

SERVITIZATION 2.0: THE SIGNIFICANCE OF PRODUCT AND SERVICE DOMINANT LOGICS FOR PUBLIC SERVICE ORGANISATIONS

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ABSTRACT

Purpose: This conceptual paper explores servitization as significant to public service organisations (PSOs) within which there is a requirement to administer lean and sustainable provision. It specifically appreciates that the digital transformation of services has embraced customer processing machine technologies that facilitate volume growth. Notably, the efficient operating model runs alongside the process of information sharing; thus, fostering co-operation within collaborative network systems whilst pro-actively operating as elements of the product-service system (PSS).

Design/Methodology/Approach: We attempt to evaluate and progress servitization research for novel and conceptual purposes by exploring the critical realities of its application as we enter the Servitization 2.0 era. We seek to determine from the academic literature the contextual issues and tensions experienced by PSOs at a point in time when they are rapidly digitally transforming their operational activities. With this comes the appreciation that organisations are therefore increasingly operating within interorganisational networks, requiring a more transparent, accountable measurement of their performance outcome. Therefore, since public transport systems are heavily reliant on information collected from their processing machines, to efficiently and effectively execute their service, they provide an ideal field of study. We seek out credible research literature in this field to determine the logic applied within the business ecosystem; and to understand the roles of service-dominant (S-D) and information-dominant (I-D) logic.

Findings: Many arguments in the literature demonstrate that it is not necessarily the goods or service element that dominate the business model in the era of Industry 4.0. Pertinently, there is a growing body of empirical studies enabling us to explore business models in this specific field of PSOs, to understand servitization in the context of public transport systems and the future developments of information driven business models. We find that there is a shifting dominance towards information logic and explain how this is evident in the context of public transport services.

Originality/Value: We demonstrate the significance of the S-D logic perspective when considering servitization within specific PSOs. Ultimately, we seek to better understand the strategic and operational realities for the era of Servitization 2.0, wherein the business operates within an ecosystem dominated and critically influenced by *information*. This is pertinent, in that we ultimately seek to understand more deeply the impact of servitization principles within PSOs, and particularly to explore the critical realities within public transport systems that rely heavily on service equipment for their customer processing and service quality and the information generated from its deployment.

KEYWORDS: Servitization 2.0, Service-Dominant (S-D) logic, Public Service Management, Information-Dominant (I-D) logic, Public Transport Systems

1. INTRODUCTION

Servitization now enters an era of critical development (Baines, Bigdeli, Bustinza, Shi, Baldwin, & Ridgway, 2017; Bigdeli, Baines, Bustinza, & Shi, 2017), having evolved from the perspective of goods-dominant (G-D) logic (Smith, Maull, & Ng, 2014), wherein the emphasis tended to be placed with the original equipment [product] manufacturer (OEM), or equipment provider. Businesses have identified the respective roles of

products and services, within their PSS business model, wherein products and services are critically interrelated. As such operations strategy would need to be reconsidered to cope with this perspective where they cooperate with each other within this system (Spring & Araujo, 2009). Kans & Ingwald (2016) offer a business model framework, for the 4.0 era of service management, that explores the opportunity for producing companies and service providers to establish value, wherein information and communications technology (ICT) is an enabler. This offers an understanding of the change that Industry 4.0 has brought to the strategy and operations within organisations and how it fosters collaboration within the business ecosystem, which therefore brings product manufacturers and service providers into increasingly dependent systems of cooperation. We believe that the PSS perspective is particularly relevant to public transport services. This is because organisations will go beyond the maintenance option as add-on service perspective of Servitization 1.0 era, to the Servitization 2.0 era; and that this perspective has a much broader value system which is dominated and led by the information collected from products in service use (Advanced Services Group, 2019; Ennis & Barnett, 2019).

Generally, the implementation of servitization has meant the resultant transformation of *product-centric* businesses; wherein there is a shifting of the business model logic towards service provision (Baines & Lightfoot, 2013). This tended to foster the claim of viability of servitization strategy across the broad range of industries and sectors. Paradoxically, the actual reality is that servitization takes differing paths, and brings about differing trajectories depending on the environment in which it is applied (Turunen & Finne, 2014). It is only by undertaking in-depth theoretical and empirical observations that the implications of the efficient and effective digital transformation of goods and services can be able to be realized, and further developed in the era of Servitization 2.0.

