

Customer ecosystems: exploring how ecosystem actors shape customer experience

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Abstract

Purpose – This study aims to characterize how ecosystem actors shape customer experience (CX). The study also proposes implications for managers and research regarding the customer ecosystem, its actors and actor constellations in the context of CXs.

Design/methodology/approach – A qualitative study is conducted among activity tracker users to identify how actors within their ecosystems shape CXs. Data include 28 in-depth interviews and ten self-reported diaries.

Findings – This study delineates six actor categories in the customer ecosystem shaping CX within and beyond the service. The number of actors and their importance to the focal customer in various actor constellations form individual-, brand- and socially driven ecosystems. These customer ecosystem types show how actors combine to drive CXs.

Research limitations/implications – Researchers should shift their attention to experiences emerging in the customer's lifeworld. A customer ecosystem highlights the customer-centered actor configuration emergent within the customer's lifeworld. It is self-constructed based on the customer's reference point.

Practical implications – Managers should aim to locate, monitor and join the customer's lifeworld to gain more insight into how CXs emerge in the customer ecosystem based on customer logic.

Social implications – Customers are not isolated actors simply experiencing service; rather, they construct idiosyncratic actor constellations that include various providers, social groups and peers.

Originality/value – This paper extends the theory on CXs by illustrating how the various actors and actor constellations forming the customer ecosystem shape CXs.

Keywords Customer experience, Customer ecosystem, Customer-dominant logic, Actors, Actor constellation

Paper type Research paper

Introduction

Academics and practitioners agree that meaningful customer experiences (CXs) – with their ability to generate happy customers and increase firm revenues (Homburg *et al.*, 2017; Lemon and Verhoef, 2016) – are a prerequisite for a successful business. Researchers recognize CXs as subjective, individual and highly contextual in nature (Edvardsson *et al.*, 2005), being formed as individuals perceive or make sense of their external (Berry *et al.*, 2002) and internal (Helkkula *et al.*, 2012) settings. Context clearly matters for experiences, and the literature has extensively discussed its role in CXs (Akaka *et al.*, 2015; Pine and Gilmore, 1998; Still *et al.*, 2018). To date, various approaches to CX have emerged, and these are well documented (Lipkin, 2016; Kranzbühler *et al.*, 2018; Becker and Jaakkola, 2020; De Keyser *et al.*, 2020).

Researchers have aimed to understand how CXs are co-created within networks and service (eco) systems

(Tax *et al.*, 2013; Ramaswamy and Ozcan, 2020; Edvardsson *et al.*, 2018). These studies go beyond the traditional dyadic view, which focuses on how environmental and social cues or elements create CXs during customer-firm touchpoints at a micro level (Berry *et al.*, 2006; Meyer and Schwager, 2007). Instead, they adopt a broader and more complex contextual frame, viewing CXs as co-created among several actors at varying levels of abstraction. This change in perspectives echoes a larger transition in marketing related to the understanding of value, a move from conventional models, in which firms

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deliver value to customers, to systemic approaches, which see value as formed among multiple actors in a shared experiential value-creation process (Edvardsson *et al.*, 2018; Hartmann *et al.*, 2018; Lusch *et al.*, 2016; Vargo and Lusch, 2017; Ramaswamy and Ozcan, 2020; Patricio *et al.*, 2020; McColl-Kennedy *et al.*, 2020).

However, research on ecosystems and their role in CXs remains limited. Although studies discuss the foundations of ecosystems in terms of shared institutions, norms, rules and practices (Baron *et al.*, 2018), few explore the system's influence on CX. The actor-to-actor system for service-for-service exchange is a common approach, without specific attention being paid to a focal actor experiencing value-in-use (Storbacka, 2019; McColl-Kennedy *et al.*, 2020). Most studies focus on actors present in dyads (McColl-Kennedy *et al.*, 2020) or service systems in which the service is the focal unit of analysis (Mustak and Plé, 2020), not a focal actor. Other studies incorporate a shared, mutual approach to ecosystems (Mele *et al.*, 2018). It is necessary to understand how multiple actors influence and potentially enhance CX. This study aims to address this issue and investigate how ecosystem actors shape CX. To achieve this goal, we address the following research questions:

RQ1. What actor constellations constitute the customer ecosystem?

RQ2. How do actor constellations shape CX?

We thus closely examine how the actors, as seen from the customer perspective and within the customer's own lifeworld, labeled the customer ecosystem, shape and frame CXs with offerings. We incorporate the classic view of actors as humans or collections of humans, such as organizations (Storbacka, 2019). The customer ecosystem view is grounded in a customer-dominant logic (CDL) approach, which emphasizes the importance of a focal actor, placing customers and their lifeworld – rather than service-for-service exchange – at the core of the business (Heinonen *et al.*, 2010; Öberg, 2011). In line with Caic *et al.* (2019) and Öberg (2011), this approach highlights the human-centered view of customers as the primary actor determining the value-in-use of a service. By focusing on what customers consider relevant, this approach broadens the view of customers and their context. While theoretically employing the term “customer” as the focal actor (Plangger *et al.*, 2013), this term is viewed as broadly incorporating all actors commonly labeled beneficiaries, such as the business customers, patients, citizens, actors, buyers, consumers, users and clients who purchase and/or use the service and can embody various roles, such as user, payer and decision-maker.

Adopting a perspective in which the customer is viewed as the focal actor in a service ecosystem, which is labeled a customer ecosystem, and focusing on the customer's domain as a constellation of systemic actors represents a unique research direction. This approach complements the traditional perspectives of ecosystems based on mutuality, coordination and shared institutions among multiple actors. Customers configure and uphold the system and reveal the idiosyncrasy of value-in-use (Lipkin, 2016; Heinonen and Strandvik, 2018; Caic *et al.*, 2019). By better understanding which actors focal

customers consider important and why, researchers and managers can gain a deeper understanding of customers, their context and their role in the CX. This study makes several contributions to the existing marketing and service literature. First, the theoretical discussion of customer ecosystems contributes to the emergent research on service ecosystems. Second, this study extends earlier work on customer ecosystems by providing a conceptualization of customer ecosystems that include their actors and characteristics, thus contributing to studies adopting established labels for actors, such as stranger, daughter or nurse, without further scrutiny. Third, most importantly, we advance the current CX understanding by illustrating how customers' systemic contexts shape the CX, specifically how customer ecosystems, which are defined by their actors and actor constellations, drive CX. These findings stress how CXs emerge in the customer's lifeworld domain. Finally, a research agenda is developed regarding customer ecosystem actors, as well as their roles in CXs. This study also provides managerial recommendations for supporting CX.

The next section begins with a discussion of previous CX research, focusing on studies emphasizing the customer's active role in forming the experience through sense-making (McColl-Kennedy *et al.*, 2015; Schembri, 2006). We discuss various contextual lenses for use in understanding the CX and specifically explore the role of the customer ecosystem in CX. We incorporate a customer-centered notion of ecosystems as a representation of the user as the focal actor determining and experiencing value-in-use in a constellation of other actors. We discuss how this view of ecosystems differs from other similar systemic views. The next section presents the empirical context and methodology. We then use explorative, qualitative data collected from users of activity trackers to empirically illustrate how customer ecosystem actors shape CXs. The empirical illustrations adopt an envisioning (MacInnis, 2011) and questioning (Alvesson and Sandberg, 2011) approach, revealing the systemic context of CXs from the perspective of the focal actor. The findings demonstrate how various actors and actor constellations drive the CX for the focal actor, resulting in various ecosystem types. We conclude the paper by discussing the study's theoretical contributions and managerial implications, as well as future research directions.

