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S-D logic-informed customer engagement: integrative framework, revised fundamental propositions, and application to CRM

Linda D. Hollebeek^{1,2} · Rajendra K. Srivastava³ · Tom Chen⁴

Abstract Research addressing the micro-foundational theoretical entity of customer engagement (CE) has proliferated in recent years. In parallel, the macro-foundational theory of service-dominant (S-D) logic is thriving. While the fit of CE/S-D logic has been recognized, insight into this theoretical interface remains tenuous, as explored in this paper. We develop an integrative, S-D logic-informed framework of CE comprising three CE foundational processes, which are required (for customer resource integration), or conducive (for customer knowledge sharing/learning) CE antecedents. While customer resource integration, in some form, extends to coincide with CE, customer knowledge sharing/learning can also do so. We also identify three CE benefits (customer individual/interpersonal operant resource development, cocreation) as CE consequences, which *can* also coincide with CE. Deploying the framework, we revise Brodie et al.'s (Journal of Service Research, 14(3),

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252–271, 2011) fundamental propositions of CE and apply these to customer relationship management. We conclude with theoretical and managerial implications, followed by future research avenues.

Keywords Customer engagement \cdot S-D logic \cdot Conceptual framework \cdot Revised FPs \cdot CRM

Introduction

Reflecting contemporary, increasingly dynamic and interactive business environments, the customer engagement (CE) concept has received considerable scholarly attention in the last five to seven years (Pansari and Kumar 2016). CE, which denotes "a psychological state that occurs by virtue of interactive customer experiences with a focal object (e.g., a brand) in service relationships" (Brodie et al. 2011, p. 260), has been heralded as a strategic imperative facilitating sales growth, superior competitive advantage, and profitability (Bijmolt et al. 2010). Engaged customers, typically, display greater brand loyalty and satisfaction (Jaakkola and Alexander 2014) and are more likely to contribute to new product development (Haumann et al. 2015), service innovation (Kumar et al. 2010), and viral marketing activity by providing referrals for specific offerings to others (Chandler and Lusch 2015).

The growing importance of CE is illustrated by the concept's inclusion in the Marketing Science Institute's 2014–2016 and 2016–2018 *Research Priorities* (MSI 2014, 2016). Further, Special Issues addressing CE have appeared in leading journals, including the *Journal of the Academy of Marketing Science* (2017), *Journal of Service Research* (2010, 2011), and the *Journal of Consumer Psychology* (2009). Research to date has provided CE conceptualizations (Hollebeek et al. 2014), fundamental propositions of CE (Brodie et al. 2011), measurement

instruments applicable to particular CE contexts (Sprott et al. 2009), initial insight into CE antecedents, dynamics and consequences (Van Doorn et al. 2010), and the effect of CE on firm performance (Kumar and Pansari 2015).

Despite these contributions important research gaps remain, in particular with respect to the conceptual association of CE vis-à-vis other theoretical entities, including servicedominant (S-D) logic and its associated lexicon (Vargo and Lusch 2004, 2008a, 2016), thus limiting our understanding of CE and its theoretical interconnections. CE and S-D logic share a theoretical focus on interactivity with or between stakeholders (e.g., customers, employees), thus reflecting a significant conceptual fit of these perspectives, warranting their joint investigation. While the applicability of CE to S-D logic has been recognized (Brodie et al. 2011), little remains known regarding the particular ways in which these theoretical entities interrelate (e.g., the link between CE and the S-D logic concepts of cocreation, resource integration), which we explore in this paper.

The primary purpose of this paper is to develop an integrative framework of CE and S-D logic, which serves as a theoretical foundation for the subsequent development of a set of revised, S-D logic-informed fundamental propositions (FPs) of CE. Our contributions are as follows. First, we develop an integrative framework that unifies, consolidates, and harmonizes CE and S-D logic, which have existed as largely fragmented perspectives to date. MacInnis (2011, p. 138), in her classification of conceptual contributions in marketing, denotes "integrating" as viewing "previously distinct pieces as similar, often in terms of a *unified whole* whose meaning is different from its constituent parts." By integrating CE with key S-D logic concepts (e.g., cocreation), our framework advances the development of theoretical parsimony and convergence of these perspectives (Yadav 2010; MacInnis 2011). We also delineate (i.e., "detail, chart, describe, or depict an entity and its relationship to other entities," MacInnis 2011, p. 138) and 'differentiate' (i.e., "discriminate, parse, or see pieces or dimensions that comprise a whole," p. 138) our key concepts.

Our second contribution lies in the development of a set of revised S-D logic–informed FPs of CE based on our framework. In their original FPs of CE, Brodie et al. (2011, p. 253) draw on four of Vargo and Lusch's (2008a) foundational premises of S-D logic, including Premise 6 ("The customer is always a cocreator of value"), Premise 8 ("A service-centered view is inherently customer-oriented and relational"), Premise 9 ("All social and economic actors are resource integrators"), and Premise 10 ("Value is always uniquely and phenomenologically determined by the beneficiary"). Except for Premise 8, Vargo and Lusch (2016) elevate these premises (subject to relevant revisions) to axiom status. Building on Brodie et al. (2011) we develop a set of revised, S-D logic–informed FPs of CE that reflects Vargo and Lusch's (2016) recent S-D logic developments, including a more explicit focus on networks and institutions. The revised FPs are a useful guide for future researchers and managers seeking to better understand CE and its theoretical associations with S-D logic.

Third, our work contributes to marketing practice through the application of our revised, S-D logic-informed FPs of CE to customer relationship management (CRM), which is centered on managing customer interactions and relationships. Reinartz et al. (2004, p. 295) define CRM as "the systematic and proactive management of [customer] relationships as they move from beginning (initiation) to end (termination), with execution across the various customer-facing contact channels." CRM leverages customer information to maximize customer lifetime value and customer equity (Malthouse et al. 2013, p. 270), and can be used to implement firms' relationship marketing objectives (Ou et al. 2016; Kumar and Reinartz 2016) and to engage customers (Malthouse et al. 2013; Verma et al. 2016; Verhoef et al. 2010a). The application of our revised, S-D logic-informed FPs of CE to CRM can thus aid managers to more effectively engage customers through enhanced customer interactions, which over time, facilitate the development of superior customer relationships and lifetime value.

The paper is structured as follows. We next review literature on CE and S-D logic, followed by the development of an integrative conceptual framework of S-D logic–informed CE. Building on Brodie et al. (2011), we proceed to develop five revised FPs of CE that explicitly incorporate key S-D logic concepts; thus contributing to the theoretical consolidation of CE and S-D logic. We then discuss our framework and revised FPs, followed by an overview of CRM implications arising from our analyses. The paper concludes with an overview of key research limitations and an agenda for future research.

Customer engagement research

The engagement concept has received considerable academic, practitioner, and consultancy-based interest in recent years (Haumann et al. 2015; Precourt 2016). Scrutiny of the literature suggests the emergence of several engagement concepts, including "customer engagement" (Pansari and Kumar 2016; Verhoef et al. 2010b), "customer engagement behaviors" (Van Doorn et al. 2010), "consumer engagement" (Brodie et al. 2013), "consumer brand engagement" (Hollebeek et al. 2014), "advertising engagement" (Phillips and McQuarrie 2010), and "brand engagement in self-concept" (Sprott et al. 2009). We adopt customer engagement (CE) with brands, which are a key responsibility of the marketing function (Doyle 2000). We view the brand, which Chandler and Lusch (2015, p. 3) identify as the most cited engagement object in the marketing literature, as a physical (e.g., identifying) entity, and a customer-based mental representation of focal offerings (Stern 2006, p. 216).

In their influential article, Brodie et al. (2011) develop a set of five fundamental propositions (FPs) of CE. First, FP1 reads, "CE reflects a psychological state, which occurs by virtue of interactive customer experiences with a focal object (e.g., a brand) in service relationships" (p. 260). The notion of interactivity between focal engagement subject(s) and object(s) runs as a common thread through most engagement conceptualizations (Jaakkola and Alexander 2014). While Brodie et al.'s (2011) interactive experience is widely adopted, this description can render theoretical confusion between CE and the conceptually related, but distinct brand experience concept (Homburg et al. 2015; Lemon and Verhoef 2016). Brakus et al. (2009, p. 53) define brand experience as "subjective, internal consumer responses... evoked by brand-related stimuli that are part of a brand's design, identity, packaging, communications, and environments." They proceed (p. 53): "brand experience... differs from motivational concepts, such as involvement" and CE; that is, in contrast to CE, "brand experience does not presume a motivational state" (p. 54). We thus focus on the interactive nature of CE (vs. interactive experience) to more clearly differentiate these concepts. Taking an S-D logic-informed view, we view interaction as "mutual or reciprocal action or influence" that facilitates exchange (Vargo and Lusch 2016, p. 9).

Second and relatedly, we note a highly voluntary (Jennings and Stoker 2004; Mollen and Wilson 2010), motivational (Higgins 2006) nature of CE, which remains more implicit in Brodie et al.'s conceptualization. Based on motivational drivers (Van Doorn et al. 2010), customers choose to invest focal operant (i.e., knowledge, skills; Vargo and Lusch 2008a, p. 6) and operand (e.g., equipment) resources in particular brand interactions (Hollebeek 2011a). Examples of customers' brand-related operant resources include cognitive (e.g., knowledge of a brand's legacy), emotional (e.g., brand imagery), behavioral (e.g., brand usage skills), and social (e.g., brand-based socializing skills) operant resources (Vargo and Lusch 2008a, p. 6), thus reflecting CE's multidimensional nature (Brodie et al. 2011, p. 258). Operant resources are "the fundamental source of competitive advantage" (Vargo and Lusch 2016, p. 8), and are also pivotal for CE.

