

# What Does it Take to Successfully Implement a Hybrid Offering Strategy? A Contingency Perspective

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Since the beginning of the 1990s, selling integrated bundles of goods and services – so-called hybrid offerings – have emerged as a trend in industrial markets. Hybrid offerings are proposed to help companies to differentiate in highly competitive markets and to generate higher margins. Meanwhile, as anecdotal evidence suggests, many companies still fail to offer such hybrid offerings successfully. Hence, the purpose of this study is to test whether a positive relationship between implementing a hybrid offering strategy and companies' financial success exists and which contingency factors moderate this relationship. By using a cross-industry survey of N=299 European industrial companies from various industries which combine products and services to varying degrees, the study at hand reveals that a hybrid offering strategy is especially successful under conditions of fierce competition. Results further reveal that a company's proactive decision to implement a hybrid offering strategy (instead of a mere reaction to customer pressure) affects the performance gains that the company can reap from hybrid offerings. Furthermore, results indicate that capabilities such as top-management commitment, modularization, as well as a supporting infrastructure significantly leverage the success of a hybrid offering strategy. These results have important im-

plications for academic knowledge on hybrid offerings as well as the management of service infusion processes in companies.

## 1. Introduction

Researchers as well as practitioners agree on a trend in industrial markets towards going beyond the offering of stand-alone goods and services by selling integrated bundles of goods and services – so-called hybrid offerings (HO) (Kowalkowski et al. 2015).<sup>1</sup> By doing so, companies are reacting to fierce competition, globalization, and growing conformity on goods markets (Evanschitzky et al. 2011; Tuli et al. 2007). HO are seen as the future on B-to-B markets in high wage countries due to three main reasons: first, from a competitive perspective, HO help companies to differentiate as service components are difficult to imitate (Baines et al. 2009; Wise and Baumgartner 1999). Second, from a financial perspective, profits from integrating services into the offering are said to compensate for declining revenues in the commoditized goods business

<sup>1</sup> Literature uses different terms in this context interchangeable (Evanschitzky et al. 2011) such as industrial product service systems (Meier et al. 2010; Barquet et al. 2013), solutions (Artto et al. 2015; Tuli et al. 2007), or service infusion and servitization (Baines et al. 2009; Fang et al. 2008; Kowalkowski et al. 2012; Vandermerwe and Rada 1988). Also they are seen to translate the new service-dominant logic into practice (Tuli et al. 2007; Vargo and Lusch 2004).



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(Worm et al. 2017; Reinartz and Ulaga 2008). Furthermore, service tends to have higher margins which heightens a company's profitability (Wise and Baumgartner 1999). Third, from a marketing perspective, HO create customer loyalty by initiating long term relationships that cover the whole life cycle of the HO and an intense integration into the customer's value chain (Artto et al. 2015; Barquet et al. 2013).

Some vivid examples from traditional industrial manufacturers that have successfully integrated services into their portfolio such as Toyota Materials Handling Company providing spare parts, rentals or financing services (Kowalkowski et al. 2012) or Rolls-Royce offering preventive monitoring services (Kwak and Kim 2016) illustrate the potential benefits from implementing an HO strategy. Nevertheless, a 2005 McKinsey survey found that only half of the companies offering HO actually earn money by doing so, whereas approximately 25 % of them are even suffering monetary losses (Hancock et al. 2005).

In general, empirical research on the success of service-driven strategies in industrial markets is still scarce. Although there are a few quantitative empirical studies which show a general positive effect of service orientation on sales and revenue (Antioco et al. 2008; Gebauer, 2009; Eggert et al. 2014) other studies reveal mixed results (Neely et al. 2008). Drawing on a public database, Neely et al. (2008) find that 53 % of companies that declared bankruptcy had previously decided to move into the direction of providing services "suggesting that the transition from a manufacturing firm to a servitized firm might be problematic" (Neely et al. 2008). Similarly, Johansson et al. (2003) find that only one out of four companies succeeds in gaining higher return on sales by offering HO. We assume that these contradictory findings could be explained by so far undetected contingency factors (Eggert et al. 2014) which evidently result in suppliers struggling with "both strategic and operational choices" (Kowalkowski et al. 2015) and a lack of profound strategies to implement a successful HO strategy.

Based on the existing literature which leaves us with mixed results regarding the effectiveness of HO strategies, we question the optimistic view assuming that HO are always a promising strategy and intend to answer two important research questions: First, does an HO strategy have a positive effect on companies' financial success? And second, which contingency factors reveal significant moderating influences on the link between HO and a firm's financial performance and can thereby shed light on the previously mixed results?

Our study builds on a cross-industry survey of N=299 European industrial companies. To identify the conditions needed to reap the rewards of an HO strategy, we develop a conceptual framework based on contingency theory that

comprises contingency factors on three different levels, i.e., (1) the competitive intensity as an environmental-level contingency factor, (2) the company's motivation for implementing an HO strategy (which can either be driven by external stimuli or by the company's internal decision) as a strategic-level contingency factor, and (3) the capabilities needed to successfully implement an HO strategy as firm-level contingency factors.

Our study contributes to the growing amount of research on HO strategies in two ways. First, we advance current research on success factors of HO strategies. Although existing research highlights the importance of transitioning toward product service bundles (Cova and Salle, 2008), the understanding of how this movement becomes profitable is rather narrow (Eggert et al. 2014; Baines et al. 2009). Guidelines are limited to anecdotal evidence from case studies providing best practice examples (Baines et al. 2009) but quantitative empirical work is still scarce (Fang et al. 2008; Eggert et al. 2014). Second, by employing contingency theory to analyze HO strategies, we provide a more holistic view on what it takes to successfully implement an HO strategy. More specifically, we analyze moderating factors on different levels that potentially influence the success of an implemented HO strategy, which are the environmental, the strategic and the firm level. In doing so, we respond to calls from current literature to analyze contingencies facilitating service related strategies (Eggert et al. 2014) and providing guidance to managers that want to start offering HO in their companies.

Our results reveal that an HO strategy is beneficial for companies under conditions of fierce competition. Furthermore, the motivation to implement HO matters, as companies which purely react to customer pressure seem to be less successful than companies taking a proactive, strategic decision. Further we identify three important capabilities for companies moving into an HO strategy which are top management commitment, modularization, and an adapted infrastructure whereas showing too much flexibility may have detrimental effects.

## 2. Theoretical background and framework

### 2.1. Conceptual background

HO are analyzed in different literature streams such as solution selling or customer solutions (Worm et al. 2017; Cova and Salle 2008; Tuli et al. 2007), (industrial) product service systems (Ayala et al. 2019; Martinez et al. 2010; Meier et al. 2010), or service infusion and servitization (Bustinza et al. 2019; Baines et al. 2009; Fang et al. 2008; Vandermerwe and Rada 1988). This heterogeneity of concepts results from the different disciplines and geographical origins of the research communities (Baines et al. 2009). Most authors use the different terms interchangeably (Evanschitz-

ky et al. 2011). The term “industrial product service system (IPS<sup>2</sup>)” stems from engineering science. Meier et al. (2010) define IPS<sup>2</sup> as “the integrated and mutually determined planning, development, provision and use of product and service shares (...) in Business-to-Business applications (...)” (Meier et al. 2010, p.608). Thus, the focus is on industrial markets, whereas B-to-C markets are not targeted. The management literature widely uses the term “integrated solutions” or “solution selling”. Solutions are defined as an individualized combination of products and services that addresses customer’s needs and create more value than the sum of its parts (Evanschitzky et al. 2011; Cova and Salle 2008). Besides this definition focusing on the combination of goods and services, other authors describe a solution as a relational process to understand and fulfill customers’ business needs (Worm et al. 2017; Tuli et al. 2007; Storbacka et al. 2011). Scandinavian researchers mostly use the term “Product Service System (PSS)”, which is closely coupled to the debate of sustainability (Baines et al. 2009; Mont 2002) by focusing on the access to goods instead of individual ownership. The term “servitization” was coined by Vandermerwe and Rada (1988) to describe the movement of companies towards offering “fuller market packages (...) of customer focused combinations of goods, services, support, self-service, and knowledge.” (Vandermerwe and Rada 1988, p. 314). All these literature streams describe how services and goods are in some way combined and integrated to solve customers’ problems (see, e.g. Baines et al. 2009; Martinez et al. 2010).

Uлага and Reinartz (2011) use the term hybrid offering as a generic term subsuming the other concepts. HO are a combination of “one or more goods and one or more services, creating more customer benefits than if the goods and service were available separately” (Shankar et al. 2007). With regard to business markets, HO can be understood as a combination of “industrial goods and services” (Uлага and Reinartz 2011). A crucial point in moving towards HO is that goods- and service-elements have to be integrated and interact synergistically in creating value rather than just being additive. This means that goods and services are developed in mutual determination to each other (Meier et al. 2010). For instance, a machine may contain sensors that simplify maintenance or repair processes by anticipating failures. Just selling a standard machine with a standard maintenance contract depicts no integrated offering but just a combination of a product and a service. This paper follows the point of view of Uлага and Reinartz (2011) and uses the term HO, subsuming the concepts described above.