Theoretical underpinnings of customer experience and customer ecosystems

Customers look for not only services and products but also experiences that meet their ultimate desires and needs (Holbrook and Hirschman, 1982). In past decades, research on CX has emerged across the psychology (Ariely and Zauberman, 2000), philosophy (Husserl, 1931-1967), marketing (Schmitt, 2003), consumer research (Arnould and Price, 1993) and service (Edvardsson *et al.*, 2005) literatures. The ontological and epistemological underpinnings of CX are well documented (Edvardsson *et al.*, 2005; Teixeira *et al.*, 2012; Lipkin, 2016; Kranzbühler *et al.*, 2018; Becker and Jaakkola, 2020; De Keyser *et al.*, 2020), offering a broad account of the nuances of CX. Building on these studies, in this paper, we define CX as customers' subjective responses to and interactions with the service organization and its offering(s),

emerging from a range of dynamic and static aspects within and outside the control of the service provider. Next, we build on Lipkin's (2016) overview of the contextual lenses of CX, which is focused on dyadic, systemic and ecosystem approaches to CX.

From a dyadic to a systemic view of customer experiences

The marketing and service literature has traditionally applied a dyadic view of CXs. This is partly because many traditional service sectors, such as banking and retail, typically involve in-house interactions. Drawing from a stimulus-organism-response (S-O-R) (Mehrabian and Russell, 1974) or sensation-perception framework (Fechner, 1860), these studies focus on how environmental and social cues or elements (Berry *et al.*, 2002, 2006; Meyer and Schwager, 2007) create CXs during customer-firm touchpoints at a micro level. Indeed, the CX is traditionally viewed as firm-created and managed – designed for the customer during service touchpoints (Johnston and Kong, 2011; Homburg, *et al.*, 2017) – although studies also highlight interactions by viewing the firm and the customer as active experience co-creators (Frow and Payne, 2007).

This classic, dyadic perspective focuses on the relationship as the unit of analysis. The dyad (Ritter *et al.*, 2004) includes two distinct actors: the provider assigned an active and directing role in the CX, as well as the customer, representing a receiver or co-producer. These studies further focus on the firm's context and how direct or indirect touchpoints form CXs across the customer journey (Meyer and Schwager, 2007). This customer journey illustrates how the customer interacts with the firm at various points in time (past, present or post-consumption phases) (Lemon and Verhoef, 2016).

Considering the fact that contemporary service is often not limited to in-house interactions but unfolds in more complex settings, the dyadic lens provides a rather narrow view of CX. Researchers (Bolton *et al.*, 2014; McColl-Kennedy *et al.*, 2015) have stressed the need to go beyond dyadic interactions and firm-defined customer journeys to study CXs in systemic contexts. This reflects a transition in marketing regarding the value concept, a move from traditional models, in which firms deliver value to waiting customers (Hartmann *et al.*, 2018), to systemic approaches, which see value and experiences as experientially co-created among multiple actors or formed and emergent in networks and systems (Håkansson and Snehota, 1989, 1995; Payne *et al.*, 2009; Heinonen and Strandvik, 2015; Akesson and Edvardsson, 2018; Caic *et al.*, 2019).

Table 1 contrasts the dyadic and systemic CX perspectives. Systems and ecosystems in general involve the provider, customer and other key stakeholders and their roles in business (Dass and Kumar, 2014; Maglio and Spohrer, 2008). CX is a social phenomenon (Lemon and Verhoef, 2016) involving many actors (Gonçalves *et al.*, 2020). These systemic views acknowledge CXs as formed when individuals actively, subjectively and collectively make sense of their lifeworlds in and across time (Helkkula, 2011; McColl-Kennedy *et al.*, 2015), thus significantly broadening the spatial and temporal boundaries of CX.

The next section discusses the systemic, ecosystem approaches to CX in more depth.

From service- to customer-focused ecosystem perspectives

The common view is that CXs occur through a process of co-creation between multiple systemic actors and stakeholders, such as in service delivery networks (Tax *et al.*, 2013), complex service systems (Patrício *et al.*, 2011; Pinho *et al.*, 2014), ecosystems (Jaakkola *et al.*, 2015) or shared institutions and networks (Vargo and Lusch, 2016). The classic business network and service-dominant networks are focused on actor linkages and intentional activities, while more recent contributions emphasize loose service ecosystems (Håkansson and Snehota, 1989; Löbler, 2013). Ecosystems have commonalities with the classic business network perspective in the industrial marketing and purchasing stream of research (Håkansson and Snehota, 1995). Such networks highlighting the interconnectedness of the system are characterized by a “heterogeneity of resources and interdependencies between activities across company boundaries, as well as the organized collaboration among the companies involved” (Gadde *et al.*, 2003, p. 357).

Ecosystems unfold at varying levels of abstraction (micro-meso-macro) and can be firm-, customer- or non-centered (Lipkin, 2016), with multiple social actors co-creating the CX within broad contextual frames, consisting of both direct and indirect interactions. Actors include the customer and provider, as well as other service-relevant actors: distributors, suppliers, co-customers, family and friends (Heinonen *et al.*, 2013; Gonçalves *et al.*, 2020; McColl-Kennedy *et al.*, 2020). All actors embody more or less active roles in co-creating the experience (Mele *et al.*, 2018), but as Tax *et al.* (2013) note, the provider may take on a leading or subordinate role across the customer journey. The customer is a co-creator and may

Table 1 Dyadic and systemic views of CX

| Indices | Dyadic view | Systemic view |
|--|--|--|
| CX characterization | CX created by the firm or co-created by the provider and customer | CX co-created among multiple actors or emergent in the customer's life world |
| Contextual boundaries (spatial and temporal) | Narrow and static | Broad and dynamic |
| Unit of analysis | Dyadic provider–customer relationship | Multiple, systemic actors |
| Level of abstraction | Micro-focus | Varying levels of abstraction (micro-meso-macro) |
| Exemplary studies | Frow and Payne (2007), Johnston and Kong (2011); Meyer and Schwager (2007) | Baron and Harris (2010), Heinonen and Strandvik (2015); Patrício <i>et al.</i> (2011); Vargo and Lusch (2016), Alexander <i>et al.</i> (2018); Caic <i>et al.</i> (2019) |

also be a coordinator between the multiple actors co-creating the CX (Kelleher *et al.*, 2020).

Two major ecosystems are summarized in Table 2. While both essentially focus on actor constellations, they represent alternative approaches. They are highlighted, for analytic reasons, through their largest differences, as represented by extreme diverging points on a continuum. The table uses exemplary research that falls into each category as representative of these categories. However, most studies do not represent the extreme points but are somewhere along the continuum, though there are always exceptions. While Table 2 highlights the differences, as the discussion above indicates, there are several commonalities among the ecosystem types, importantly the dynamic constellation of actors aimed at value creation, with some similarities to natural ecosystems (Mars *et al.*, 2012).

Service ecosystems are “relatively self-contained, self-adjusting system[s] of resource-integrating actors connected by shared institutional arrangements and mutual value creation through service exchange” (Vargo and Lusch, 2016, pp. 10–11). The key to these system types is that they focus on service-for-service exchange, characterized as something that one actor does for the benefit of another (Maglio and Spohrer, 2008) in a dynamic, constantly evolving setting (Vargo and Lusch, 2017). The service ecosystem involves actor agency, that is, the “ability to act and coordinate action relative to the actions of others” (Mele *et al.*, 2018, p. 526) and an orientation toward mutuality (Vargo and Lusch, 2017).

