743>
- Ulaga, W., & Kohli, A. K. (2018). The role of a solutions salesperson: Reducing uncertainty and fostering adaptiveness. *Industrial Marketing Management*, 69, 161–168. <https://doi.org/10.1016/j.indmarman.2017.11.008>
- Ulaga, W., & Loveland, J. M. (2014). Transitioning from product to service-led growth in manufacturing firms: Emergent challenges in selecting and managing the industrial sales force. *Industrial Marketing Management*, 43(1), 113–125. <https://doi.org/10.1016/j.indmarman.2013.08.006>
- Ulaga, W., & Reinartz, W. J. (2011). Hybrid Offerings: How Manufacturing Firms Combine Goods and Services Successfully. *Journal of Marketing*, 75(6), 5–23. <https://doi.org/10.1509/jm.09.0395>
- van den Berg, W. E., Verbeke, W., Bagozzi, R. P., Worm, L., Jong, A. A. de, & Nijssen, E. (2014). Salespersons as Internal Knowledge Brokers and New Products Selling: Discovering the Link to Genetic Makeup. *Journal of Product Innovation Management*, 31(4), 695–709. <https://doi.org/10.1111/jpim.12156>
- van der Borgh, M., Nijssen, E. J., & Schepers, J. J. (2023). Unleash the power of the installed base: Identifying cross-selling opportunities from solution offerings. *Industrial Marketing Management*, 108, 122–133. <https://doi.org/10.1016/j.indmarman.2022.11.010>
- van der Borgh, M., & Schepers, J. (2018). Are conservative approaches to new product selling a blessing in disguise? *Journal of the Academy of Marketing Science*, 46(5), 857–878. <https://doi.org/10.1007/s11747-017-0521-1>
- Varey, R. J. (1995). Internal marketing: a review and some interdisciplinary research challenges. *International Journal of Service Industry Management*, 6(1), 40–63. <https://doi.org/10.1108/09564239510078849>
- Varey, R. J., & Lewis, B. R. (1999). A broadened conception of internal marketing. *European Journal of Marketing*, 33(9/10), 926–944. <https://doi.org/10.1108/03090569910285869>
- Visnjic, I., Jovanovic, M., Neely, A., & Engwall, M. (2017). What brings the value to outcome-based contract providers? Value drivers in outcome business models.

- 
- International Journal of Production Economics*, 192, 169–181.  
<https://doi.org/10.1016/j.ijpe.2016.12.008>
- Waiser, R. (2021). Involving Sales Managers in Sales Force Compensation Design. *Journal of Marketing Research*, 58(1), 182–201.  
<https://doi.org/10.1177/0022243720969174>
- Weitz, B. A. (1981). Effectiveness in Sales Interactions: A Contingency Framework. *Journal of Marketing*, 45(1), 85–103. <https://doi.org/10.2307/1251723>
- Wielgos, D. M., Homburg, C., & Kuehnl, C. (2021). Digital business capability: its impact on firm and customer performance. *Journal of the Academy of Marketing Science*, 49(4), 762–789. <https://doi.org/10.1007/s11747-021-00771-5>
- Wieseke, J., Homburg, C., & Lee, N. (2008). Understanding the adoption of new brands through salespeople: a multilevel framework. *Journal of the Academy of Marketing Science*, 36(2), 278–291. <https://doi.org/10.1007/s11747-007-0055-z>
- Woodward, J. (1970). *Industrial organization: theory and practice* (Vol. 3). Oxford University Press.
- Wotruba, T. R., & Rochford, L. (2013). The Impact of New Product Introductions on Sales Management Strategy. *Journal of Personal Selling and Sales Management*, 15(1), 35–51. <https://doi.org/10.1080/08853134.1995.10754010>
- Yin, R. K. (Ed.). (2009). *Applied Social Research Methods: Vol. 5. Case study research: Design and methods* (4th ed.). SAGE.
- Yin, R. K. (Ed.). (2018). *Case study research and applications: Design and methods: Design and methods* (5th ed.). SAGE.
- Zablah, A. R., Chonko, L. B., Bettencourt, L. A., Allen, G., & Haas, A. (2012). A Job Demands-Resources (JD-R) Perspective on New Product Selling: A Framework for Future Research. *Journal of Personal Selling & Sales Management*, 32(1), 73–87. <https://doi.org/10.2753/PSS0885-3134320107>
- Zoltners, A. A., Sinha, P., & Lorimer, S. E. (2012). Breaking the Sales Force Incentive Addiction: A Balanced Approach to Sales Force Effectiveness. *Journal of Personal Selling & Sales Management*, 32(2), 171–186.  
<https://doi.org/10.2753/PSS0885-3134320201>