## 2.2. Research on performance effects of HO strategies

Empirical research on the link between HO strategies and firm profitability is still scarce. *Tab. 1* shows a summary of

empirical research on performance effects of implementing service strategies.

Our study seeks to complement current research in two main areas. First, past research offers first insights into the influence of market characteristics on the performance effect of service strategies. Environmental level factors as industry growth or industry turbulence (Fang et al. 2008) technology intensity (Worm et al. 2017) or industry maturity (Nezami et al. 2018) were shown to moderate the effect of a service strategy on companies’ success. The studies of Antioco et al., (2008), Gebauer (2009) and Worm et al. (2017) complement these findings by adding firm-level moderators. Antioco et al., (2008) find that service technology as well as cross functional communication and service training moderate the effect of service on the sales performance positively. The study of Gebauer (2009) reveals a positive effect of management attention on the success of a service strategy and Worm et al. (2017) find a positive effect of sales capabilities. Meanwhile important other capabilities of HO suppliers that were discussed by previous research, as e.g., the ability to individually adopt offerings towards customers’ needs whilst at the same time staying profitable, as well as providing service related data processing (Uлага and Reinartz 2011) or handling higher risks which are associated with HO (Cova and Salle 2007) have not been analyzed with regard to their influence on the success of an HO strategy. Thus, our study adds to the current knowledge on performance effects of HO by studying additional moderating factors on a firm level (i.e., modularization, a supporting infrastructure, flexibility, and risk management) that have been neglected in past empirical research. Further, on the strategy level moderating factors, such as the motivation of a company to implement an HO have not been analyzed. Transitioning towards an HO provider leads to a repositioning of the firm (Shepherd and Ahmed 2000) which needs a good starting point. To provide guidance to managers on how to successfully implement an HO strategy and contribute to current research this study takes a more holistic view by analyzing moderating factors on three different levels and their influence on the success of an HO strategy, which are the environmental, the strategic, and the firm level. Existing studies mainly focus on one of the areas as for example Antioco et al., (2008) focus on firm level factors and Nezami et al., (2018) focus industry level factors.

Second, existing studies mainly analyze the performance effects of the number of services that a company offers in addition to their products. Examining the effect of services supporting the product (SSP) and services supporting the clients’ actions (SSC), for instance, Antioco et al. (2008) show that SSC leverage relative product sales, while SSP rather generate service volume. Whereas the former support the use of tangible products, for instance maintenance, the latter are services that could also be sold with-

Author, Year	Sample	Measurement of Service strategy and companies success	Moderators	Results
Antiocho et al. 2008	151 manufacturers from Belgium, Netherlands, Denmark, survey	Effect of the number of, the broadness of, and the emphasis on services on relative product sales and service volume	Top management commitment, service rewards, service technology, cross functional communication, service training, customer treatment	Not all types of services generate higher sales volumes. Service technology, cross functional communication and service training moderate the results.
Eggert et al. 2014	513 companies from a panel in the German mechanical engineering industry, survey	Effect of the number of offered services on annual revenue and profit situation	Decentralization, share of loyal customers	A broader service portfolio increases the revenue but not the profit. Decentralization moderates positively as well as the share of local customers.
Eggert et al. 2011	414 companies from a panel in the German mechanical engineering industry, survey	Effect of number of offered services on companies' profit situation.	Product innovation activity	Service offerings do not per se lead to higher profitability but depend on the fit of companies' innovation activities.
Fang et al., 2008	477 US manufacturing firms from secondary data	Effect of Service ratio of sales revenues on firm value measured by tobin's q.	Service relatedness, resource slack, industry growth, industry turbulence	Service ration exhibits a nonlinear effect on firms' performance, only showing positive effects after a critical mass is reached. The positive effect increased in highly turbulent industries and with the relation of services to the firms core business but diminishes in high growth industries.
Gebauer 2009	302 German and Swiss manufacturing companies, survey	Effect of number of services offered, number of customers to which services are offered, emphasis on services on the average ROS over last 3 years	Situated management attention	Service orientation has a positive effect on overall profitability and management attention increases this relationship.
Neely 2008	10,028 companies from 25 countries from secondary data	Effect of service offering coded from the description of the firm on sales revenue and profitability	Firm size	Companies offering services have larger sales revenue but lower profitability. Smaller firms profit from a service strategy more than larger firms.
Nezami et al., 2018	227 manufacturing companies listed in longitudinal database	Effect of service revenue share on firm value, sales growth, profitability and earnings volatility	Industry maturity, business scope, industry turbulence	Service ratio influences sales growth positively but has a u-shaped curvilinear relationship of profitability and earnings volatility. Industry maturity positively influences these effects, while the scope of business hinders profitability and industry turbulence negatively moderates the effect on earnings volatility.
Worm et al. 2017	175 German and French manufacturing companies, surveys combined with database measures	Effect of solution selling on profitability and growth	Sales capability, value creation know how, technology intensity of industry, buyer power in industry	Offering solutions has a positive effect on firm performance. The relationship is strengthened by strong sales capability and in low-technology intensive industries as well as in industries with high buyer power.
This study	299 European B to B companies	Effect of a HO strategy on companies' financial performance	contingency factors on three different levels, environmental level, strategy level and firm level	An HO strategy has a positive effect on financial performance, especially under conditions of fierce competition. While an internal differentiation decision moderates this effect positive pressure from customers has a negative moderating effect. Top management commitment, modularization and a supporting infrastructure moderate the effect positive, while flexibility has a negative moderating effect.

Tab. 1: Empirical research on service strategies

out a product, for instance consulting (Eggert et al. 2011). Building on the same categories to measure service orientation, Eggert et al. (2011) show that SSP directly increase firm profitability, while SSC do not display any link with long-term profitability. In a follow-up study, Eggert et al. (2014) reveal that a service strategy increases the revenue

streams but not the profit of a firm. Fang et al. (2008) analyze the effect of the 'service ratio' on firm value. Their study reveals that the impact of service transition only pays off if a critical mass of service of 20–30 % is reached and that a fit between goods and services positively moderates this effect. Nezami et al., (2018) use the service reve-



nue share for their analysis showing a positive sales growth and u-shaped curvilinear relationship on profitability. Neely et al. (2008) draw on a database providing financial company data coding whether a company is offering services or not and find that the decision of a firm to servitize has a positive impact on revenue, but only a positive influence on net profit for smaller firms. Mainly studies measure a company's service orientation by counting the number of services offered, or by measuring the service ratio of sales revenues focusing on the question of whether or not companies include services into their portfolio of offerings. Our study goes beyond these endeavors by exploring whether the integration of products and services, i.e., hybrid offerings in the strict sense of the term, have a positive effect on companies' performance and which contingency factors leverage this effect.

### 2.3. A contingency perspective on the success of hybrid offering strategies

Contingency theory emphasizes that organizational performance depends on a set of three intervening factors: environment, strategy, and firm characteristics (e.g., Burns and Stalker 1961; Lawrence and Lorsch 1967; Mintzberg 1979). Taking a situational perspective, researchers found environmental variables to influence a company's respective performance in interaction with the offering of a company (Luthans and Steward 1977), meaning that a company's offering has to align with the market conditions it is operating in. Further, the internal functioning of a firm has to be adapted to the organization's task (Hellriegel and Slocum 1973) concerning both strategy as well as a firm's capabilities. In the context of offering HO, Neu and Brown (2005) take a contingency perspective and discuss how the chosen product-service strategy has to align with a set of factors that can be found in the environment, strategic decision making as well as firms internal capabilities. We base our framework on this well-established contingency theory to identify factors that potentially moderate the link between an HO strategy and a company's success: (1) competitive intensity (2) the motivation to implement an HO strategy and (3) companies internal HO-specific capabilities.

First, contingency theory emphasizes the moderating effect of environmental characteristics (Zeithaml et al. 1988), which are said to influence the success of a company's offering strategy and proposes that the offering has to align with this respective context (Neu and Brown 2005). Regarding HO strategies, various authors have discussed the external environment as one factor influencing the success of such strategies (e.g., Neu and Brown 2005; Fang et al. 2008; Eggert et al. 2015). The literature has introduced different approaches to integrate environmental-level factors into research frameworks, for example environmental dynamism (e.g. Fang, 2008), technology turbulence (e.g. Ku-

mar et al. 2011), or competitive intensity (e.g. Eggert et al. 2015). Thereby, competitive intensity refers to the degree of market competition that a firm is facing, meaning that under conditions of high competitive intensity, customers have many alternatives to choose from (Tsai and Hsu 2014). Competitive intensity has been found to lead to perceived equalization of product and service quality and thus to difficulties for suppliers to differentiate (Homburg et al. 2013). As HO are often introduced as a strategy to fight product commoditization and help suppliers to differentiate, we introduce competitive intensity as an environmental-level moderator that may potentially moderate the influence of an HO strategy on performance.