Third, Brodie et al.'s (2011, p. 259) second FP reads: "CE states occur within a dynamic, iterative process of service relationships that cocreates value." Following these authors, we view CE and its associated intensity and valence (e.g., positive/negative) at a particular time as a state, with a series of aggregated CE states accumulating to a broader CE process. Relatedly, Brodie et al.'s third FP reads: "CE plays a central role within a nomological network of service relationships." Despite several conceptual (Van Doorn et al. 2010) and empirical (Malthouse et al. 2016) studies in this area, the nature of particular CE-based theoretical relationships remains nebulous, as well as debated (Leeflang 2011; Hollebeek et al. 2014). Table 1 outlines extant research addressing focal

CE and related conceptualizations, their key antecedents and consequences.

Fourth, we agree with Brodie et al.'s FP4 (p. 258), which views CE as a multidimensional concept comprising cognitive, emotional, and behavioral dimensions that are subject to personal, object-related, and situational factors (Baldus et al. 2015). Some authors limit their focus to *customer engagement behaviors* (Table 1), thus rendering CE-based cognitions and emotions more implicit. We, however, adopt Brodie et al.'s (2013) multidimensional view, which also incorporates a social CE dimension (Vivek et al. 2014), and thus more fully reflects CE, particularly in networked or institutional settings (Vargo and Lusch 2016).

Fifth, we also agree with Brodie et al.'s (2011) CE context dependency (FP5), and note the existence of different CE characteristics, or at a minimum, varying importance levels of CE tenets across contexts (Bolton 2011). CE research conducted across contexts, including social media (Hollebeek et al. 2014), brand communities (Brodie et al. 2013), tourism (So et al. 2014), nursing homes (Verleye et al. 2014), public transportation (Jaakkola and Alexander 2014), and customer/ employee interactions (Kumar and Pansari 2015) suggests CE's high context-specificity. As a result unique, or markedly different, CE dimensions have been suggested across contexts (cf. Hollebeek et al. (2014) for an in-depth review). To illustrate, scales gauging brand engagement in self-concept (Sprott et al. 2009), online engagement (Calder et al. 2009), online brand community engagement (Baldus et al. 2015), and consumer engagement with brand-related social media content (Schivinski et al. 2016) each propose a unique set of engagement dimensions. Despite these differences, all of these scales model engagement as a reflective construct. Our S-D logicinformed view of CE is aligned with Hollebeek et al.'s (2014) definition (Table 1). Similar to these authors, we adopt an interaction-centric, positively valenced, multidimensional view of CE (Schamari and Schaefers 2015). Next, we explore the conceptual association between CE and S-D logic.

The customer engagement/S-D logic interface

Macro- and micro-theoretical foundations

A theory is "a systematically related set of statements, including some law-like generalizations that are empirically testable" (Hunt 1983, p. 10). Theory purports to "increase scientific understanding through a systematized structure capable of both explaining and predicting phenomena" (p. 10). Based on Rousseau's (1985, p. 6) contention that "theories must be built with explicit description of the levels to which the generalization is appropriate," we adopt Coleman's (1994) interrelated levels of macro- and micro-foundational theory.

Author(s) (<i>Study type</i>)	Concept	Definition	CE antecedents	CE consequences
Brodie et al. (2011) (<i>Conceptual</i>)	Customer engagement	"A psychological state that occurs by virtue of interactive, cocreative customer experiences with a focal agent/object (e.g., a brand) in service relationships" (p. 260).	 Customer involvement (Wirtz et al. 2013) Customer participation (Cui and Wu 2016; Leckie et al. 2016) Customer satisfaction (for existing customers; Hollebeek 2011b; Sleep et al. 2015) 	 Customer satisfaction (for new customers; Hollebeek 2011b) Self-brand connection (Hollebeek et al. 2014) Brand attachment (Schau et al. 2009) Brand loyalty (O'Brien et al. 2015)
Pansari and Kumar (2016) (<i>Conceptual</i>)	Customer engagement	"The mechanics of a customer's value addition to the firm, either through direct and/or indirect contribution" (p. 2).	 Customer satisfaction (Bowden 2009) Customer emotions (Dolan et al. 2016) 	 Firm performance (Kumar 2013) Intangible benefits, e.g., customer opt-in (Kumar et al. 2014)
Kumar and Pansari (2015) (<i>Empirical</i>)	Customer engagement	"CE comprises customer purchasing behavior, customer referral behavior, customer influencer behvior and customer knowledge behavior" (Kumar et al. 2010, p. 299).	• Employee engagement (Auh et al. 2016)	 Firm performance (Kumar et al. 2010; Bijmolt et al. 2010)
Van Doom et al. (2010) (<i>Conceptual</i>)	Customer engagement behaviors (CEBs)	"Customers' behavioral manifestation toward a brand or firm, beyond purchase, resulting from motivational drivers (e.g., word-of-mouth activity, recommendations, helping other cus- tomers, blogging, writing reviews, and ensorino in leval action)" (n. 753)	 Customer-based, e.g., trust (Rossmann et al. 2016) Firm-based, e.g., firm reputation (Groeger et al. 2016; Szöcs et al. 2016) Context-based, e.g., competition (Kumar and Pansari 2015) 	 Customer-based, e.g., identity (Thakur 2016) Firm-based, e.g., financial (Kumar et al. 2010) Other, e.g., economic/social sur- plus (Beckers et al. 2016)
Verleye et al. (2014) (<i>Empirical</i>)	Customer engagement behaviors (CEBs)	"Customers' behavioral of the factor of the	 Customer-based, e.g., customer role readiness (Higgins and Scholer 2009) Firm-based, e.g., organizational support (Vivek et al. 2014), organizational so- cialization (So et al. 2014) 	
Malthouse et al. (2016) (<i>Empirical</i>)	Consumer engagement	"A psychological state that occurs by virtue of interactive, cocreative experiences with a focal agent/object (e of a hynd)" (n. 4)	 User-generated content (Van Dijck 2009) 	 Buying decisions (Schivinski et al. 2016; Naidoo and Hollebeek 2016)
Hollebeek et al. (2014) (<i>Empirical</i>)	Consumer brand engagement	"A consumer's positively valenced brand-related cognitive, emotional and behavioral activity during, or related to, focal consumer/brand interactions" (p. 149).	 Consumer involvement (Leckie et al. 2016; Cui and Wu 2016) 	 Self-brand connection (Brodie et al. 2011) Brand usage intent (Malthouse et al. 2016; Blasco-Arcas et al. 2016)

 Table 1
 Customer engagement (CE)-based conceptual relationships in the broader nomological network

Cited sources (stated in brackets in last two columns) refer to existing research on related research issue(s).

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Theoretical macro- and micro-foundations are used relatively scarcely in marketing to date (Korhonen-Sande 2010). Building on strategic management and organizational theory, Storbacka et al. (2016) adopt the micro-foundational theoretical entity of engagement to advance understanding of the macro-foundational theory of S-D logic (Foss 2009). Theoretical micro-foundations are important to "unpack collective [macro-foundational theories] to understand how individual-level factors impact..., how the interaction of individuals leads to emergent [and] collective outcomes... and how relations between macro-variables are mediated by micro-actions and interactions" (Felin et al. 2015, p. 4), thus illustrating the relatedness of these theoretical levels (Langlois 2004, p. 261) and the iterative nature of theorizing (Weick 1995).

Micro-foundational theory (e.g., engagement, microfoundations of capabilities) provides "deeper theoretical explanation [and]... a bridge for empirical investigation, thus anchoring more abstract macro-[foundational theories]" (Storbacka et al. 2016, p. 1). Micro-foundations thus are the theoretical building blocks of macro-foundational theory that have narrower conceptual applicability, rendering these closer to the realm of marketing practice (Gavetti 2005). Macrofoundations, by contrast, are wide-ranging theoretical entities characterized by high levels of aggregation and theoretical abstraction, similar to Hunt's (1983) general theory. While marketing, to date, has lacked a unifying perspective (Hunt 1990), S-D logic provides a promising candidate for a macrofoundational theory in our discipline (Lusch and Vargo 2006a). CE, in turn, is a particular micro-foundational theoretical constituent of S-D logic (Storbacka et al. 2016).

Macro- and micro-foundational theory are gaining recognition in the marketing literature. To illustrate, Vargo (2011, p. 127) states: "To understand markets and value creation, one must constantly oscillate the focus among micro-... and macro-perspectives," thus reflecting a particular form of MacInnis' (2011) "integrating," which we examine through S-D logic-informed CE. Correspondingly, Van Doorn (2011, p. 280) posits that "interactivity between customers and a company [is] the core of the engagement construct. S-D logic is, therefore, a fruitful theoretical lens, because this approach stresses that all value creation is interactional and the customer is always a cocreator of value" (Ramani and Kumar 2008). We next view S-D logic's axioms from a CE perspective.

S-D logic axioms: a customer engagement perspective

Since its introduction by Vargo and Lusch (2004), S-D logic has been subject to widespread adoption and conceptual refinement. While the original (2004) premises were refined in Vargo and Lusch (2008a), a recent consolidation sees the elevation of four of the premises to *axiom* status, denoting their core importance for S-D logic (Vargo and Lusch 2016). These authors also develop FP11 (i.e., the fifth S-D logic axiom). We discuss the five axioms from a CE perspective below, whilst also considering Vargo and Lusch's (2016) other S-D logic premises at relevant points throughout this paper.

Axiom 1: service as the fundamental basis of exchange In S-D logic, service is defined as "the application of specialized competences (i.e., operant resources: knowledge, skills) through deeds, processes, and performances for the benefit of another entity, or the entity itself" (Vargo and Lusch 2008b, p. 26). In service systems, individuals connected by "shared institutional arrangements" (e.g., rules, norms; Akaka and Vargo 2015, p. 456) integrate specific operant/operand resources in value-seeking or -optimizing processes (Lusch and Vargo 2006b). Axiom 1 exhibits conceptual fit with CE, which has been linked to resource integration in value creation processes (Jaakkola and Alexander 2014). Specifically, under S-D logic engaged customers investing elevated resource levels in particular interactions are providing service-either to themselves or focal others-by integrating resources for value-creating purposes (Karpen et al. 2015; Brodie and Hollebeek 2011).

