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3. Article title

Service innovation through resource integration: an empirical examination of the co-created value using telehealth services

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5. Abstract

Scholars, policymakers and practitioners recognise the potential to improve public services through active citizen involvement and much research has examined the formal opportunities to ‘co-produce’ changes in the structures and cultures of public services. Yet scholars have devoted little attention to the opportunities for service and social innovation that emerge from the everyday activities of service users and their phenomenological experiences of realising value from service interactions. This qualitative study of telehealth users explores how and why public service beneficiaries co-create value. It argues that understanding citizens’ approaches to co-create phenomenological value is a vital component of the collaborative processes that generate social benefit.

Keywords

Co-production, value co-creation, telehealth, service-dominant logic, health care

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Introduction

There has been longstanding deliberation in public administration theory and practice on how public services can be improved through active citizen involvement (Osborne, 2017b; Parks et al., 1981; Pestoff, 2006), and the ‘co-production’ of services is frequently cited as driving contemporary policy reforms. The term co-production has been applied to a range of activities by different actors; as such it has been defined as ‘an umbrella term that captures a wide variety of activities that can occur in any phase of the public service cycle and in which state and lay actors work together to produce benefits’ (Nabatchi et al., 2017: 772). Much scholarship on co-production has concentrated on the potential for changes in the structures and cultures of public services to bring higher levels of engagement and involvement of clients, patients and users to address a ‘democratic deficit’ (Fung, 2015), a concept linking the effectiveness of complex governance arrangements with individual, collective and multi-sectoral participation in the framing of problems and their solutions. Participation has been considered, for example, in relation to the increasing heterogeneity in the organisational environment of public services, including the increase of third sector, voluntary or membership organisations into the delivery and co-management of services (Osborne and McLaughlin, 2004). Co-production has similarly been considered in relation to changing modes of governance (Bovaird, 2005; Osborne, 2010) and shifting relations between public services and wider civic organisations and activities (Ackerman, 2004).

In this paper we align with Osborne and colleagues (Osborne, 2017a) in considering the applicability of S-D logic (Vargo and Lusch, 2004) to public services. This perspective is strongly rooted in services marketing scholarship (Gummesson, 1994) and debate within this field has generated some of the principle developments to S-D logic over the last decade (Vargo and Lusch, 2008). Here we pay particular attention to a key distinction between the ‘co-production’ and the ‘co-creation’ of services (Oliver, 2006; Vargo and Lusch, 2004). This distinction has been examined in relation to public services (Osborne et al., 2016; Voorberg et al., 2014b, 2015) but studies are yet to consider how the constitutive involvement of service users in the co-creation of value holds implications for the process of service innovation.

Realising co-production of public services can be challenging (Osborne, 2017a; Ostrom, 1996) especially when aiming for social innovation involving changes to relationships, positions and rules to create long-lasting social benefit (Pol and Ville, 2009; Voorberg et al., 2015). The need for institutional change in order that social innovation can occur implies that governance issues are the primary motive for involving service users in the co-production of public services. In this paper, we argue that focusing on governance issues at scale creates a blind spot obscuring everyday activity that underpins social innovation by improving experience at the individual level. We conceive this as a process of service innovation (Ng, 2007, 2014), specifically ‘experiential service innovation’ (Helkkula et al., 2018), which is characterised as co-creating phenomenological value through everyday service interactions that shape service user experiences. In ascribing to a phenomenological understanding of knowledge acquisition through experience that is intersubjectively validated (Hegel, 2001; Hirschheim, 1992; Löbler, 2011), the concept of value co-creation suggests service interactions are motivated by the search for value, where ‘value is always uniquely and phenomenologically determined by the beneficiary’ (Vargo and Lusch, 2008: 32). Here then, value co-creation, refers to service users’ efforts to realise value within their own life worlds, rather than their participation in formal opportunities set out by provider organisations. Service innovation implies a governance element that occurs through the process of introducing micro level adaptations that service users experience during everyday interactions. Service innovation can involve fundamental changes to relationships, positions and rules, to meet social needs at the micro level but unlike social innovation, does not necessarily suggest the benefits are long-lasting or require institutional change.

This conceptual lens challenges prior conceptualisations of how and where governance issues matter. We propose that experiential value co-creation by individuals is an important basis for meso level changes and service innovation. We argue that service innovation takes place through processes of individual resource integration that indirectly alters designed-in proposed value. In other words, service innovation involves provider-led value propositions being altered by the service user experiences in practice (Skålén et al., 2014). We present findings describing how citizens find ways of augmenting the designed-in or proposed value of a telehealth service to co-create value, and show that this occurs by engaging in resource integration processes primarily to make the service function for them as well as for the service system. This point

highlights how value co-creation (Vargo and Lusch, 2008, 2016) in concert with service co-production, particularly ‘co-implementation’ (Voorberg et al., 2015), are integral to the user experience of the service system. Our findings provide insight on the blind spot within public service research into co-production, co-creation and social innovation (Ansell et al., 2017; Voorberg et al., 2013, 2017).