## Appendix

### Appendix A1: Study 1 – Case company overview

Case	Firm pseudonym	Participating informants	Type of DS discussed	Turnover (Mio €)	Employees
Alpha	Aseptic FillingAlpha Co	Director Service & Supply, Market Area Director Europe North, Product Manager Technical Service	Line performance visualization dashboard	940	2,600
Beta	Aseptic FillingBeta <sup>1</sup> Co	Digital Transformation Manager <sup>2</sup> , Senior Global Product Manager Service	Condition monitoring	2,700	8,000
Gamma	Compressor Co	Director Global Governance and Digital Transformation, Global Product Portfolio Manager <sup>2</sup>	Remote support service	630	2,600
Delta	MachineTool Co <sup>1</sup>	Head of Sales Effectiveness <sup>2</sup> , Head of Digital Business, Head of Software Business <sup>2</sup>	Condition monitoring	870	3,200
Epsilon	Material Handling Co	Product Owner Digital Customer Solutions <sup>2</sup> , Senior Manager Commercial Excellence Digital Products	Fleet management software	3,500	13,000
Zeta	Medical DeviceAlpha Co	Head of Digital Channel Management <sup>2</sup> , Head of Channel Management Minimally Invasive Surgery and Neurosurgery <sup>2</sup> , Vice President Global Sales OR Technology	Digital tray organizing manager	7,800	66,000
Eta	Medical DeviceBeta Co	Senior Business Manager <sup>2</sup> , Head of Product & Solutions Ophthalmic Diagnostics Devices	Workflow software	1,600	3,500

#### Explanation:

<sup>1</sup> Company was not part of the focus group consortium

<sup>2</sup> Informants participated in a follow-up interview

**Study 1 – Interview guideline**

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**Introduction**

- (1) Please introduce yourself and briefly describe your responsibilities.
- (2) Can you please give a short overview of your current portfolio of digital solutions?
- (3) How is your sales organization structured and who is responsible for selling the different digital solutions?
- (4) What were the biggest concerns your sales reps mentioned when you introduced your digital solutions to them?

**Knowledge/Launch Stage (internal communication)**

- (5) When you launched your digital solution, how did you raise awareness for your digital solutions and what type of knowledge did you provide in this regard?
  - Whom did you address first (hierarchy-wise, country-wise)?
  - What channels did you choose?
  - What materials did you use and provide (to make digital solutions more tangible)?
  - What type of management support did you have during the launch phase?
- (6) What aspects did you communicate regarding the digital solution?
  - How do you explain the benefits for your company, the customer, and sales reps?
  - What aspects were most difficult to explain and why?
  - How do you simplify your offering/offer structure (bundles, pricing, contracts, etc.) for communication purposes?
- (7) How did you explain and train how the digital solution can be sold?
  - What information did you provide regarding target customers?
  - What information did you provide regarding how to start the conversation?
  - What information did you provide regarding the right contact person?
- (8) How well did your messages resonate with sales reps?
  - How often or frequently did you communicate the different aspects?
  - How did you address the remaining concerns of sales reps to change their attitudes?
  - How do you deal with communicating frequent updates or releases?
- (9) What specific roles did you introduce for selling digital solutions and what is their role in the communication process and sales process?
- (10) How does the communication between such roles (that are located in different regions) and the headquarter look like?
- (11) What is their responsibility in the sales process of digital solutions?

**Knowledge/Launch Stage (external communication)**

- (12) What type of external marketing activities did you conduct to inform your customers about digital solutions?
- (13) What type of messages and content did you use?
- (14) How successful have you been with these marketing activities?

**Persuasion and Decision Stage**

- (15) How did you engage sales reps in digital solution selling?
  - How do you enable action in the different sales regions?
  - Did you set and communicate goals for selling digital solutions?
  - What type of goals did you set and what were your experiences with these targets?
- (16) What initial feedback did you receive from sales reps that engaged in digital solution selling and how did you cope with it?
- (17) Where do you store the necessary information to sell digital solutions and to whom can sales reps reach out in terms of questions?

- (18) What is the role of sales leaders in the different regions and how did you achieve their buy-in for digital solution selling?