In contrast, customer-focused ecosystems represent an alternative perspective because service ecosystems are not sufficiently customer-focused (Öberg, 2011; Caic *et al.*, 2019; Patricio *et al.*, 2020). Instead of focusing on service provision and exchange (Meyer and Schwager, 2007; Tax *et al.*, 2013;

Vargo and Lusch, 2016), the customer ecosystem takes an actor-specific, human-centered lens and places the customer and their systemic context at the center of analysis (Heinonen *et al.*, 2010; Caic *et al.*, 2019). A customer ecosystem represents a “system of actors and elements related to the customer and relevant to a specific service” (Heinonen and Strandvik, 2015, p. 479). An example in the context of elderly care and assistive living is care-based actor networks for value co-creation, which, in addition to humans, also include socially assistive robots (Čaić *et al.*, 2018). However, while actor networks can manifest as bundles, hierarchies, focalized networks or hybrids (Caic *et al.*, 2019), what is central is that the customer(s) is the focal actor, rather than the service-for-service exchange. This ecosystem lens shifts the focus from how co-creation occurs among multiple interdependent actors to how customers embed resources and actors into their lives, as well as how other actors are involved in and contribute to the customer’s lifeworld.

The customer thus represents the primary actor in the customer ecosystem, around which the ecosystem revolves. The customer can be observed at various abstraction levels – ranging from a single unit, such as an individual, to a collective, such as a family, an organization or a community – and the scope of the “customer” depends on the value unit. For example, previous studies have explored customer ecosystems composed of single individuals (Leino, 2017), interconnected customers (Caic *et al.*, 2018; Leino, 2021; Kelleher *et al.*, 2020) and families (Epp and Price, 2008). However, an ecosystem can include other actors, for example, the focal provider and its offerings, other providers in the same or another industry, co-customers, family, and friends, even strangers (Martin and Pranter, 1989; Baron and Harris, 2010; Brocato, *et al.*, 2012; Leino, 2017; Caic, *et al.*, 2019). The customer ecosystem also

Table 2 Service- and customer-focused ecosystems

| Indices | Service-focused | Reference | Customer-focused |
|--------------------------|--|--|---|
| Description | Adaptive system of resource-integrating actors | Vargo and Lusch (2016) | System of actors and resources to achieve life goals |
| Nexus | Multiple actors, interconnected relationships | Chandler and Vargo (2011); McColl-Kennedy <i>et al.</i> (2020) | One focal actor (often labeled customer) among other actors representing a value unit |
| Key elements | Shared institutional arrangements, social structures, practices, norms | Frow <i>et al.</i> (2019); Vink <i>et al.</i> (2020) | Customers’ emotions, experiences, actions and goals |
| Process focus | Service-for-service exchange, service provision, resource-integrating interactions, shared wellbeing | Chandler and Vargo (2011); Frow <i>et al.</i> (2019) | Customers’ milestones and eudaimonia |
| Orientation | Mutuality, cooperation and coordination | Vargo and Lusch (2016), Breidbach <i>et al.</i> (2016) | Heterogeneity, responsabilization and actionability |
| Position of the actors | Based on relevance for the service-for-service exchange | Chandler and Vargo (2011); Vargo and Lusch (2016) | Based on relevance for the customers in their lifeworlds |
| Philosophical foundation | Institutionalism | Vink <i>et al.</i> (2020); Vargo and Lusch (2016) | Humanism |

goes beyond the social to include physical, virtual and commercial features. However, various actors and actor configurations form the system's fundamental premise (Voima *et al.*, 2011) and play an important role in shaping the individual CX (Gonçalves *et al.*, 2020). These actors can undertake various roles and positions within the system and, in doing so, influence how the customer experiences the offering (Voima *et al.*, 2011). Instead of viewing these actors as reciprocal and interconnected, as is often the case with studies applying a service ecosystem lens (Akaka *et al.*, 2015; Storbacka, 2019; Kelleher *et al.*, 2020), this view accepts customers, providers and other actors as distinct, considering them as having different goals, experiences, activities and practices (Laamanen and Skälén, 2015; Mele *et al.*, 2018).

Essentially, the actor constellation is experienced by the focal beneficiary and its representatives (Caic, *et al.*, 2019; Leino, 2017). Here, following Plangger *et al.* (2013), we label the customer as a representative of all beneficiaries, irrespective of the label used (consumer, patient, citizen or user). The contextual, aggregate boundaries of the customer ecosystem can be as small or wide as the customer determines them to be in relation to a goal achievement. This approach broadens the scope of CX to include not only core experiences with a service but also related experiences, for example, with other providers, with even non-related experiences contributing to the total experience of an offering (Patricio *et al.*, 2020). The customer ecosystem is dynamic in that it can change as the focal customer's goals, experiences and activities shift (Voima *et al.*, 2011). As Lipkin (2016, p. 690) explains, this perspective encourages researchers "to move away from restrictive interactions to study customers' goal-directed actions and tasks" and customers' milestones and eudamonia "situated into the consumer's life" (Schau *et al.*, 2009, p. 48; Anderson *et al.*, 2013; Tikkanen, 2019). Customer ecosystems involve customer responsabilization, in which customers are individually responsible for the achievement of their own life goals (Tikkanen, 2019) and have sufficient capabilities, that is, the "ability or competency to achieve a particular goal or fulfill expectations" (Anderson *et al.*, 2016, p. 265).

The philosophical foundation of customer ecosystems is humanism (Copson, 2015), highlighting the fact that:

[...] human nature is not entirely a given, that it can be refined, through education and learning. In addition, the ethical component remains a cornerstone in humanism in that it attributes unalienable rights to everybody, independent from ethnicity, nationality, social status or gender. Humanism addresses everybody and is universal in its outreach (Pirson and Lawrence, 2010, p. 554).

Humanism is a worldview and can be defined as the "democratic and ethical life stance, which affirms that human beings have the right and responsibility to give meaning and shape to their own lives" (Byelaw 5.1 of the International Humanist and Ethical Union, in Copson, 2015). This differs largely from the institutional focus of service ecosystems (Vargo and Lusch, 2016, 2017).

Importantly, CXs emerge in customer ecosystems through customers' actions and processes in customers' systemic contexts. As a result, it is crucial to understand the customer ecosystem and the ways in which it shapes the CX. The next section empirically illustrates how such customer ecosystems shape CX with a self-service offering.

Methodology

An explorative, qualitative study was conducted among users of an activity tracker. The study was guided by the abductive, hermeneutic research methodology that highlights the iterative, interpretive approach between theoretical knowledge and empirical observations (Dubois and Gadde, 2002). Activity trackers represent a smart service offering that is "delivered to or via an intelligent object that is able to sense its own condition and its surroundings and thus allows for real-time data collection[...]" (Wunderlich *et al.*, 2015, p. 442). These activity trackers enable users to track and monitor their running, walking and other movements in and over time and communicate these activities to others. This empirical setting was chosen because it can generate ample insights into the customer ecosystem and how it shapes the CX. Essentially, an activity tracker allows customers to use the offering in their own contexts, whenever and wherever they want to; thus, it is embedded in the customer's lifeworld (Wunderlich *et al.*, 2015; Gummerus *et al.*, 2019). Also, the activity tracker captures and stores data related to each activity, which further enables customers to more easily reflect on their experiences with the tracker in and over time. Moreover, there is a call for more research on this type of smart service, especially that related to how customers experience it in their everyday lives (Gummerus *et al.*, 2019; Wunderlich *et al.*, 2015, 2013; Gonçalves *et al.*, 2020).