In the next two sections we set out the approach of service-dominant (S-D) logic (Vargo and Lusch, 2004) and highlight its relevance to service innovation. Then we report on an empirical investigation of a co-produced telehealth service for COPD sufferers.

Co-production as the study of passive user engagement

Recent literature (Denhardt and Denhardt, 2000; Osborne et al., 2012; Osborne and Strokosch, 2013) makes the case for greater concentration on the *service* aspect of public service organisations and argues that the nature of service demands reconsideration of the nature of co-production by users and providers. Osborne and colleagues (Osborne et al., 2012; Osborne and Strokosch, 2013) urge a move away from the models and analogies drawn from manufacturing organisations, which dominated thinking about public service reform. Instead they advocate public service (dominant) logic (Osborne, 2017a) building on the notion of ‘S-D logic’, which emerged from the field of service research, to develop new approaches to understanding the activities, processes and outcomes of service organisations. Of particular importance to public services, this approach emphasises the roles, experiences and value(s) of service users. It also highlights the importance of user perspectives on quality and effectiveness, which are neglected in approaches to public service research and practice that are pre-occupied with the improvement of efficiency of intra-organisational processes (Denhardt and Denhardt, 2000).

A number of papers have shed light on the nature of co-production by providing examples of active user involvement in public services production in contexts of childcare (Pestoff, 2006), social housing (Needham, 2008), postnatal care (Fowler et al., 2012), community redevelopment and residential care (Bovaird et al., 2015). Such studies have provided insight into the nature and facilitators of, and barriers to, the involvement of users in active efforts to allow co-production in public services. However, the research remains focused upon examples of purposeful citizen involvement, brought about through the purposive actions of public agencies pursuing forms of co-production that take place outside of normal service provision.

Indeed, Joshi and Moore's (2004) definition of co-production centres on public agencies' focused engagement with organised citizen groups. In contrast to this, it has long been recognised that while public agencies can act with particular collaborative objectives, it is only through the recipients themselves that the intended transformations can be realised (Whitaker, 1980). In other words, the role of service users is much broader than the engagement initiatives and mechanisms that public agencies promote. While this has been recognised in co-production literature (Ostrom, 1996), the focus of empirical studies remains on co-production initiatives and projects.

The contribution of citizens' engagement to the performance of public services has most commonly been referenced by two conceptual terms, namely co-production and co-creation. These terms are often used interchangeably in discussion on how to promote a step-change in the relationships between public services and users, to address perceived democratic deficit in public management and improve effectiveness of governance arrangements (Fung, 2015). However, there are important debates on the definition and conceptual distinction between these two terms. One view defines co-production according to the intensity of active involvement; this conceptualisation draws the notion of 'passive' co-production from a key principle of service definitions, which insists that co-production occurs even if it involves unconscious or involuntary interactions (Grönroos, 2006, 2009). This view also suggests that the term co-creation be reserved to describe citizens actively co-designing and even initiating services (Bovaird and Loeffler, 2012; Osborne, 2017a; Osborne et al., 2015; Osborne and Strokosch, 2013; Pestoff, 2006; Voorberg et al., 2015). Conceptualisation of a passive-active binary is used to explain how participation quality depends on the structural relationship between partners (Osborne et al., 2016; Voorberg et al., 2015). However, the vantage point here remains the 'supply' side of the relationship and how this can be reformed to allow greater user involvement (Dunston et al., 2009).

An alternate view defines service co-production as provider-led attempts to engage service users (Chathoth et al., 2013), while co-creation is reserved to capture processes by which service beneficiaries realise experiential value which is dependent on service users' situated experiences of engaging with the service on a day to day basis (Jaakkola et al., 2015; Verleye et al., 2017). This represents a larger departure from traditional public administration thinking, and is fundamental to the public service logic (Osborne, 2017a) that recognises the centrality of service user participation for value to emerge (Skålén et al., 2014). Grounded in the S-D

logic perspective of marketing theory (Vargo and Lusch, 2004, 2008) the significance of this view is that the citizen's role in co-creation is not defined by formal opportunities presented to them by providers, but rather is formed in relation to the life-worlds of the service users, and the meanings and behaviours attached, involved in taking part in services. From this perspective, service users 'merely' being involved in the implementation of services does not preclude co-creation of value (c.f. Voorberg et al., 2015).