Axiom 2: multiple actor cocreation Axiom 2 posits: "Value is cocreated by multiple actors, always including the beneficiary," which corresponds to the interactive nature of CE in service systems (Baumöl et al. 2016). According to this axiom, the beneficiary is always included in value cocreation, which corresponds to the customer's interactive, value-seeking or -optimizing intent in CE (Fang et al. 2008; Pervan and Bove 2011). Axiom 2 also reflects customers' increasingly (pro)active roles, in clear contrast to the traditional view of customers as passive recipients of brand-related information (Sawhney et al. 2005).

Axiom 3: social and economic actors as resource integrators While remaining undefined in Vargo and Lusch (2004), resource integration re-appeared in Lusch and Vargo (2006b, p. 283), and was subsequently formalized in S-D logic's ninth foundational premise (Vargo and Lusch 2008a). Resource integration, which entails the assimilation of specific operant and/or operand resources in particular interactions (Sweeney et al. 2015; Lusch et al. 2007), motivates and constitutes exchange (Vargo and Lusch 2008a, p. 9). The manner and scope with which resources are integrated depends on individual factors (e.g., personality; Goff and Ackerman 1992), object factors (e.g., stress; Schaufeli et al. 2002).

Axiom 4: beneficiary-determined value Axiom 4 posits: "Value is always uniquely and phenomenologically determined by the beneficiary," which emphasizes the experiential, inherently subjective, and contextual nature of service systembased cocreation that is also applicable to CE. This axiom also highlights that while firms develop value propositions, it is the beneficiary (e.g., customer), ultimately, who regulates the intensity of ensuing perceived cocreation. The final evaluation of interactions thus resides in the customer's mind and therefore cannot be fully controlled by the firm or its representatives. Further, while perceived interaction-related value may be significant and positive for one stakeholder (e.g., a customer) this may be negative, neutral, or negligible for other service system actors (e.g., frontline service staff required to pay lost revenue, out of their pocket, to their employer; Bowden et al. 2015).

Axiom 5: cocreation, institutions, and institutional arrangements Axiom 5 states: "Value cocreation is coordinated through actor-generated institutions and institutional arrangements." Vargo and Lusch (2016, p. 6) define institutions as "humanly devised rules, norms, and beliefs that enable and constrain action, and make social life predictable and meaningful," and institutional arrangements as "interdependent assemblages of institutions" (p. 11). Axiom 5 thus explicitly incorporates the notion of collective, networked actors and service systems in S-D logic's conceptual domain (Koskela-Huotari and Vargo 2016). Service systems are "value cocreation configurations of people, technology, organizations and shared information" (e.g., language, laws; Maglio and Spohrer 2008, p. 18). Similarly, service ecosystems are "systems of resource-integrating actors connected by shared institutional logics and mutual value creation through service exchange" (Vargo and Akaka 2012, p. 207), and relational ecosystems are "webs of interconnections among relational entities that operate as a system and influence customer decision-making behaviors" (Henderson and Palmatier 2010, p. 37). These concepts each reflect specific institutional arrangements focused on interactivity, relationships and stakeholders' value-(co)creating intent, which are also core to CE and S-D logic (Vargo et al. 2015). Overall, our analyses suggest the relevance of adopting an integrative, S-D logic-informed perspective of CE, which we further develop next, in our conceptual framework.

Conceptual framework

Customer engagement and the CE foundational processes

Based on the theoretical ambiguity surrounding S-D logic– informed CE, we develop an integrative framework incorporating these theoretical entities, thus taking a step toward their conceptual consolidation. Extending Brodie et al. (2011) and Vargo and Lusch (2016) we define S-D logic–informed CE, which is presented at the framework's nucleus, as (Table 2; Fig. 1):

A customer's motivationally driven, volitional investment of focal operant resources (including cognitive, emotional, behavioral, and social knowledge and skills), and operand resources (e.g., equipment) into brand interactions in service systems.

In the remainder of this section, we discuss the CE foundational processes of customer resource integration, knowledge sharing and learning (Fig. 1). In Table 2 we provide definitions of the concepts in our framework, reflecting MacInnis' (2011, p. 138) "explicating," including "delineating" and "summarizing" (cf. Definition column). We also discuss key theoretical links between these concepts, reflecting MacInnis' (2011) "relating," including "differentiating" and "integrating" (cf. Theoretical Associations column).

The framework comprises three CE foundational processes, which are required (for customer resource integration), or conducive (for customer knowledge sharing/learning) CE antecedents (Table 2). Hence while customer resource integration is a *necessary* requirement for the development of CE (i.e., CE-*enabling* factor), customer knowledge sharing and learning are *conducive* for CE (i.e., CE-*facilitating* factors). Further, customer resource integration, in some form, extends to coincide with CE, while customer knowledge sharing and learning *can* also do so. Increasing levels of the CE foundational processes generate greater CE. CE, in turn, spawns three types of CE benefits that act as CE consequences (but which *can* also coincide with CE), as discussed in the section titled "Customer engagement benefits."

Customer resource integration Customer resource integration denotes a customer's incorporation, assimilation, and application of focal operant and/or operand resources into the processes of other actors in brand-related utility optimization processes (Table 2). For example, holiday makers ordering operand resources (e.g., cocktails) to optimize their perceived vacation utility, are integrating their personal (e.g., monetary) resources with the brand (Axiom 3). Customer resource integration is core for the development of CE, given: (1) specific customer resources are integrated with the brand by virtue of interactivity, thus rendering CE (Brodie et al. 2011), and (2) the value-creating intent of customer resource integration that is also common to CE (Peters et al. 2014). For example, an individual acquiring brochures (i.e., operand resource) and deploying their reading skills (i.e., operant resource) to facilitate the purchase of a car not only reflects resource integration but also entails cognitive, behavioral, etc. investments into object-related interactions-that is, CE (Hollebeek et al. 2014). We thus include customer resource integration as our first CE foundational process. This example also indicates that

Table 2	Conceptual framework: Definitions and theoretical associations	
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Concept	Definition	Theoretical associations		
Nucleus of framework				
Customer engagement (CE)	A customer's motivationally driven, volitional investment of focal operant resources (including cognitive, emotional, behavioral and social knowledge and skills), and operand resources (e.g., equipment) into brand interactions in service systems (Brodie et al. 2011; Vargo and Lusch 2016; Hollebeek et al. 2014; Hollebeek 2011a).	 CE foundational processes: CE antecedents that (can) extend to coincide with CE Customer resource integration is <i>required</i> for the development of CE (i.e., CE-enabler, or required CE antecedent) in service systems, which also extends, in some form, to <i>coincide</i> with CE. Customer knowledge sharing and learning are <i>conducive</i> to the development of CE (i.e., CE- facilitators, or non-essential CE antecedents) in service systems that <i>can</i> also extend to coincide with CE. CE benefits: CE outcomes/consequences that <i>can</i> also coincide with CE For positively valenced CE (Hollebeek and Chen 2014), higher CE will generate greater CE benefits (cf. "CE benefits" section of this Table). When CE is negative, the term "CE detriments" should be used. 		
CE foundational processes				
Customer resource integration	A customer's incorporation, assimilation and application of focal operant and/or operand resources into the processes of other actors in brand-related utility optimization processes (Vargo and Lusch 2008a, 2016; Skålén et al. 2015; Hibbert et al. 2012, p. 248; Gummesson and Mele 2010).	 Required CE antecedent (i.e., CE-enabler) that contributes to a particular CE level/valence in service systems. In some form, customer resource integration also extends to coincide with CE. Plays a necessary part in customer knowledge sharing/learning; that is, customers assimilate focal operant/operand resources into the processes of other actors (i.e., integrate resources) during customer knowledge sharing/learning. 		
Customer learning A customer's communication of specific perceived brand knowledge (including information- or experience-based knowledge) to other(s) in their network for the purpose of creating value for themselves, the recipient(s), or both (Ho and Ganesan 2013; Kumar and Pansari 2015; Flint and Woodruff 2001, p. 322).		 Conducive (but not required) for the development of CE (i.e., CE-facilitator) in service systems; <i>can</i> also extend to coincide with CE. Entails, by definition, some form/level of customer resource integration (Ranjan and Read 2016). Can coincide with customer learning; that is, a customer can learn during (through) knowledge sharing, thus rendering customer knowledge sharing a concurrent factor (antecedent) to customer learning. Customer knowledge sharing can also occur as an outcome of customer learning (e.g., by sharing particular learned knowledge). 		
Customer learning An iterative process that involves a customer's development of mental rules and guidelines for processing relevant brand-related information, the acquisition of new brand knowledge or insight, and ensuing behavioral modification based on new brand knowledge or insight gained (Mena and Chabowski 2015; Payne et al. 2008, p. 86; Sinkula et al. 1997).		 Conducive (but not required) for the development of CE (i.e., CE-facilitator), which <i>can</i> also extend to coincide with CE. Entails some level/form of customer resource integration (Hibbert et al. 2012; Jun et al. 2012; Weerawardena et al. 2015; Banerjee et al. 2015). May precede, coincide with, or follow customer knowledge sharing (Lakshmanan and Krishnan 2011). For example, by sharing one's learning, customer learning acts as a customer knowledge sharing antecedent. By learning during (through) knowledge sharing, customer learning occurs as a concurrent factor (consequence) of customer knowledge sharing. 		
CE benefits				
Customer individual operant resource development	A customer's perceived modification (e.g., growth) in their own brand-related operant resources (knowledge, skills) through brand interactions (Vargo and Lusch 2008a, 2016).	 Outcome of CE, which <i>can</i> also coincide with CE. Customer resource integration and learning, by fostering CE, are of particular importance for customer individual operant resource 		

Table 2	(continued)
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Concept	Definition	Theoretical associations
		 development in service systems. By stimulating CE, customer knowledge sharing is a conducive factor to customer individual operant resource development. May precede, coincide with, or follow customer interpersonal operant resource development and cocreation in service systems.
Customer interpersonal operant resource development	A customer's perceived modification (e.g., growth) in their own brand-related operant resources (knowledge, skills) through acting as the initiator or recipient of brand-related knowledge sharing with others (Vargo and Lusch 2008a, 2016).	 Outcome of CE, which <i>can</i> also coincide with CE. Customer individual operant resource development and cocreation are potential antecedents to, concurrent factors to, or consequences of, customer interpersonal operant resource development in service systems. Of the CE foundational processes, customer knowledge sharing, by stimulating CE, plays a key role in fostering customer interpersonal operant resource development.
Customer cocreation	A customer's perceived value arising from interactive, joint, collaborative or personalized brand-related activities for or with stakeholders in service systems (Vargo and Lusch 2008a, 2016; Ranjan and Read 2016).	 Outcome of CE, which <i>can</i> also coincide with CE. Customer resource integration, knowledge sharing and learning, by stimulating CE, thus contribute to the development of customer cocreation (Fombelle et al. 2015; Santos-Vijande et al. 2016). Likely to coincide with, or occur as a consequence of, customer interpersonal operant resource development. Based on its individual (vs. social) nature, customer individual operant resource development has a lesser association with customer cocreation than customer interpersonal operant resource development has a lesser association with customer cocreation than customer interpersonal operant resource (development has a lesser association with customer cocreation than customer interpersonal operant resource development. Negative cocreation (codestruction) can also occur (Heidenreich et al. 2014; Roggeveen et al. 2012).