We are particularly interested in digital transformations' impact within public transport systems relying on the servitization of their products for efficient and effective service delivery. With this comes the appreciation that organisations are therefore increasingly operating within interorganisational networks, requiring a more transparent, accountable measurement of their performance outcome.

2. RESEARCH METHODOLOGY/APPROACH

A conceptual consideration is posited that the deeper understanding of the dominant logic applied in servitized sectors, which are operating in a system where products and services are interdependent, adds to the knowledge in the field of business strategy and business models (Vargo & Akaka, 2009). We aim to add to the understanding of the business logic applied in executing information dependent public transport services in the Industrial era 4.0, and its associated Servitization era 2.0. This is pertinent since organisations are not explicitly aware of the concept of servitization (Crowley, Burton, & Zolkiewski, 2018). Very often, organisations assume that they can follow a prescribed process towards performance improvement with the 'silver bullet' of digital transformation (Curtis, 2019). This transformation process, with its operation's strategy, and its lean and efficiency objectives, is based historically on manufacturing models (Barnes, 2018) and the production of goods; which tended to foster the G-D logic (Baines & Lightfoot, 2013). From the perspective of the broader operating environment, Paton, Clegg, Hsuan, & Pilkington, (2011) define the operations production, with its associated processes as a *system* of complex interactions; which for us is an important aspect for the way in which we explore the concepts of business models and logics.

In contrast to the G-D logic, Wieland, Hartmann, & Vargo, (2017) offer a conceptualisation of the application of business models as an element of service strategy. Therefore, we express, that using a S-D logic lens allows consideration of the importance of the interoperable and dynamic network perspective, with its systems orientation emphasis on service outcome (Gaiardelli, Martinez, & Cavalieri, 2015). Turunen & Finne (2014) determine the intentions for service provision in manufacturing organisations and encourage comparative research on servitization in differing manufacturing contexts, so we would like to go beyond that and explore service organisations. Notably, Ostrom, Parasuraman, Bowen, Patricio, & Voss (2015) state that research from the service innovation perspective requires more understanding of servitization. Therefore, critical arguments are determined from the S-D logic and servitization literature (see also the work of Ordanini & Parasuraman, 2011; Karpen, Bove, & Lukas, 2012; Kohtamaki, Parida, Oghazi, Gebauer, & Baines, 2019). We wish to clarify the more recent characteristics in relation to the organisational and

operational strategy as relevant and significant, to goods, service and information logic, within PSOs. Since public transport systems are heavily reliant on information collected from their processing machines, to efficiently and effectively execute their service, they provide an ideal field of study from which to view the business model and logic framework.

3. SERVICITIZATION AND THE SERVICE-DOMINANT PERSPECTIVE

Digital capability and its transformational powers can be applied to goods production, machine maintenance, service processing, and *information management* and the associated system within which they co-operate (Jovanovic, Engwall, & Jerbrant, 2016; Huikkola & Kohtamaki, 2017). Hence it becomes pertinent that we ultimately seek to understand more deeply the impact of servitization principles in an era when organisations have gone beyond the initial framework of creating mutual value through a shift from selling products, to selling PSS, with their added benefits and value (Baines, Lightfoot, Evans., Neely, Greenough, Peppard,... Wilson, 2007). Historically, PSS is considered as complimentary service which is offered and bundled with the product to include warranties, maintenance and revenue-through-use contracts (Baines & Lightfoot, 2013), which is dependent on the information generated in the use of the products. Notably, organisations have evolved, in the digital era, to an approach which adopts data-driven decision making (Bigdeli, Baines, Bustinza, & Shi, 2017; Brynjolfsson & McElheran, 2016); and towards strategies and business models, that exploit the usefulness of this data in managing individual operations and supply network members (Ennis & Barnett, 2019). We have now gone beyond the first phase of servitization (Baines, et al., 2017), to an era wherein the developments of digital transformation, and information, bring critical opportunities in terms of the value within the business ecosystem (Dinges, V; Urmetzer, F; Martinez, V; Zaki, M; Neely, A, 2015). This is the case particularly where the products deployed in *service-dominant* contexts involves capturing information that brings the loop back round to the product designer. The strategic intention here is to capture the value that this offers in relation to product efficiency, effectiveness; and its associated quality performance for members of the business ecosystem (Gaiardelli, Martinez, & Cavalieri, 2015). As we consider in more depth, the deployment of manufactured goods when directly applied within *service provision* we seek to be able to identify the logic being applied in terms of goods, services and now information. Moreover, where we experience *information as the logic* that drives business decisions, Parnell, Stone, & Aravopoulou (2018) see this as a critical aspect of how we manage our businesses with futureproofed strategic orientation. The perspective of information is critical to our academic framing in this field, since we seek to understand the implications of the logic deployed by business in the execution of their organisational strategy related to digital transformation.