Adopting this second view, we argue that there has been a lack of empirical research to fully examine the implications for public services and, particularly, those relating to service innovation. To address this, we apply the concept of value co-creation to a UK telehealth service used by patients with chronic obstructive pulmonary disorder (COPD). Telehealth is increasingly used by health and social care providers as a means to manage rising demand and budget constraints (Bower et al., 2011; Weinstein et al., 2013). We examine the role of service beneficiaries in realising and improving public services as they co-create value in everyday activities outside of formal participation and engagement processes (Osborne and Strokosch, 2013). In doing so, this paper makes three contributions. First, we show that descriptions of passive participation as co-production are misleading because they underestimate the level of activity that occurs experientially, which can motivate further participation leading to social benefit. Second, we illustrate how bottom-up service adaptations at the micro level of individual service interactions can be interpreted as initiating service innovation at the meso level. Third, we provide insight that responds to calls to understand the conditions and outcomes of value co-creation, to encourage open systems approaches to public service governance (Osborne, 2017a; Voorberg et al., 2014a, 2015).

In order to move beyond the study of active citizen engagement as the basis for co-production in public services, we suggest greater attention is needed to the ways in which all service users shape the realised service through 'consumption'. Within public service theory and practice, concepts from marketing are often viewed with suspicion, associated with the problematic transformation of 'citizens', 'patients' and 'service users' into (rational) consumers (Barnes and Prior, 1995; Jung, 2010). Public service scholars are often in ideological opposition to notions of markets and consumerism (Barnes and Prior, 1995) with key characteristics of public services seen as distinct from for-profit services (Osborne, 2017a). Yet, we argue, advances in the field of marketing and consumer research help us to move away from provider-centric views of public services, by paying close attention to processes of dispersed agency, even in

conditions of highly unequal distributions of power. Drawing on marketing and consumer research enables exploration of beneficiaries' experiences of service interactions and their subjective perspectives of dynamic value co-creation (Echeverri and Skålén, 2011; Skålén et al., 2015). Taking seriously processes of 'consumption' has allowed marketing theorists to develop critical insights into the subjective experiences and meaning of service interactions, revealing the importance of understanding both service beneficiaries' life circumstances and the institutional context of service (Edvardsson et al., 2011).

Service-dominant logic

The rationale for S-D logic was advanced by Vargo and Lusch in 2004. Since, there has been considerable debate on S-D logic's foundational principles and key concepts, much emanating from the criticism that the original conception privileged organizational and managerial interests to the detriment of other actors and especially beneficiaries of a service (Schembri, 2006). As a result, the perspective of service beneficiariesⁱ is now well represented (Vargo and Lusch, 2016) and research traditions that offer in-depth insights into consumers' subjective experience (Arnould, 2005; Thompson et al., 1989) are recognized as a key source of theoretical development on value co-creation (Tynan and McKechnie, 2009).

A major impetus for S-D logic came from the idea that beneficiaries play an active and collaborative role in their relationships with organisations and other actors, hence value co-creation is a central concept (Vargo and Lusch, 2008, 2016). In the original publications that advanced S-D logic, Vargo and Lusch (2004) proposed that 'the customer is always a co-producer'. While the 'co-' reflected the collaboration of different actors, it was argued that the 'production' lexicon had an inherent bias towards a firm-centric view of participation (Payne et al., 2008) such that facilitators of and constraints on collaboration are determined by firm resources and competencies (Chathoth et al., 2013). Therefore, the terminology was quickly revised and 'value co-creation' was adopted to reflect the view that value is determined by the beneficiary during usage processes (and is therefore labelled 'value-in-use') (Vargo and Lusch, 2004). The co-production term has not been dropped, rather it is considered to be an element of co-creation that covers 'participation in the development of the core offering itself' (Vargo and Lusch, 2004) (e.g., design, definition, production). By contrast, the conceptualisation of value co-creation is user-centric and emphasises that beneficiaries create value through their personalised and subjective experiences, situated within their everyday lives.

Literature on value co-creation distinguishes between value outcomes and value processes (Gummerus, 2013). The conceptualisation of value *outcomes* in the S-D logic literature jettisons previously dominant psychological perspectives (e.g., cost-benefit, means-end frameworks), drawing instead upon ‘Consumer Culture Theoryⁱⁱ’ to understand people’s construal of value as part of their lived experience (Thompson et al., 1989) and the macro social forces (social, cultural, political, institutional) by which it is shaped (Askegaard and Linnet, 2011). As such, value outcomes are defined as ‘uniquely and phenomenologically determined by the beneficiary’ during use (Vargo and Lusch, 2008: 7).