Data collection

We collected qualitative data in two phases using semi-structured interviews and personal diaries (Table 3), thus ensuring rich insights into CXs with the activity tracker. Similar approaches have been applied to gain broad and deep insights into the studied phenomenon or concept (Fließ *et al.*, 2015). Also, the multimethod approach facilitates a nuanced understanding of the studied phenomenon (Mingers and Brocklesby, 1997). In both phases, we focused on activity trackers as a mobile application (e.g. Run Keeper) or wearable wristbands or watches (e.g. Polar). We collected data until we reached the saturation point (Glaser and Strauss, 1967).

First, we conducted semi-structured interviews to gain rich insights into the studied phenomenon (Deshpande, 1983). We selected the study participants purposively (Golafshani, 2003), including individuals who had used an activity tracker during their regular runs for a minimum of one month. This ensured that the respondents were familiar with the service and could reflect on their use processes. The interview guide consisted of questions covering themes such as running, the everyday use of activity trackers and positive and negative memories of such devices. All interviews were transcribed verbatim and saved in separate documents.

The second phase consisted of diary narratives among users of an activity tracker for running. Diaries represent a suitable method with which to study various activities and experiences occurring *in situ* and daily (Bolger *et al.*, 2003), allowing unobtrusive data collection regarding the respondents' experiences of the service and how their ecosystem actors impacted their experiences. The same selection criteria used for Phase 1 were applied in this case, resulting in a new set of respondents. All diaries were reported after five to six

Table 3 Research approach

| Data source | Twenty-eight customer interviews | Ten diaries |
|-------------------------------|--|--|
| Participant selection | The participant had used the activity tracker for a min. of one month before the interview. | The participant had used the activity tracker for a min. of one month before the interview. |
| criteria | 11 women, 17 men, aged between 20 and 50 years. | 8 women, 2 men, aged between 20 and 50 years. |
| Data collection | Semi-structured interviews Thematic questions <ol style="list-style-type: none"> 1 Describe a normal run, a perfect run and the worst possible run 2 Describe your activity tracker 3 How, when, where, with whom and why do you run with the activity tracker? 4 Describe a positive memory of the activity tracker – what made this memory positive? 5 Describe a negative memory of the activity tracker – what made this memory negative? 6 What role does the activity tracker play in your life? What is your role regarding the activity tracker? 7 What role do other actors play in your sports tracking experience? | Personal diaries Thematic questions <ol style="list-style-type: none"> 1 How was your run today? 2 What role did the activity tracker play in your run? Has anything changed in your experience with running with the activity tracker since a) last time and b) you started using it? 3 What role does the activity tracker play in your life? What is your role regarding the activity tracker? 4 What role do other actors play in your sports tracking experience? |
| Interview/diary length | 30–50 min/each | 5–6 pages/diary |

consecutive runs. The average duration of diary keeping was 1–2 weeks. This timeframe corresponds with other similar studies (Dube and Helkkula, 2015).

Data analysis

The data was analyzed using an interpretive, thematic analysis technique that involved scrutinizing the characteristics, properties and conceptual dimensions of the qualitative data. The data was organized, structured and coded manually with Microsoft Excel. The process was informed by the Gioia methodology for rigorous qualitative research (Gioia *et al.*, 2013), deriving informant-centric meaning and researcher-centric interpretive concepts, themes and dimensions. In contrast to the common naturalist orientation of the Gioia methodology, which is based on a strict analytic template, we adopted a more hermeneutic orientation focused on a “critical attitude toward the interpreted nature of data, the role of the researcher as an interpreter, and the resultant knowledge claims” in an attempt to understand what is really going on or being said (Mees-Buss *et al.*, 2020). Such interpretive rigor “involves subjecting data to intensive questioning and provisional theoretical understanding to multiple rounds of testing and verification” (Mees-Buss *et al.*, 2020, p. 12). The objective was to discover how the respondents reflected on actors that were involved in their experiences, as well as how these influenced CX. The process involved critically scrutinizing the data, posing questions about the data such as “What is going on?”, “What is important for the respondents?” and “What does it mean?” First, we read through the transcripts twice to gain a solid understanding of the study participants’ narratives (Hirschman, 1992). All respondents mentioned various actors relevant to their activity-tracking experiences. These actors ranged, for

example, from service providers to co-customers and friends. Furthermore, it became apparent early on that the respondents considered their experiences with activity trackers as a continuous flow of experiences. Various aspects of the CX were mentioned by the respondents. These aspects ranged from more individual elements, such as performance and individual goals, to more brand- and socially focused elements. We divided the interview and diary transcripts into relevant categories. These categories focused on the mentioned actors’ characteristics and significance for the focal customer, as well as the various CX elements considered important by the respondents.

We compared and challenged the various categories across respondents, identifying similarities and differences. The emergent thematic analysis aimed to identify concepts and themes based on something important about the data in relation to the research question (Braun and Clarke, 2006, p. 82). We moved between a more holistic interpretation of the experience and a more detailed level of word, sentence and phrase interpretation. It became apparent that there were similarities and differences between the actors present in the respondents’ contexts, resulting in three distinct actor constellations, which we named the individual-, brand- and socially driven customer ecosystems. Furthermore, based on customer ecosystem type, the themes related to the distinct key drivers of CX also emerged. We located two key CX drivers for each customer ecosystem type.

Findings

First, we describe the actors, and then we analyze and characterize three ecosystems, concluding with a discussion of how each ecosystem type shapes the CX.

Actors

Table 4 summarizes six actor categories in the customer ecosystem: the *focal customer*; *focal provider*; *other providers*; *co-customers*; *peers, family and friends*; and *strangers*.

Focal customer

The user was the key actor in the ecosystem and, thus, labeled the *focal customer*. This focal actor represented a human and single-actor unit using an activity tracker. Many of the focal customers purchased their activity trackers; however, some applications were free, or the customer used the offering together with someone else, who owned it.

The focal customer differs from the other actors in that the ecosystem revolves around and is dependent on this actor. The customer’s position in the ecosystem is central. This individual-centrality was often reflected in the way respondents described their experiences: sharing their personal thoughts, feelings and actions regarding activity tracking and how their past, current and even future experiences impacted their total experience with the activity tracker.

Focal provider

The focal provider represents another key actor. This non-human actor is responsible for the business offering and various offering-related factors, such as the offering’s technical and functional features. The respondents often mentioned the focal provider and frequently described the activity tracker offering in conjunction with same. Some respondents seemed to view the two as a rather integrated entity. The respondents did not mention the focal provider’s frontline employees as distinct actors in their contexts. This is likely related to the nature of the studied offering because most users were able to purchase and use the activity tracker without having any direct contact with

the focal provider. We do, nonetheless, acknowledge that the focal provider represents a group of actors as part of a provider organization.

This focal provider was often referred to as the seller, supplier or enabler of the business offering in that it provided a means of tracking activities. It was this means that became the point of relevance for the respondents when they described the various actors driving the CX. In other words, all other actors were deemed relevant in the customer’s context related to this service. This service, however, was not dependent on only one focal service provider. It was something other providers could potentially offer as well. Many respondents even used several providers simultaneously. For example, when they had a difficult time selecting only one among many offerings or they had recently switched devices yet wanted to continue collecting data on the old one. Importantly, however, the focal provider was the main provider, and other potential providers had secondary roles.

