



To Measure Is to Know: Development of an Instrument for Measuring Consulting Service Value: Recent Findings and Practical Cases

by

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Abstract: While their fundamental business model has not changed for many decades, consulting firms are currently faced with serious challenges putting the complete market at the risk of disruption. Given that situation, it is essential for consultancies to understand how value emerges in consulting projects in the eyes of their clients. Turning to the customer perspective, it is also important to understand how value emerges from the relationship with consultancies. While previous literature provides valuable but fragmented starting points to explain the joint value creation in IT consulting projects, we suggested a synthesized conceptual model drawing on the service-dominant logic in a previous article that integrates both the service provider and client perspectives. In this article, we now put forth a measurement instrument that we subjected to a preliminary empirical validation with which the important determinants in both spheres can be assessed to ultimately explain the value of the IT consulting service in a follow-up, large-scale quantitative-empirical validation.

1 Introduction and Motivation

While their fundamental business model has not changed for many decades, consulting firms are currently faced with serious challenges putting the complete market at the risk of disruption (Christensen et al. 2013). Major trigger of this development are a general market saturation (Richter & Schmidt 2006), the trend towards digital business models (Veit et al. 2014), and the customer companies' increasing sophistication about consulting services. Looking at the domain of information technology (IT), service providers are further pressured by both a persisting competition from low-wage countries and the rise of innovative services, such as cloud computing, providing alternatives to the established business models (McCarthy & Matzke 2010). Given that situation, for consultancies it is essential to understand the needs of their customers as good as possible. Only with a deeper comprehension of how their service provision leads to value for the customer will those companies be able to optimize their customer relationships and, finally, increase or at least keep their sales and profits as well as raise their market shares. Next to profit and sales, it becomes more and more important for consultancies to be recognized as thought leader by the customer. Turning to the customer perspective, it is also important to understand how co-created value emerges from the relationship with consultancies. In this case, client companies can arrange and staff their project teams in a way to gain the highest possible value of the delivered consulting service. Next to the understanding of how the value emerges from consulting services, it is also vital for consultancies as well as for client companies to measure which determinants relatively contribute to the emergence of consulting service value.

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Our research is theoretically rooted in the insight that the value of collaboration between consulting service providers and their customers does not emerge in either the service provider (i.e. the consultancy) or the customer organization, but emerges through co-creation (Vargo & Lusch 2004), which is also long established in practice by consultancies and their interaction with clients in consulting projects. While knowledge on the underlying mechanisms between a consultancy's service provision and a customer's value receipt is surprisingly scarce, some related aspects have already been subject to academic research. Customer satisfaction with IT consultants (Das et al. 1999) is investigated but does not consider other determinants important to this setting (e.g. collaboration quality and value co-creation); IT Consulting SERVQUAL as a measurement instrument for service quality of and customer satisfaction with IT consultants (Yoon & Suh 2004) is based on a firm-centric view that is no longer state-of-the-art considering the service-dominant logic (S-D logic) (Vargo & Lusch 2004; Vargo & Lusch 2008; Vargo & Lusch 2016). Barrutia & Gilsanz (2013) investigate electronic service quality to explain consumer value perceptions in B2C e-commerce contexts from both, the customer and the service provider; Breidbach et al. (2013b) focuses on innovation in professional service firms drawing on the S-D logic; Chan et al. (2010) investigate customer participation in professional financial services across cultures.

While the closely related work served as valuable starting points, we advanced the scientific discourse by suggesting a structural model for explaining consulting service value (Oesterle et al. 2016) that we slightly refine and extend in this article. As we explain in more detail in the subsequent section, service providers, such as consultancies, can only provide value propositions to their clients, which can only judge ex-post the value of the provided service during its later use. Therefore, we develop an instrument to measure consulting service value and its determinants in consulting domains characterized by strong interaction between the consultancy and the client organization (such as management and IT consultancies). The remainder of this article is structured as follows: Section 2 entails the theoretical background of this research project. Subsequently, we describe the underlying research process in Section 3. In Section 4 we briefly sketch the hypotheses synthesized in the conceptual model. Section 5 contains the detailed measurement model and results of our pre-test. In Section 6, we discuss our results and outline the next steps in the overall research project.

2 Theoretical Background

We ground our research in the service-dominant logic (S-D logic). In 2004, Vargo and Lusch (2004) published their seminal work with which the dichotomy of goods and services is overcome. They define service “as the application of specialized competences (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself” (Vargo & Lusch 2004, p.2). In their view, goods are a distributing mechanism for services because a service represents the fundamental unit of exchange (Breidbach & Maglio 2015; Vargo & Lusch 2004; Vargo & Lusch 2016). Moreover, the S-D logic and related perspectives, e.g. service logic and service science, focus on transactions in which specialized competences, such as knowledge and skills, are exchanged (Bruns & Jacob 2014) and describe the mutual interaction between the provider of a service with its customers. Therefore, it is vital to understand the S-D logic's assumptions “all economies are service economies” (Vargo & Lusch 2004, p.10) and “enterprises cannot deliver value, but only offer value propositions” (Vargo & Lusch 2008, p.7). Hence, the role of the customer and its resources has become more and more important. However, Heinonen et al. (2010) put forth that the S-D logic is still service provider-orientated. That is why they focus to apply a deeper customer lens. Moreover, they state that “[...] the center of interest are not exchange and service as such, but how a company's

service is and becomes embedded in the customer's contexts, activities, practices, and experiences, and what implications this has for service companies" (Heinonen et al. 2010, p.533). Hence, their customer-dominant logic places the customer in the center and not the service. In our research endeavor, we focus on the service and its mutual interactions with the client within a specific service delivery process. Consequently, we consider clients as partners in the value co-creation process and follow the view of Vargo and Lusch (2008, p.6) that "service is the fundamental basis of exchange".