Conceptual framework: Depicted in Fig. 1

customer resource integration, in addition to acting as a CE antecedent, extends to *coincide* (i.e., occur concurrently) with CE (Table 2).

Customer resource integration implies that value is created in service systems, or constellations of networked actors accessing or acquiring scarce resources (Vargo and Lusch 2008a). Extrinsic operand resources are traded between individuals in their networks, and become available when owned, controlled, or shared (Moeller 2008). Customer operant resources are the outputs of prior customer motivation and capacity to integrate resources in focal object interactions. Hibbert et al.'s (2012), p. 248) resource integration effectiveness (i.e., resource deployment proficiency to create value) recognizes that all customers are not equal in unlocking value from their resource integration activities. Customer integration of operant resources is of particular importance, given their role as "the fundamental source of strategic benefit" (Vargo and Lusch 2016, p. 8). Customer resource integration also interacts with customer knowledge sharing and learning, which we address next.

Customer knowledge sharing Customer knowledge sharing denotes a customer's communication of specific perceived brand knowledge (including information- or experience-based knowledge) to other(s) in their network for the purpose of creating value for themselves, the recipient(s), or both (Table 2). When sharing knowledge, customers seek to inter-actively create value; thus explaining the importance of customer knowledge sharing for S-D logic–informed CE, and warranting its inclusion as our second CE foundational process. While customer knowledge sharing is conducive to CE (Kumar et al. 2010, p. 298), it is not required for CE per se (e.g., knowledge gained in interactions with privately consumed (e.g., adult-themed) brands, whilst engaging, is less likely to be shared with others). In other contexts customer knowledge sharing *can* also extend to coincide with CE.

Information and experiences, once processed, often develop into particular forms of perceived knowledge (Hult et al. 2004; Mena and Chabowski 2015). We therefore include information- and experience sharing in the ambit of customer knowledge sharing. Of these, experience sharing has the



Fig. 1 Integrative, S-D logic–informed framework of customer engagement (CE). Notes: (1) Lightly shaded (outer) areas: CE foundational processes of customer resource integration, knowledge sharing, and learning (CE antecedents that may extend to coincide with CE); (2) Non-shaded areas: CE benefits of customer individual operant resource development, interpersonal operant resource development, and cocreation (CE consequences that can also coincide with CE)

greatest (but not sole) propensity to cover customers' highly subjective interpretations of objects, activities, etc. (Chen et al. 2012). Parties with whom customers tend to share their knowledge include other customers, friends, service employees, and the focal firm (Ho and Ganesan 2013; Sohi et al. 1996). Customer knowledge sharing contexts have included new product development (Fang et al. 2008; Hong et al. 2004), innovation (Cui and Wu 2016), digital environments (e.g., social media; Naylor et al. 2012), and retailing (Kim and Phalak 2012).

While knowledge sharing remains implicit in Vargo and Lusch's (2016) premises of S-D logic, it has particular importance for Axiom 5, which recognizes the networked nature of interactions involving multiple institutionalized actors and institutional arrangements. Customer knowledge sharing is important to communicate and action particular institutions and institutional arrangements; thus providing *service* either to the self or others (Axiom 1). The wider knowledge is shared, the more influential it can become. Vargo and Lusch (2016, p. 11) state: "Institutions... shared by actors, result in a network effect with increasing returns... The more actors share an institution, the greater the potential coordination benefit to all actors."

Customer learning Customer learning is an iterative process that involves a customer's development of mental rules and guidelines for processing relevant brand-related information, the acquisition of new brand knowledge or insight, and ensuing behavioral modification based on new brand knowledge or insight gained (Table 2). "Customers must acquire the necessary skills and knowledge [i.e., learn]" to be effective in brand interactions (Hibbert et al. 2012, p. 247), thus substantiating the role of customer learning as our third S-D logic– informed CE foundational process. Whilst acting as an antecedent conducive to CE, customer learning can also extend to coincide with CE.

Customer learning is a volitional process comprising cognitive, emotional, and behavioral facets (Bolhuis 2003) that can be triggered by situational requirements, where customers find themselves motivated to learn (e.g., the onset of disease; Rager 2003). Thus, customer learning is often self-initiated, self-directed, and self-controlled (Tough 1971), reflecting a form of service provision to the self (Axiom 1). To stimulate customer learning many firms (e.g., Home Depot, Nikon) have learning resources available (Honebein and Cammarano 2005), which may use traditional media (e.g., seminars, advertising; Xie et al. 2008), and/or new media (e.g., online videos, blogs; Payne et al. 2008). Customer learning activities include customer socialization (Groth 2005), education (Eisingerich and Bell 2008), training (Zaho et al. 2008), and post-purchase learning (Mittal and Sawhney 2001), which may reflect differing levels of perceived task complexity (Baker and Sinkula 1999). Accidental (unintended) customer learning can also occur (Eneroth 2008).

As individuals become increasingly networked (Axiom 5), they must "*learn* how to be a vital and sustaining part of the value network" (Lusch et al. 2010, p. 21); thus generating increasing importance of adaptable, agile learning capabilities and techniques (e.g., experiential learning) to sustain strategic advantage (Ramaswamy and Ozcan 2015; Hult and Ferrell 1997). Customer learning can also stimulate CE over time (e.g., by reducing customer tedium in interactions), particularly when perceived favorable learning outcomes exist (e.g., service mastery; Rothschild and Gaidis 1981). Next, we address the CE benefits that stem from CE.

Customer engagement benefits The CE benefits that emanate from CE (i.e., CE consequences) include customer individual- and interpersonal operant resource development and cocreation, which are shown at the respective intersections of the CE foundational processes (Fig. 1). While the scope of CE is limited to customers' *intra*-interaction dynamics (Hollebeek et al. 2014), some level of the CE benefits is perceived not only after, but *can* also be perceived during, focal interactions (i.e., the CE benefits *can* also coincide with CE; Table 2). For positively valenced CE (Bowden et al. 2015), higher CE leads to greater CE benefits.

Customer individual operant resource development Customer individual operant resource development denotes a customer's perceived modification (e.g., growth) in their own brand-related operant resources through brand interactions (Table 2). It is a key outcome of past interactions (and thus of CE) in service systems, warranting its inclusion as the first S-D logic–informed CE benefit in our framework. The concept, which acknowledges the dynamic nature of operant resources, may be self-assessed by customers at any time (Axiom 4).

In the framework, customer individual operant resource development is represented at the intersection of the CE foundational processes of customer resource integration and learning. By integrating resources, customers can acquire new knowledge and skills (i.e., develop their operant resources) and thus, learn (Lusch et al. 2010). Madhavaram and Hunt (2008, p. 71) identify three operant resource types: (1) basic operant resources that are easily developed (e.g., learning to drink tea), (2) composite operant resources that are more difficult to develop (e.g., learning Zumba), and (3) interconnected operant resources that are most difficult to develop, but most capable of generating sustainable advantage (e.g., MBA learning). For potential or new customers, resource integration and learning precede individual operant resource development: "At Apple stores... prospective customers benefit from interactions [by] learning about the products and how to use them, and connecting with value-in-use experiences before purchase" (Ramaswamy and Ozcan 2015, p. 6).

Existing customers may require further development, refinement (e.g., for using new products), or restoration (e.g., PADI scuba diving refresher courses) of their brand-related operant resources. Personal factors (e.g., disposition to learn), brand factors (e.g., brand image), and situational factors (e.g., resource availability) shape customers' individual operant resource development in service systems. We next address customers' *interpersonal* operant resource development.

Customer interpersonal operant resource development Customer interpersonal operant resource development denotes a customer's perceived modification (e.g., growth) in their own brand-related operant resources through acting as the initiator or recipient of brandrelated knowledge sharing with others (Table 2). We include this concept, which occurs as a result of focal interactions (and thus, of CE), at the intersection of customer knowledge sharing and learning in our framework. Through its shared nature, interpersonal operant resource development renders direct relevance of Vargo and Lusch's (2016) second and fifth S-D logic axioms. We illustrate the concept, which reflects customers' personal determination of value (Axiom 4), as follows (Ramaswamy and Ozcan 2015, p. 6): "[At Apple stores, prospective customers] share their learning from one customer to the next, and [also] learn [about other] customers' past experiences and their future intentions."

Customer interpersonal operant resource development can help turn perceived utilitarian brands into more hedonic ones (Voss et al. 2003). For example, Nike's PHOTOiD app "enables [users] to take [photographed] moments of [their] life and commemorate them... by applying colors from the image to [their] favorite Nike Air Max shoe, and sharing [their] design through Facebook, Twitter, Tumblr, Pinterest... and... Instagram" (Ramaswamy and Ozcan 2015, p. 9). Drivers of customer interpersonal operant resource development include individual factors (e.g., customer self-efficacy), brand factors (e.g., utilitarian/hedonic brands), and situational factors (e.g., mood), though in some cases it is not possible or permissible to share one's operant resource development (e.g., sharing exam answers with fellow students during an exam).