Other providers

Other providers emerged as another actor group influencing the CX, differing essentially from the focal provider in their secondary relevance and importance for the focal customer. This category consists of two sub-types: providers offering alternatives to the focal provider and providers providing support offerings to the focal provider. The first sub-type includes providers of other activity-tracking devices than the focal customer’s primary choice. Customers also benchmarked their current devices against those of other providers. In doing so, they either reinforced the appropriateness of the current device or triggered a switch to another brand. Regardless of the outcome, this benchmarking clearly impacted their overall CX with the offering. For example, some customers mentioned

Table 4 Customer ecosystem actors

| Actor | Description | Actor unit | Example from informant data |
|-------------------------------|--|----------------------------------|--|
| <i>Focal customer</i> | The subjective and active individual making-sense of the experience with the business offering. Can be a user, co-user or payer of the business offering | Human Single | “When I started using it, I had more structure in my training. Then, I was also more interested to follow up all the time, but now, I’ve been running very little, so I’ve had very little structure in my life, and now, I experience that it is no longer that important if I have a sports watch or not, but that may change in the future” |
| <i>Focal provider</i> | A seller, supplier, deliverer or enabler of a business offering, including the offering <i>per se</i> and other firm-related aspects | Non-human Collective | “company,” “firm,” “brand” or “organization” “Suunto,” “Runkeeper,” “Sports Tracker” |
| <i>Other providers</i> | Other commercial providers can be a (co-) seller supplier, deliverer or enabler of a similar offering or support the business offering of the focal provider. Can be a collaborator with or competitor to the focal provider | Non-human Collective | “I regularly read a lot about different activity trackers. There is this website which tests each and every type” |
| <i>Co-customers and peers</i> | Other individuals (co-) using the same business offering as the focal customer or individuals engaging in similar business-offering related activities as the focal customer | Human Single or Collective | “I know there are probably people out there that use it, but basically, I’m isolated from any other than these four people that use it. It doesn’t feel like I’m part of a group that much” |
| <i>Family and friends</i> | The focal customer’s closest unit of social actors can be a user, co-user or buyer of the business offering OR a non-user of the business offering The user’s parents, siblings and friends | Human Single or Collective | “The reason that I stopped carrying it so much is because none of my friends really use it. If there were lots of people using it, we could all compare times” |
| <i>Strangers</i> | Actors unknown to the focal customer that implicitly or explicitly influence the focal customer. Can be both users and non-users of the offering | Human Single or Collective | “I guess I just felt that I was pushing myself harder, and I felt like I was even competing against someone that I did not know” |

having negative experiences with their devices after having compared them to other providers' offerings. The second sub-type includes actors such as Strava, which is a social fitness network enabling users to track and upload their runs and other related data, compare data and engage with other users. Similarly, music providers were also mentioned as an important actor for those runners who listened to music while running. These other providers simply represented other or complementary options to use in engaging with ongoing activities, not competing suppliers.

Co-customers and peers

Co-customers and peers consist of actors using either the same activity tracker as the focal customer or actors engaging in similar activities regarding activity tracking, such as regular running exercises, training for a marathon or tracking one's bodily functions. They could also be non-users of the offering who are simply interested in activities connected to activity tracking. Some respondents described these co-customers and peers as a single unit or individual, for example, as someone with whom the customer could discuss tips and tricks regarding how to increase one's endurance when training for a marathon. Others referred to a larger social community or collective, which the focal customer identified as part of or pursued being a part of. The respondents mentioned discussing the features and technological developments of activity trackers with other customers using similar services. These discussions played a role in the overall activity tracking experience because they helped the respondents realize previously unnoticed technological features or simply reinforced the idea that they were indeed using the right type of offering to meet their individual goals. Furthermore, some respondents shared that merely knowing that peers across the world used the same offering as them also contributed positively to the activity-tracking experience, but it could also have an adverse effect. Co-customers became apparent on social media and discussion forums and impacted the respondents' experiences with the focal offering. Actors could thus be included in the customer's context through social interactions but also based on the knowledge of their existence.

Family and friends

The CX is also driven by human actors close to the customer. This actor group, labeled family and friends, often figured in the users' lives, both related to and beyond the focal offering. These actors differ from co-customers and peers in that they are not necessarily users of the offering or even familiar with the activity tracking *per se*. This actor group can denote a single unit, such as one family member or friend, but also a collective, such as a family or group of friends. Several respondents shared that running with a friend who possessed the same activity tracker as themselves positively contributed to the tracking experience, such as comparing times, competing against one another and sharing these results on social networking sites, such as Facebook or Instagram. On the other hand, some respondents stopped using their activity tracker because of their friends not using it. Family or friends could also positively or negatively contribute to the activity-tracking experience, for example, if a family member had negative perceptions of the focal customer's use or experiences.

Strangers

Strangers emerged as an actor group impacting the activity-tracking experience for some respondents. These actors represent single individuals or a collective of individuals unknown to the focal customer who, for some reason, cross the focal customer's path and are deemed relevant enough to be part of the ecosystem. For example, some respondents mentioned that running in new places where they could bump into groups of tourists negatively impacted their CX. Simply going out for a run at the wrong time of the day could have a similar outcome. Other respondents mentioned that posting events on social media and knowing that people beyond their immediate circle of acquaintances could see this contributed to the CX. Events earlier during the day also impacted their mood and how they experienced activity tracking. For example, a bad day at work could result in a bad activity-tracking experience simply because the focal customer was not in the mood for running.

Customer ecosystem types and how they shape CX

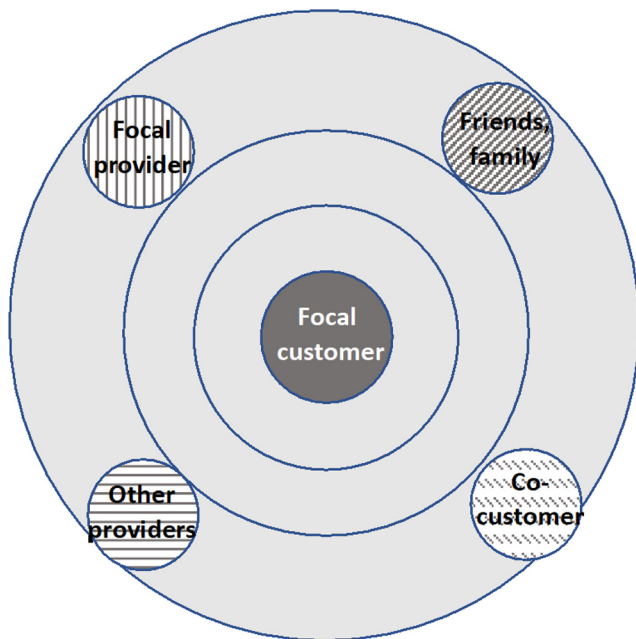
The findings indicated that the above-mentioned actors were present in different forms in the focal customer's experience. Some customers mentioned all such actors, while others mentioned only a few. For example, some actors played a large role in helping the focal customer lose weight, become better at running or simply spend more time with friends and family. Others were included more by chance because of the activities and experiences the customer engaged with. For example, the customer would meet strangers out on the running track or read about running on another provider's running forum and, thus, incorporate these actors into her ecosystem. The analysis of the customer ecosystems, including the actors and actor positions, the number of actors and their importance to the focal customer, revealed three types of customer ecosystems: *individual-driven*, *brand-driven* and *socially driven ecosystems* (Figures 1–3; Table 5).

Individual-driven customer ecosystems

In the individual-driven customer ecosystem (Figure 1), only a few other actors are included, and these actors tend to play minor roles in the overall activity-tracking experience. In this ecosystem type, the experience is all about the focal customer. Although the focal actors may acknowledge that other actors play a role in the context and, consequently, also the activity-tracking experience, they view themselves as the most important and dominant actors. This type of ecosystem thus emerged as rather limited in size and scope, with other actors being positioned farther away from the focal customer as compared with other ecosystem types. Although the respondents never claimed to have full control over their experiences within their contexts, they clearly played a key role in determining the CX. Other actors were further included as the focal customer saw fit. This resulted in varying ecosystem sizes.