Vargo, one of the highly regarded theorists of S-D logic, along with colleagues, identified that more needs to be understood about the framing and revised conceptualisation of business models in this era of *service revolution* (Wieland, Hartmann, & Vargo, 2017). It is our intention to bring a greater understanding of servitization and the business logic within PSOs (Luftenegger, Comuzzi, & Grefen, 2013; Smith, Maull, & Ng, 2014; Virtanen, Stenvall, Kinder, & Hatam, 2018), and particularly to explore the critical realities within public transport systems, particularly where the service must be configured around specific customer needs (Raja, Chakkol, Johnson, & Beltagui, 2018). This is significant since this category of public service relies heavily on service process machines, with their *associated operating information* indicating its use, performance, and customer service quality (Hartmann, Roehrich, Frederiksen, & Davies, 2014; Raja, Bourne, Goffin, Cakkol, & Martinez, 2013). In more recent work on S-D logic, Lusch & Nambisan (2015:160), state that “the emergence of computers enabled the digitization of information and the associated capability to decouple the information from the technologies (or devices) that store, transmit, or process it”. Pertinently, their paper indicates the current key themes of service-dominant logic and service innovation; with the central themes being that of *service ecosystem, service platform and value cocreation*; (for more on this supply chain and business network ecosystem perspective see Ennis, Barnett, de Cesare, Lander, & Pilkington, 2018). Other academics determine that S-D logic can function as a *strategic business logic*, particularly where organisations are able to facilitate long-term improvement from the mutual value cocreation (Karpen, Bove, & Lukas, 2012).

Going beneath the business logic, and more deeply into the operational aspects, Ordanini and Parasuraman (2011) consider that service innovation operates within a service network involving collaboration and capability. They understand the complexity of service operations, wherein there is an emphasis on S-D logic; but as the study was in the case of a luxury hotel, their work is therefore not generalizable. However, (Ng & Vargo, 2018) justify the framing and perspective of S-D logic, defining it as operating within service ecosystems and institutions, with interrelationships; also indicating the growing recognition that S-D logic is experiencing. Deriving from the S-D logic, Fehrer, Woratschek, & Brodie (2018) state the need to consider the business ecosystem where there is a reliance on engagement within [information] platforms; and Wieland, Hartmann, & Vargo (2017) provide perspectives that challenge the previous norms and advocate business models informed by S-D logic.

3.1 Public Services and business logic

Public services differ in funding models between fully funded, and partially funded with the service user paying for use of the service, to hopefully make up the extent of the operating cost; and sometimes creating excess for reinvestment (Hartley, 2005). Since the UK model funding for public transport is by the charging fares for most users, the day-to-day transport service user experience is likely to be at the forefront of the value proposition (Burnham, 2006). Therefore the approach towards production is driven by the customer service need, for which the business decisions are made with service value as a dominant factor (Lusch & Nambisan, 2015).

Since some argue that there are flaws emanating from the dominance of product and manufacturing based business model logic, alternative conceptualisations espouse identifying and activating service-based dominance pertinent to specific organisation types (Fehrer, Woratschek, & Brodie, 2018); for example, the *public* service-dominant logic. This very specific conceptualisation states that services are evolving and are being transformed into service ecosystems (Vargo & Lusch, 2017), and within public services, leading to the changing nature of their management towards the new model of networked governance (Osborne, Radnor, & Nasi, 2012) and accountability (Virtanen, *et al.*, 2018). As such, the associated business models require inter-firm operational capabilities (Spring & Araujo, 2009) and business logic that addresses the challenges of survival (Osborne, Radnor, Kinder, & Vidal, 2014; Osborne, 2018). We can draw again on the work of Parnell, Stone, & Aravopoulou (2018), who within their research on the service sectors, determine that within the public sector there is a role that *information* plays in the business model choice; which is particularly critical if the organisation intends to be able to sustain itself in an era of enhanced efficiency. As such, the service should be able to fully exploit the information to make decisions that enhance service performance, customer quality and product design; and then ultimately the information becomes a dominant factor in the business strategy and operations. Notably, this approach requires dynamic capabilities within the organisations (for more on this see (Teece, 2010; Teece, 2018).