Second, contingency theory proposes that strategic choices must fit the company's situation and that these choices have important performance implications (Zeithaml et al. 1988). In the context of HO, previous research states that strategic drivers leading to the adoption of product-service strategies may influence their success (Ceci and Masini 2013; Neu and Brown 2005). The market orientation literature, for instance, discusses two basic strategic approaches which companies can follow, i.e., reactive market-driven strategies or proactive market-driving strategies (Jaworski et al. 2000). We follow this stream of literature and argue that the implementation of an HO strategy can either be reactive, i.e., triggered by customer pressure, or proactive, i.e., based on internal managerial decisions. We propose that these two different motivations to implement an HO strategy may have moderating effect on the link between an HO strategy and firm performance.

Third, extant literature proposes that the company's HO offering should be aligned with key firm characteristics (Neu and Brown 2005) and thus organizational capabilities (Ceci and Masini 2013). Specifically, to be effective in offering HO, qualitative research indicates that companies have to dispose of certain capabilities that go beyond merely offering products (Ulaga and Reinartz 2011; Storbacka 2011). To advance research on capabilities necessary for HO, the literature has called for more empirical studies to quantify the effects of the capabilities needed for a successful offering of HO (Storbacka 2011; Ulaga and Reinartz 2011; Eggert et al. 2014).

Thus, our research framework draws on the discussed three categories of contingency factors. It is displayed in Fig. 1.

To assess the influence on a company's success, we rely on financial performance as a measure of success (Lehmann 2004; Fang et al. 2008). The benefits associated with an HO strategy do not come without considerable costs in order to implement the new service business (Fang et al. 2008). Financial performance accounts for the benefits as well as cost effects associated with the implementation of a mar-

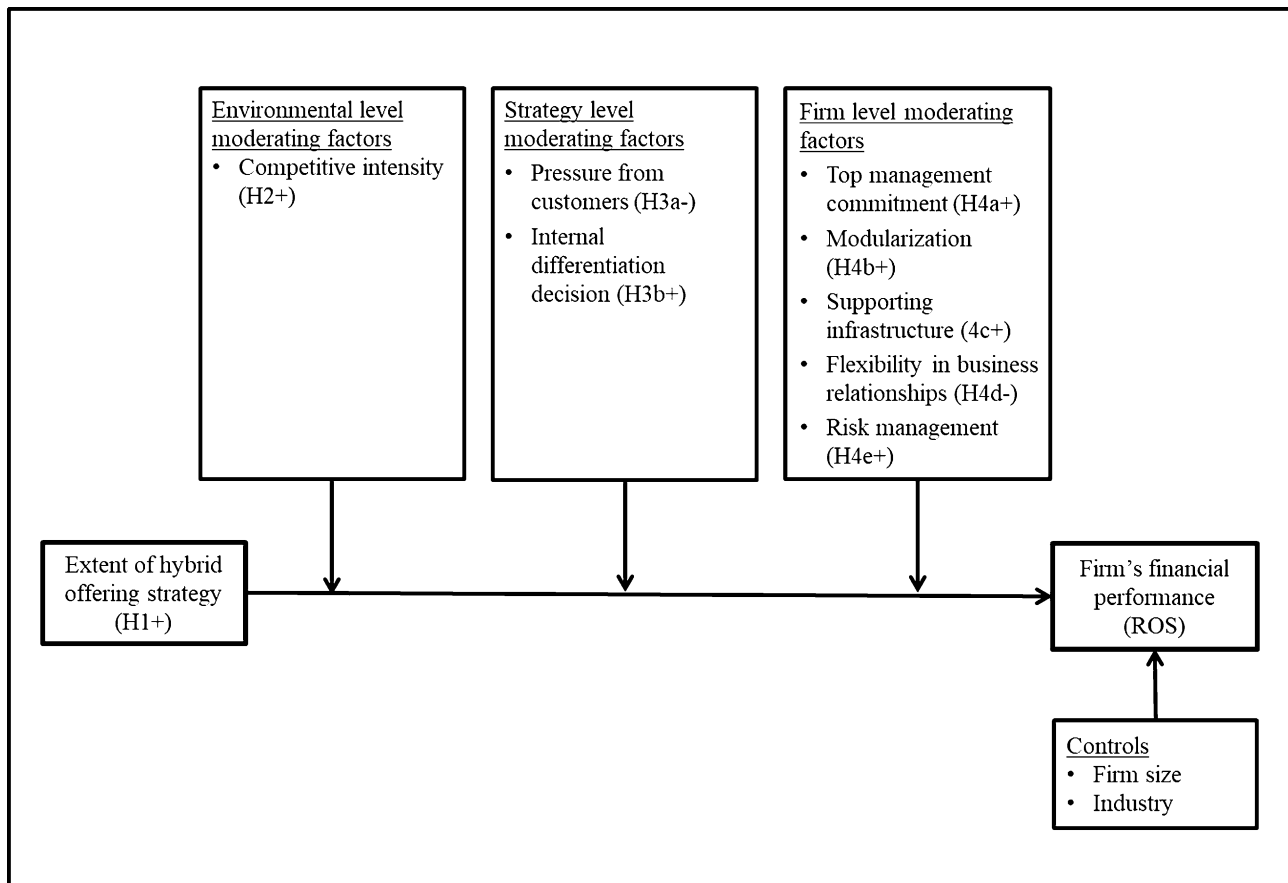


Fig. 1: Research Framework

keting measure (Homburg and Bucerius 2005). Regarding the HO strategy which a company implements, we assess to what extent a company integrates goods and services to enhance customer value. In what follows, we will derive our hypotheses.

### 3. Derivation of hypotheses

#### 3.1. Effect of hybrid offerings on a company's financial performance

The literature to date posits two main reasons why introducing an HO strategy should be rewarded by enhanced firm profitability (Baines et al. 2009). First, the literature suggests financial aspects. Integrating services into an offering can compensate for declining revenues on goods markets (Reinartz and Ulaga 2008). Many companies in industrial markets struggle with product commoditization and high price pressure (Cova and Salle 2007) as well as with stagnating goods demand (Davies, 2004). Broadening the scope by integrating services helps suppliers to cover the whole life cycle (Davies 2004) and gain growth opportunities in otherwise mature markets (Brax 2005). Further, as revenues from services are at least to some extent counter-cyclical to revenues from goods (Davies 2004), and more regular than one-off pay-

ments from goods sales, continuous revenue streams are generated and cash flows are stabilized (Eggert et al. 2011; Wise and Baumgartner 1999). Moreover, the service components in HO are expected to create higher margins (Eggert et al. 2011) and thus leverage financial performance.

Second, there are strategic reasons for companies to introduce HO that are concerned with the ability to differentiate (Baines et al. 2009; Wise and Baumgartner 1999) and to immunize the business. This ability can be traced back to the nature of services which typically have to be performed on location and depend on the company's skilled workforce and are thus harder for overseas competitors to imitate (Raddats and Easingwood 2010; Martinez et al. 2010). In addition to this, HO generate individualized customer value (Salunke et al. 2019) which makes it difficult to compare them to other offerings and thus HO are less subject to imitation by competitors (Malleret 2006). Moreover, by gaining insight into their customers' organizational structures, firms are able to tailor their offerings to better suit customers' needs (Baines et al. 2009) and by individualizing the offer companies generate greater customer loyalty (Vandermerwe and Rada 1988). These benefits offer companies the opportunity to gain competitive advantages that ultimately drive the companies' financial performance (Kumar et al. 2011).

Thus, in line with the arguments offered by conceptual and case study literature, we propose an overall positive relationship between choosing an HO strategy and the resulting financial performance.

*H1: The extent of a company's HO strategy has a positive effect on a firm's financial performance.*

### 3.2. Environmental-level moderating effects

As competition intensifies, firms increasingly need valuable and difficult-to-imitate offerings to distinguish themselves from competitors. HO are discussed as offering the possibility to differentiate (Baines et al. 2009). Whereas in industries with low levels of competition, firms that do not make use of the benefits of HO may still generate acceptable profit levels, in highly competitive surroundings, firms without the potential to differentiate will ultimately be driven out of business (Fang et al. 2008). Thus, the competitive advantage gained by the above discussed advantages becomes more critical as competition increases. We thus hypothesize that the positive relationship between an HO strategy and a firms' financial performance is even stronger in markets which are characterized by a high competitive intensity, as compared to markets in which the level of competitive intensity is low:

*H2: Competitive intensity has a positive moderating effect on the relationship between the extent of an HO strategy and a firm's financial performance in a way that the positive relationship is stronger in markets characterized by a high level of competitive intensity as compared to markets with a low level of competitive intensity.*

### 3.3. Strategy-level moderating effects

Moving to offer HO changes a company's strategy with the goal to repositioning itself (Shepherd and Ahmed, 2000). The driver of this strategic change can be both "proactive and reactive" (Brambila-Macias et al. 2019). Companies that decide to offer HO could have various motivations for initiating this step. Companies could, for instance, merely react to customers' calls to satisfy their needs over and above providing mere physical goods (Cova and Salle 2007; Shepherd and Ahmed 2000). They could, however, also proactively decide to take this route and thereby succeed in distinguishing themselves from their competitors (Wise and Baumgartner 1999). Purely reactive strategies (as in the case of companies which only start to offer HO because of customer pressure) are usually referred to as *market-driven strategies*. Strategies with a higher degree of originality and proactivity (as in the case of companies which autonomously choose to switch to an HO strategy) are commonly termed *market-driving strategies*. We presume that the motivation to implement an HO strategy makes a difference in terms of its effectiveness with market-driven strategies being less effective than

market-driving strategies. We will elaborate on the reasons that lead us to this assumption in the following.