The conceptualisation of value creation *processes* emphasises that it involves a set of activities from which value outcomes emerge (Vargo and Lusch, 2008). Within S-D logic, conceptualization of the process of value co-creation has centred on the notion that consumers are resource integrators (Vargo and Lusch, 2004). This thinking was rooted in the resource-based thinking of strategic marketing, which distinguished between operant resources, including values, ideologies, knowledge, competencies and skills, and operand resources that are the material resources that are ‘acted upon’ by operant resources to produce effects (Vargo and Lusch, 2004). Arnould et al. (2006) interrogated resources relevant to consumer lifeworlds and distinguished between cultural, social and physical operant resources and between the material possessions and physical spaces that constitute their economic, operand resources. Customer resource integration refers to ‘the processes by which customers deploy their resources as they undertake bundles of activities that create value directly or that will facilitate subsequent consumption/use from which they derive value’ (Hibbert et al., 2012: 2).

Ravald (2009) defines co-creation as ‘a complex whole where several actors and resources are involved and where the customer engages in a multitude of different activities’ (Ravald, 2009: 2). To play an active role in these activities individuals draw upon their physical, mental, emotional, social and cultural resources (Arnould et al., 2006) and collaborate with other actors either through direct interaction or indirectly via interactions with resources provided as mechanisms for service provision (Lusch and Vargo, 2006). To be consistent with this conceptualisation, S-D logic has dropped the term ‘services’, which highlights the distinction between goods and services and reflects a passive role for recipients to whom they are ‘delivered’. Rather it adopts the term ‘service’ to reflect the idea that resources of all types can be applied for the benefit of others, but beneficiaries’ interaction with resources is critical to the emergence of value (Lusch and Vargo, 2006).

Critiques of co-production and managerialist perspectives on co-creation highlight that when service beneficiaries engage in collaborative activities, their aims and desired outcomes are sometimes in conflict with those of organisational actors or, at least, diverge in some way as they pursue subjectively structured goals (Helkkula et al., 2013). Research into value co-creation processes that attends to, rather than ignores, the divergent goals and experience of collaborating actors, requires consideration of each actor's social context and the 'creative labour' (Huws, 2010) and meaning making processes (Graeber, 2001) through which people bridge incongruent goals and activities. That is, allowing for the possibility that 'heterogeneous elements can hold together without actually forming a coherent whole' (Arnould and Thompson, 2015).

Our purpose in this study is to apply this theoretical and empirical insight to a public service context to illustrate how everyday users co-create value. Specifically, we examine value co-creation in relation to telehealth, attending to the interplay between patient lifeworld and their perspectives on the technology and healthcare system that constitute the service context for their collaboration. Service user processes at this micro level often remain unobserved, yet they can uncover the heterogeneity of experience responsible for diverse perspectives on the value created through public services. This type of analysis can also reveal a need for change relating to the roles of either users (e.g., selecting appropriate users, persuasion and support to increase knowledge or motivation) or providers (e.g., further training of front line staff, improvements to technology features, system design change and innovation to align with user experience). In particular, we suggest that further case studies of end-user co-production can highlight how beneficiaries find themselves actively making more of opportunities to participate in service governance, especially in conditions where they are only invited to co-produce highly constrained forms of passive participation by public service agents used to top-down governance relationships. Public service agents may need to rethink their role in open systems of governance if they wish to encourage social innovation (Voorberg et al., 2014a), which this paper argues necessitates understanding how beneficiaries co-create subjective value through service innovation.

Method

This study focused on user experiences of a new telehealth service within the UK National Health Service (NHS). The implementation of a telehealth service involves installation of new technological hardware and software (accompanied by installation, maintenance and repair

services), integrated within a broader health service ecosystem orchestrated by the NHS. As such, telehealth is an example of a public sector service for which co-production is an inter-organisational enterprise. Patients' interactions with the in-home technology, and the service ecosystem to which it connects, provide an opportunity to examine variations in their usage, experience and value that emerges. Patients are both beneficiaries of the service but also citizens within a society trying to meet the population's fast-growing healthcare needs from the public purse. Although telehealth is designed from the service provider perspective and its simplified user interface suggests service use is a case of 'passive co-production' (Osborne et al., 2016) our findings provide a suitable case of phenomenological value co-creation where value-in-use exceeds the non-monetary costs implied by the initial value proposition offered by the originating healthcare provider (Skálén et al., 2014). This enquiry into telehealth service use is therefore consistent with a shift of focus from provider interactions to those within a wider service system (Osborne, 2017a). Telehealth users tend to be older, often suffer from multiple chronic health difficulties, and many find it difficult to negotiate life outside the home. This type of service user is often overlooked in studies on active citizen involvement with public services yet their experiences of co-creating value in circumstances of significant power difference between provider and user can provide a vivid illustration of the facilitators of and constraints on collaboration to produce outcomes of value to users and providers.