The focal customer's experience is shaped by *individual performance and improvement*, such as running faster or longer. This is also why they engage in activities such as running and data monitoring. The overall CX with the activity tracker was often driven by the mood and performance of the focal customer, rather than the activity tracker or any other actors for

Figure 1 Individually driven customer ecosystem



that matter. If they had a good run, the activity tracking experience was also great. These respondents noted that the activity tracker was participating in their individual performance and experience.

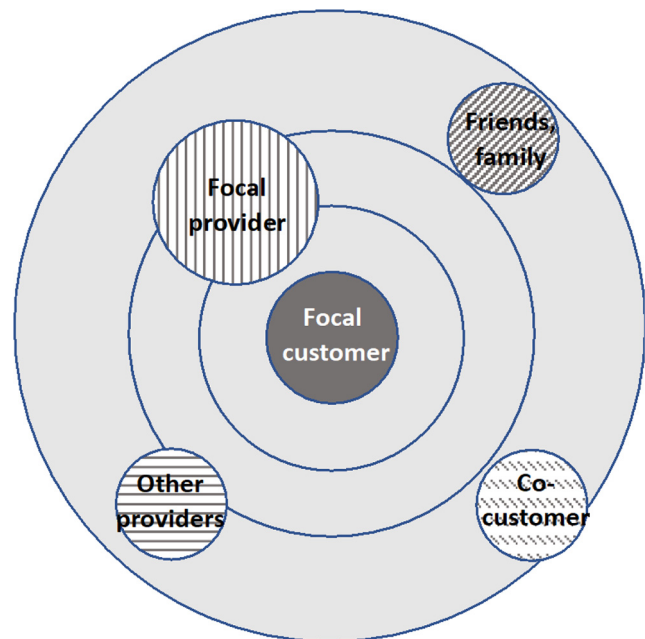
The *mood* of the focal customer was another key aspect shaping the CX. If the respondent had a bad run, this was also reflected negatively in the activity-tracking experience. Due to this individual focus, some respondents mentioned that they avoided sharing activity-tracking experiences with other connections, for example, on social media. Because social sharing does not further individual goals, it was simply not deemed important. Furthermore, some focal customers with individual-driven customer ecosystems also noted that they had a goal of not having any goals regarding running and activity tracking. These focal customers were often previous athletes who coupled the activity tracker with negative feelings about individual performance.

Brand-driven customer ecosystems

In the brand-driven customer ecosystem (Figure 2), the focal provider plays a key role and is positioned close to the focal customer. Indeed, the brand and the offering are considered key actors in the ecosystem and, thus, also key drivers of the running and activity-tracking experience. The brand-driven customer ecosystem may include many or few other actors, but these are of less importance than the focal provider and are positioned further away from the focal customer. However, it is worth noting that many focal customers of brand-driven ecosystems like to compare their current focal provider to others because they seek reassurance that they are using the latest and greatest. As such, other providers can also take on more important roles in this type of ecosystem.

The focal customers of brand-driven ecosystems focus on goals and activities revolving around the provided service, in this case activity tracking. For example, the users may aim to

Figure 2 Brand-driven customer ecosystem

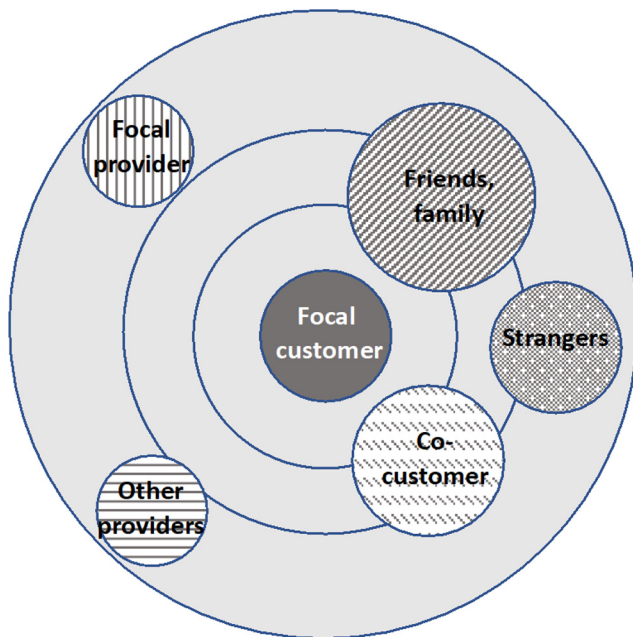


better understand their running patterns and accompanying bodily functions or simply engage with the latest technology. For these customers, the *functional and technical features* of the activity tracker lie at the core of CX. Indeed, many of these customers would be characterized as early adopters, and the features and function of the offering largely shape CXs. Issues related to brand are important and play a key role in driving CX. For example, the running experience with a Nike application is further amplified by Nike products and services. For these customers, the overall activity-tracking experience is highly dependent on the reliability and precision of the activity tracker. For example, if the activity tracker does not succeed in tracking the entire run, the customer may discontinue the running activity altogether and walk back home. On the other hand, customers viewed the CX as positive when the activity tracker performed to their expectations, including times when their own performance was questionable. A sense of *reliability* and support enabled by the activity tracker were another aspect stimulating CX.

Socially driven customer ecosystems

In socially driven customer ecosystems (Figure 3), other individual and collective social actors form the key actors for the focal customer. As a result, the socially driven customer ecosystem often consists of many actors positioned close to the focal customer. This type of customer ecosystem is thus larger and denser in scope as compared to the other ecosystem types and dominated by the collective, rather than the individual.

The focal customers of socially driven ecosystems place a great deal of focus on connecting with other social beings, such as their peers and co-customers, family and friends. This is more important than their individual performance or the activity-tracking technology. Many of these focal customers like to run and track their runs together with others. *Connection and belonging* thus represent a key CX driver in the socially driven

Figure 3 Socially driven customer ecosystem

customer ecosystem. The focal customer may also seek *social status* and significance, frequently through posts on social media or other social platforms. Great experiences are characterized by feeling connected to others through the activity tracker. An element of competition can also be present in this experience, either driving or hindering the CX. The connection with various social media networks expands the range and reach of the ecosystem, thus expanding the ecosystem size as well.

Actor influence on CX

The identified customer ecosystems related to a specific service are similar in that they all portray the customer's sense-making of the context of CX and contain multiple actors. The difference is in how the ecosystem types shape the CX (Table 5). The number of actors varied, resulting in different sizes and scopes for the three ecosystem types, largely based on what the focal customers aimed to achieve, do and experience. Some focal customers included many actors to achieve their goals and aspirations and engage in preferred activities and experiences, while others included only a few.

The actors' importance levels and positions related to the focal customer differed between the three ecosystem types. Whereas some actors were regarded as key, others played a marginal role in the ecosystem related to activity tracking. The importance of the different actors became apparent as customers shared their experiences with the activity tracker. These actors seemed to engage in activities or goals that were closely connected with the focal customer or simply embodied a key role in the customer's daily life, as with, for example, family and friends. On the other hand, less important actors were explained by the focal customer as actors contributing marginally to the activity-tracking experience.

The importance of the actor further determined an actor's position in the customer ecosystem. Importance signifies how

meaningful the focal customer considers the actor to be: the more meaningful, the closer the actor is to the focal customer. This position can be both physical and mental in nature. For example, the focal customer could interact physically with some actors, such as friends and family, whereas other actors, such as brands, embodied a mental position in the customer's life. Regardless of the other actors' positions, the focal customer always embodied a central position in the ecosystem. However, this does not automatically mean that the customer ecosystem is always focused on the individual customer; the customer can also represent a value unit, for example, a couple jointly using a wearable.