**Implementation and Confirmation Stage**

- (19) To which degree can sales reps sell digital solutions on their own?  
(20) What type of support do you offer to sign a contract for digital solutions?  
(21) How do you share experiences and success stories?  
(22) How do you ensure that the attention to digital solution selling does not fade after the launch?

**General questions**










- (23) How successful have you been with launching your digital solutions (regarding leads, opportunities and signed contracts)?  
(24) What were your three most important lessons learned in this context?  
(25) Did I forget something to ask that is worthwhile to mention in this context?
-









## Appendix A3: Study 2 – Interview informants (Tienken et al., 2023)









#	Informant	Function	Firm pseudonym	Products	Types of DS offered <sup>1</sup>	Exemplary DS	DS maturity <sup>2</sup>	Turnover (Mio €)	Employees
1	Andrew	Senior Director Sales	AircraftService Co	MRO Aircraft Services	1,2	Condition Monitoring, Digital Logbook	●	3,700	23,000
2	Patrick	Product Business Manager IIoT & Digital	Automation Co	Automation and Information Technology	1	Predictive Maintenance, MES-Software	●	6,300	23,000
3	Kyle	Regional Vice President – EMEA Software	Automation Co	Automation and Information Technology	1	Predictive Maintenance, MES-Software	●	6,300	23,000
4	Stephen, Philip	Senior Program Manager Service, Head of Product Management	Building Automation Alpha Co	Building Infrastructure Solutions	1, 2, 3	Real-time Monitoring and Control Services	◐	6,500	28,000
5	Dillon	Global Pricing Manager	Building Automation Alpha Co	Building Infrastructure Solutions	1, 2, 3	Real-time Monitoring and Control Services	◐	6,500	28,000
6	Ethan	Sales Excellence Manager	Building Automation Alpha Co	Building Infrastructure Solutions	1, 2, 3	Real-time Monitoring and Control Services	◐	6,500	28,000
7	Edwin	Sales Director Energy Efficiency	Building Automation Alpha Co	Building Infrastructure Solutions	1, 2, 3	Real-time Monitoring and Control Services	◐	6,500	28,000








8	Billy	Vice President Digital Buildings Commercial & Services	Building Automation Beta Co	Building Infrastructure Solutions	1, 2, 3	Digital Building Management Services	●	24,700	142,000
9	Bruce	Sales Director Buildings	Building Automation Beta Co	Building Infrastructure Solutions	1, 2, 3	Digital Building Management Services	●	24,700	142,000
10	Stephanie	Global Offering Leader Platforms and Security	Building Automation Gamma Co	Building Infrastructure Solutions	1, 2, 3	Digital Visualization and Optimization Services	●	31,600	113,000
11	Eric	Head of Digitalization & IT	CableCar Co	Cable Cars	1	Ropeway Assistant, Remote Assist	◐	872	3,400
12	Danny	Managing Director Switzerland	Compressor Alpha Co	Compressed Air Systems	3	Predictive Maintenance	●	700	5,000
13	Milton	Product Manager Maintenance Service	Compressor Beta Co	Compressed Air Systems	2, 3	Remote Monitoring	●	10,000	45,000
14	Dylan	Head of Digital	Construction Equipment Co	Construction Equipment	1, 2, 3	Planning and Simulation Software, Remote Diagnosis	●	10,300	50,000
15	Dirk	Head of Product Management Digital Solutions and Consulting	Construction Equipment Co	Construction Equipment	1, 2, 3	Planning and Simulation Software, Remote Diagnosis	●	10,300	50,000

16	Morris, Derrick, Andrew	Head of Digital Machining, Business Development Manager, Corporate Development Analyst	CuttingTool Co	Metal Cutting Tools	1	Tool Guide and Library, Digital Optimization Services	●	9,000	4,000
17	Daniel	Head Digital Products	Elevator Co	Elevators	1	Remote Monitoring, Smart Mirror	◐	10,900	58,000
18	Frank	Head of Finance Digitalization	EnergyAlpha Co	Energy Solutions	2	Asset Performance Management	◐	14,500	54,000
19	Edgar	Engineering Manager for R&D, Innovation and Digital Solutions	EnergyBeta Co	Energy Solutions	1,2	Anomaly Detection, Fleet Monitoring	●	24,000	11,0000
20	Steven	Director Sales & Product Development	EnergyService Co	Power Plant Service Provider	1, 2	Condition Monitoring, Vibration Analysis	●	51,000	12,000
21	Matthew	Managing Director	Filling Co	Bottling Plants	1, 2	Line Management Software	●	3,800	17,000
22	Luke	Head of Sales Global Digitalization & Digital Services	Filling Co	Bottling Plants	1, 2	Line Management Software	●	3,800	17,000