To examine value co-creation through everyday service interactions in-depth qualitative interviews were carried out with 11 telehealth users diagnosed with COPD and observational data were gathered in-home as they used the technology. Interviews lasted an average of 60 minutes including time to explain the study and take consent. Iterative data collection and analysis were employed until theoretical saturation was achieved in an 18-month study. Audio recordings of the interviews were transcribed in full. The data were thematically analyzed. Coding identified emergent themes for analysis against themes previously identified from the value co-creation and CCT literature, and which were used to design the interview protocol.

We adopted a theoretical sampling approach. Patients with advanced COPD are typically dependent on healthcare services. Their incurable and worsening condition suggests diminishing returns from healthcare interactions, affecting the value that can be co-created with service provision. Although the type of telehealth service selected for study was chosen for its potential to support self-care behaviors due to its visual display of symptom monitoring test results as well as the interface with the health service for feedback, to our knowledge no

patient-centered studies focused on phenomenological value co-creation, which is a level of interaction beyond implementation-type co-production that is designed in to the service interface. The telehealth service is provided free of charge by a local NHS primary care organization that also provides face-to-face community-based healthcare in a large English city. Participants were identified by the patients' regular healthcare providers or the telehealth service provider, who requested consent to share contact details with the researcher. The researcher explained the study, arranged and conducted interviews. Inclusion criteria were adults (19+), with COPD, English language, and at least two months' experience using telehealth. Exclusion criteria included practitioner-concerns about patient or researcher vulnerability from health, cognitive or behavioral issues.

Findings

The findings presented below demonstrate the co-creation of value through telehealth service experience. We present service users' perspectives concentrating, first, on the activities through which users contribute to realising the service by applying their own knowledge and understanding. Second, we reveal how these activities contribute to the co-creation of value. In the findings below, participants' accounts of their efforts to engage with the service and shape service interactions reveal adaptive processes of telehealth usage. This involves balancing adherence to the technology and service system logics of healthcare providers, coping with malfunctions and system flaws, and making adjustments to better align the service with their personalised goals. These findings highlight that a broader understanding of user experiences, which is consistent with a value co-creation perspective, is needed to inform service improvement in alignment with user needs.

Co-creation processes of telehealth

A central aspect of performing the telehealth service involves taking vital signs readings and submitting these to the telehealth system. Our participants' accounts of this activity illustrate how the service is co-created. Patients (and/or their carers) taking vital signs readings can be seen as an indirect service interaction via the telehealth technologies, and for the participants was the central activity of engaging with telehealth.

When first introduced to the service, telehealth users are instructed on the process of taking and submitting readings at particular times of the day/week. Although the telehealth machines are designed to be straightforward to use, it became clear during the research that the process

of taking and submitting readings is an involving and quite fickle process, with frequent notifications of error. Taking readings often required creative responses (such as subjectively deciding what to do when faced with abnormal machine readings or lengthy waiting times for data to be logged) and adaptive learning through trial and error. Some patients navigated this process alone in the privacy of their own home, especially those who are more confident technology users or experienced with telehealth services. In other instances, users address their problems in collaboration with other actors from both the healthcare service system and their personal networks, until their experience grows. In either case, participants frequently encountered problems with the technology and connectivity, and it was often necessary to cycle through steps, or take readings multiple times to obtain ‘meaningful’ results.

‘what I don’t understand is that, alright, my readings are low and [as a consequence the telehealth worker calls saying] ‘Put your [oxygen] machine on and then do your readings again and tell me when it’s 90.’ That to me is wrong. [...] So that’s not a true reading as you are. Do you know what I mean? [...] why is it [oxygen saturation] so sensitive to movement? Because they can’t tell me – not even the doctors in the hospital, they can’t tell me. [He’s frustrated with] the service [...] because they’re not telling me to do anything that I don’t already know I can do. [...] because [the improved reading is] right and they’re happy. *They’re* happy. (Clive, 78)

Some participants felt that they were able to overcome problems and described a sense of control over the machines; others (as in the extract above) continued to encounter problems in taking readings that are acceptable for the patient (given their personalised understanding of their condition) and the health professionals (given the parameters set), reporting frustration and anxiety.

In order to engage actively with telehealth, it became clear that users were required to enact several forms of knowledge. Namely 1) an understanding of their own health conditions, treatments and care plans, 2) knowledge of the technical aspects of taking telehealth readings, and 3) knowledge of the health service systems that lie behind the telehealth machine. In describing their use of telehealth, participants commonly gave detailed accounts of their own approaches to taking readings, as well as how these linked to health service responses (e.g., visits from healthcare professionals, access to services). These accounts build on their experience of using the service, adapting their actions over time, demonstrating the role of

feedback in developing knowledge about the system. In the example below, these different forms of knowledge are demonstrated by the participant, as they describe how parameters of 'normal' readings can be altered by events that he understands to be ancillary to assessing his health status (e.g. time of day, usual body temperature).