4. FINDINGS

It is stated that the explicit understanding of the public transport service needs will be embedded within the core principals of the service delivery for this sector (Lyons & Harman, 2002; Parnell, Stone, & Aravopoulou, 2018; Ennis & Barnett, 2019). Generally, meeting the critical customer needs involves carefully planned cooperation and business process systems integration, which draws from data collected from registration and service use (Brynjolfsson & McElheran, 2016). Where data is collected from profiled registered service users it provides much more critical and individualist information, and knowledge about users and therefore supports tailored service delivery (Karpen, Bove, & Lukas, 2012). The associated knowledge that arises from the collected data, and thereafter the refined information, provide insight that allows an organisation to improve performance and public service quality (Hartmann, *et al.*, 2014; Lariviere, Bowen, Andreassen, Kunz, Sirianni, Voss, . . . De Keyser, 2017; Kohtamaki, *et al.*, 2019). Camacho, Foth, & Rakotonirainy (2013) find this to be particularly pertinent in public transport systems since it is the information aspect that brings value for the customer. This indicates a business model, which whilst relying on products for the service process, is dominated by the *service standard* requirement. Drawing and exploiting knowledge from service use information, machine maintenance information, and customer registration information, therefore dominates the philosophy and logic of the business approach, particularly in public transport systems. This

enables the organisation to be able to make strategic business decisions for service delivery directly and indirectly within its networked ecosystem; albeit constrained by some members of the service supply network (Ennis & Barnett, 2019). The interoperations of the network members of the business ecosystem (Ennis, Barnett, *et al.*, 2018) will contribute information and then exploit it for efficiency and effectiveness of the products and services within the system.

Although not explicitly identified, servitization is practiced within organisations (Crowley, Burton, & Zolkiewski, 2018), since the service provision involves a broad range of machine products that are deployed and that are closely associated with the original equipment manufacturer (OEM). This is significant as customer processing machines are able to provide critical information about required product use, maintenance needs and product design improvement (Huikkola & Kohtamaki, 2017); thus supporting service quality. In this era of progressive digital transformation service provision is discussed in relation to the *digital servitization* of products which is experiencing evolution into the Servitization 2.0 era, relying on a collaborative, interdependent, networked business ecosystem (Ostrom, Parasuraman, Bowen, Patricio, & Voss, 2015; Raja, *et al.*, 2013; Tossi, Lockett, Raja, & Martinez, 2013). Recently the use of digital information platforms has been encapsulated as the *platform provider business model* (Kohtamaki, *et al.*, 2019); and is identified as a model where the organisation is a fully digital business ecosystem. It is reasonable to argue then that fully functioning, cooperative and networked digital operations are the ideal, not the norm (Osborne, 2018; Curtis, 2019). Therefore, in order to understand the issues of digital information, and the servitization of products, more specific empirical studies are needed to explore the critical realities and learn the lessons of the revision of business models (Wieland, Hartmann, & Vargo, 2017; Ennis, *et al.*, 2018). Then we will have the opportunity to establish an enhanced understanding of the shift towards an I-D logic perspective; and then how the ecosystem operates in the collaboration and exploitation of the value of the information it has gathered.

When applied to public services, this *ecosystem* perspective can be explored in terms of the dynamic capabilities involved within the network members of the system which are fostering the requirement for co-creative endeavour, and this revised collaborative business model logic (Osborne, 2018). Where the service proposition is the indicator of expected service quality, and its associated performance of the operation, we can draw upon Ng & Vargo (2018:519) who determine the narrative and process of S-D logic as having the characteristics of nesting, interlocking and coordination through service exchange. This is an increasingly significant issue, in terms of the role that the service system contributes to the value chain and firm performance. Further revisions of business model logic indicate an identification of the link between [information] platform business models, and S-D logic; although these are subject to empirical investigation (Fehrer, Woratschek, & Brodie, 2018). However, we are still in the early years of research into Industry 4.0, and therefore have yet to develop a deeper understanding and knowledge of the operating awareness of digital PSS, specifically where business logic is dominated by information, and the move into the era of Servitization 2.0. Pertinently, we believe that this establishes a business model approach that fosters the perspective of *I-D logic*.