23	Adrian	Head of Asset & Process Optimization Services	Food Co	Food Processing & Advanced Material Technology	1	Condition and Performance Monitoring		2,500	12,000
24	Davis	Business Developer	Gearing Co	Gearing Technology	1	Condition Monitoring		400	3,000
25	Simon	Head of Sales Heating as a Service	Heating Co	Heating Systems	3	Remote Heating Management System		2,700	12,000
26	Henry	Vice President Digital Hydro	Hydropower Co	Hydro Plants	1, 2	Acoustic Anomaly Detection		42,000	21,000
27	Paul	Director Product Management & Strategy Development	Industrial Service Co	Equipment and Process Services	2	Asset Performance Management		4,300	34,000
28	Mitchell	Head of Sales & Marketing	Industrial Software Alpha Co	Industrial Software Solutions	1	Real-time Monitoring		12,600	83,000
29	Jonathan	VP globally and Emerging Industries DACH	Industrial Software Beta Co	Industrial Software Solutions	1, 2	PLM and Simulation Software		3,600	7,300
30	Terrence	Manager Digital Transformation Life Cycle Service	Intralogistics Co	Logistics Engineering Solutions	2	Remote Support, Analytics Services		400	2,000
31	Carl	Head of Customer Satisfaction & Governance Affairs	Light Co	Lighting Systems	2, 3	Indoor Navigation Services		6,500	38,000




32	Arthur	Area Sales Manager	Logistics Co	Fastener Technology	1	Smart Bin, Smart Label		600	3,000
33	Martin	Business Development Manager IoT	MachineTool Co	Machine Tools	1	Digital Health Check and Visualization		673	3,100
34	Samuel	Executive Vice President Sales	Manometer Co	Pressure and Temperature Measurement Instruments	2, 3	Digital Gas Workflow Services		900	9,000
35	Dean	Head of Digital Solutions	Measurement Co	Measuring Equipment	1	Measurement Data Management Software		400	2,000
36	Scott	Head of Sales Digital Solutions	MedicalDevice Alpha Co	Medical Technology	1, 2, 3	AI-Workflow Software		14,500	54,000
37	Dustin	Director Data-Driven Solutions	MedicalDevice Beta Co	Medical Technology	1	Real-time Positioning Systems		3,400	16,000
38	Thomas	Manager Strategy & Commercial Excellence	MedicalDevice Beta Co	Medical Technology	1	Real-time Positioning System		3,400	16,000
39	Nicholas	New Business Developer	MedicalDevice Gamma Co	Medical Technology	1, 2, 3	Patient Management System		19,500	77,000
40	Darren	Global Business Development Manager	Metering Co	Water & Electricity Meter	1	Smart Metering Services		3,800	18,000

41	Jason	Chief Expert Corporate Innovation Management & Head of Portfolio Management Services	Metering Co	Water & Electricity Meter	1	Smart Metering Services		3,800	18,000
42	Donald, Ian	Digital Business Development Manager, Senior Director Business Development	Metrology Co	Industrial Metrology Equipment	1	Reporting Software, Reverse Engineering Software		6,300	32,000
43	David	Director Digital Services	Mining Co	Mining & Tunneling Technology	2	Connected Fleet Services		314	1,400
44	Gregory	Group Leader Industrial IT	Packaging Alpha Co	Packaging Systems	1	Line Management		400	2,000
45	Philip	Product Manager Digital Packaging Material	PackagingBeta Co	Filling and Packaging Machines	1, 2, 3	Asset Performance Management		11,900	24,000
46	Shane	Managing Director Sales, Service and Marketing	Packaging Gamma Co	Packaging Systems	1	Production KPI Visualization		200	1,000
47	Max	Head of Pricing Management	PowerGrid Co	Energy Solutions	1, 2	Asset Performance Management		75,800	336,000
48	Sebastian	Vice President Sales CH	PowerTool Co	Power Tools	1, 3	Connected Fleet Services		5,300	30,000