Customer cocreation Customer cocreation denotes a customer's perceived value arising from interactive, joint, collaborative, or personalized brand-related activities for or with stakeholders in service systems (Table 2), thus primarily reflecting Vargo and Lusch's (2016) second and fifth S-D logic axioms. These authors also caution in their seventh premise of S-D logic (p. 8): "[Brands] cannot deliver value, but can participate in the creation and offering of value propositions," implying that (cocreated) value is determined by the beneficiary (e.g., customer), rather than the firm. As an outcome of interactions, and thus of CE, we include customer cocreation as the third CE benefit in our framework. Like the other CE benefits, customer cocreation can also coincide with CE.

There is some debate about the scope of customer cocreation (Vargo and Lusch 2008a). For example, Grönroos (2011) and Grönroos and Voima (2013, p. 133) limit cocreation to face-toface, or virtual, interactions (e.g., between customers and a brand, other customers, etc.). Taking a broader view (which we share), Vargo and Lusch (2016) posit cocreation to occur in any type of interaction, which they define as "mutual or reciprocal action or influence" (p. 9). Customer cocreation valence can also differ across interactions, or from different actor perspectives. For example, customers spreading negative brand-related word-of-mouth may feel satisfied (i.e., cocreation), while the firm in question is likely to perceive a codestructive act (De Matos and Rossi 2008). Broadly, actors trade off (e.g., social, psychological) benefits of cocreation activities with the perceived cost (e.g., time; Hoyer et al. 2010; Ranjan and Read 2016; Vargo et al. 2008).

In Fig. 1 customer cocreation is represented at the intersection of customer resource integration and knowledge sharing, which are facilitated by the "joint activities for or with stakeholders" inherent in cocreation (Santos-Vijande et al. 2016). Ramaswamy and Ozcan (2015) recommend the use of engagement platforms to facilitate not only customer cocreation, but also customer resource integration and knowledge sharing (e.g., Nike's PHOTOiD platform facilitates customer interactions, maps customer preferences, and helps develop deeper, more meaningful customer relationships; Breidbach et al. 2014). We next revise Brodie et al.'s (2011) FPs of CE.

Revised, S-D logic-informed FPs of customer engagement

Building on Brodie et al. (2011) and our framework (Fig. 1), we next develop a set of revised, S-D logic-informed fundamental propositions (FPs) of CE. Three reasons underlie our revision of Brodie et al.'s FPs. First, despite the authors' identified link between CE and S-D logic, they do not explicitly integrate CE with particular S-D logic concepts in a conceptual framework, thus limiting insight into the nature of CE and focal S-D logic-based theoretical relationships. Second, the recent introduction of Vargo and Lusch's (2016) axioms and new S-D logic thinking is not accounted for in Brodie et al.'s FPs of CE. Third, the additional insight gleaned into CE since publication of Brodie et al. (2011) is not reflected in the authors' FPs. Below, we revise Brodie et al.'s FPs of CE in line with our conceptual framework, thus contributing to the theoretical consolidation of CE and S-D logic (MacInnis 2011; Yadav 2010). Table 3 provides an overview of Brodie et al.'s (2011) FPs of CE, our S-D logic-informed, revised FPs of CE, and a theoretical explication/justification for the revised FPs.

Revised FP1: CE as volitional resource investments in brand interactions

Brodie et al. (2011, p. 260) denote CE as a "psychological state" (Hsieh and Chang 2016). While we acknowledge the inherently psychological nature of CE (Van Doorn 2011), we believe that from an S-D logic perspective, the notion of customers' "motivationally driven, volitional investment of specific operant and operand resources" more accurately describes CE (Table 3). That is, in many contexts, CE reflects an individual's *discretionary* (vs. enforced) resource investment (Jennings and Stoker 2004), including cognitive and other operant resources that may be combined with focal operand resources in service system-based interactions.

As stated in our literature review, we replace Brodie et al.'s (2011, p. 260) view of CE as *interactive experience* with *interactions* in our first revised FP. The reason for this amendment is to reduce potential conceptual confounding between CE and (brand) experience, and preserve their conceptual distinctiveness. Our first revised FP is: *CE reflects a customer's motivationally driven, volitional investment of specific operant and operand resources into brand interactions in service systems.*

Revised FP2: CE benefits

The CE benefits include customer individual- and interpersonal operant resource development, and cocreation. Customers' brand-related knowledge and skill development, whether gained individually (i.e., individual operant resource development), or through knowledge sharing with others (i.e., interpersonal operant resource development), is an expected beneficial outcome of CE. Customer cocreation may carry positive, negative, or neutral valence; thus permitting the emergence of codestruction (i.e., negative cocreation; Smith 2013). Given most firms' intent for cocreation, we assign the similarly positively valenced term of CE benefits in our framework. However, where CE is negative the term CE detriments should be used (Table 2). The CE benefits tend to develop as a result of multiple brand interactions over time (reflecting their iterative nature), and induce the undertaking of further brand interactions, thus fostering future CE (Hollebeek 2013). We revise FP2 as follows: The CE benefits of customer individual- and interpersonal operant resource development and cocreation result from CE within service systems.

Revised FP3: CE foundational processes

Brodie et al. (2011, p. 260) posit that CE "plays a central role in a nomological network governing service relationships" (Bolton 2011). While we agree with these authors' generic rationale (e.g., Table 1: last two columns), a higher degree of specificity is needed to more accurately and uniquely denote CE in this FP. We achieve enhanced specificity by stipulating particular CE-based conceptual relationships in our revised FP3: *The CE foundational processes of customer resource integration, knowledge sharing and learning represent either necessary* (i.e., *for customer resource integration), or conducive* (i.e., *for customer knowledge sharing/learning) factors for the development of CE in service systems*.

While the CE benefits were addressed in the revised FP2, our third revised FP suggests the role of the CE foundational processes as key CE antecedents, which can also extend to coincide with CE (Table 2). The theoretical linkages between CE and specific S-D logic concepts are therefore covered in our revised FPs 2 and 3 *collectively*.

Revised FP4: multidimensional CE

Brodie et al.'s (2011, p. 260) FP4 reads: "CE is a multidimensional concept subject to a context- and/or stakeholderspecific expression of relevant cognitive, emotional, and behavioral dimensions." We amend our fourth FP as follows: *CE reflects a customer's investment of focal cognitive, emotional, behavioral and social resources during, or related to, specific brand interactions in service systems* (Table 3). We thus retain Brodie et al.'s notion of cognitive, emotional, and behavioral

 Table 3
 Revised, S-D logic-informed fundamental propositions (FPs) of customer engagement (CE)

Brodie et al.'s (2011) original FPs of CE	Revised, S-D logic-informed FPs of CE	Theoretical explication/justification for revised FPs
FP1: CE reflects a psychological state, which occurs by virtue of interactive customer experiences with a focal agent/object within specific service relationships.	FP1: CE reflects a customer's motivationally driven, volitional investment of specific operant and operand resources into brand interactions in service systems.	 Customers' operant resources include product-, firm and competitor-based knowledge and experience. Customers' operand resources include their personal resources that can be used to complement the firm's offering (e.g., a customer's dwelling complementing new furniture; Vargo and Lusch 2016). A positive association exists between customers' operant/operand resource investments and CE. Engaged customers tend to make greater resource investments in brand interactions, thus providing service to themselves or others (cf. Vargo and Lusch's (2016) first S-D logic axiom).
FP2: CE states occur within a dynamic, iterative process of service relationships that cocreates value.	FP2: The CE benefits of customer individual- and interpersonal operant resource development and cocreation result from CE within service systems.	 The CE benefits emanate from CE (i.e., CE outcomes), but <i>can</i> also coincide with CE. While interactions are assumed to have value-generating intent (cf. Axioms 2, 4), the CE benefits can also be negative or neutral. The valence of CE benefits is driven by individual factors (e.g., personality), brand factors (e.g., brand attitude), and external factors (e.g., noise). Where CE's valence is negative, the term "CE detriments" (rather than "CE benefits") should be used.
FP3: CE plays a central role within a nomological network of service relationships.	FP3: The CE foundational processes of customer resource integration, knowledge sharing and learning represent either necessary (i.e., for customer resource integration), or conducive (i.e., for customer knowledge sharing/learning) factors for the development of CE in service systems.	 While customer resource integration is necessary for CE, customer knowledge sharing and learning are conducive (but not required) for CE in service systems. CE thus requires some form/level of customer resource integration (cf. Axiom 3). Customer knowledge sharing drivers include customer factors (e.g., perception), brand factors (e.g., tie strength), and situational factors (e.g., stress). Customer learning drivers include customer factors (e.g., perception), brand factors (e.g., need-for-cognition), brand factors (e.g., perceived difficulty of brand-related learning task), and situational factors (e.g., time availability).
FP4: CE is a multidimensional concept subject to a context- and/or stakeholder-specific expression of relevant cognitive, emotional, and behavioral dimensions.	FP4: CE reflects a customer's investment of focal cognitive, emotional, behavioral and social resources during, or related to, specific brand interactions in service systems.	 Building on FP1, CE's multidimensional nature is further detailed in this FP (i.e., customers' cognitive, emotional, behavioral and social resource investments in brand interactions). A social CE dimension is added (Brodie et al. 2013; Vivek et al. 2014), which reflects the growing recognition for increasingly connected, networked stakeholders (cf. Axiom 5).

Brodie et al.'s (2011) original FPs of CE	Revised, S-D logic-informed FPs of CE	Theoretical explication/justification for revised FPs
FP5: CE occurs within a specific set of situational conditions generating differing CE levels.	FP5: CE is contingent on focal context-specific characteristics in service systems. Customer manifestations (including intensity, valence) of CE, the CE foundational processes and CE benefits may thus vary across contextual contingencies.	 Acknowledges that the CE foundational processes and CE benefits can manifest with positive, neutral or negative valence, and at varying intensity, across contexts or over time (Hollebeek and Chen 2014). CE levels can be determined by deploying relevant scales (e.g., Sprott et al. 2009; Hollebeek et al. 2014). The term "service system" is added to highlight the shift toward more networked (vs. dyadic) CE forms/expressions (cf. Axiom 5).