A market-driven strategy refers to a company's focus on customers' needs within existing markets (Jaworski et al. 2000) which causes them to move into directions determined by their customers (Schindehutte et al. 2008). When pushed by customers, innovation is said to occur only incrementally and, usually, only minor changes are achieved (Baker and Sinkula 2007). Firms adopting market-driving strategies, in contrast, try to shape markets proactively (Jaworski et al. 2000) and may thereby develop radical innovations to realize large increases in value propositions (Schindehutte et al. 2008). As for a potential interplay of both strategies, there is no consensus in the literature (for a summary of the discussion see Schindehutte et al. 2008). We follow the argumentation of Jaworski et al. (2000) who assume both strategies to be complements, as firms may simultaneously seek to rely on known customer needs and respond to their demands while at the same time searching for new opportunities to proactively shape markets.

At the first glance, a market-driven strategy seems to be beneficial when offering individualized HO addressing customer problems, due to its focus is on customer needs and the co-creation of value (Schindehutte et al. 2008). Meanwhile, changing the company's strategy from offering pure products towards offerings HO represents a major change (Cova and Salle 2008). This might lead to a loss of strategic focus as firms have to allocate their resources to the existing as well as the new HO business which – at least in the short run – involves drawbacks and increased costs (Fang et al. 2008). To overcome these drawbacks, companies have to apply a sound transition strategy by choosing a path that fits their own competences (Matthysens and Vandenbempt 2008). Meier et al. (2005) argue that companies who merely respond to customers' wishes by integrating services into their offering lack a coherent strategy and thus risk finding themselves in an unprofitable and unwieldy "service jungle". Similarly Miller et al. (2002) discuss how companies have to balance their own unique capabilities and their clients' wishes to offer HO profitably. Consequently, some clients whose requirements are outside of the firms' current capabilities cannot be served with an HO. Hence, a purely reactive HO strategy, driven by pressure from customers, might fail to generate the above discussed benefits due to the absence of a sound strategy and the company may find itself offering a scattered portfolio of goods and services difficult to manage. A market-driving strategy, on the contrary, is associated with proactive radical changes (Baker and Sinkula 2007) and entirely new value propositions (Kumar et al., 2002). Companies which autonomously decide to move into HO strategies are radically changing their value proposition, thereby opening up new markets, which in

turn requires major changes within the company itself (Baines et al. 2009). Given the radical changes that are required, a proactive market-driving strategy, thus an internal differentiation decision, seems to be able to support this process and hence leverage the success of an HO strategy. We formally propose:

*H3a: A market-driven introduction of HO, i.e., a mere reaction to pressure from customers, negatively moderates the relationship between the extent of an HO strategy and the firm's financial performance in a way that the positive link between HO and performance is less strong for high levels of market-driven strategies than for low levels.*

*H3b: A market-driving strategy, i.e., a company's autonomous internal differentiation decision to introduce HO, positively moderates the relationship between the extent of an HO strategy and the firm's financial performance in a way that the positive link between HO and performance is stronger for high levels of market-driving strategies than for low levels.*

### 3.4. Firm-level moderating effects

Commitment on the part of top management has been identified in the literature as an influential factor for the success of a strategic orientation (Garrett and Neubaum 2013; Gebauer et al. 2010). "Top management involvement is needed anytime a firm attempts to implement a new business strategy or approach." (Rapp et al. 2008, p. 11). Top management commitment is "defined as the corporate parent's senior-level executives' support of and commitment" (Garrett and Neubaum 2013, p. 898) towards a chosen strategy. The literature assumes an effect of top management commitment in two ways, namely an influence on behavior as well as on employees' beliefs (Antioco et al. 2008) as the members of the organization are supposed to reflect the attitudes of its top management team (Rapp et al. 2008). Employees' behavior is influenced by what they regard as top management' expectations (Venkatesh and Davis 2000). Further, top management acts as a role model and the communication of a top management's commitment enhances favorable employee behaviors (Kohli and Jaworski 1990).

HO strategies require a reorientation of the firm, turning away from being goods-oriented towards being service-oriented and customer-centric (Kapletia and Probert 2010). For many manufacturing firms with a long lasting goods-centric orientation this can pose a major challenge. Services are still considered a "necessary evil" (Reinartz and Ulaga 2008). The implemented changes may provoke resistance, as employees want to protect their existing competences (Antioco et al. 2008). As HO involve integrated services, the outcome is highly dependent on the employees' support and performance. Top management commitment might promote favorable employee behavior

towards a greater emphasis on HO and thereby leverage the success of this strategy. In a service context, Gebauer et al. (2010) already revealed a positive impact of top management's service orientation on employee's service orientation and the overall performance on the firm. In line with these findings and rationales, we propose top management commitment to enable the process of change from goods orientation towards HO orientation and thus influence the success of an HO strategy resulting in positive effects on the company's financial performance:

*H4a: Top management commitment has a positive moderating effect on the relationship between the extent of an HO strategy and a firm's financial performance in a way that the positive link between HO and performance is stronger if top management commitment is high as compared to low.*

To enable firms to realize individualization towards customers' needs, the HO literature discusses modularization as one method (Davies 2004; Vandermerwe and Rada 1988). It describes the breaking up of an offer into standardized subparts – modules (Ethiraj and Levinthal 2004) that are compatible with each other and can be combined into individual offerings (Davies et al. 2007). Modular designs are considered useful when systems become complex (Ethiraj and Levinthal 2004). By combining standardized modules, suppliers can exploit the advantages of producing standardized parts and configuring individual offerings for a variety of customers simultaneously (Davies et al. 2007). Modularization is thus discussed as a mechanism to incorporate efficiency for the firm (Tuunanen and Cassab 2011) and thus deliver HO in a cost efficient way.

With HO strategies, companies face the dilemma of having to make individual adaptations to the offering based on a customer's needs whilst at the same time staying profitable (Ulaga and Reinartz 2011; Windahl et al. 2004). To balance both objectives, goods and service components can be designed as modular structures that can be combined for each customer to achieve economies of scale at the component level (Baines et al. 2009; Windahl et al. 2004). Modules can be easily matched for different customers into unique customer offerings at the same time ensuring repeatability (Davies et al. 2007; Ulaga and Reinartz 2011) which enables cost efficient customization of HO. Further, modularization can be used to resolve the increased complexity (Tuunanen and Cassab 2011) due to the combined goods and service provision, and increase flexibility from an engineering point of view (Brambila-Macias et al. 2018). In short, it is no longer necessary to develop an HO for every customer from scratch and firms may thereby enjoy significant cost savings. Due to the potential of modularization to balance between individuality of an offering on the one hand and a company's increased costs on the other we hypothesize a positive mod-



erating effect of modularization on the financial performance of an HO strategy:

*H4b: Modularization has a positive moderating effect on the relationship between the extent of an HO strategy and a firm's financial performance in a way that the positive relationship between HO and performance is stronger for firms with high levels of modularization as compared to low levels.*

The infrastructure of a firm is the enabler of processes and the provision of necessary tools and data. It supports the execution of a company's operations and helps to gather information (Storbacka 2011). Collecting information in a customer database helps suppliers to manage the relationship and to proactively plan their offerings (Antioco et al. 2008). Further, Oliva and Kallenberg (2003) emphasize the relevance of diffusing knowledge across networks to exploit its intellectual capital.

Given the complexity at hand, HO providers are faced with an increased intensity of knowledge that calls for a stronger information and communication technology infrastructure (Storbacka 2011; Storbacka et al. 2011). On the one hand, devices to systematically collect knowledge about customers, their problems as well as their strategic issues can enhance organizational learning (Storbacka et al. 2011). In addition, product usage and process data can be used to continuously improve goods components as well as service execution processes (Ulaga and Reinartz 2011). Moreover, sharing the collected knowledge among a company's functions is a key issue to enable the cross-functional and integrated development of HO. Therefore, the intelligence gathered needs to be spread within the whole company (Storbacka et al. 2011). For example, to properly execute cross-functional team work during HO development and sales, a company-wide usage of support systems (e.g., CRM systems) is necessary (Storbacka et al. 2011). Hence, an established information and knowledge management system enables the exploitation of available data, facilitates the cross-functional cooperation, and thus leads to a more efficient HO development and sales that better meet customer's needs. If installed in the company, we thus hypothesize an adequate infrastructure to enhance the financial performance of the company's HO offerings.