49	Peter	Head of Product Management	PrintAlpha Co	Digital Printing Technology	1	Workflow Software		260	500
50	Seth	Head of Sales Excellence and Data Driven Sales	PrintBeta Co	Printing Presses	1, 2, 3	Predictive Monitoring, Benchmarking Services		2,300	11,000
51	Christian	Head of Subscription Sales & Customer Success Management	PrintBeta Co	Printing Presses	1, 2, 3	Predictive Monitoring, Benchmarking Services		2,300	11,000
52	Shawn	Head of Group Digital Solutions	Pumps Co	Pumping Technology	1, 2	Pump Analytics Services		3,300	15,000
53	Gabriel	Vice President Global Service	Scale Co	Industrial Scales and Slicing Machines	1, 2, 3	Retail Software, Workflow Software		700	4,000
54	Kilian	Head of Global Key Account Management	Scale Co	Industrial Scales and Slicing Machines	1, 2, 3	Retail Software, Workflow Software		700	4,000
55	Dominic	Managing Director MO Germany	Scale Co	Industrial Scales and Slicing Machines	1, 2, 3	Retail Software, Workflow Software		700	4,000

56	Ivan, Pedro, Danny	General Manager Industrial Internet of Things, Product Manager, Head and Principal Expert - Digital Strategy and Innovation	SensorAlpha Co	Measuring Equipment	1	Device Monitoring, Data Management Services, Inventory Services	●	2,700	14,000
57	Sean, Sara	Senior Department Manager Strategic Marketing & Sales Excellence, Managing Director & Global Head of Sales Digital Business	SensorBeta Co	Sensors	1	Condition Monitoring, Anomaly Detection Services	◐	1,000	7,300
58	Oliver	Chief Operating Officer	SensorDelta Co	Sensors	1	Asset Management and Tracking	◑	650	5,900
59	Tyler	Global Technology Business Leader	SensorGamma Co	Sensors	1	Visualization, Reporting, and Notification Services	●	3,200	19,600
60	Sam	Director Small Medium Corporate CH	Technology Co	Computer Hardware and Software Applications	1	Cloud Computing Services	●	144,000	182,000
61	Robert	Product Manager Recycling Digital	Sorting Co	Food Sorting Machines	1	Sorting Data Platform	◑	700	5,000

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62	Gerald	Strategic Manager Next Generation Products	Tobacco Machine Co	Machines & Services for Tobacco Industry	1	Condition Monitoring, Building Management Services		700	4,000
63	Alexander	Head of Automation and Industrial IT	Vacuum Technology Co	Vacuum Equipment	1, 2, 3	Batch Management		900	3,000
64	Craig, Maria	Chief Digital Officer, Sales & Implementation Consultant	Valve Co	Control Valves and Regulators	1, 2	Valve Management, Predictive Maintenance		650	4,000

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**Explanation:**

<sup>1</sup> Based on the taxonomy of digital solutions, shown in Table 4

<sup>2</sup> *Digital solution maturity* was qualitatively assessed according to the following criteria: portfolio size of digital solutions, time since the introduction of digital solutions, existence of software capabilities (own digital unit, software development department, etc.), and share of digital solution contracts with an installed customer base

 low

 medium

 high

 very high

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**Study 2 – Interview guideline**

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**Introduction**

- (1) Please introduce yourself and outline your prior experience in this field.
- (2) Can you please give a short overview of your current portfolio of digital solutions?
- (3) How are digital solutions related to or bundled with the core product or existing services?
  - Since when do you offer digital solutions?
  - What type of revenue models and contracts do you offer for your digital solutions?
- (4) What percentage of your existing customer base has a digital solution contract?
- (5) Who in the sales organization was responsible for selling the different digital solutions in the beginning?
  - Do these sales reps also sell other types of products or services?
  - Why did you choose this sales approach?
- (6) What were the biggest challenges you faced in your sales organization at the individual sales rep level when you launched your digital solutions?

**Adverse selection and input controls**

- (7) How did you change the initial organizational sales setup over time for selling digital solutions (e.g., the introduction of new roles)?
- (8) How did you instruct the sales force to sell digital solutions?
  - Where and how did you start selling digital solutions?
  - How did you select sales reps for digital solution selling?
- (9) What are the most important criteria (regarding skills, abilities, behaviors) you look for when selecting candidates for digital solution selling?
- (10) How do you assess the suitability of candidates for digital solution selling?
- (11) What type of training and enablement programs do you provide to newly selected candidates?
- (12) How individual or general are the training and enablement programs?
- (13) What lessons did you learn regarding the selection of candidates for digital solution selling?