'It depends on the actual readings at the time. If they fall within the parameters of what they've got, 'cause they get alerted by my... they probably get some kind of alarm to let them know that my [...] body temperature's too high. [...] But because certain times in the day, different times in the day your blood pressure's different. So I've done that from 8:00 and between like 11:00 and 3:00 at infrequent times. [...] Mainly on the three days I do it, probably every time, it's not necessarily me feeling anything bad. Well, I mean I feel fine. I'm a warm person anyway [...] I'm always hot, so my temperature is probably higher for that reason. But normally that's what'd happen, they'd ring me every time and say "Hi [Darren], such and such. You know your temperature is a bit high today, are you feeling okay?" I'm like, "Yeah, yeah. No problem, fine." They'll say, "Can you just do me another BP? It's irregular."' (Darren, 43)

Here the participant suggests that the set parameters are problematic for the assessment of his own health status and decisions relating to his case because he knows his temperature is always high but that doesn't mean he's experiencing infection. Instead, he watches for changes to sputum quality and breathlessness before self-administering relieving medications (e.g. nebuliser, antibiotics and steroids). In doing so, we see how patient knowledge is essential to the production of the service; through understanding the requirements of the system and his fluctuating health readings, Darren is able to provide repeat readings, sufficient to comply with the service protocol.

Leading on from this, we also see how users sought to calibrate their telehealth use to allow them to take readings consistent with their subjective understanding of their overall health status. Central to the active co-creation of the service was the extent to which participants felt control over deciding which readings were 'acceptable' and 'useful' and which were not. In certain instances, respondents suggested they were able to use their own judgement to identify useful readings that should be recorded about their health. While using the machine, Howard describes the process of taking his blood pressure.

‘Yeah, that’s pretty high because of the stairs I think, if we believe that [machine]. At the moment, now, I would sort of do that again. I mean, I don’t want to do it again but I would... the most I’d do is three, and then I just throw it against the window or something or out the window [chuckles]. No, I would do it probably three, and then I would just give up on it. Or the best of three, you know.’ (Howard, 66)

Here we see that the participant appears to be making justifications for a ‘high’ reading ‘because of the stairs’ and feeling able to take multiple readings to get the ‘best’ result. In contrast, others (as the extract from Clive presented above) felt that the judgement of ‘acceptable’ readings was out of their hands and decided by professional or health system criteria and did not match with their own understanding of their health status. Across other participants, this locus of control over whether readings for transmission are ‘meaningful’ appears to be central to perceptions of positive and negative value of the service. In some cases, users feel they are using the telehealth system to make visible their own health status, helping them to remain in control of their own health, which means they directly benefit by interacting according to their preferences. In other cases, users feel they are fulfilling a ‘system’ need to monitor and efficiently manage the patient, thus allowing the service provider to determine access to healthcare resources based on a more constrained service implementation role. The difference lies in the ability to co-create value through fulfilling the co-implementation role.

Co-creation of phenomenological value outcomes and service innovation

This section considers how the active co-creation processes of telehealth, including the enactment of multiple forms of patient knowledge, contributed to value co-creation and initiated service innovation. Reflecting on their engagement with the service, participants most commonly described the telehealth as offering the potential to improve their ability to manage their own health condition. The ability to ‘self-care’ or ‘self-manage’ was emphasised by participants who were keen to monitor and better understand factors that contributed to their own feelings of (ill) health. While they already saw themselves as having an intimate and personalized knowledge of their own health conditions and history, telehealth readings contributed to an on-going effort to develop this understanding. At the same time, the participants’ views of what constituted effective self-care varied significantly. Views of acceptable degrees of ‘coping’ with their conditions depended on specific daily life goals, expectation, or requirements related to personal biography and life circumstances. For example, one participant explains his use of telehealth helps to regain sufficient functional

independence to help look after his grandchildren, or another to reduce strain on his wife as carer, illustrating that its value ultimately resides in enabling him to pursue other life goals (Arnould et al., 2006).

Additionally, telehealth is seen by participants as helping them to gain appropriate and welcome responses from the health service system. Rather than a passive tool for supplying health status readings, the co-created telehealth service was seen by participants as offering a degree of control over access to health professionals. Over several years of chronic illness and deteriorating health, participants shared a frustration over access to acute and primary health services. At the same time, many had previous experience of poor care during hospital stays and were keen to stay away from acute services, leaving them in a position of resistant dependence on the health system. Participants therefore viewed telehealth as a means to stay at a distance from, but within reach of, the health system.