CE dimensions, and add a social dimension that has particular relevance in service system-based, collective, or institutional CE settings (e.g., brand communities; Schau et al. 2009), thus exhibiting conceptual alignment with Vargo and Lusch's (2016) fifth S-D logic axiom. Similarly, Baldus et al. (2015, p. 978) define online brand community engagement as "the compelling, intrinsic motivations [i.e., cognitive/emotional engagement] to continue interacting with an online brand community [i.e., behavioral/social engagement]."

Revised FP5: context-specific CE

We revise our final FP as follows: *CE is contingent on focal context-specific characteristics in service systems. Customer manifestations (including intensity, valence) of CE, the CE foundational processes and CE benefits may thus vary across contextual contingencies* (Table 3). Whilst retaining Brodie et al.'s CE context-dependence (So et al. 2014), we also note that CE can have a negative (vs. positive) valence, which is largely overlooked in the literature to date (Juric et al. 2016). When CE is negative, the CE benefit of customer cocreation will likely manifest as codestruction (e.g., negative CE leading to inauspicious perceptions of jointly created value; Anderson and Ostrom 2015). However, negative CE *during* interactions has the capacity to generate *post*-interaction cocreation (e.g., thinking favorably about a prize one was awarded at a disliked past event).

Structural context characteristics affect service system–based CE. For example, in monopolistic markets FP1's *volitional nature of CE* is compromised, given customers' lack of choice. In these instances CE adjusts to reflect a reduced level of voluntarism, imposed by choice-constraining contextual factors. Thus while most CE literature has applicability to free market contexts, distinct CE dynamics may apply elsewhere (e.g., in oligopolies). In sum, individuals exist within unique contexts made up of particular objective (e.g., factual) and subjective (e.g., perceptual) characteristics, including individual, spatial, temporal, relational, and other situational factors that may

influence CE (Chandler and Lusch 2015). Overall, the revised, S-D logic–informed FPs of CE help bridge the conceptual chasm between S-D logic and CE, thus contributing to the development of theoretical parsimony and convergence of these perspectives. We next discuss key implications and future research avenues that stem from this research.

Discussion and implications

Theoretical implications

In line with our first stated contribution (cf. Introduction), our framework advances insight into CE and S-D logic, which, despite having been recognized for their significant theoretical fit, have remained largely disparate in the literature. Our conceptual framework (Fig. 1) reflects MacInnis' (2011, p. 138) conceptual goals of "integrating," "delineating," and "differentiating," thus contributing to the theoretical development of S-D logic–informed CE.

Building on Brodie et al. (2011), we also develop a set of revised, S-D logic-informed FPs of CE as our second contribution. Based on our analyses, we make the following observations regarding recent CE literature (e.g., Table 1). First, the emergence of multiple, somewhat disparate, CE conceptualizations and measurement tools is starting to engender fragmentation in CE research. While researchers are investigating related, often only subtly distinct engagement phenomena, we observe a tendency for the development of isolated or myopic insight that has only limited applicability (e.g., to particular contexts; Calder et al. 2016a). For example, while reported findings address CE in online brand communities (Schau et al. 2009), social media (Hollebeek et al. 2014), and public transportation (Jaakkola and Alexander 2014), the limited generalizability of these findings is concerning. We also observe a debate regarding the nature of particular CE antecedents and consequences in the nomological network. Consequently, CE research is rapidly becoming

fragmented, which we expect to impede, or at least decelerate, its theoretical advancement, should this trend continue. Thus extant research, which has predominantly relied on partial, fragmented conceptual underpinnings of CE, would have benefited from having had a more integrative, macro-foundational theoretical perspective of CE, as presented in this paper. Specifically, our framework and revised, S-D logic–informed FPs of CE, through their general theoretical nature (Brodie et al. 2011), help establish more generalizable insight into CE.

Following a successful five to seven-year stage of initiating theory development (Yadav 2010), CE research has arrived at a theory assessment and enhancement stage, which requires "the development of theoretical enhancements to address mixed or ambiguous evidence, review and critique of focal theories, [and] the identification and addressing of gaps in extant conceptualizations" (p. 3). To further CE's theoretical development, we establish an explicit conceptual link with the macrofoundational theory of S-D logic and its key concepts, thus addressing an extant gap in CE-based theorizing and providing an initial step toward the consolidation of CE and S-D logic. By mapping the CE/S-D logic interface in a framework and revised, S-D logic-informed FPs of CE, this study contributes to the development of theoretical parsimony in CE/S-D logic research (MacInnis 2011) and increases our understanding of CE's theoretical relationships which, in turn, can aid the concept's further (empirical) investigation.

We must take stock and ensure the future development of a unified body of CE research that also has managerial relevance. Plausibly, CE's *context-specific nature* (Brodie et al. 2011, p. 260) is a key inhibiting factor for the advancement of theoretically consolidated CE research. Thus, to unlock CE's true potential, researchers need to vigilantly guard their theoretical contributions vis-à-vis relevant (macro-foundational) literature. We urge marketing scholars to speak as a unified engagement voice, and provide an initial step in this direction through our integrative, S-D logic–informed framework, and revised FPs of CE. We next apply the revised FPs of CE to CRM to illustrate their practical applicability.

Managerial implications

Customer engagement and CRM Different CRM perspectives exist that range from "CRM defined narrowly and tactically" (e.g., implementing a technology solution) to "CRM defined broadly and strategically" (i.e., CRM as a holistic approach to managing customer relationships to create shareholder value; Payne and Frow 2005, p. 168). In line with Reinartz et al.'s (2004, p. 295) definition of CRM (cf. Introduction), we adopt the latter, broader perspective (Palmatier et al. 2006, 2007, 2009; Hult 2015). Relatedly, Vargo and Lusch's (2016) ninth premise of S-D logic reads: "A service-centered view is inherently beneficiary oriented and *relational*." Relationships, in turn, are based on interactions and thus, CE. CRM can therefore be used to engage customers, with engaged customers typically providing longer-lasting, stronger, more stable relationships, greater customer contributions and responsiveness, increased referrals, customer advocacy and retention rates, and higher stock returns (Malthouse et al. 2013; Kumar and Pansari 2015). Next, we describe the consultation of our managerial panel.

Managerial panel consultation and application of revised FPs to CRM To explore key CRM implications of S-D logic– informed CE in more detail, we drew on the preceding analyses, supplemented with insight gained from 16 marketing managers known to the main researcher (after initially approaching 20 managers). Responses centered on managers' CE activities, strategies, and issues in their CRM practices, which we attained via email or by phone, based on participants' preference. The managers, who we identify as M1, M2, etc., worked across a range of industries and company sizes (cf. Appendix).

We analyzed the data by using open and axial coding (Strauss and Corbin 1998), an iterative approach commonly used in marketing studies (Homburg et al. 2015, p. 6). First, during open coding we grouped similar respondent statements. Second, during axial coding we searched for theoretical links between specific respondent statements and the revised FPs of CE. We also contextualized responses with supplementary, recent consultancy-based literature on CE (e.g., by Deloitte, Forrester Research). We next derive key CRM implications that we discuss below, with further detail (including managerial quotes) provided in Table 4.

Revised FP1: CE as volitional resource investments in brand interactions The key difference between Brodie et al.'s and our first FP of CE lies in our notion of CE as voluntary resource investments in brand interactions (Table 3). Thirteen managers indicated that engaged customers, typically, invest more resources in brand interactions than their less engaged counterparts. For example, M16 states: "Engaged customers are more active [e.g., in terms of making behavioral investments] in relation to our brand." In addition, nine managers observed differences in new/existing customers' resource investments (cf. Table 4: M9's quote - FP1). Managers are thus advised to help accelerate customers' perceived transition from new to existing customer (e.g., by providing indepth customer support/resources, facilitating new/existing customer interactions, such as by assigning existing-customer mentors to new customers). Existing customers may be offered incentives, including VIP status or emotional benefits (e.g., airline Frequent Flyer programs; Teixeira et al. 2012).

Revised FP2: CE benefits By addressing the *CE benefits* as key CE consequences, our revised FP2 departs from Brodie et al.'s second FP (Table 3). For example, M2 states: "I want my clients to be part of the [service] process... to build