**Moral hazard and capability control**

- (14) How do you control sales rep capabilities for digital solution selling?
  - What type of goals do you set to develop the necessary capabilities for digital solution selling, such as specific selling techniques?
  - How do you monitor, evaluate, and reward these goals?
  - How do you provide feedback on areas that need improvement?

**Moral hazard and activity control**

- (15) How do you control sales reps regarding activities for digital solution selling?
  - What type of goals do you set regarding activities for digital solution selling, such as customer visits dedicated to pitching digital solutions or showing demos of digital solutions?
  - How do you monitor, evaluate, and reward these goals?
  - How do you provide feedback on areas that need improvement?









**Moral hazard and outcome control**

- (16) How do you control sales reps regarding outcome of selling digital solutions?
  - What type of outcome-related goals do you set for selling digital solutions, such as volume, revenue, or margin targets?
  - How do you monitor, evaluate, and reward these goals?
  - How do you provide feedback on areas that need improvement?










**Additional questions**











- (17) How do you support and enable sales reps to achieve goals related to digital solution selling?
  - (18) What do you regard as the most important type of control for digital solution selling and why?
  - (19) How do you currently balance your controls for sales reps who engage in digital solution selling?
  - (20) What important lessons did you learn during the launch/introduction of your digital solutions?
-

## Appendix A5: Study 3 – Interview informants

#	Informant	Function	Firm pseudonym	Products	Types of DS offered <sup>1</sup>	Exemplary DS	DS maturity <sup>2</sup>	Turnover (Mio €)	Employees
1	Jayden	Head of Sales Germany	Agricultural Machinery Alpha Co	Harvesting Technology	1,2	Telematics Services, Smart Farming Software		11,100	23,000
2	Mason	Director Parts and Service Central & Eastern Europe	Agricultural Machinery Alpha Co	Harvesting Technology	1,2	Telematics Services, Smart Farming Software		11,100	23,000
3	Sophia	Head of Digital Solutions	Agricultural Machinery Beta Co	Harvesting Technology	1, 2	Farm Management, Remote Service		4,900	12,000
4	Andrew	Senior Director Sales	AircraftService Co	MRO Aircraft Services	1,2	Condition Monitoring, Digital Logbook		3,700	23,000
5	Kyle	Regional Vice President – EMEA Software	Automation Alpha Co	Automation and Information Technology	1	Predictive Maintenance, MES-Software		6,300	23,000
6	Jacob	Head of Global Marketing & Sales	Automation Beta Co	Powertrain Solutions	1, 2	Predictive Maintenance, Remote Monitoring		6,700	21,000
7	Liam	Manager Rotation as a Service & Product Management	Bearing Co	Industrial Bearings and Seals	1, 2, 3	Condition Monitoring		7,600	43,000
8	Dillon	Global Pricing Manager	Building Automation Alpha Co	Building Infrastructure Solutions	1, 2, 3	Real-time Monitoring and Control Services		6,500	28,000


9	Edwin	Sales Director Energy Efficiency	Building Automation Alpha Co	Building Infrastructure Solutions	1, 2, 3	Real-time Monitoring and Control Services		6,500	28,000
10	Billy	Vice President Digital Buildings Commercial & Services	Building Automation Beta Co	Building Infrastructure Solutions	1, 2, 3	Digital Building Management Services		24,700	142,000
11	Bruce	Sales Director Buildings	Building Automation Beta Co	Building Infrastructure Solutions	1, 2, 3	Digital Building Management Services		24,700	142,000
12	Stephanie	Global Offering Leader Platforms and Security	Building Automation Gamma Co	Building Infrastructure Solutions	1, 2, 3	Digital Visualization and Optimization Services		31,600	113,000
13	Danny	Managing Director Switzerland	Compressor Alpha Co	Compressed Air Systems	3	Predictive Maintenance		700	5,000
14	Dylan	Head of Digital	Construction Equipment Co	Construction Equipment	1, 2, 3	Planning and Simulation Software, Remote Diagnosis		10,300	50,000
15	Matthew	Managing Director	Filling Co	Bottling Plants	1, 2	Line Management Software		3,800	17,000
16	Luke	Head of Sales Global Digitalization & Digital Services	Filling Co	Bottling Plants	1, 2	Line Management Software		3,800	17,000
17	William	Chief Sales Officer	Grinding Machine Co	Grinding Machines	1	Machine Performance Dashboard		100	1,000