2.1 Value Propositions, Value Co-Creation, and Value

Within the initial work and later revised works of S-D logic, the term value proposition has not been defined clearly (Vargo & Lusch 2004; Vargo & Lusch 2008; Vargo & Lusch 2016). However, looking in related works, value propositions are considered as commitments the service provider makes that value-in-exchange is connected with value-in-use (Ballantyne et al. 2011; Frow & Payne 2011; Kowalkowski 2011; Lusch et al. 2007). Similarly, Grönroos and Voima (2013) consider value propositions as "promises that customers can extract some value from an offering" (Grönroos & Voima 2013, p.146). However, the actual evaluation whether the service contributes to the client's value in future use has to be made only by the client. Thus, the service provider cannot assure an initial value contribution (Skålén et al. 2014). Furthermore, the offered value proposition has to put the individual client in a better position. The service provider can only make suggestions how the value proposition should be used. The emergence of value, however, differs in literature. Grönroos (2006) proposes that only clients are value creators and service providers are considered value co-creators only in the case interactions exist between both parties. In other terms, a service provider is co-creator when the client invites the service provider to interact, otherwise the service provider is merely a facilitator. In contrast, Vargo and Lusch (2016, p.9) put forth that "value is always cocreated" between a service provider and the client. Furthermore, Barrutia & Gilsanz (2013, p.232) state that "service science suggest that company and consumer service systems simultaneously access, adapt, and integrate resources to create value for themselves and others." Summarizing, service provider cannot deliver value directly. It rather emerges in the client sphere (Ballantyne & Varey 2006; Grönroos & Ravald 2011; Gummesson 2007; Vargo and Lusch 2016) which should be seen as value-in-use (Bruns & Jacob 2014; Lusch & Nambisan 2015; Lusch et al. 2007; Vargo & Lusch 2004) because the value for clients is generated by them while using and/or consuming the provided service (Grönroos & Ravald 2011; Sandström et al. 2008).

2.2 Service Provider and Client Capabilities

In the light of the S-D logic and the closely related research fields, it is necessary to consider service provider resources as well as the resources of the client in the value co-creation process which we discuss in this article as service provider capabilities and client capabilities (Barrutia & Gilsanz 2013) drawing upon the notion of the S-D logic. Drawing on the distinction of Arnould et al. (2014), operand resources are in general e.g. physical and tangible resources, economic resources as well as goods and raw materials in their possession and which are under sole control (Chandler & Vargo 2011). In turn, there are operant resources, e.g. knowledge and skills, and openness in relation to certain activities (Alborz et al. 2003; Barrutia & Gilsanz 2013). Hence, operant resources can be defined as "[...] those that act on other [operand] resources [...]" (Vargo et al. 2008, p.148). Vargo and Lusch (2004, 2008, 2016) state that in

the S-D logic the fundamental unit of exchange is service (knowledge and skills), which is why we concentrate on these abilities and focus our approach on operant resources (Attewell 1990).

Next to certain types of expertise, such as social expertise, technological expertise, and functional expertise, that are needed by both client company and service provider, each party needs to also provide particular skills to a consulting project to maximize the value resulting from such consulting project. Considering the service provider capabilities, industry expertise and methodological expertise are required to ensure a high level of consulting quality. According to the S-D logic, however, firms cannot provide value directly to their customers, but they can only offer value propositions. In the hierarchy model of Madhavaram and Hunt (2008), the service quality of an consulting firm can be established as a higher-order interconnected operant resource. They define “an interconnected operant resource as a combination of two or more distinct, basic [operand] resources in which the lower order resources significantly interact, thereby reinforcing each other in enabling the firm to produce efficiently and/or effectively valued market offerings” (Madhavaram & Hunt 2008, p.70). Though, service quality is the major resource of professional service firms (Kaiser & Ringlsetter 2011) and should be also considered as a operant resource which is why we integrated consulting service quality into the service provider capabilities. Summarizing, the different types of expertise of the service provider outlined above contribute altogether to the consulting service quality (Alborz et al. 2003; Breidbach et al. 2013a; Goles 2003).

Similarly, a client company needs to provide a few unique capabilities. First, a client company needs to understand how the regular business with consultancies takes place. Hence an operant resource for a client is the experience made in the past with consultancies. Furthermore, clients need to be willing to change their organizational structure as well as their work and administrative processes. Otherwise, the solution suggested by a consultancy will most likely miss the planned objectives. A consulting service will only contribute to a client's value if the client has the ability to recognize the provided value and external information, transform and assimilate it, and apply it (Cohen & Levinthal 1990) which is why we also integrate the absorptive capacity of a client as an operant resource into the client capabilities.