*H4c: A supporting infrastructure has a positive moderating effect on the relationship between the extent of an HO strategy and a firm's financial performance in a way that the positive relationship between HO and performance is stronger for firms with a supporting infrastructure than for those who lack such an infrastructure.*

Flexibility in business relationships is defined as the "will- ingness to make adaptations as circumstances change" (Heide and John 1992, p. 35). It enables business partners

to mutually adjust their obligations as unforeseen incidents arise (Gopal and Koka 2012). Especially in long-lasting and complex business relationships, future changes are likely to occur as many current markets are characterized by high uncertainty (Gopal and Koka 2012). Flexibility in business relationships permits quick responses to these changes and facilitates the adaptation to new circumstances (Wathne and Heide 2004). Thus, flexibility in business relationships has been identified as a critical imperative for firms in turbulent environments (Achrol and Kotler 1999).

HO depict solutions to complex individual customer problems (Evanschitzky et al. 2011). Consequently, one inherent characteristic of HO is their adaptation to changing customer requirements over time (Meier et al. 2005). When designing an individual HO, suppliers have to take into account current as well as future requirements on the part of their customers, whose needs evolve over time (Tuli et al. 2007). To implement these changes quickly and adapt to changing circumstances, suppliers have to show flexibility.

However, flexibility is not without costs. HO are highly individualized offerings and thus, the supplier has to build up and invest into specific assets for this particular use. These assets may not be usable in the renewed setting and may have severely diminished in value when it comes to showing flexibility on the supplier's side (Young-Ybarra and Wiersema 1999). Such investments are defined as sunk costs, representing irreversible investments (Cabral and Ross 2008). For the suppliers, new investments might be necessary to exert flexibility, which in turn may heighten costs and diminish the efficiency of the HO and – consequently – the supplier's financial returns.

Hence, while beneficial in fulfilling customer requirements, flexibility might be costly and thus detrimental to the supplier's financial performance. As a consequence, HO suppliers face a dilemma between flexibility and stability (Meier et al. 2010). We hypothesize a resulting detrimental effect on the relationship between an HO strategy and financial performance:

*H4d: Flexibility in business relationships has a negative moderating effect on the relationship between the extent of an HO strategy and a firm's financial performance in a way that the positive relationship between HO and performance is weaker for firms with high levels of flexibility as compared to firms with low levels.*

Developing towards an HO supplier brings with it unique risk implications (Josephson et al. 2015). HO are associated with higher risk-taking for suppliers (Cova and Salle, 2007; Storbacka, 2011; Ulaga and Reinartz 2011) and a different risk profile (Neely 2008). For HO risk "refers to uncertainty about whether contractually agreed-on out-

comes of hybrid offerings will be achieved" (Uлага and Reinartz 2011). These risks stem from three main sources. First, HO depict individualized offerings that fit with the customers' environment and meet their needs, which requires strong operational linkages, causes higher costs and calls for dedicated resources (Nordin et al. 2011). Thus, strong levels of engagement with customers entail higher risks in comparison to goods sales (Storbacka 2011). Second, in bundling goods and services to solve customer problems, the supplier often takes over operational risks that were previously carried by customers (Nordin et al. 2011). The supplier, for instance, guarantees a particular performance or availability (Cova and Salle 2007; Uлага and Reinartz 2011). These risks relate to being responsible for the performance of processes carried out by customers, sometimes with limited influence as performance is dependent on the customers' behavior (Storbacka 2011). Third, by moving towards HO, most suppliers extend their range of offering which increases the probability of technical or human errors (Nordin et al. 2011). If a supply chain is integrated, the risk of coordination failure also arises (Nordin et al. 2011).

Resulting from these higher risks associated with HO, an effective risk management that takes into account the special characteristics of HO is critical (Uлага and Reinartz 2011). Risk management is described as the "identification and analysis of risks as well as their control" (Thun and Hoenig 2011, p. 243). Using risk management, firms may try to avoid, reduce, or transfer risks proactively (Link and Marxt 2004) to prevent negative performance effects. Thus in line with previous conceptual and qualitative empirical research (Cova and Salle 2007; Storbacka 2011; Uлага and Reinartz 2011) we hypothesize that proactive risk management should be able to leverage the financial performance effects of an HO strategy:

*H4e: An effective risk management has a positive moderating effect on the relationship between the extent of an HO strategy and a firm's financial performance in a way that the positive link between HO and performance is stronger for firms with a proactive risk management as compared to firms that lack such a risk management.*

## 4. Methodology

### 4.1. Data Collection and Sample

To test our conceptual model, we conducted a cross-industry survey study among European B-to-B firms using key informants. To construct the sampling frame for our study, we drew on a database listing companies' addresses and providing data about the industry, company size, as well as the names of distinct contact persons. We included companies belonging to industries traditionally

	%
<b>Industrial Sector</b>	
Machine manufacturer	31
Medical technology and optical instruments	6
Electrical engineering	9
Energy and environmental engineering	5
Automotive industry	6
Automation industry	5
Information technology	26
Others	12
<b>Company size</b>	
Less than 150 employees	49
150-249 employees	12
250-999 employees	22
More than 1,000 employees	17
<b>Position of respondent</b>	
Head of sales	36
Head of marketing	7
General management responsibility (head of SBU, managing director, chief executive officer, ...)	39
Other	18

Tab. 2: Sample Characteristics

selling goods with more than 20 employees. As HO are defined as the integrated combination of goods and services, pure service companies such as banking or insurance companies were not included in the sample. The data was gathered in a survey sent out to 3,300 companies. We received 316 answers resulting in a response rate of 9.6 % which is comparable to similar studies. The final sample of usable responses included 299 companies. The sample covers a diverse range of firms, with organizations of different sizes and different industries represented. Tab. 2 reports the sample characteristics. To avoid problems with non-response error we conducted tests on the respondent population. We compared the distribution of respondents and non-respondents by industry and found no significant differences.

We used a key informant approach. Despite potential problems associated with key informant approaches – such as problems of availability and retrieval of information for the key informant (Homburg et al. 2012b) – key informants are generally highly capable of valid responses because of the specific knowledge they hold. The reliability of key informants was found to be higher for persons in high hierarchical positions and with longer tenure (Homburg et al. 2012b). Hence, we directed our questionnaire at the upper management level, the head of marketing or head of sales department. To further ensure the quality of information obtained from respondents, a question regarding professional experience was included in the questionnaire. Respondents averaged 22.05 years of experience, indicating an adequate amount of knowledge for the purpose of this research.

## 4.2. Measures

We followed commonly-accepted scale development processes. Multi-item scales as well as single indicators were adapted from previous research where possible. In cases in which no established scales were available in the extant literature, we constructed original scales for the special purpose of this investigation based on recommendations by DeVellis (2012). Thereby, we adopted a four-step approach. First, we engaged in an extensive literature review to collect relevant conceptualizations of the constructs which we aimed to operationalize. Second, based on these conceptualizations, we drafted first lists of items to reflect the various aspects of the constructs. Third, we then asked academic experts whether the items were representative of our underlying constructs and refined them on the basis of their comments. Fourth, we then qualitatively pre-tested the questionnaire with 16 practitioners aiming to reach understandability and content validity. Based on the pretest results, we slightly adapted the wording and deleted some redundant items. Finally, we engaged in a thorough scale evaluation process using the data collected to ensure the reliability and validity of the scales used in the final model. All items used in the final questionnaire are listed in the Appendix A1.

*Scales from the literature.* With regard to general management capabilities, we measured top management commitment using five items which were adapted from Lytle et al. (1998) including top managements visions as well as actions. Competitive intensity was measured using items from Jaworski and Kohli (1993). The items measuring modularity were adapted from Antonio et al. (2009) and Worren et al. (2002) concerning the modular structure of an offering. We complemented these items by the aspect of reuse of HO for different customers as stressed by Ulaga and Reinartz (2011) and Storbacka (2011).

*Newly developed scales.* To operationalize our construct HO strategy we did not find existing scales that fitted the purpose of our study and thus decided to develop an original scale items based on the conceptualization of HO in the literature. Ulaga and Reinartz (2011) as well as Shankar et al. (2009) define HO as a combination of industrial goods and services which need to be combined in a meaningful way. To achieve this combination, products and service need to be mutually developed (Meier et al. 2010) and need to interact synergistically (Ulaga and Reinartz 2011) resulting in a combination to deliver added value to the customer (Evanschitzky et al. 2011; Cova and Salle 2008). The final scale comprises four items capturing these characteristics of HO described in literature. We measured the motivation to implement an HO strategy using two single items asking respondents to indicate 1) how much pressure from customers as well as 2) internal strategic considerations influenced the company's decision to shift to-

wards an HO strategy. Concerning the supporting infrastructure as well as risk management, no scales were available which would have been appropriate for the purpose of this paper. Thus, we developed scales following the procedures described above. We established the scale for a supporting infrastructure by relying on the qualitative work of Storbacka (2011). The items used to measure risk management reflect a supplier's efforts to control the higher risks in case of HO.