18	Simon	Head of Sales Heating as a Service	Heating Co	Heating Systems	3	Remote Heating Management System		2,700	12,000
19	Mitchell	Head of Sales & Marketing	Industrial Software Alpha Co	Industrial Software Solutions	1	Real-time Monitoring		12,600	83,000
20	Jonathan	VP globally and Emerging Industries DACH	Industrial Software Beta Co	Industrial Software Solutions	1, 2	PLM and Simulation Software, IIoT Software		3,600	7,300
21	Michael	Head of Sales Cloud IIoT for EMEA	Industrial Software Beta Co	Industrial Software Solutions	1, 2	PLM and Simulation Software		3,600	7,300
22	Terrence	Manager Digital Transformation Life Cycle Service	Intralogistics Alpha Co	Logistics Engineering Solutions	2	Remote Support, Analytics Services		400	2,000
23	Noah	Managing Director Germany	Intralogistics Beta Co	Material Handling Vehicles	1, 2, 3	Fleet Management Services		3,400	11,600
24	Carl	Head of Customer Satisfaction & Governance Affairs	Light Co	Lighting Systems	2, 3	Indoor Navigation Services		6,500	38,000
25	Samuel	Executive Vice President Sales	Manometer Co	Pressure and Temperature Measurement Instruments	2, 3	Digital Gas Workflow Services		900	9,000
26	Scott	Head of Sales Digital Solutions	Medical Device Alpha Co	Medical Technology	1, 2, 3	AI-Workflow Software		14,500	54,000

27	Aiden	Global Go-to-Market Lead	Medical Device Alpha Co	Medical Technology	1, 2, 3	AI-Workflow Software		14,500	54,000
28	Elijah	Senior Business Manager	Medical Device Beta Co	Surgical Microscopes	1, 2, 3	Diagnostic Imaging Software		2,000	4,000
29	Joshua	Head of Sales and Service Germany	Microscopy Co	Research Microscopy Solutions	1	Automated imaging and analysis functions		2,000	7,500
30	Sebastian	Vice President Sales CH	PowerTool Co	Power Tools	1, 3	Connected Fleet Services		5,300	30,000
31	Peter	Head of Product Management	PrintAlpha Co	Digital Printing Technology	1	Workflow Software		260	500
32	Seth	Head of Sales Excellence and Data Driven Sales	PrintBeta Co	Printing Presses	1, 2, 3	Predictive Monitoring, Benchmarking Services		2,300	11,000
33	Christian	Head of Subscription Sales & Customer Success Management	PrintBeta Co	Printing Presses	1, 2, 3	Predictive Monitoring, Benchmarking Services		2,300	11,000
34	Shawn	Head of Group Digital Solutions	PumpsAlpha Co	Pumping Technology	1, 2	Pump Analytics Services		3,300	15,000
35	Anthony	Chief Technology Officer	PumpsBeta Co	Pumping Technology	1,2	Condition Monitoring, Remote Management		3,500	19,000
36	Kilian	Head of Global Key Account Management	Scale Co	Industrial Scales and Slicing Machines	1, 2, 3	Retail Software, Workflow Software		700	4,000

37	Dominic	Managing Director MO Germany	Scale Co	Industrial Scales and Slicing Machines	1, 2, 3	Retail Software, Workflow Software		700	4,000
38	Sean, Sara	Senior Department Manager Strategic Marketing & Sales Excellence, Managing Director & Global Head of Sales Digital Business	SensorBeta Co	Sensors	1	Condition Monitoring, Anomaly Detection Services		1,000	7,300
39	Sam	Director Small Medium Corporate CH	Technology Co	Computer Hardware and Software Applications	1	Cloud Computing Services		144,000	182,000
49	Gary	Global Business Segment Manager	Testing Solutions Co		1, 2, 3	Simulation Software, Maintenance Manager Tool, Smart Reports		1,800	11,200
41	Logan	Manager Digital Services	Trailer Co	Trailers, Truck Bodies	1, 2	Telematics Services		2,300	6,900
42	James	Head of Service Contracts & Telematic Solutions	Utility Vehicle Co	Commercial Vehicles	1, 2, 3	Telematics Services		12,600	34,400
43	Alexander	Head of Automation and Industrial IT	Vacuum Technology Co	Vacuum Equipment	1, 2, 3	Batch Management		900	3,000

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44	Craig, Maria	Chief Digital Officer, Sales & Implementation Consultant	Valve Co	Control Valves and Regulators	1, 2	Valve Management, Predictive Maintenance		650	4,000
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**Explanation:**