After having introduced the two complementary capability sets, we also hypothesize that the collaboration of both parties is an additional important determinant that contributes to the consulting service value. A prerequisite for consulting services is the exchange of knowledge and information between the service provider and the client company as well as a trustworthy and courteous way of interacting with each other. This social resources comprise for instance, interpersonal trust, know-how exchange, perceived pressure, relationship proneness and social skills (Paredes et al. 2014). We suggest that the collaboration quality is determined by the social expertise of each of the parties and subsequently directly influences the consulting service value.

3 Research Process

Our research aims at explaining and measuring consulting service value on the basis of both client and service provider capabilities drawing on S-D logic as theoretical foundation. We build on Oesterle et al. (2016) in which we deductively derived a preliminary structural model. Whereas our previous article serves as a valuable starting point, we modify the previous model by including the concept of absorptive capacity (Cohen & Levinthal 1990) and by extending it with additional antecedents. To measure the proposed model, we mostly rely on existing measurement scales where possible and develop new ones where necessary. The existing measurement items were adjusted in language and phrasing to achieve consistency among the instrument. Furthermore, we conduct one round of card-sorting to test our measurement scales

for clarity and a construct validity. We adopted the card-sorting procedure of Moore and Benbasat (1991) which attempts to identify any particular items which might be still ambiguous. Therefore, a small number of judges are asked to sort the items to given construct categories with the corresponding construct definitions (Davis 1989). The card-sorting procedure is conducted with a long-list of both, existing ones and new developed items. Next to the card-sorting approach, we also carry out an item prioritization which is why we can condense the long-list of items to the final measurement model.

4 Structural Model Development

After having introduced the theoretical foundations and previous works related to the investigation of value, we now derive our propositions to explain the value co-creation between a consultancy and its client. To examine the value co-creation in the consulting industry, we focus on the project-level, and investigate the consulting service value that emerges from the joint work of a consultancy and its client on a project level. The projects or sub-projects investigated should thus be completed, i.e. the assessment is an ex-post consideration.

As introduced in our theoretical foundation, we integrate both client and service provider capabilities to capture the co-creation process within the consulting industry. Especially, in collaboration-intensive industries like the consulting industry, it is important to consider both perspectives simultaneously. To derive our conceptual model, we were inspired by previous works of Chan et al. (2010), Breidbach et al. (2013b), and Barrutia and Gilsanz (2013). In our concept, we follow the view of Barrutia and Gilsanz (2013) of the value co-creation core model which consists of the client capabilities, service provider capabilities, and the value perception. In addition to Barrutia and Gilsanz (2013), we also integrate the collaboration quality. Our dependent variable *consulting service value* is defined as the client's evaluation of adequacy of price and value (Varki & Colgate 2001), which emerges in the S-D logic during the use of the provided service (Grönroos & Voima 2013; Vargo & Akaka 2009; Vargo & Lusch 2004).

Collaboration quality refers to the extent to which at least two entities of the service provider and the client work jointly and coordinated together (Pereira & Soares 2007). Thus, collaboration consists of personal interactions and relations between service provider and clients as well as interactional aspects like courtesy, respect, and friendliness (Kelley et al. 1990). Furthermore, collaboration depends on the mutual trustworthiness of the participants. The better these qualities, the stronger are the ties between a service provider and its client (Yi & Gong 2013), and thus, a higher value emerges. Hence, a strong relationship between client and service provider as well as a thoroughly executed relationship management are needed for a high collaboration quality (Goles 2003; Han et al. 2008). These multiple interactions are a prerequisite for successful value creation (Ennew & Binks 1999). Hence, we hypothesize:

H1: Collaboration quality has a positive impact on consulting service value.

4.1 Service Provider Capabilities

Within the service provider capabilities, the *consulting service quality* ultimately determines the consulting service value (Cronin et al. 2000; Gallarza et al. 2013). *Consulting service quality* "is best described as the result of an assessment process, in that course the client compares the expected service with the one delivered" (Kaiser & Ringlstetter 2011, p.40). Consulting service quality is the evaluation if the expectations are met or not and differs from consulting service value. In turn, the consulting service quality depends on the operant resources of the service

provider: industry expertise, methodological expertise, technological expertise, functional expertise, innovativeness, and social expertise. The assessment of the outcome, i.e. consulting service quality, is a judgment of an individual, and thus subjective impression of the regarded project (Kang 2006). Thus, we conclude:

H2: Consulting service quality has a positive impact on consulting service value.

Furthermore, the success of a consulting project depends on the industry knowledge of the project team of the consultancy. Consultants with a high industry expertise better understand the needs of the client and have a thorough understanding of how business is conducted in the specific client industry (Goles 2003). We define *industry expertise* as the extent to which a consulting project team possesses expert knowledge in the domain of the client. We hypothesize:

H3: Industry expertise has a positive impact on consulting service quality.