‘I think it’s a good thing, because when you do your tests and there’s owt wrong, they phone you straightaway. And then if you say, “Yes, there is this, I feel this, I feel that,” then they’ll get in touch with the services you require, like the District Matron, your doctor, whatever.’ (Ray, 66)

As this suggests, value from the user perspective related to whether the readings transmitted, and the response received, reflected the subjective need for more or less healthcare resources. Learning to take and submit readings was not only about use of the machine, but linking machine use to understanding of how scarce system resources are distributed, under the participants’ own control.

Moreover, this attempt to gain appropriate and controlled access to services was also dependent on participants’ wider efforts to make sense of their identity as patients and rights and responsibilities as citizens. Most participants described being conscious of the costs of healthcare and saw telehealth as a means of both controlling as well as taking additional responsibility for these costs. Several participants discussed their telehealth in light of their duties as responsible patients to ‘look after’ themselves. In particular, participants described positive feelings about reducing the ‘burden’ on the state through achieving self-care.

‘[Telehealth] saves a job for a heart nurse, coming out every week, or twice a week, or three times a week, which is a big saving to the National Health ... It also gives me peace of mind that I’ve got it in the house.’ (Nigel, 66)

Rather than seeking to maximise access to health here we see participants’ own moral judgements influenced their views of appropriate forms of care. This discussion of personal responsibility is particularly interesting, as although cost is a key driver for the NHS adopting telehealth and other health technology, here the patients’ consideration of costs joins the ‘system’ perspective with their own wish for controlled independence. While the ‘system’ and ‘user’ value overlaps, for instance in the aim of reducing the risks associated with complications necessitating emergency hospital admissions, users’ consideration of these benefits are personalised and experiential, focusing upon the avoidance of repeat negative experiences while maintaining their identity as both responsible patient and independent individual.

Conclusions

This paper claims that (1) all service use is active co-creation of value, (2) resource integration and co-creation of value lead to service innovation at the meso level, and (3) these have implications for public service governance (namely the importance of learning from experiences of all users in continual improvement of services, rather than necessarily looking for deeper expert engagement in the design process).

Our findings show how the co-creation of telehealth services involves users developing and enacting several types of knowledge, connected both to their health and life experience and adaptive use of the system itself. Technological unreliability and distance between the user and the health system meant that seemingly simple telehealth use required considerable user discretion and effort. Co-creation involved participants seeking a consistent view of how vital-signs readings related to their subjective experiences of their own health status, as well as their expectations of appropriate health system responses. Previous literature suggests that value co-creation requires that users are engaged in service interaction and know both what to do and how to do it (Hibbert et al., 2012; Payne et al., 2009). In this study, we see participants going to significant lengths to learn the language of the telehealth service. Users described this engagement partly in terms of the healthcare benefits that it affords, allowing them to gain control over access to health resources. They also saw this as allowing them to maintain a

position as responsible citizen, moving out of the 'sick role' (Parsons, 1951) and willing to take steps to take care of themselves. The research also highlights the importance of the user's emergent knowledge, both general and personalised, by which they enable the broader service system.

Further reflecting on our theoretical perspective, we suggest that the consumption of expert services involves the integration of different forms of knowledge resources (of the health system, of the service phenomenon, of the user's requirements) held in varying amounts by service user and service provider. Enacting several forms of knowledge allowed users to overcome tensions between their own interests and the interests of the healthcare system, which may overlap but are not wholly integrated (Fyrberg Yngfalk, 2013). In order for meaningful service value to be co-created, the tension between 'different actors' contested value determinations' (Helkkula et al., 2013: 6), and between provider-led intended co-production processes and consumer-led alternative use (or co-production-plus) should be understood. In other words, understanding how and why users were engaging with telehealth, both in expected and unexpected ways, is central to understanding the value potentially created.

Voorberg et al. (2014b: 2) suggest that 'successful co-creation does not so much depend on the efforts of public officials and the extent in which public organisations are adapted to co-creation. Rather it seems to depend on the willingness, social capital and the ability to create a smoothly running organisation of citizens. Remarkable is that this willingness is primarily based on whether citizens are approached because of their competences and skills.' We suggest that citizens do not wait to be approached or invited – even 'passive' opportunities (i.e. limited or constrained interactions) with inappropriate services are perceived by users as opportunities for service innovation. Identifying opportunities for adaptations is part of the value co-creation process. It is part of viewing the end goal as desirable and attainable through resource integration and critically enables service users to perceive the service differently from intended, for example as ripe for customisation to the extent that they escape overt external 'correction' or control by the service providers. The game changing nature of self-service technologies like telehealth is precisely because they enable instances of active participation and subjective value co-creation even for services governed using a top-down Public Administration Management approach.