*Dependent variable.* In measuring the success of an HO strategy we used companies' turnover as well as ROS in comparison to competitors as measures of financial performance. In line with prior research, we use a subjective evaluation of the participants (Homburg et al. 2012a; Krohmer et al. 2002). These perceptual performance measures have been shown to highly correlate with objective financial performance measures (e.g., Dess and Robinson 1984; Hart and Banbury 1994). Following recommendations from the literature, we measured financial performance relative to competitors to account for industry specific differences in profit margins, as our study includes firms from different industries (Homburg et al. 2012a).

*Controls.* As profitability might depend on company size, we included it as a control variable into our model. We measured company size by the total number of employees. We also control for effects induced by different industries by including industry dummies.

All measures exposed Cronbach's Alpha values greater than the commonly recommended cut-off point of .70 suggested by Nunnally (1978), indicating a good internal consistency of the scales. We further conducted exploratory factor analyses for our scales, which revealed factor loadings higher than .50 for all items. Furthermore, the measures indicate discriminant validity according to the criterion of Fornell and Larcker (1981), meaning that the average variance extracted for each construct was greater than its highest shared variance with other constructs. Additionally, for all measures, composite reliability scores exceeded the recommended level of .60, and average variance extracted scores were higher than the recommended level of .50 (Bagozzi and Yi 1988). Tab. 3 shows descriptive statistics and correlations of our scales.

## 4.3. Common Method Bias

Using a single informant survey, common method variance might be a potential problem. According to Podsakoff et al. (2003) there are two ways to test for common method bias, i.e., procedural and statistical techniques. Procedural remedies were applied by guaranteeing anonymity to all respondents and assured that there were no right or wrong answers to diminish social desirability bias. Statistical remedies were applied by conducting Har-



	Mean	SD	1	2	3	4	5	6	7	8	9	10
<b>1 Extend of HO strategy</b>	5.62	1.28	1.00									
<b>2 Competitive intensity</b>	5.22	1.10	0.17**	1.00								
<b>3 Customer pressure</b>	5.83	1.11	0.33**	0.18**	1.00							
<b>4 Internal differentiation dec.</b>	5.96	1.11	0.32**	0.22**	0.46**	1.00						
<b>5 Top man. commitment</b>	5.14	1.16	0.45**	0.21**	0.28**	0.32**	1.00					
<b>6 Modularization</b>	5.03	1.28	0.29**	0.19**	0.16**	0.17**	0.51**	1.00				
<b>7 Supporting infrastructure</b>	4.23	1.66	0.23**	0.22**	0.12**	0.14*	0.47**	0.55**	1.00			
<b>8 Flexibility in business rel.</b>	5.60	1.01	0.26**	0.22**	0.41**	0.42**	0.37**	0.27**	0.18**	1.00		
<b>9 Risk management</b>	4.60	1.48	0.26**	0.23**	0.15**	0.22**	0.56**	0.42**	0.53**	0.34**	1.00	
<b>10 Financial performance</b>	4.77	0.93	0.20**	0.18**	0.16**	0.24**	0.34**	0.33**	0.35**	0.21**	0.32**	1.00

\*  $p < 0.05$ ; \*\*  $p < 0.01$

Tab. 3: Descriptives and Correlations

man's single factor test. This test includes a confirmatory factor analyses (CFA) wherein all constructs were allowed to load on one single factor. The CFA illustrates that the single-factor model fits the data poorly ( $\chi^2(434) = 3405.55$ , comparative fit index (CFI) = .42, root mean square error of approximation (RMSEA) = .15, standardized root-mean-square residual (SRMR) = .13). Thus, the results from Harman's single factor test suggest that common method variance is unlikely to affect the findings of our study. In addition to this approach of testing for CMV using confirmatory factor analyses and model fit measures as indicators, we conducted a simple factor analysis in SPSS restraining the number of factors to 1. This single factor explains only 26 % of the variance which is by far lower than the threshold value of 50 %. Thus, both analyses indicate that common-method bias does not present a major problem in our study.

## 5. Analyses and results

We calculated a moderated regression model including industry fixed effects to test the hypothesized relationships. Thereby, we first tested only the effect of a HO strategy on financial performance (to test H1) in one model and subsequently all other hypotheses were tested in one simultaneous second regression model. We chose moderated regression analysis as a methodological approach because it "provides the most straightforward and the most general method for testing a (contingency) hypothesis" in which an interaction is implied (Arnold 1982, p. 170). Another option to testing our hypotheses would have been to compute structural-equation models (SEM) with latent interactions. Given the large number of moderated relationships in our model and the resulting complexity of the computation we, however, decided use the leaner approach. To ensure that the SEM approach would not have uncovered different effects, we estimated parts of the model using latent interactions and found fully consistent results. The interaction terms were calculated by multiplying the relevant variables with each other. All variables were mean-centered to reduce potential multicollinearity

problems (Aiken and West 1991). We further calculated the variance inflation factors (VIF) to prevent problems due to multicollinearity. All VIF values are below the required cut-off of 5.0, not indicating any multicollinearity problems in our analysis. Tab. 4 reports the results of hypotheses testing.

In H1, we expected a positive direct effect of a HO strategy on financial performance. In line with this main effects prediction, the direct effect in the first model shows a significant positive effect of HO on performance and thus, H1 is supported. In a next step, we tested our moderation hypotheses in a second model, as our study intends to investigate under which conditions an HO strategy is more or less successful.

The first contingency factor analyzed is the firm's environment – more precisely the respective competitive intensity. H2 hypothesizes a positive moderating effect of competitive intensity on the relationship between the extent of an HO strategy and company's financial performance. The coefficient of the interaction term is significant and positive and thus fully supports H2. Specifically, an HO strategy has positive performance effects in highly competitive markets but no effect in markets with low competitive intensity as shown in Fig. 2. In less competitive markets, firms may be able to compete with mere goods strategies and an HO strategy does not yield higher rewards.

Hypotheses 3a and 3b pertain to the moderating effect of the motivation to implement an HO strategy as a critical, yet underexplored contingency factor, testing whether the mere reaction to customer pressure exerts a negative moderating effect, whereas an autonomous strategic decision exerts a positive moderating effect. In line with our theorizing, the coefficient estimates for the respective interaction terms were significantly negative for customer pressure and significantly positive for internal differentiation decision. Consequently, H3a as well as H3b are supported by the results.

Regarding the moderating effects of a company's capabilities, top management commitment (H4a), modularization



Dependent Variable	Financial Performance		Financial Performance	
	Direct effect		Moderation analysis	
	Std. Coeff.	S.E.	Std. Coeff.	S.E.
Firm size	.263	.033 ***	.159	.033 **
Industry dummy set	Yes	**	Yes	**
HO Strategy (H1+)	.208	.051 ***	.074	.060
Competitive intensity			.028	.051
HOS x competitive intensity (H2+)			.098	.054 *
Customer pressure			.018	.058
HOS x customer pressure (H3a-)			-.157	.054 **
Internal differentiation dec.			.047	.058
HOS x internal dif. dec. (H3b+)			.136	.054 *
Top man. commitment			.128	.064 *
HOS x top man. comm. (H4a+)			.124	.056 *
Modularization			.133	.059 **
HOS x modularization (H4b+)			.115	.056 *
Supporting infrastructure			.131	.065 *
HOS x infrastructure (H4c+)			.110	.059 *
Flexibility in business rel.			.036	.057
HOS x flexibility in bus.rel. (H4d-)			-.187	.060 **
Risk management			-.092	.064
HOS x risk management (H4e+)			.036	.057
Total observations	299		299	
F-statistic	5.593 ***		5.635 ***	
R <sup>2</sup>	.148		.340	
Adjusted R <sup>2</sup>	.122		.280	

\*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$  (one-tailed)

Tab. 4: Results from Regression Analysis

(H4b), a supporting infrastructure (H4c) as well as risk management (H4e) were hypothesized to have a positive moderating effect on the link between the extent of an HO strategy and the resulting performance. Meanwhile, flexibility was hypothesized to influence the effect of HO on performance negatively (H4d). Our results show that the interaction between top management commitment and HO strategy is positively related to the firm's financial performance, thus supporting H4a. Further, our analysis shows a positive significant effect of modularization, as well as an supporting infrastructure. Hence, we can support H4b and H4c. Meanwhile, in our model we can find a negative moderating effect for flexibility which supports H4d indicating that flexibility in business relationships exerts a negative effect on financial performance. We do not find empirical support for H4e as we cannot find a significant moderating effect for risk management. Fig. 2 depicts the significant effects found.

We additionally integrated the control variables company size as well as industry in our model showing a positive effect of company size on the financial performance. Com-

panies belonging to the sector of electrical engineering and automotive industry have a significantly higher financial performance than firms in other industries. Further, we tested whether firm size may moderate the link between HO and performance. However, this interaction is insignificant.