Contribution and implications

This study investigated how the customer ecosystem and its key components shape CX. In line with previous research (Heinonen and Strandvik, 2015; Caic *et al.*, 2019; Patrício *et al.*, 2020), the emphasis was on the customers' idiosyncratic and systemic context as relevant to, rather than centered on, a specific service. This seemingly marginal distinction is important in better understanding what matters to the customer the most. The study reveals that CX is not solely confined to the service providers' offering, consisting of products, services, solutions, promises and value propositions, but also emerges from the customer ecosystem. The key implications of customer ecosystems for CX are summarized in Table 6.

Theoretical implications

This study contributes to the service marketing literature in several ways. First, and most importantly, it advances the research on CX in systemic contexts by illustrating how the customer ecosystem, defined by its actors and actor constellations, shapes the CX. The study shows that different actor constellations have different drivers of CX, thereby also showing how CXs emerge in the customer's lifeworld. The findings reveal three customer ecosystem types, with each having key drivers of CXs. In line with Lipkin (2016), we argue that the customer ecosystem is key to better understanding customers and how they select, experience and relate to business offerings. The ecosystem, as a perspective, can also be adopted in other theoretical contexts and help to explore customer ecosystems' impact on other phenomena, such as customer activities, value and engagement. The focus on CX through a customer-defined ecosystem is novel: in contrast to existing studies that focus on CX in terms of individual or collective actors (Becker and Jaakkola, 2020), this study views CX as related to a constellation of multiple systemic actors in an ecosystem, with the customer as the focal actor. In other words, CX does not emerge from only one actor (service provider) alone but from a constellation of actors *relative to the customer's/user's reference point*, and there are different drivers for different actor constellations. As such, the ecosystem is a self-constructed and customer-centered actor configuration emergent within the customer's lifeworld. This relative reference point is a unique contribution. Specifically, it extends the work of McColl-Kennedy *et al.* (2020) addressing ecosystem actors and relationships that are essentially dyadic (physician–patient, patient–health-care team and patient–family member). Also, by showing how the actors shape the experience together, it extends previous research on CX, such as the work of Gonçalves *et al.* (2020), related to how actors

Table 5 Customer ecosystem types and CX drivers

| Ecosystem (size and scope) | Role of actors (relevance, proximity) | Key drivers of CX | Example of CX drivers from data |
|--|--|--|---|
| <i>Individual-driven customer ecosystem</i> | | | |
| Small; only few actors present | Individual CX dominates; other actors are less important. All actors are positioned further away from the focal customer | Mood | "A more negative experience with the Sports tracker would occur during a day that I've felt a bit down and without any energy. Then, it would have felt really hard, and I would not have had this super happy feeling after coming home from the run" |
| | | Individual performance | "It was a memorable experience when I got to see the steadily up-going curve of my runs. I was getting better. I would not have understood this as well nor have so concrete evidence of my progress without the Sports Tracker" "Those times when you've performed extremely well and you've been looking at the pulse and had good interim times, then the activity tracker has also participated in that experience" |
| <i>Brand-driven customer ecosystem</i> | | | |
| Ranges from small to large; actors vary in number | The CX of the focal provider(s) plays a key role; other actors are less important The focal provider is positioned closely to the focal customer; other actors are more distant | Functional and technical features | "I feel cool when I have a sports track that has a built-in system for altitude changes and real-time GPS" "I've heard about some people who don't like to run with activity trackers, because they feel like they can't run freely. I'm not at all like that. I'm a technology freak. The more gimmicks, the more fun it is to run" |
| | | Reliability | "If the activity tracker, for some reason, stops tracking during the run, I would joke that this run did, in fact, not happen" "We actually ran the same route 10 to 15 times under a time period of 6 weeks. . . the first time I ran with the sports tracker, it showed 6.15/km. And the last time we ran the route, or the fastest lap, I think it was between 5.18 or so. That is over one minute of progress per kilometre, and that is very good, and I was super happy when I had progressed that much, and felt that I could have potential to become a really good runner. And there, the sports tracker also plays an important role, because it measured all this to me, and it also saves all my runs, so I can easily scroll back and check and compare my times" |
| <i>Socially driven customer ecosystem</i> | | | |
| Large; many actors present. | Multiple social actors drive CX Social actors are positioned closely to the focal customer Providers have a marginalized role | Connection and belonging | "What matters is really the social connections and networks, to see how others have run. I'm motivated to run longer when I see others who have run like 16 km" "I feel like I belong to some sort of community and that makes my experience with the activity tracker positive" |
| | | Social status | "When I was doing challenges with my friends, it was also a way of keeping them informed that I'm ahead or that I'm pushing, so also the competition is what really drove it" |

(family, friends and neighbors; service providers; and online communities) influence experience individually.

Another contribution is the expanded understanding of the customer ecosystem, responding to research calls to increase the knowledge of this concept (Heinonen and Strandvik, 2018; Leino, 2017). Although researchers have devoted increasing attention to networks and the systemic aspects of business, studies have focused on exploring provider systems (Kingman-Brundage *et al.*, 1995) or, more recently, how multiple actors exchange services within service ecosystems and institutional structures (Akaka *et al.*, 2015; Edvardsson *et al.*, 2018; Vink *et al.*, 2021; Patricio *et al.*, 2020). Customer ecosystems, as human-centered systems with a nexus on the customer, have received limited attention (Caic *et al.*, 2019). The paper forwards a theoretical conceptualization of customer

ecosystems (delineated in Table 2) that represents an alternative to the service ecosystem. This study, mapping out actors and customer ecosystem types, can aid service researchers in interpreting and designing future studies on customer collectives. Although the located ecosystem types are similar in several respects, illustrating the focal customer's systems with multiple present actors, they also demonstrate variations in terms of how the types and numbers of customer ecosystem actors are grounded in the customer's individual logic. In so doing, it thus also contributes to the work on customer logic (Heinonen and Strandvik, 2015).

This empirical study revealed six actor categories that extend previous work on customer ecosystems (Leino, 2017; Heinonen and Strandvik, 2018; Gonçalves *et al.*, 2020) by characterizing and synthesizing their key components and

Table 6 Key implications of customer ecosystems for CX

| | Customer ecosystem | Implication for customer experience |
|-----------------------------|---|---|
| Description | Is self-chosen and customer-centered, including key actors and actor configurations, and emergent within the customer's lifeworld | The CX has individual and social properties, based on heterogeneity |
| Scope | Has broad contextual frames with physical, virtual and commercial features and structures. The scope is dependent on customer unit level of abstraction (e.g., individual customer versus collective unit) | The CX is formed and emergent within the customer ecosystem, where multiple actors are present, and also outside market-related interactions |
| Actors | Includes human and non-human, as well as single and collective, actors. The relevance of each (non) selected actor is grounded in the customer logic Includes the focal customer, service providers, other customers and other actors, such as co-customers, peers, family, friends and strangers, in the customer's lifeworld | The CX is driven by actors both within and beyond the service context, ranging from marginal to significant and positive to negative influences |
| Actor constellations | Dynamic configuration can vary in size and relevance. The constellation is grounded in the customer logic | Actors drive the CX in combinations, and actor constellations reveal different drivers of CX |

relative positions in the ecosystem. Although previous studies consider similar actor categories, they are not further characterized. Rather, studies mention distinct actor types, such as secondary customers (Leino, 2017), co-customers (Letaifa and Reynoso, 2015), acquaintances or strangers (Baron and Harris, 2010) or other actors confined to the focal service (Slåtten *et al.*, 2009), but few explore the actor types in detail. Frequently, the actors are mentioned as a tangential aspect of but not as an important element of the entire narrative of the paper (McCull-Kennedy *et al.*, 2020; Gonçalves *et al.*, 2020). For example, Caic *et al.* (2019) discussed different actor networks as different sets of actors but did not further specify the characteristics of the actors beyond adopting established labels (daughter, caregiver or pharmacist).