Adopting a S-DL perspective places service users, even those previously considered on the periphery of service engagement, at the heart of the co-creation of service value. Furthermore, value co-creation is observed to instantiate novel processes identifiable as patient-led service innovation. This occurs even among constituent groups who can hardly access resources for active citizen participation in public initiatives due to disabling conditions. Public administration literature has considered the potential for ‘co-production’ of services, as well as additional ideas to question the relationship between users and providers through mechanisms such as ‘co-governance’ and ‘co-management’. We suggest that while these are useful notions, they have led to a tendency to focus analysis on the formal organisations and institutions providing public services, rather than the users of services themselves. We suggest additional insight can be gained from examining how value is co-created during everyday services, with full consideration of the role of co-implementing service users in realising value from the service. Although financial and professional knowledge resources are provided by public service organisations, these alone are not sufficient for any service value to be created, and service users, even those that are usually considered passive recipients of services, can be seen to bring knowledge, cultural or social resources to the creation of the service. Therefore, while there has been a useful critical discussion of marketing as well as consumer discourse entering public services, this should not preclude the adoption of theoretical and methodological perspectives developed by marketing scholars which help provide insight into how value is jointly created by service providers and users. There is a wide difference between marketing literature that regards consumers in utilitarian terms, and studies that seek to examine the experiences and meanings of consumption. Engaging with the latter offers considerable scope for the development of alternative perspectives in public administration theory and practice.

Theoretical implications

Our paper makes several contributions. First, by presenting evidence of active resource integration within ‘simple’ service activities to realise service benefits, we challenge assumptions about ‘passive’ forms of citizen participation and their classification as co-production (Osborne et al., 2016; Voorberg et al., 2015). Second, by focusing on citizens who would otherwise be invisible to scholars fixated on operationalising binary definitions of ‘active’ participation in formal arrangements, we highlight that studies of ‘active’ involvement in co-designing and co-initiating service innovation (Bate and Robert, 2006; Lloyd and Oak, 2018; Sangiorgi, 2015) need to consider novel methods to integrate the study of co-production with value co-creation processes. This is especially important for addressing the democratic

deficit (Fung, 2015) due to the absence of service users from shared service innovation initiatives because participation is physically challenging and also because public services have pursued inputs (to governance) through citizen engagement; perhaps they could learn from marketing and also seek insight on service user experiences throughout the service process (for service innovation). Our study of disadvantaged citizens co-creating appropriate outcomes for themselves and service providers should be interpreted as a building block for understanding how continuous social innovation can be facilitated and enabled through a mix of interpersonal and technology-based remotely delivered service structures.

By challenging the analytical utility of distinguishing between co-production and co-creation in order to target resources at citizens who are more inclined and structurally capable of active participation (Osborne et al., 2016; Voorberg et al., 2013), we highlight that dynamic, provider-led co-production and user-led co-creation take place resulting in different types of value emerging. This is consistent with an axiom of S-DL that beneficiaries always co-create value (Vargo and Lusch, 2016) and the generally accepted view that further work is needed to understand under what conditions the balance of value is realised between stakeholders. Rather than delimiting the relevance of S-DL to public service logics because it emanates from the study of value creation in the context of for-profit service and markets (Osborne, 2017a; Vargo et al., 2017), we argue that public service management should continue to reference it as a framework for further understanding citizen motivation to co-create subjective value as a building block of collaborative social value co-creation, depending on individual experiences of structural arrangements (Benoit et al., 2017; Edvardsson et al., 2011; Osborne, 2017a; Voorberg et al., 2017). Collective or social value e.g. through improved efficiencies and innovation (Osborne et al., 2015), competences, skills, and social capital (Voorberg et al., 2014b) should also include capability to integrate resources independently, so that greater than expected value co-creation can be realised. This is consistent with public service improvement by considering external stakeholder value (Osborne et al., 2015). Our paper makes a relevant contribution to the public service management debates about how to involve citizen participation to improve public service provision, specifically how to encourage social innovation through subjective value co-creation.

Finally, we discuss service innovation rather than social innovation due to the limitations of our study design, Service innovation is discussed as an outcome of service users' creative labour to co-create experiential value. We suggest that service innovation and social innovation

are linked through value co-creation and future research is needed to explore processes of translation from micro to macro level collaborative policymaking (Ansell et al., 2017).

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ⁱ The term ‘beneficiary’ has been adopted as opposed to ‘consumer’ in acknowledgement that the lexicon of consumers implies consumption of a firm’s output and therefore reinforces a dyadic rather than network view of markets that foregrounds interactions and relationships with

a focal firm (Vargo and Lusch, 2015). However, the traditional ‘consumer’ label remains predominant in marketing literature that examines experiences of service users.

ⁱⁱ The body of scholarship drawn together under the banner of Consumer Culture Theory (CCT) (Arnould and Thompson, 2005) encompasses literature on consumptions that is grounded in the research traditions of sociological, anthropological and cultural studies.