Next to a high industry expertise, the consulting project team should provide a high *methodological expertise* to address the tasks in a structured and comprehensible way as well as usable research techniques applicable to the specific project. We define methodological expertise of the service provider as the extent to which a consulting project team possesses expert knowledge in required project skills such as systematic approach, statistical analysis, project and change management, development of surveys and measurements, or software engineering (Boh et al. 2002). The requirements of the methodological expertise can vary in each project, and it is the task of the consultancy to assess which methodological skill set is best for the project to achieve a high consulting service quality. Hence, we state:

H4: Methodological expertise has a positive impact on consulting service quality.

Furthermore, a service provider needs also *technological expertise*. Especially in the light of the ongoing digitalization, there are only few consulting projects which do not include technology issues which also stresses the importance of consultants possessing those skills. The contracting of a consultancy seems to be an easy way to get to know new technologies. Technological expertise is defined as the extent to which a consulting project team possesses expert knowledge in technology and related areas (Kirby & Dylan 1997) which facilitates the consulting service quality. We hypothesize:

H5: Technological expertise has a positive impact on consulting service quality.

Next to a technological expertise, also a functional expertise is needed to successfully complete consulting projects. Consulting projects do not only require one specific set of expert knowledge, but a heterogeneous set of expert knowledge is required. Hoffman (1998, p.85) defines a functional expert as “one who has special skills or knowledge derived from extensive experience with subdomains” which is why we define *functional expertise* of the consultant project team as the extent to which it has expert knowledge in a specific domain. We conclude:

H6: Functional expertise of the service provider has a positive impact on consulting service quality.

Subsequent to functional expertise, *innovativeness* of the service provider contributes to the consulting service quality. We define innovativeness as the degree to which an innovative and hence novel service provided is able to positively influence and improve the client organization (Garcia & Calantone 2002). Furthermore, when dealing with innovativeness, it is important to notice that innovativeness depends always on whose perspective is taken, e.g. “[...] new to the world, new to the adopting unit, new to the industry, new to the market, or new to the customer” (Garcia & Calantone 2002, p.112). Within the consultancy industry, clients rely on their service provider to figure out new ways of dealing with a specific task, process, or issue. Especially in light of the digitization of services, a certain level of innovativeness is necessary to keep track with their competitors. If the consulting project team is innovative the perception of the consulting service quality will increase. Hence, we hypothesize:

H7: Innovativeness of the service provider has a positive impact on consulting service quality.

Finally, *social expertise of the provider* is defined as the “degree to which consumers receive intelligent social support [...]” (Barrutia & Gilsanz 2013, p.235). This conclusion remains also valid in a business-to-business context and hence, also for the consulting industry. Within the consulting project team, every team member also receives intelligent social support from his or her colleagues. This intelligent social support can be seen as knowledge transfer (Gruen et al. 2007). Consulting project teams can deploy this knowledge to complete the required service. However, the knowledge transfer will only take place if there is an interpersonal trustworthy relationship between the actors (Breidbach et al. 2013a) and if the person receiving such support has openness towards social support. Within the consulting project teams, there are various kinds of actors with different expertise and hence, the potential to receive social support from team members is high. The social expertise will facilitate the quality of the collaboration and furthermore enable a high level of consulting service quality. Thus, we conclude:

H8: Social expertise of the provider has a positive impact on consulting service quality.

H9: Social expertise of the provider has a positive impact on collaboration quality.

Summarizing, the service provider capabilities focus on the operant resources. We hypothesize that the determinants introduced above positively influence the client’s perception of the overall consulting service quality.

4.2 Client Capabilities

In addition to the service provider capabilities, we now introduce the client company capabilities and its operant resources following the S-D logic through which the consulting service value emerges. Some determinants of the client capabilities are similar to the service provider capabilities, but are assessed from the client company’s perspective. As part of the client capabilities, we include social expertise, technological expertise, and functional expertise. In addition to that, we further include the determinants willingness to change, experience with consultants, as well as the concept of absorptive capacity.

First, we suggest that absorptive capacity of the client company within a consulting project contributes to the explanation of the consulting service value. Absorptive capacity is a firm’s ability to identify, assimilate, transform, and apply valuable external knowledge (Roberts et al. 2012) which is also applicable to consulting services. The consulting service is based on different kinds of expertise which needs to be absorbed by the client company. Thus, the consulting project team possesses external knowledge from the client perspective which has to be identified, assimilated, transformed, and applied to be valuable to the client firm. Therefore, we hypothesize:

H10: Absorptive capacity has a positive impact on consulting service value.

The *social expertise of the client*, while similar to the service provider capabilities, takes the client’s perspective. According to Paredes et al. (2014, p.128), social expertise is defined as the “knowledge available in consumer social context”. In the same vein, employees of the client company receive intelligent social support from their internal workmates, i.e. colleagues from other departments or from the same department. In contrast to the service provider’s social expertise, the employees of the client company receive social support from their regular team members with which they work for a longer period of time. Because of the interpersonal trust which is needed for the knowledge transfer, social expertise of the client company contributes to the collaboration quality. Furthermore, the social expertise of the client facilitates the client employees to absorb external knowledge through their interexchange. Hence, we hypothesize:

H11: Social expertise of the client has a positive impact on collaboration quality.

H12: Social expertise of the client has a positive impact on absorptive capacity.