## 6. Discussion of results

In summary, our study provides empirical evidence that an HO strategy can be beneficial for companies under certain conditions. First, as an environmental level contingency factor, we find that competitive intensity positively moderates the effect of HO on performance and that HO strategies only lead to an enhanced performance under conditions of fierce competition. A reason for this effect could lie in the considerable costs incurred when launching a new service business (Fang et al. 2008). As competition increases, however, HO strategies become more important (Fang et al. 2008). Our findings are in line with previous results by Fang et al. (2008) who find that the

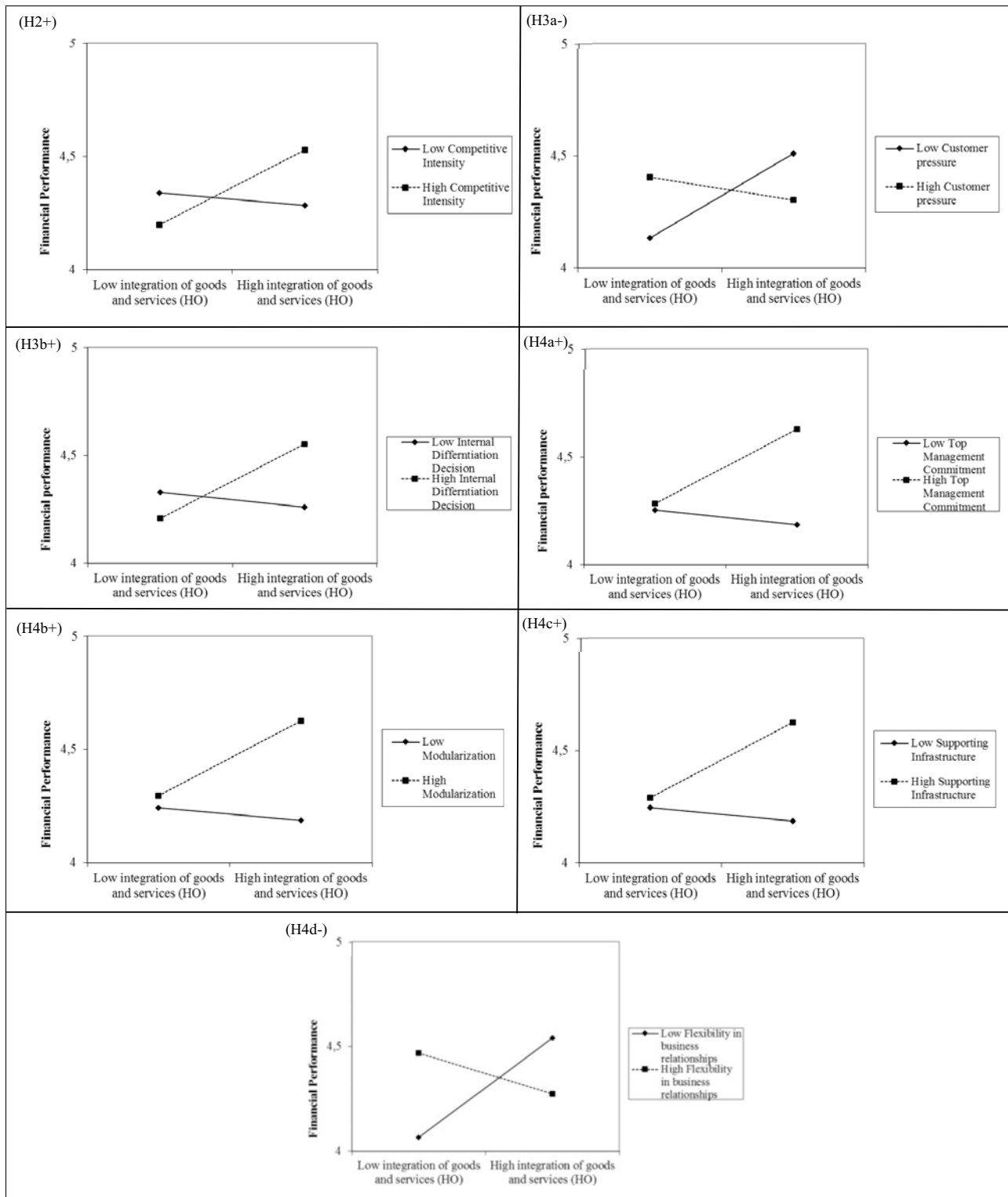


Fig. 2: Interaction effect HO strategy x moderators

success of a service transition strategy is most effective in turbulent industries but may otherwise even decrease firm value.

Regarding the strategy level moderating factors we find that merely reacting towards customer pressure has a negative effect on the success of an HO strategy, whereas an

internal differentiation decision has a positive effect. These effects may be due to the absence of a sound strategy behind the development of HO (Meier et al. 2005) and customer's requirements that are outside the scope of a firm's own unique abilities (Miller et al. 2002). Accordingly, our results show that companies whose decision to use an HO strategy includes the strategic aim of differentiat-

ing themselves from increasing competition proactively changing their offering into totally new HO value propositions, succeed in realizing positive results. These findings match current research findings on reactive and proactive market orientation. A reactive market orientation pertaining to current customers and their expressed needs (Jaworski et al. 2000) has been shown to be insufficient to leverage new product success (Narver et al. 2004). Berthon et al. (1999) argue that responsive market orientation detracts companies from innovation. Meanwhile, proactive market orientation uncovers latent needs and thus new market opportunities and takes firms beyond the scope of their experiences increasing their problem-solving capacity (Atuahene-Gima et al. 2005). As a result, proactive market orientation was found to be the most important driver of customer value (Blocker et al. 2011) enhancing companies' new product performance (Narver et al. 2004). A proactive market orientation thus also seems to be in line with the implementation of the innovative offering strategy HO.

We further identify three capabilities and conditions that companies should ensure when deciding to move into HO, i.e., top management commitment, modularization, and a supporting infrastructure. In contrast to this, being flexible towards customers' changing needs has detrimental effects. Previous qualitative research already emphasized that offering HO needs other distinct capabilities than offering single goods or services (Storbacka 2011; Ulaga and Reinartz 2011). Top management commitment may facilitate organizational change and help to overcome conflicts and resistance to change associated with a business reorientation toward HO (Antioco et al. 2008). These findings are in line with the findings of Gebauer et al. (2010) who revealed a positive impact of top management's service orientation on that of their employees.

To offer HO in an efficient way, companies using modularization are keeping a balance between offering individual HOs and standardizing components (Baines et al. 2009; Windahl et al. 2004) and are thus able to reap the rewards from offering HO. Contributing to the successful delivery of an HO is also a supporting infrastructure which previous qualitative research highlighted as an enabler of processes (Storbacka 2011). Based on our results, companies adapting their infrastructure to the new HO offering are better able to convert the new strategy into financial profits. Although flexibility might be beneficial in reacting towards changing customer requirements, it does not come without considerable costs. HO require investments into customer-specific assets, which may have diminished in value in a renewed setting (Young-Ybarra and Wiersema 1999) which our findings support as we find a negative moderating effect of flexibility.

Previous qualitative research identified risk management skills as a crucial capability for HO suppliers (Ulaga and

Reinartz 2011). Offering HO implies taking higher risks due to the increased complexity as well as new values delivered (e.g., performance commitments) (Storbacka 2011; Ulaga and Reinartz 2011). Taking these risks, companies have to implement safeguarding mechanisms to maintain internal profitability (Ulaga and Reinartz 2011). Surprisingly, contradicting these assumptions, we cannot find a moderating effect of risk management on the success of an HO strategy.

## 6.1. Theoretical implications

Our study offers two important implications for research on product-service strategies. First, this study advances the rapidly growing literature on HO. In doing so we respond to the call for research to explore how good-based organizations can evolve into service-oriented firms (Ostrom et al. 2010) while taking into account important contingency factors (Eggert, et al. 2014; Storbacka 2011; Neu and Brown 2005). Although previous research has highlighted the importance of transitioning toward service (Fang et al. 2008) the conditions under which this endeavor may prove successful remain partly unknown. We show that an HO strategy does not pay off per se. While we do find a positive direct effect of an HO strategy on a company's financial performance our results reveal that under certain conditions this positive effect may not realize. We base our paper on the contingency theory of the firm (e.g., Burns and Stalker 1961; Lawrence and Lorsch 1967; Mintzberg 1979) emphasizing that organizational performance depends on three factors, i.e., environment, strategy, and firm characteristics. We investigate the role of moderators on all three levels drawing a more holistic picture of what it takes to successfully implement an HO strategy. As variables on all three levels turn out to influence the success of an HO strategy, it is obviously not enough to analyze only one category of success factors.

Second, we advance the literature on HO by virtue of our measurement approach. We measure HO by focusing on the integration of goods and service components which creates additional customer value. Hence, we explicitly acknowledge the integrative character of HO, which has been argued to be a central defining characteristic. In doing so, we set up the first empirical study examining integrated offerings of goods and services. Previous research relied on examining service strategies measuring the service ratio (Fang et al. 2008), the revenue share (Nezami et al., 2018) or on the number and range of services offered (Antioco et al. 2008; Eggert et al. 2014, 2011).