Table 4	Revised, S-D logic-informed	fundamental propositions	(FPs) of customer	engagement (CE):	CRM applications
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Revised, S-D logic-informed FPs of CE	CRM applications	Illustrative managerial quotes		
FP1: CE reflects a customer's motivationally driven, volitional investment of specific operant and operand resources into brand interactions in service systems.	 Based on their limited brand experience, new customers will usually focus on investing basic operant resources in brand interactions (e.g., providing their personal details to the firm; Madhavaram and Hunt 2008). Existing customers have enhanced capability to invest more complex operant resources in brand interactions (e.g., providing referrals, assisting with product development), thus typically providing greater depth/breadth of 	• "[I use] a referral card that can be given to a friend. The [new customer] gets \$10 off their first [service] and I take down their details [<i>basic operant resource</i>], and the existing customer puts their name on the referral card and if I get three I give a free 1-hour [service] to them as appreciation for their referrals [<i>complex operant resource</i>]." (M9)		
FP2: The CE benefits of customer individual- and interpersonal operant resource development and cocreation result from CE within service systems.	 CRM contributions than new customers. Customer individual operant resource development can inform CRM by: (1) lowering firm investments in customer education; (2) erecting a perceived switching barrier that enhances customer lifetime value; and (3) leveraging customer knowledge through market research. Customer interpersonal operant resource development can inform CRM through market research, including by analyzing customers' network sharing dynamics to more effectively influence customers (e.g., by inciting opinion leaders to post/share brand-related content on social media). Customer cocreation can inform CRM by: (1) understanding customers' preferred brand activities for sharing in networks; and (3) early detection of cocreation issues through market research); 	 "The best way to engage [my] customers is with honesty, information [<i>fostering individual operant resource development</i>] and a warm and personalized service. [Referrals] do the rest [<i>fostering customer interpersonal operant resource development</i>]." (M7) "I have a concession card (pre-pay five and get one free) [and] a referral card attached to my business card that can be perforated off and given to a friend [<i>interpersonal operant resource development</i>]." (M9) 		
FP3: The CE foundational processes of customer resource integration, knowledge sharing and learning represent either necessary (i.e., for customer resource integration), or conducive (i.e., for customer knowledge sharing/learning) factors for the development of CE in service systems.	 Customer resource integration is important in CRM: (1) firms can incite customers to integrate their existing resources into firm interactions (generating cost savings); (2) customer operant resources (e.g., brand sentiment) can be recorded, analyzed and leveraged through CRM (e.g., via customer feedback/profiling). Customer knowledge sharing is a key CRM data source, including customer-to-business/ customer-to-customer, etc. knowledge sharing (e.g., via social media). When customer learning yields unique personal/strategic advantage, it may be retained privately. In other cases, customer learning can be conspicuous and shared within networks (i.e. CRM data source) 	 "We have [bi-annual] events called meet-and-greets held in our office. This enables the wider team to meet clients and they feel engaged with us, especially coming in and seeing our office [<i>integrating customer cognitive, behavioral,</i> etc. <i>resources with the brand</i>]." (M3) "Providing updates on technology and education on the industry [<i>customer learning</i>] is a very important means for us to [engage] our current or potential customers." (M11) 		
FP4: CE reflects a customer's investment of focal cognitive, emotional, behavioral and social resources during, or related to, specific brand interactions in service systems.	 Firms capture a range of customer (e.g., cognitive, behavioral, etc.) dynamics in their CRM activities, which requires using different techniques (e.g., behaviors tracked in customer purchase history; emotions gauged via face-to-face interactions/neuromarketing techniques, e.g., eye tracking). CRM can capture (big) data of customer thoughts (e.g., product preference), feelings (e.g., satisfaction), actions (e.g., prand-base history), and social interactions (e.g., brand-based social sharing). 	 "Maintaining 'share of mind' [cognitive/ emotional CE] is very important when [customers] have so many competing demands on their time. We have to continue to be relevant and important [to ensure ongoing behavioral CE]." (M11) "I like [having a] big data focus." (M15) "We do strategic planning and market research to develop the brand [with] the target market's preference [codeveloping behaviors]." (M14) 		

CRM Customer relationship management, M1, M2, etc. (in right-hand column): Manager ID (cf. Appendix)

sentimental value" (i.e., reflecting *cocreation*), which can be used to erect a perceived switching cost and foster brand loyalty. Eight managers also noted that customers' brand-based operant resource development has CRM value (e.g., by helping firms decide when to reduce investments in customer education, generating cost savings; Table 4). To cultivate customers' *individual* operant resource development, we recommend using personalized content marketing (e.g., newsletters, Facebook Instant Articles), and (self-service) customer information repositories, particularly for complex offerings (e.g., ondemand television). To stimulate customers' *interpersonal* operant resource development and cocreation, social media, blogs, online communities, and other interactive tools are suitable (Rapp et al. 2013).

Revised FP3: CE foundational processes Our revised FP3 departs from Brodie et al.'s third FP by addressing the *CE foundational benefits* as key CE antecedents (Table 3). M5 states: "Customers' likelihood to... share what they know about the brand is key for CE" (reflecting *customer knowledge sharing*), which can be used to stimulate brand performance. For example, managers can leverage customer knowledge sharing through regular tracking and analysis of customers' brand perceptions shared with the firm directly (e.g., through market research), or on public platforms (e.g., social media; Hult et al. 2016). We also advocate the creation of online/ offline customer brand knowledge sharing opportunities (e.g., "Share-A-Coke" campaign).

Nine managers also noted the importance of customer resource integration for CRM, which can be fostered by encouraging customers to integrate their own resources with the brand, thus generating cost savings (e.g., gyms providing showers without shampoo invite customers to bring their own product; Table 4). To nurture customer learning, firms are advised to offer highly relevant learning resources and stimulate customer collaboration and contributions to product development (e.g., BMW's Customer Innovation Lab). To reward customers, free products (e.g., surprise gifts), deals, joint ownership options, or other (financial) incentives can be offered.

Revised FP4: multidimensional CE In FP4, our key departure from Brodie et al. lies in our addition of a *social* CE dimension that is of increasing importance in networked, institutional and service system contexts (Kozinets 2014). M4 states: "Engaged customers are more likely to post positive information about the brand on social media, which helps our business." We recommend the use of brand *customization* to engage customers in multiple ways (e.g., cognitively, socially, etc.; Table 4). For example, McDonald's used gamification in its "Create Your Taste" campaign, with winning products featuring on social media to foster social CE, thus complementing and leveraging customers' existing (e.g., behavioral) CE generated in creating their product solutions (Harwood and Garry 2015). We also recommend the use of detailed customer profiling that incorporates brand-related social CE.

Revised FP5: context-specific CE The key difference between Brodie et al.'s and our final FP lies in our addition of CE's context-dependent *valence* (Table 3). M16 comments, in the auction business context: "We provide relevant content to create positive engagement," thus recognizing that CE can turn negative for communications perceived as less relevant (Hollebeek and Chen 2014). In sum, CE's context-dependency creates a challenge for its optimal execution in CRM, thus requiring tailored, adaptable CE strategies (Table 4). We recommend that managers undertake regular assessments of their CE activities to ensure their continued alignment and effectiveness, and take prompt corrective action as needed. In today's rapidly evolving markets, organizational agility in responding to (or ideally, pre-empting) CE-based changes and trends is key for competitive success (Lusch et al. 2010). Managers also need to carefully trade off the cost/gain of particular CE/CRM investments (Steinhoff and Palmatier 2016).

Limitations and future research directions

Limitations of this research

Despite its contributions this research is also subject to several limitations. First, while building on an extensive body of CE and S-D logic literature, our framework and revised FPs are yet to be subjected to empirical testing and validation (Yadav 2010), which is an interesting future research avenue. For example, empirical study may reveal differing importance levels of specific parts of the framework, or revised FPs of CE. Second, while S-D logic provides an ostensibly suitable macro-theoretical foundation for CE, others may also exist (e.g., actor network theory) that may substitute, or complement, our discussion of S-D logic–informed CE.

Third, an underlying assumption of our framework is that customers are willing and able to engage with brands. Our findings thus provide little insight for disengaged customers, who exhibit limited willingness to engage, or customers actively resisting to engage, with focal brands (Labrecque et al. 2016; Hibbard et al. 2001). Relatedly, our view is focused on positively valenced CE, and only touches on negative CE manifestations (Juric et al. 2016). Future studies may wish to more explicitly consider our framework for disengaged customers, or negative CE. Fourth, our framework and revised FPs were developed with a primary focus on business-to-consumer contexts; hence their applicability to business-to-business, or other contexts is unknown (Homburg et al. 2013; DeLeon and Chatterjee 2016). Future research is thus needed that tests, validates, and extends our conceptual findings, and develops generalizable CE-based insight. Next, we provide an overview of avenues for future S-D logic-informed CE research that build on our framework and revised FPs of CE.

Avenues for further research

Similar to the approach taken for the managerial panel, our future research suggestions are based on the preceding analyses, supplemented with insight provided by an international expert panel of 21 active academic CE researchers. Following Brodie et al. (2011, p. 258), we requested 25 scholars via email to provide 5-10 CE research directions for the next five years, which we assessed from an S-D logic-informed perspective. The panel provided substantial written feedback by return email. We again used open and axial coding to analyze the data, extending our axial coding stage to the development of core research themes from the expert panel data (Nag and Gioia 2012). We further assessed, verified, and finalized the themes during a selective coding stage. We also developed core research themes from our managerial panel data by using open, axial, and selective coding in a separate analytical process (Homburg et al. 2015, p. 6). An independent researcher helped by assessing the themes derived from both samples, yielding three core, intersecting research themes for S-D logic-informed CE that we discuss below. The core themes may not only guide the categorization of future research on S-D logic-informed CE, but also influence how this is conducted. Additional research avenues for our core themes, classified by the revised FPs of CE, are presented in Table 5.

Enhanced theoretical development and understanding of CE

Twenty experts agreed regarding the need for further theoretical development of S-D logic–informed CE, coinciding with 13 of our managers who stated a need to better understand CE. The following specific issues were raised. First, 15 experts identified a need to better understand CE vis-à-vis other, related (micro-foundational) theoretical entities, including key CE drivers (e.g., the CE foundational processes; revised FP3, 5), inhibitors (e.g., service failure), and outcomes (e.g., the CE benefits; revised FP2, 5; Table 5), or broader macrofoundational theory (e.g., social exchange theory). For example, how do the CE foundational processes drive volitional CE (revised FPs 1, 3)? These issues, broadly, reflect Vargo and Lusch's (2016) second and third S-D logic axioms.