Similar to the technological expertise of the service provider, also clients have to have *technological expertise*. Otherwise, the client does not have the abilities to absorb the new

external knowledge. The client needs technological expertise to evaluate if the provided service is applicable to its firm and to judge if the transformation will be valuable. Therefore, we propose:

H13: Technological expertise has a positive impact on absorptive capacity.

Similar to the functional expertise of the provider, also the client needs *functional expertise*. Due to the mutual service provision, the client requires these skills to assess if the externally provided consulting service fits into the client company and if the transformation of the external knowledge is beneficial. Hence, we conclude:

H14: Functional expertise has a positive impact on absorptive capacity.

In addition, we also integrate the dimension experience with consultants and willingness to change. *Experience with consultants* is defined as the extent to which the client project members have developed empirical knowledge based on past interactions with consultants. This determinant is important for clients because of the learning process of how to interact, govern, judge, and transform the relationship with consultants. Hence, we hypothesize:

H15: Experience with consultants has a positive impact on absorptive capacity.

Finally, we integrate the *willingness to change* of the client which is defined as a positive behavioral intention of organizational change such as planned modification of an organization's structure or work and administrative processes (Metselaar 1997). Only if the client organization in total (or its parts affected) is willing to change and accept modifications, the external knowledge can be usefully implemented into the client's firm. Hence, we propose:

H16: Willingness to change has a positive impact on absorptive capacity.

Summarizing, the client capabilities focus on the operant resources of the client. In our context, the client of a consulting service should also provide knowledge, skills, and social expertise as well as has to be open to change and modifications which are decisive for the value co-creation. In sum, we propose that the determinants positively influence the absorptive capacity of a client company. Figure 1 provides an overview of the derived hypotheses.

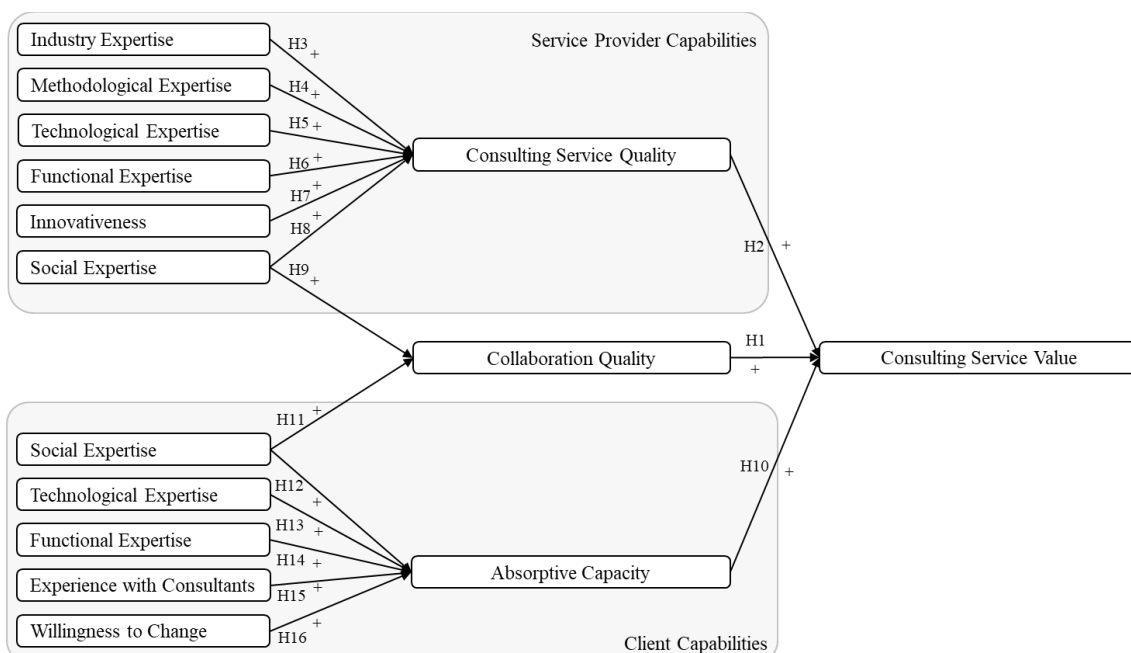


Figure 1: Model explaining consulting service value.

5 Measurement Instrument Development

5.1 Item Identification and Development

After having presented our structural model and introduced the derived hypotheses, we now enlarge on the development of the measurement instrument. For the simplification reasons, we show the item identification only once for the twofold constructs which are integrated in both, the client and the service provider capabilities (technological expertise, functional expertise, social expertise). As mentioned above, we rely on existing measurement scales where possible and develop new ones where necessary. The existing measurement scales were predominantly found in academic journals of different domains, such as outsourcing and service science literature as well as literature on behavioral science, IT and IS research, and innovation management. While the existing measurement scales serve as a good starting point, they had to be adapted to our specific context. We adjusted the existing scales in wording and language as well as in formality to have a precise measurement model. Table 1 presents the constructs for which we found existing measurement scales.

Table 1: Initial item pool.