## 6.2. Managerial Implications

This study also offers several meaningful insights for decision-makers. At a more general level, it adds to the evidence on the performance-enhancing effects of HO strate-

gies (Matthyssens and Vandenbempt 2008; Ulaga and Reinarz 2011), thereby underlining its strategic relevance. Especially, managers facing fierce competition in goods markets might find HO a promising strategy to overcome product commoditization and price pressure (Nezami et al. 2018; Cova and Salle 2007) and distinguish themselves from competitors (Wise and Baumgartner 1999). Importantly, however, the findings presented in this article indicate that positive returns to an HO strategy do not accrue automatically. Companies have to actively adopt an HO strategy and implement several capabilities.

At a more specific level, this study sensitizes decision-makers to possible negative effects from just responding to customers' pressure. Implementing an HO strategy must be a proactively taken internal decision going along with the implementation of distinct capabilities. Specifically, when introducing an HO strategy, top management needs to play an active role in facilitating it. Implementing a service driven strategy can result in internal conflicts taking away opportunities, e.g., from manufacturing improvements (Kwak and Kim 2016). To successfully manage these conflicts and overcome resistance to change, top management has to act as role model by emphasizing the importance of a new strategy. Further, firms should choose a modular offering structure. Combining standardized modules into individual offerings, is an efficient approach for companies to balance between staying profitable and fulfilling individual customer needs (Windahl and Lakemond 2006). Thus, when implementing an HO strategy, managers should actively strive to develop building blocks of goods and services that upon customer request can be combined to an HO. When offering HO, a supporting infrastructure to facilitate these individual offerings is of utmost importance. Installed databases and customer knowledge are a prerequisite for targeting customers with the right HO. Facing customers' changing demands, suppliers should follow a stable strategy as the costs of flexibility diminish the financial performance. Merely reacting to customers' wishes might lead to a scattered portfolio of services, without being able to realize synergies among products and services or applying a modular development approach.

To sum up, offering HO is a complex endeavor that needs careful strategic considerations and distinct capabilities. Rather than waiting to be pushed into offering value-added combinations of goods and services by their customers, companies operating in markets with high competitive intensity should proactively decide to move towards an HO strategy. As such, suppliers may be able to successfully implement this strategy and achieve financial success.

### 6.3. Limitations and Future Research

Notwithstanding its theoretical and managerial contributions, this study is not without limitations, which might in turn serve as a starting point for future research. First, and foremost, our study is based on a single-source survey dataset. Future research may set out to replicate our findings with secondary data, operationalizing the variables not by self-report measures but by using more objective information from databases. While this approach sounds appealing, we found it difficult to acquire suitable secondary data, especially concerning the moderating variables, given that these variables often contain sensitive information which companies may not openly report in databases. Thus, while being aware of the limitations of our data, we were grateful for the willingness of our respondents to report this detailed information on their companies' strategies. However, in the future, better secondary data access might be a reality and, given these conditions, we would see a replication of our findings as highly desirable and insightful.

Second, this study draws on a cross-industry dataset. Due to the limited sample size, no separate analyses for different industries are conducted. The findings should be generalized cautiously but as they are in line with previous findings in service settings and qualitative research, we nevertheless think that they offer valuable insights for research and practice. Future research might wish to analyze industry differences in larger samples to detect whether our results remain robust.

Third, financial performance captures the benefits associated with an HO strategy as well as considerable costs that are associated with launching a new service business (Fang et al. 2008). Nevertheless, the objectives of an HO strategy are also those of differentiation from competitors and customer loyalty. It might be interesting to analyze the effect of an HO strategy in more detail by integrating these concepts and their mediating effect on financial performance. Further, research applying longitudinal research designs is needed to complement this study. Panel data research covering longer time periods, for instance, holds the potential to unearth the temporal dynamics that are likely to influence the interplay between an HO strategy and its contingency factors. Some capabilities might become more important for suppliers in the long run. Above that, the transformation from manufacturing-focused strategies to HO strategies proceeds gradually in different stages (Oliva and Kallenberg 2003; Vandermerwe and Rada 1988). Longitudinal studies could identify at which stages of the transformation precisely which capabilities are of special importance.

Fourth, while they explain part of the success of an HO strategy, the performance effects are somewhat weak. Applying a contingency perspective of the firm, we do not in-



tegrate the customer perspective into our framework. Customer demandingness (Antioico et al. 2008) as well as customer perceived hurdles might as well heavily influence the success of an HO strategy. On the one hand, it is still unknown under which conditions customers prefer HO offerings over products (Evanschitzky et al. 2011). HO increase the customer's perceived purchase risk, as the intangibility of the offering makes it difficult to evaluate (Fang et al. 2008) and customers may be reluctant to choose HO over products. On the other hand, the effectiveness of an HO is not only influenced by the supplier's

but also by customer variables (Tuli et al. 2007). The customer's willingness to co-operate and the support from the customer's local management were identified as critical causes for failure (Brax 2005). Consequently, future research might adapt a dyadic perspective integrating customer variables to further uncover success factors of implementing HO strategies. Hence, there are several promising avenues for future research to deepen scholarly understanding of HO strategies, providing hands-on guidance for practitioners in this emerging field.

## Appendix

Measures used	Factor Loading	Conbach's alpha	CR	AVE
<i>Extent of hybrid offering strategy</i> : newly developed; seven-point scale: "strongly disagree" to "strongly agree"				
Our offerings are composed of combined and integrated good and service shares.	0.69	0.85	0.86	0.60
When developing new goods we make sure that they can be easily combined with our services (e.g. ease of maintenance).	0.72			
Our services are closely linked to our goods and synergies emerge.	0.82			
By integrating goods and services we create additional value for our customers.	0.85			
<i>Motivation to implement an HO strategy</i> : newly developed; seven-point scale: "strongly disagree" to "strongly agree"				
The decision to provide HO was primarily driven by our customers' demands to solve their problems.	-	-		
The decision to provide HO was primarily driven by the possibility to differentiate ourselves from competitors.	-	-		
<i>Top management commitment</i> : based on Lytle, Hom, Mokwa (1998); seven-point scale: "strongly disagree" to "strongly agree"				
Management constantly defines goals and visions for solutions.	0.55	0.82	0.83	0.50
The financial impact of solutions are recognized as significant by our management.	0.60			
Management regularly spends time "in the field" or "on the floor" with customers and front-line employees.	0.60			
Management is constantly measuring solution quality.	0.87			
Management shows that they care about solutions by constantly giving of themselves.	0.85			
<i>Modularization</i> : adapted from Gosh et al. (2006) and Worren et al (2002); seven-point scale: "strongly disagree" to "strongly agree"				
We use standardised modules to create individual solutions.	0.75	0.87	0.87	0.57
We follow a hierarchical solution structure (e.g. defined standardized components).	0.86			
Standardized solution components are deposited in our IT-systems.	0.84			
Ready-made solutions for different customer segments exist.	0.72			
Newly developed customer solutions are documented so they can be sold to other customers as well.	0.59			
<i>Supporting infrastructure</i> : newly developed; seven-point scale: "strongly disagree" to "strongly agree"				
Configuration tools are available to create customer solutions.	0.72	0.81	0.82	0.53
Databases are available to collect solution knowledge.	0.76			
Model contracts are available via the corporate databases.	0.80			
A CRM system is used throughout the company to support solution sales.	0.61			
<i>Flexibility in business relationships</i> : based on Heide, John (1992); seven-point scale:				
We are always willing to respond flexibly to changes in the needs of our customers.	0.79	0.82	0.83	0.62
Flexibility in response to requests for changes is a characteristic of this relationship.	0.89			
The parties expect to be able to make adjustments in the ongoing relationship to cope with changing circumstances.	0.67			

Fig. A1: Used Measures

	Factor Loading	Conbach's alpha	CR	AVE
<i>Risk management:</i> newly developed; seven-point scale: "strongly disagree" to "strongly agree"				
The risks that are connected with delivering solutions are analyzed systematically.	0.82	0.88	0.93	0.72
In cases of performance guarantees (e.g. guaranteed availability) we use control mechanisms for hedging.	0.83			
Our risk management has been adapted to the solution strategy.	0.90			
Risks are calculated into the prices of solutions.	0.68			
<i>Competitive intensity:</i> Jaworski, Kohli (1993); seven-point scale: "strongly disagree" to "strongly agree"				
Competition in our industry is cutthroat.	0.87	0.90	0.90	0.61
There are many "promotion wars" in our industry.	0.85			
Anything that one competitor can offer, others can match readily.	0.79			
One hears of a new competitive move almost every day.	0.62			
Our competitors are characterized by their aggressive procedures.	0.78			
Price competition is a hallmark of our industry.	0.77			
<i>Financial performance in comparison to competitors:</i> adapted from Homburg, Droll, Totzek (2008) seven-point scale: "much worse than our competitors" to "much better than"				
Please rate your turnover relative to your competitors.	0.592	-	-	-
Please rate your return on sales relative to your competitors.	0.592			

Fig. A1: Used Measures

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#### Keywords

Hybrid Offerings, Service Infusion, Competitive Advantage, Contingency Perspective