Second and relatedly, 14 experts recommended further research into CE-based contextual similarities and differences (revised FP5). Studies identifying *generalizable* CE principles (e.g., through meta-analytic research) are particularly valuable for the development of more unified insight into S-D logic– informed CE. Third, 12 researchers raised the need to better understand the evolution of the CE process or life cycle, which can be applied to each of the revised FPs of CE. For example, insight into the role of CE's dimensions (revised FP4) over time can be attained through longitudinal research (Guo et al. 2015). Fourth, seven experts identified a need to better

Table 5	Revised, S-D	logic-informed	fundamental	propositions	(FPs) of	customer engagement	(CE): A	A research agenda
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Revised, S-D logic–informed FPs of CE	Future research avenues	Illustrative managerial quotes
FP1: CE reflects a customer's motivationally driven, volitional investment of specific operant and operand resources into brand interactions in service systems.	 Enhanced theoretical development/understanding of CE What is the role of motivation and operant/operand resources in generating/sustaining CE in service systems? (n = 8; Watson et al. 2015; Chang and Taylor 2016) What are the weightings of CE dimensions in focal contexts? (n = 9; Hollebeek et al. 2014) Networked CE What are the key CE dynamics in networks and service systems? (n = 14; Bolton 2011) CE & marketing performance How do innovations that leverage CE contribute to modulate for a formation of the service of the ser	 Enhanced theoretical development/understanding of CE "[I need to] understand a client's head space [motivation] before [and during] engaging." (M2) Networked CE "Networks are key [to CE]" (M2) "It is really hard to grasp [CE] in [the customer] journey across touch-points and channels." (M15) CE & marketing performance "What is the business value of CE?" (M15)
FP2: The CE benefits of customer individual- and interpersonal operant resource development and cocreation result from CE within service systems.	 <i>Enhanced theoretical development/understanding</i> of <i>CE</i> How do the CE benefits emanate from CE? (<i>n</i> = 11; Vargo and Lusch 2016) Do the CE benefits change, mature, or terminate over time? (<i>n</i> = 10; Etgar 2008) <i>Networked CE</i> How do the CE benefits manifest in different (e.g., dyadic, triadic) interactions and across institutions? (<i>n</i> = 15; Wirtz et al. 2013; Kumar et al. 2016a; Hillebrand et al. 2015) <i>CE & marketing performance</i> How do the CE benefits contribute to marketing performance? (<i>n</i> = 15; Kumar 2013, Kumar 2015) 	 Enhanced theoretical development/understanding of CE "We adjust our assortment to the target market's wants. CE and [customer] needs change over time." (M16) Networked CE "I do my best to ensure [my customers] know my story and my work [i.e., individual operant resource development]. [Network-based] word-of-mouth does the rest." (M7) CE & marketing performance "Engaged customers are more likely to share positive [brand] information on social media, which helps our business." (M4)
FP3: The CE foundational processes of customer resource integration, knowledge sharing and learning represent either necessary (i.e., for customer resource integration), or conducive (i.e., for customer knowledge sharing/learning) factors for the development of CE in service systems.	 Enhanced theoretical development/understanding of CE How does new technology, including artificial intelligence (e.g., self-driving cars, IBM Watson), virtual reality tools (e.g., Samsung's Oculus) affect the CE foundational processes, and CE? (n = 6; Kumar et al. 2016b) Networked CE How do customer resource integration, knowledge sharing/learning drive CE in institutions/service systems? (n = 8; Jaakkola and Alexander 2014) How do the CE foundational processes manifest in networks of distinct size, purpose or reputation? (n = 4; Verleye et al. 2014; Hammedi et al. 2015) CE & marketing performance How can the CE foundational processes be leveraged to optimize marketing performance? (n = 12: Kumar et al. 2010: Kumar 2013)? 	 Enhanced theoretical development/understanding of CE "We keep the game play in our apps as engaging as possible [by] constantly adding new levels, challenges, etc. to our games [fostering customer resource integration, learning]." (M8) Networked CE "Videos are probably the best option [for advertising] on Facebook or YouTube [using social media to foster the CE foundational processes]." (M7) CE & marketing performance "The most valuable asset a company has is their customers' attention [required for the CE foundational processes]. [CE] is now as common a Board management benchmark as free cash flow." (M5)
FP4: CE reflects a customer's investment of focal cognitive, emotional, behavioral and social resources during, or related to, specific brand interactions in service systems.	 <i>Enhanced theoretical development/understanding of CE</i> What is the relative importance of customers' cognitive, emotional, behavioral and social investments in optimizing/sustaining CE? (n = 9; De Vries and Carlson 2014) Is CE primarily driven by nature or nuture? (n = 3; Van Doorn et al. 2010) <i>Networked CE</i> What is the role of customers' cognitive, emotional, behavioral and social investments in 	 Enhanced theoretical development/understanding of CE "[I] have [customer] meetings [behavioral CE] to make sure they are happy with the design. They love that, and feel I honestly care about their feedback [i.e., emotional, cognitive CE]." (M7) Networked CE "I get [my customers] to like my Facebook page [i.e., behavioral CE], this year I've boosted my reach from 100 likes to over 250." (M9) CE & marketing performance

CE in networks or service systems? (n = 8; Zanjani et al. 2016; Chung et al. 2016)

Revised, S-D logic–informed FPs of CE	Future research avenues	Illustrative managerial quotes
	 <i>CE & marketing performance</i> How can marketers design their brands to optimally engage customers, leverage any distinct CE patterns, and drive loyalty? (n = 14; Watson et al. 2015; Fliess et al. 2012) 	 "[Engaging customers (e.g., behaviorally) via social media] helps our reach and thereby our brand." (M13)
FP5: CE is contingent on focal context- specific characteristics in service	Enhanced theoretical development/understanding of CE	Enhanced theoretical development/understanding of CE
systems. Customer manifestations (including intensity, valence) of CE, the CE foundational processes and CE benefits may thus vary across contextual contingencies.	 How do CE, its foundational processes and benefits differ across contexts? (n = 11; Vargo and Lusch 2016; Cabiddu et al. 2014) How do transformational relationship events affect CE, its foundational processes and benefits? (n = 3; Harmeling et al. 2015; Boulding et al. 2005) <i>Networked CE</i> How do the CE foundational processes interact within particular network/service system contexts to produce CE? (n = 9; Vargo and Lusch 2016; Hollebeek et al. 2016) <i>CE & marketing performance</i> To optimize marketing performance, should managers always strive to maximize CE? (n = 4; Libai 2011; Viswanathan et al. 2016) 	 "[Having a local] call center versus an overseas call center, that's the billion dollar question [i.e., need to better understand CE]." (M5) Networked CE "[I] use Twitter and Facebook on a regular basis by posting interesting and useful messages on the topics of marketing, etc." (M10) CE & marketing performance "Return on invested capital (ROIC)/weighted average cost of capital (WACC) is more important than CE (as you can satisfy unprofitable customers [across contexts]), watch this trap!" (M5)

Information stated in brackets (in middle column): (1) 'n=': Expert count, i.e., No. academic panel participants raising focal research issue; (2) Cited sources: Refer to existing research on related research issue(s); In right-hand column: M1, M2, etc.: Manager ID (cf. Appendix).

understand and manage different CE valences, their relationships, and managerial actions to reverse negative CE into more positive forms (Juric et al. 2016).

Networked CE Twelve managers and 14 scholars recommended further research into CE in networked settings, including service systems and institutions, as reflected in Vargo and Lusch's (2016) fifth S-D logic axiom and CE's *service system*-based nature (e.g., Table 5). A sample research question includes: How can emerging technological trends be used to foster resource integration, and thus CE, in networks (revised FP1, 4, 5)? Trends for investigation include social commerce (e.g., via Instagram), live-stream video (e.g., Android/iOS's Meerkat), mobile marketing (e.g., mobile apps), wearables (e.g., Google Glass), and location-based marketing (e.g., Foursquare).

Four experts also raised the importance of leveraging big data to better understand CE (Calder et al. 2016b), which can be applied to each of the revised FPs of CE. Six experts queried whether CE, indeed, is the optimal engagement concept for our discipline. Given the increasingly networked nature of service system actors (Chandler and Lusch 2015), may the conceptually broader "actor engagement" be suitable in particular contexts? Summing up, one expert asked: "How can CE be used to improve customer relationships?" Research providing *universal* network-based CE dynamics is particularly valuable to foster more cohesive CE research.

CE and marketing performance Thirteen managers and 15 scholars raised the lack of insight into CE's contribution to marketing performance as a key research issue. As the focus of the revised FPs is on customer- (vs. firm)-based dynamics, marketing performance outcomes result from our revised FPs of CE (cf. also Kumar and Pansari's (2015, p. 34) "engagement orientation"). Katsikeas et al. (2016, pp. 2, 5) classify marketing performance in two broad categories: (1) operational performance (i.e., goal fulfilment in the firm's value-chain activities), including customer mindset, product-market, customer behavior, and customer-level performance outcomes resulting from the interplay among an organization's attributes, actions, and environment), comprising accounting and financial market performance outcomes.

To date, little is known about the operational and organizational performance outcomes of S-D logic–informed CE. While extant CE research has focused on customer mindset and customer behavior–based performance, generalizable findings in these areas are lacking. In addition, scant research has focused on customer-level (e.g., lifetime value) or product-market (e.g., market share) performance outcomes of CE (Katsikeas et al. 2016; Pansari and Kumar 2016). Regarding organizational performance, CE's contribution to accounting (e.g., return on assets), or financial market performance (e.g., shareholder returns) remains even more nebulous, thus warranting further research, particularly that which identifies *generalizable* organizational performance implications of S-D logic–informed CE (Kumar and Pansari 2015; Kumar 2013, 2015; Lee et al. 2015). We also encourage future researchers to consider CE's impact on different performance aspects, and possible trade-offs between different performance indicators, thus facilitating more coherent, cumulative knowledge development on the performance impact of S-D logic–informed CE.

Overall, we are thrilled about the scholarly and managerial interest in, and potential contributions of, S-D logic–informed CE research to the discipline of marketing, which we expect to advance the state of theoretical development not only of CE, but also of our discipline more broadly (Hunt 1983).

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Appendix

Marketing manager sample characteristics

ID	Industry	Firm size
M1	Retailing	Micro
M2	Information technology	Micro
M3	Publishing	Medium-sized
M4	Public sector	Large
M5	Telecommunications	Large
M6	Hospitality	Medium-sized
M7	Custom-made product retailing	Micro
M8	Information technology	Small
M9	Health self-care services	Micro
M10	Business consulting	Micro
M11	Information technology	Medium-sized
M12	Mental health services	Medium-sized
M13	Recorded music industry	Medium-sized
M14	Not-for-profit	Large
M15	Telecommunications	Large
M16	Auction house	Small

M1: Manager 1, etc.; Firm size: Micro < 10 employees; Small 10–49 employees; Medium-sized 50–249 employees; Large \geq 250 employees (European Commission 2016)

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