Construct	Abbreviation	Operationalization sources	Number of existing items	Number of own added items
Absorptive Capacity	AbCap	Ko et al. (2005)	7	1
Collaboration Quality	CollQual	Han et al. (2008), Zacharia et al. (2011)	15	1
Consulting Service Quality	CoSeQual	Barrutia & Gilsanz (2013), Brady et al. (2005), Goles (2003)	10	1
Consulting Service Value	CoSeVal	Barrutia & Gilsanz (2013), Gruen et al. (2007), Park et al. (2004)	6	0
Functional Expertise	FuncExp	Brady & Cronin (2001), Bergeron et al. (2001), Sharma & Patterson (2000)	7	1
Industry Expertise	IndExp	Goles (2003)	2	4
Innovativeness	Inno	Calantone et al. (2002), Wang (2008)	8	3
Social Expertise	SocExp	Barrutia & Gilsanz (2013), Gruen et al. (2007), Yi & Gong (2013)	11	1
Technological Expertise	TechExp	Barrutia & Gilsanz (2013), Goles (2003)	7	1
Willingness to Change	WillCha	Dayan et al. (2016), Kellermanns & Eddleston (2006)	4	1
Items in total:			77	14

In the case that no suitable measurement scales were found, the existing measurement scales did not fit to our context, a specific aspect was not covered, or the constructs were operationalized with a single item, we developed additional items. Thus, in addition to the 77 initially found items in literature another 14 were added (Table 1). For the constructs *experience with consultants* and *methodological expertise* we developed new construct operationalizations. We developed six items for measuring *experience with consultants* and eight items to measure *methodological expertise*. After a first analysis of the initially found items, we shortened our long-list and excluded eight items which do not fit to our context. Afterwards, we continued

with our resulting item pool consisting of 97 items and started with the adjustment of the raw items in several rounds to fit to our context and to provide a common style.

5.2 Card-Sorting Procedure

After having developed our initial item pool (Table 1), created new items where necessary, and adjusted them in an iteration process, we continued our instrument development with a card-sorting procedure. The aim of the card-sorting procedure is to assess the construct validity of the various scales and “to attempt to identify any particular items which still may have been ambiguous” (Moore & Benbasat 1991, p.199). Therefore, we asked seven judges to sort the given items to constructs on basis of the construct definitions (Davis 1985; Davis 1989). After having assigned the items to the corresponding constructs, the judges were asked to rank the items of every construct according to their representativeness. Hence, we can identify the most suitable items for each construct. We followed the card-sorting procedure proposed by Moore and Benbasat (1991) and performed the card-sorting procedure spreadsheet-based. After having received the judges’ results, we were able to evaluate the validity of our measurement model.

In Table 2, we present the results of the card-sorting procedure. The diagonal shows how many items were sorted in target, i.e. the items were correctly sorted to the corresponding construct. The last column shows the ratio of correct placed items to total, e.g. for the construct *collaboration quality* we notice a hit ratio of 95,71 %. The construct *collaboration quality* consists of ten items, so the highest absolute matching would be 70, because of the seven judges (7 judges x 10 items). The hit ratio of 95,71 % is the ratio of correct sorted items into the target construct (observations: 67) to the highest possible number.

Table 2: Item placement ratio.

Constructs		Actual														Total	% Hits
		Ab Cap	Coll Qual	CoSe Qual	CoSe Val	Func Exp	Expe Con	Ind Exp	Inno	Meth Exp	Soc Exp	Tech Exp	Will Cha	Ambig./Unclear			
Theoretical	AbCap	36	4	4	1	3	1	0	1	0	0	5	0	1	56	64,29%	
	CollQual	0	67	0	0	0	0	0	0	1	0	0	1	1	70	95,71%	
	CoSeQual	0	0	43	10	5	0	2	0	0	1	0	0	2	63	68,25%	
	CoSeVal	0	0	7	31	0	0	1	0	1	0	0	0	2	42	73,81%	
	FuncExp	0	1	9	1	38	1	3	0	1	0	0	0	2	56	67,86%	
	ExpeCon	2	2	1	0	0	37	0	0	0	0	0	0	0	42	88,10%	
	IndExp	0	0	1	0	2	0	38	0	0	0	1	0	0	42	90,48%	
	Inno	0	0	0	0	4	0	0	62	4	1	1	5	0	77	80,52%	
	MethExp	0	0	5	0	4	0	0	0	46	0	0	0	1	56	82,14%	
	SocExp	0	3	0	1	0	0	1	0	0	79	0	0	0	84	94,05%	
	TechExp	0	0	0	0	0	0	1	7	0	0	48	0	0	56	85,71%	
	WillCha	0	0	1	0	0	1	0	11	0	0	0	22	0	35	62,86%	
			Item placements: 679							Hits: 547				Overall hit ratio: 80,56%			