<sup>1</sup> Based on the taxonomy of digital solutions, shown in Table 4

<sup>2</sup> *Digital solution maturity* was qualitatively assessed according to the following criteria: portfolio size of digital solutions, time since the introduction of digital solutions, existence of software capabilities (own digital unit, software development department, etc.), and share of digital solution contracts with an installed customer base

 low

 medium

 high

 very high

**Study 3 – Interview guideline**

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**Introduction**

- (1) Please introduce yourself and outline your prior experience in this field.
- (2) Can you please give a short overview of your current portfolio of digital solutions?
- (3) How are digital solutions related to or bundled with the core product or existing services?
  - Since when do you offer digital solutions?
  - What type of revenue models and contracts do you offer for your digital solutions?
- (4) What percentage of your existing customer base has a digital solution contract?
- (5) Who in the sales organization was responsible for selling the different digital solutions in the beginning?
  - Do these sales reps also sell other types of products or services?
  - Why did you choose this sales approach?
  - Did you introduce new roles to support sales reps in different stages of the sales process?
- (6) What were the biggest motivational issues you faced in your sales organization at the individual sales rep level when you launched your digital solutions?

**Targets**

- (7) How do you integrate digital solutions into your overall sales strategy?
- (8) How do you define sales targets for digital solutions and what does the target definition process look like (on a global scale)?
- (9) What type of targets do you define (revenue, recurring revenue, volume, number of subscribers, margin, etc.)?
- (10) How far do you cascade down the targets (from regional heads to team leaders to single sales reps)?

**Monetary incentives**

- (11) What is the general ratio between fixed salary and variable compensation for your sales reps?
  - On which factors does this structure depend (e.g., selling experience, role in the digital solution sales process, etc.)?
  - Did you change this structure for digital solution selling (if yes, how did you change it)?
- (12) What type of monetary incentives do you use to motivate sales reps to sell digital solutions?
  - How do you measure digital solution sales performance and for which dimensions, i.e., outcomes, activities, capabilities, do you provide incentives?
  - Which metrics or KPIs do you incentivize in the different sales performance dimensions?
  - How do you incentivize recurring and lower digital solution revenue (in comparison to transactional purchase models)?
  - What type of incentives do you provide to ensure that customers do not churn from subscription contracts?
  - How do you avoid discounting of digital solutions (if they are sold or bundled with expensive hardware products)?
  - What does your incentive payout curve look like and how did you change it for digital solution selling?
  - What does your incentive payment cycle look like and how did you change it for digital solution selling?

**Non-monetary incentives**

- (13) What type of non-monetary incentives do you use to motivate sales reps to sell digital solutions?
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## Curriculum vitae

Christoph Tienken, born 9 September 1991, in Velbert (DE)

### Education

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01/2020 – 06/2023	<b>University of St.Gallen</b> , St.Gallen, CH Doctor of Philosophy, Management
10/2016 – 09/2019	<b>Technical University of Berlin</b> , Berlin, DE Master of Science, Industrial Engineering
08/2017 – 12/2017	<b>National University of Singapore</b> , Singapore, SG Exchange, Industrial Engineering
10/2012 – 09/2016	<b>Technical University of Dortmund</b> , Dortmund, DE Bachelor of Science, Industrial Engineering
10/2011 – 05/2012	<b>University of Applied Sciences Bochum</b> , Bochum, DE Bachelor of Engineering, Mechatronics & IT
09/2002 – 06/2011	<b>Geschwister-Scholl-Gymnasium</b> , Velbert, DE German A-Levels

### Professional Experience

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01/2020 – 06/2023	<b>University of St.Gallen</b> , St.Gallen, CH Research Associate, Institute of Technology Management
04/2018 – 10/2018	<b>Volkswagen Group of America</b> , Chattanooga, US Intern, CEO Office
11/2016 – 05/2017	<b>Institute of Machine Tools and Factory Management</b> , Berlin, DE Student Research Assistant, Production Technology

- 09/2015 – 02/2016      **Daimler AG**, Sindelfingen, DE  
Intern, Assembly Planning E-Class
- 03/2013 – 11/2014      **Witte Automotive GmbH & CO. KG**, Velbert, DE  
Student Assistant, Engineering & Design
- 08/2011 – 06/2012      **Witte Automotive GmbH & CO. KG**, Velbert, DE  
Student Apprentice (Dual Study System),  
Engineering & Design