4.1 Public Transport Services

Parnell, Stone, & Aravopoulou (2018:160) argue that within public sector organisations, the use of information presents an appropriate approach to the decision making, logic and business model applied by management and that most managers understand “the need for and significance of information” which goes beyond the scope of the direct service provider (Karpen, Bove, & Lukas, 2012; Kohtamaki, *et al.*, 2019). An international range of academics have explored the use of data for public transport delivery and improvement (Pelletier, Trepanier, & Morency, 2011; Watkins, Ferris, Borning, Rutherford, & Layton, 2011; Tang & Thakuriah, 2012; Camacho, Foth, & Rakotonirainy, 2013; Dragoicea, Borangiu, & Voinescu, 2016; Mehmood, *et al.*, 2016), demonstrating the critical realities about the day-to-day gathering of data and information, from the overall business ecosystem; and the contributions that this has for efficient and effective service provision.

Public transport, as a PSS, is increasingly digitalized and interoperable within its business ecosystem (Ennis & Barnett, 2019). Notably, not all regions of the world have identified the significance of this within their public transport provision; about which Leviakangas (2016) determines that the government agenda is

where this would be strongly represented. Geographical context, and society norms will obviously determine the strategic approach that is adopted towards public transport services and systems in different geographical locations. For example, the US government strategy is related to the value proposition that public transport is provided for users with no alternative option of transportation (Polzin, 2018). This is in stark contrast to the UK government agenda which advocates transport investment that fosters a stronger, fairer country; pertinent to a post-Brexit Britain (Department for Transport, 2017).

Lyons and Harman (2002) had talked about how infrastructure improvements to UK public transport alone would not necessarily persuade people to forgo their cars and make use of public transport modes, since intending travellers needed to be informed of what was available, and to appreciate the value proposition of public transport services as a viable alternative to car use. Notably, at a time when information dominance within the business strategy was in its early days, they stated that enhanced public transport information systems assisted the efficient and effective operation of transport services. Pertinently, the main national initiatives for UK public transport services are now advocating integrated information provision (Department for Transport, 2017). Public transport services require efficient and effective customer processing, dependent on a fully integrated and interoperable information system, and as such there is a critical role for the information as a dominant element of the logic being applied in public transport networks; and pertinently, other public services too. City authorities and communities are using ever-growing bodies of data to improve their understanding of citizen behaviour and service usage, in which case, future city operations managers need strategic tools to help them realize a vision of an efficient and effective urban transportation network (Mehmood, Meriton, Graham, Hennelly, & Kumar, 2016:76).

City based public transport strategies are refined from the overall national agenda, and in London the responsibility for the implementation of the agenda and government policy is undertaken by Transport for London (TfL), within The Mayor's Transport Strategy (Transport for London (TfL), 2018a). Related to her role as Head of Analytics, Sager Weinstein, (2016) considers the collection of data from TfL transport use, and the value that it has exploited which act to support service prediction, planning and improvement. Interestingly, Sager Weinstein (*ibid.*) mentions the valuable [broader] *open use* of this data as it extends beyond direct use of the transport service; pertinently it offers chances for transport safety planning. This data subsequently now contributes categorically into the broader aspects of the TfL Strategy, such as the Vision Zero for London action plan (Transport for London (TfL), 2018b). From the data collected from TfL's service information, it seeks to have an acute understanding of issues such as crowding, congestion and delays, in order to be able to provide safer streets and efficient and effective use of transport routes. TfL is one of the world's largest public transport systems and research conducted by Stone & Aravopoulou, (2018:12) determined that within TfL, their *live* open data platform operates with, "information [which] continues to be used to make improvements for travellers". TfL state that the role of big data is critical in the development and improvement of the service, however, they are aware of the difficulties presented by the differing trajectories within the functions of the interoperating systems that demonstrate the critical realities of business strategy and operations (Ennis & Barnett, 2019).