With an overall hit ratio of 80,56 % the measurement model seems to be satisfying. However, the spread of the continuum is quite wide. The lowest scores were achieved for the construct *willingness to change* with 62,86 %, and the highest scores for the construct *collaboration quality* with 95,71 %. However, through the integration of the elaborated long-list consisting of previously published and self-developed items, the number of items per

construct is quite high. Hence, we have the possibility to only integrate those items into the final measurement instrument which were mainly sorted into the correct target construct. In a first step, we therefore analyzed the constructs with a hit ratio under 80 % into detail on an item level and eliminated the items which were mainly assessed into not intended constructs. This will help us to identify the final measurement model and ensure a high validity. According to the card-sorting results presented in Table 2, the following constructs had to be considered: absorptive capacity, consulting service quality, consulting service value, functional expertise, and willingness to change. For the construct *absorptive capacity*, we identified four items which have only little target hits. Hence, we removed these items from the item pool. Furthermore, we analyzed the construct *consulting service quality*. For this construct, we identified that some of the items were ambiguous and were overlapping with consulting service value. Therefore, we removed five of the original eleven items with the lowest target hits. Moreover, we removed two items intended to measure *consulting service value*. Both items had high overlaps with *consulting service quality*. For *functional expertise* three items had to be excluded because of their high cross loadings. Finally, the construct *willingness to change* is examined. For this construct, we examined that the judges considered three items often as innovativeness. Hence, we delete these items. In a second step, we analyzed the constructs which showed a hit ratio above 80 % (collaboration quality, experience with consultants, industry expertise, innovativeness, social expertise, technological expertise, and methodological expertise) and selected those items of the long-list which were most often sorted in the target construct and ranked best according to their mean of the assessed ranks. After having identified the final items, we present an updated hit ratio in Table 3. Through the elimination of items, we gain a higher overall hit ratio, and none of the constructs have a hit ratio beneath 80 %.

Table 3: Item ratio after selection.

<i>Constructs</i>		Actual															
		Number Items	Ab Cap	Coll Qual	CoSe Qual	CoSe Val	Func Exp	Expe Con	Ind Exp	Inno	Meth Exp	Soc Exp	Tech Exp	Will Cha	Ambig./ Unclear	Total	% Hits
Theoretical	AbCap	4	25				1					2		1	28	89,29%	
	CollQual	6		42										1	42	100%	
	CoSeQual	4			27	1									2	28	96,43%
	CoSeVal	4			2	26									2	28	92,86%
	FuncExp	5					34		1						2	35	97,14%
	ExpeCon	5		2											0	35	94,29%
	IndExp	3			1				20						0	21	95,24%
	Inno	5								33				2	0	35	94,29%
	MethExp	4			1						27				1	28	96,43%
	SocExp	5										35			0	35	100%
	TechExp	5							1				34		0	35	97,14%
	WillCha	3						1		2				18	0	21	85,71%
			Item placements: 371 Hits: 354 Overall hit ratio: 95,42%														

5.3 Final Measurement Instrument

On the basis of the presented card-sorting procedure, we identified a set of measurement items which are suitable to operationalize our structural model. The conducted procedure leads us to a measurement model consisting of 53 items (Table 4). However, keeping in mind that we have

to incorporate some of the constructs twice because of the divergent capabilities shown in Section 4, we will end by a total of 68 items. The resulting measurement model will help us to explain the phenomena under investigation and will be used in a matched pairs survey approach.

Table 4: Final measurement instrument.

<i>Absorptive Capacity</i>	
AbCap1	The client has the necessary skills to implement the delivered service.
AbCap2	The client has the managerial competence to absorb the business knowledge about the delivered service.
AbCap3	The client has the technical competence to absorb the technical knowledge about the delivered service.
AbCap4	Overall, the client's absorptive capacity is high.
<i>Collaboration Quality</i>	
CollQual1	We and our client are interested in each other's problems.
CollQual2	We and our client solve most problems together.
CollQual3	We and our client are generally cooperative in conducting business.
CollQual4	We and the client shared a lot of information.
CollQual5	We and the client made joint decisions on most issues.
CollQual6	Overall, the quality of collaboration between us and the client is high.
<i>Consulting Service Quality</i>	
CoSeQual1	Our service quality is generally first class.
CoSeQual2	Our performance within the project is absolutely reliable.
CoSeQual3	Overall, our service quality is outstanding.
CoSeQual4	Overall, the quality of the delivered service is high.
<i>Consulting Service Value</i>	
CoSeVal2	The overall value you get from the provided service is worth your money and effort.
CoSeVal3	Considering the price the client pays, we believe that the provided service is sufficient.
CoSeVal4	The price the client pays is reasonable.
CoSeVal6	Overall, the value of the provided service is high.
<i>Experience with Consultants</i>	
ExpeCon1	The client employees know how to work efficiently with consultants.
ExpeCon2	The client employees often collaborate with consultants in their project domain.
ExpeCon3	Working with consultants is not unusual to the client employees in their project domain.
ExpeCon4	The client employees are experienced working with consultants.
ExpeCon5	Overall, the client employees have much experience with consultants.
<i>Functional Expertise</i>	
FuncExp1	We understand the functional aspects of the actual problem addressed by the project.
FuncExp2	We possess good functional knowledge in the project domain.
FuncExp3	We are quite experienced in the functional project domain.
FuncExp4	We apply our functional expertise well on the actual problem addressed by the project.
FuncExp5	Overall, our functional expertise is high.
<i>Industry Expertise</i>	
IndExp1	We have a high reputation in the client's industry.
IndExp2	We are well experienced in the client industry.
IndExp3	Overall, our industry expertise is high.
<i>Innovativeness</i>	
Inno1	We frequently try out new ideas.
Inno2	We seek out new ways doing things.
Inno3	We actively seek innovative ideas.