Moreover, the current study posits that the focal customers include actors in their ecosystem that they deem relevant based on their idiosyncratic frame of reference. The findings thus support previous studies indicating that the opinions and activities of family members and close friends matter greatly to customers (Shin, 2013) in the context of business offerings. Such actors have even been regarded as “secondary customers” and can play a role in the focal (or primary) customer's ecosystem (Leino, 2017). Consequently, CXs emerge in the customer's context and also unfold beyond market interactions (Lipkin, 2016). This approach helps to showcase what occurs outside the focal firm's visibility and control but plays an important role in forming CXs with an offering. Therefore, we encourage researchers to also consider outside market-related interactions and thus increase their understanding of the customer and their experiences with offerings.

Finally, this study answers a call to empirically explore smart self-services (Gonçalves *et al.*, 2020; Gummerus *et al.*, 2019; Wunderlich *et al.*, 2013), revealing how CXs with such devices are largely driven by a systemic use context, both *in situ* CXs and the total experience with the offering. We encourage researchers to continue to study the CX of smart services by applying a customer-ecosystem lens because this can contribute to our understanding of customers' technology-enabled experiences and how they evolve as new technologies emerge.

Managerial implications

The key managerial challenge is essentially to adopt a customer-ecosystem lens on CXs. Although customer-centricity is acknowledged as *the key* to effective CX management (Lemon and Verhoef, 2016) and ultimate business success (Prahalad and Ramaswamy, 2004), many managers struggle to apply this in practice. Guided by traditional provider-dominant thinking, managers commonly focus on the firm's role or the role of other actors and factors connected to the core service when exploring and managing CXs. Today's companies strive for influence, yet the customer may not consider them important enough to actually be influential. This remains a challenge because companies often focus on setting and meeting their own and shareholder's objectives rather than prioritizing an understanding of the customer's goals. To alleviate this issue, we encourage managers to be sensitive to what is happening in the customer's context. By applying a customer-ecosystem lens on CXs, managers can gain a more holistic and expanded view of the customers, their experiences and the provider's potential role in CX. Mapping customers' ecosystems essentially means exploring customers' idiosyncratic actor configurations. Based on such insights, the firm can then design, manage and market offerings that have a greater chance of becoming embedded in customers' lives.

As this study demonstrates, CXs with business offerings are shaped by multiple actors in the customer's ecosystem. The study highlights the fact that all actors are contingent on their relevance to the focal customer. The customer's logic, in the form of their goals, activities and experiences, drives this relevance. We suggest managers focus on better understanding this customer logic and how it influences the size and scope of the customer ecosystem, the prioritization of actors within this system, and how these actors drive the CX with the offering. We encourage managers to study these actors and their key characteristics and thus better understand how complex and dynamic CX is constructed through individual sense-making within social contexts (Helkkula *et al.*, 2012). We also encourage managers to always start with the focal customer because CX is idiosyncratic and the customer ecosystem

revolves around and is dependent on this actor. Although this study approached focal customers as individuals, managers should acknowledge that the focal customer may also represent a collective, such as a family. This may increase complexity because each member of the collective comes with own goals, experiences, activities and practices.

It is equally important to explore other actor groups. By considering their core characteristics (e.g. individual/collective and human/non-human) and similarities and differences, managers gain a more systematic overview of the customer ecosystem. To propel a customer-centric approach across the organization, managers must challenge their current thinking and vocabulary. For example, as this study demonstrates, competitors to a focal provider merely represent other providers to the focal customer. Consequently, instead of analyzing these competitive actors through a competitive analysis, it may be more useful to analyze them through the customer's eyes. Such insights can help the company in successfully positioning its offerings against competition. Nonetheless, it is important to keep in mind that these other actors also have ecosystems of their own and are driven by their respective goals, activities and experiences. By considering the multiple goals present in the customer ecosystem and whether these are currently being met, managers can better predict how the customer ecosystem will evolve.

By mapping various customer ecosystem types, managers can also gain a useful tool with which to segment and target (potential) customers. This type of segmentation goes beyond traditional demographic and psychographic variables, acknowledging the customer's life, including their goals, activities and experiences. Managers can use these ecosystem types as the

basis for targeting offerings: crafting relevant and effective value propositions and marketing communications. Although we acknowledge that each customer ecosystem is unique and may vary in size and scope, there are similarities that can drive such categorizations. For example, in this study, focal customers with individual-driven ecosystems likely warrant a value proposition emphasizing individual performance, whereas focal customers with socially driven ecosystems demand a proposition based on the fun of running together.

In summary, because CXs with offerings are largely shaped by the customer's life and the multiple actors present in their context, managers must ensure the customer ecosystem is sufficiently considered in the firm's goals, strategies and actions. Firms that succeed in doing so will gain a competitive advantage.

Future research

This study gives rise to a wide array of future research avenues (Table 7). By exploring these topics further, researchers and managers will gain an in-depth understanding of contemporary customers' lives in relation to the actors and actor constellations that influence CX. One area of future research is empirical context. This study was conducted in one specific service setting. However, we argue that the located actor categories, constellations and roles may be applicable to other contexts, especially technology-enabled services. Future research should explore how the customer ecosystem and its key components shape CX in other empirical settings, including B2B and B2C contexts. This includes systematically exploring how actor relationships influence CX, the actor interactions and/or their strength in the CX. The

Table 7 Directions for future research

| | Future research: customer ecosystems | Future research: customer experiences |
|--|---|---|
| Customer ecosystem as a lens on CX | <ul style="list-style-type: none"> • How does this lens apply to business customer contexts? • What is the role of customer ecosystems in engagement and value creation? | <ul style="list-style-type: none"> • What can we learn about the dynamic and holistic nature of CXs by applying a customer ecosystem lens? • In what circumstances is this lens useful? |
| Customer ecosystem actors | <ul style="list-style-type: none"> • How do these actor categories apply to other settings? • What other actor categories can be identified in customers' ecosystems? • How do single versus collective actors enter the customer ecosystem? • In what ways do customers define the relevance of and prioritize actors in their ecosystem? | <ul style="list-style-type: none"> • How do the influences of single versus collective and human versus non-human actors on the CX differ? • How does the number of included actors impact the CX, e.g. crowded versus spacious ecosystems? • What types of actors drive the CX in other empirical settings? |
| Customer ecosystem actor constellations | <ul style="list-style-type: none"> • How do these actor constellations apply to different settings? • What other customer ecosystem types can be identified? • How static/dynamic are these customer ecosystem types? • Are focal customers' actor constellations related to a specific service similar when related to other services? • How do actor relationships, their interactions, and actor strength influence CX? | <ul style="list-style-type: none"> • In what ways do specific actor constellations (e.g. combinations of peers and strangers) drive the CX? • How does a swift versus a gradual shift in the actor constellation drive the CX? |

methodological approach to customer ecosystems also represents an area for future research. We applied qualitative methods to explore customer ecosystems and their impact on CX. We encourage researchers to also apply other methods to identify relevant actors and actor constellations, as well as the interlinkages between these. The mapping of customer ecosystems could especially benefit from quantitative methods, such as text mining techniques and cluster analyses. We also encourage researchers to conduct longitudinal studies and thus reach a more complete understanding of customer ecosystems' and CXs' dynamic natures.

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Further reading

- Akaka, M.A. and Vargo, S.L. (2015), “Extending the context of service: from encounters to ecosystems”, *Journal of Services Marketing*, Vol. 29 Nos 6/7, pp. 453-462.

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