When considering the value proposition of public transport services, Turetken, *et al.*, (2018), highlight that this is a business domain where digital innovation has great potential. This is particularly pertinent since it offers heightened opportunities wherein open and networked service use information can offer critical enhancement for public transport services and smart mobility. Urban public transport systems are designed with the aim of moving large sets of people in a specific geographic setting, in an efficient and effective way; and this strategy relies very heavily on the information relating to the operating activities (Camacho, Foth, & Rakotonirainy, 2013; Camacho, Foth, Rakotonirainy, Rittenbruch, & Bunker, 2016; Dragoicea, Borangiu, & Voinescu, 2016; Mehmood, *et al.*, 2016).

Turetken, Grefen, Gilsing, & Adali, (2019) determine that in moving large groups of people around a city that the stakeholder collaboration requires a service-dominant business logic to be applied and that digital technology enables the complexity to be more easily managed. Improving journeys is a critical aspect of transport service developments and utilising the information that is captured from the service use, gives rise to value capture and exploitation (Dinges, Urmetzer, Martinez, Zaki, Neely, 2015; (Ennis & Barnett, 2019; Stone & Aravopoulou, 2018). Hence, we can determine examples of the dominance of *service and*

information logic in the business model and philosophy, particularly within an organisation that relies heavily on the use of information gathered from its customer service and processing machines [products]. Where there is enhanced deployment of processing machines, collecting live and ongoing data within their PSS, which involves ticketing processes, entry barriers, escalator and transport hub usage, this demonstrates that these organisations are operating with the dominance of business strategy emanating from information. See Ennis & Barnett, 2019 for an example of how this supports use of escalators in TfL. Organisations are often operating within a PSS, where the dominance of business strategy emanates from push-based emphasis on assumed product capabilities, as opposed to pull-based appreciation of the service system information. This is pertinent to recognise, because we advocate that high performing interoperable service system networks, that draw critically from information logic, address the broader scope of the service provision and performance beyond that of the G-D logic. Hence, the business model and logic should be addressed more critically as we evolve into Servitization 2.0 and into collaborative, interdependent, interoperable business networks and ecosystems (Smith, Maull, & Ng, 2014; Ennis, *et al.*, 2018), wherein manufactured products are not the dominant aspect of what we offer and how we consider strategy and operations.

4.3 Theoretical and practical contribution

Whilst the digital transformation of organisations has given rise to a reconsideration of the dominant logic (Gaiardelli, Martinez, & Cavalieri, 2015) there are difficulties in translating the principles of S-D logic at the strategic level (Luftenegger, Comuzzi, & Grefen, 2013). Business strategies and models should be considering competitive capabilities of efficiency and effectiveness with much more attention given to the design and value of interoperable business information. Moreover, there needs to be more empirical observation of the associated dominant model of business logic and decision making that this I-D logic necessitates (Parnell, Stone, & Aravopoulou, 2018). It is pertinent to seek to understand how the *holistic* perspective of the S-D ecosystem (Luftenegger *et al.*, 2013) enables collaboration and value, and what this business model looks like in specific services operating within the PSS contexts. Bigdeli *et al.*, 2017:15, determine that we should seek to understand more deeply the process of cooperating within the business ecosystem, and how this applies in relation to PSS for the next servitization era. In doing so, they state that prescriptive research should be “principally concerned with questions on how the reality should be”. We strongly suggest that in PSOs the role and significant value of information may foster a dominance of information logic within the strategy and business model.

We believe we have drawn from an extensive and credible range of literature to further explore and conceptualise the dominant logics in PSOs; and specifically within public transport services. Our previous papers within the servitization academic community have enabled us to develop further the initial consideration of competitive strategy and business ecosystems (Ennis, *et al.*, 2018; Ennis & Barnett, 2019); although we appreciate there is still much to explore about business strategy, models and logics that supports the operational efficiency and effectiveness of organisations. In an era when products and services are critically interdependent, organisations will be able to advance their offering to be strategically and operationally sustainable for the digital era and Industry 4.0 (Jovanovic, Engwall, & Jerbrant, 2016; Sousa & da Silveira, 2017; Kohtamaki, *et al.*, 2019). We advocate that information dominates how the PSS operates in transport systems. Deploying the business model and dominant logic lens in research offers a perspective from which further research can be framed in order to view organisational practice of PSS in other service contexts as we forge ahead into the Servitization 2.0 era.

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We use the spelling *organisation* for our own writing; where it is spelt *organization*, this is in line with the title of the article of publication.

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