Inno4	We are willing to try new ways of doing things and seek unusual, novel solutions.
Inno5	Overall, we can be considered as innovative.
<i>Methodological Expertise</i>	
MethExp1	We follow a clear project schedule.
MethExp2	We follow a clear structure in our specific project methodology.
MethExp3	We use methods which are appropriate for the specific project.
MethExp4	Overall, our methodological expertise is high.
<i>Social Expertise</i>	
SocExp1	My colleagues and I usually speak about how to solve a specific problem.
SocExp2	My colleagues and I share our knowledge with each other.
SocExp3	If my colleagues and I have a useful idea on how to solve a problem, we let I let each other know.
SocExp4	When my colleagues and I experience a problem, we let each other know.
SocExp5	Overall, my colleagues and I have a strong social expertise.
<i>Technological Expertise</i>	
TechExp1	We give appropriate advice on relevant technologies to the client.
TechExp2	We know more about relevant technologies than others.
TechExp3	We have strong technological consulting capabilities.
TechExp4	We have a high degree of technological competence.
TechExp5	Overall, our technological expertise is high.
<i>Willingness to Change</i>	
WillCha1	The client employees are ready to take on any new challenges that they are faced with.
WillCha2	The client employees find it easy to change.
WillCha3	Overall, the client employees can be considered as willing to change.

6 Discussion and Conclusion

With our work, we set out to develop a measurement model to explain the emergence of co-created value in consulting relationships from both the perspective of the consultancy and the client. To achieve this goal, first we deductively developed a structural model based on Oesterle et al. (2016) for which we then elaborated the presented measurement model. We were inspired by previous works and their measurement models which we adjusted to our context as well as developed new items where we did not find existing scales. In particular, the identified items were then tested in a card-sorting procedure which led us to our final measurement model. In our future research activities, our elaborated measurement model will be implemented into an online survey tool, pilot tested, and finally distributed. We attempt to follow a matched pair approach, whereby clients evaluate their service provider and vice versa on a project level. Hence, with our derived model and the corresponding measurement instrument we lay the foundation of a future empirical validation.

Before we conclude this paper by outlining our recommendations for future research and by highlighting our contributions to both theory and practice, we briefly discuss the limitations of our study. Since our study, so far, is only a conceptual piece concerning the structural model, we do not have any empirical evidence as to how far our propositions reflect the reality and as to how strong the proposed relationships between constructs are. Thus, while the model is deductively derived on theoretical accounts, the empirical validation remains for future research. Another aspect we want to highlight is that our study only focuses on perceived value, which can be considered as a key determinant of consulting service success. Success in that respect may also be influenced by additional factors such as price, political connections, and

sales capabilities (Das et al. 1999; Oh 1999) which, however, is beyond the scope of our study. In addition to that, the conducted card-sorting procedure does not allow any further statistical analysis based on the small number of judges.

Regarding the specific next steps in this research endeavor, we deem quantitative-empirical methods as most suitable to validate our proposed model. Before we will collect survey data, we will conduct a pilot-test and analyze the first data sets and adjust again adjust the measurement model if necessary. We will then accomplish the main study and analyze the gathered data using a structural equation modeling approach (Straub 1989; Urbach & Ahlemann 2010). For the measurement of the two spheres, we will follow a matched pairs approach (O'Farrell & Hitchins 1988; Peck 1985). Through measurement of the two spheres, we will obtain better insights and a comparison of the client's view and the provider's view is possible. To account for the particularities of the consulting domain, we aim to strengthen our statistical analysis by carrying out multi-group comparisons (Chin 2003; Henseler 2007) in a subsequent step. This will allow us to investigate not only the different value drivers' impact but also potential differences in the dynamics leading to value within consulting services considering the specific characteristics of the service offered, the service provider, and the client. An additional opportunity would be the application of bottom-up segmentation procedures, such as FIMIX-PLS (Becker et al. 2013; Mohan & Urbach 2012), for further identification of heterogeneities in the dynamics leading to the emergence of value in consulting relationships.

Keeping the limitations of our work in mind, our results contribute to both theory and practice. Having finished the overall research project, our targeted contribution to research is the advancement of the theoretical discourse on the emergence of value by providing an empirically validated theory that explains consulting service value. By proposing collaboration quality as an additional dimension in the value co-creation model next to the capabilities of service providers and client, we aim for a more differentiated view of co-value creation with which we go beyond previous approaches. Furthermore, we account for the value co-creation model in a business-to-business context that has mostly been neglected by similar studies. From a practical point of view, we expect our model after a thorough empirical evaluation to be a beneficial instrument to evaluate and predict client value with consulting services. By considering the specific characteristics of the service offered, the service provider and the client in our empirical analysis, we try to achieve a largely differentiated view of the phenomenon under investigation. Thus, our results might be useful for providing consulting firms with the necessary theoretical information and empirical findings to better understand the drivers of consulting service value, thus support their after sales process and the acquisition of follow-up projects, and finally improve or at least maintain their market position. Moreover, client companies will gain a deeper understanding which drivers of consulting service they can influence and which drivers are needed in different kinds of consulting services.

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