IT Service Well-Being: A Service Ecosystem Approach

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Abstract: This research aims to explore the complex and dynamic nature of IT service well-being from a multi-level perspective of the service ecosystem. Most research in the IT service area focuses on individual and micro-level interactions and practices and overlooks the importance of a holistic and systematic view of understanding service well-being. This research addresses these limitations by exploring IT service well-being from a "service ecosystem" perspective. The research follows an interpretive approach to build a middle-range theory based on a case study and grounded theory technique in an educational institution. The findings reveal well-being drivers, determinants, and outcomes at the micro, meso and macro levels of the IT service ecosystem. This study contributes to research on well-being in the context of IT service by providing the well-being characteristics and conceptualisation in the IT service context, which has been barely investigated. This research is in progress.

1 INTRODUCTION

IT service can be defined as: "a service provided by an IT service provider that is made up of a combination of information, technology, people and processes" (Global Best Practice, 2011). IT services create and support information systems that integrate with people and processes to provide business services. IT services can help organisations to cut costs, generate customer value and support organisational goals (Winkler & Wulf, 2019). Buffeted by unpredictable economic and social forces, organisations are under extreme pressure to deliver IT services effectively and efficiently to support their strategic goals. (Cusick, 2020).The challenge is that IT service is highly complex and dynamic and more research in this area is needed (Lempinen & Rajala, 2014).

A topic gaining attention in the general service research area is the concept of well-being (Frow, McColl-Kennedy, Payne, & Govind, 2019; Laud, Chou, & Leo, 2022; Ostrom, Parasuraman, Bowen, Patrício, & Voss, 2015). Well-being is an important indicator of "system betterment" (Leo, Laud, & Chou, 2019) and "shared value creation" (Frow et al., 2019) of services and is a significant area of investigation for understanding complex systems. Despite the calls for more investigation on the well-being in service systems (Anderson & Ostrom, 2015;

Ostrom et al., 2015), scholars believe that there is still a huge gap in the 'conceptualization' of the phenomenon of well-being (Frow et al., 2019).Most of the research in service well-being has been undertaken in the micro-perspective, that is, focusing on individual-level processes, behaviours and perceptions of customers and service providers in creating value and improving well-being consequences (Budrionis et al., 2020; Islam, Muhamad, & Sumardi, 2022; Tikkanen, 2020). Despite the importance of micro perspectives on well-being, there is a strong need for adapting a broader context, such as a *Service Ecosystem* in which individuals are nested, interrelated, and interdependent. This is in line with the fact that as enterprises grow in size and complexity, the emphasis shifts from a primary focus on the micro level to a focus on the meso and the macro levels (Stephen L Vargo & Lusch, 2019). Researchers point out to need for more understanding of the collective and systematic aspects of well-being that could better explain the complexity and dynamism of service interactions and service delivery (Leo et al., 2019; Ranjan & Friend, 2020). Based on such perspective, Leo et al. (2019) interpret system well-being as "a condition that … considers the fulfilment of the needs and betterment of the system and its actors," while Frow et al. (2019) define service ecosystem well-being as "a holistic, dynamic and positive state that

contextually determined ... guided by a shared worldview and levels of the ecosystem … that result in shared value co-creation." The concept of Service Ecosystem is rooted in Service-Dominant logic (S-D logic). The evolution of S-D logic underlines the importance of the "service ecosystem" approach as the main unit of analysis for the theoretical explanations (Akaka & Vargo, 2015; Stephen L. Vargo & Lusch, 2017). The service ecosystem consists of three levels of aggregation: micro, meso and macro. These levels embed in each other and dynamic interactions between actors shape the ecosystem and co-create value for the whole organisation (Stephen L. Vargo, Maglio, & Akaka, 2008). Extant discussions of service ecosystems identify the need to understand the nature of interactions and how value co-creation practices contribute to well-being (Dam, Le Dinh, & Menvielle, 2020; Stephen L. Vargo et al., 2008). IT service ecosystem comprises of various actors such as customers, service providers, employees, and communities. Among these actors, different levels of interactions and relationships make the IT service a complex service. Given the importance of well-being as an indicator of "system betterment" and "shared value creation" and recognizing that well-being is a contextual, multi-level phenomenon, we aim to conceptualise well-being in IT services within the frame of "Service Ecosystem".

The study revolves around the question: How can well-being be conceptualized in an IT service ecosystem? The aim of this explanatory research (Gregor, 2006) is to build a theory (Rowlands, 2005) that characterises and conceptualizes well-being in an IT service ecosystem. The findings identify broader levels of well-being drivers, determinants and outcomes at the various ecosystem levels and enhanced understanding of the interrelationships between levels to enhance well-being. We follow a 2-phases approach to our qualitative study. In the first phase that already completed we focus on IT directors, IT managers and IT supervisors for understanding the perceptions and viewpoints of service provider side. In the next phase we plan to investigate the IT service users and customers to reach to the comprehensive perspective of the well-being phenomenon.

We chose a large educational sector as the case study as understanding dimensions of well-being in this sector is critical from both theory and practice. McCallum and Price (2016) suggest that there needs to be a positive and holistic approach to promoting and describing well-being within a whole educational context as a central focus (Carter & Andersen, 2019).

The present study contributes to both theory and practice of IT service. The research is focused on well-being in the context of IT service and explores the well-being characteristics (drivers, determinants, and outcomes) and conceptualization (multi-level) in IT service context which previously have not been investigated. Also, it offers an ecosystem approach for understanding the dynamics of multiple actors' interactions in micro level of individual and dyadic interactions, meso level of IT teams and IT department and macro level of focal firm that provide a holistic approach to well-being in IT service. The study also contributes to the development of middle-range theory (Hassan & Lowry, 2015) as do Brodie, Saren, and Pels (2011), who bridge the S-D logic high-level conceptual perspective, by bridging metatheory of S-D logic with empirical findings in a specific IT service context.

The practical contribution of the work relates to the potential for improvement of the well-being of the service ecosystem that goes beyond individual levels to broader levels of collective and holistic well-being (meso and macro levels). Decision makers are made more aware of the interconnections between and across layers of IT service and the impact of each ecosystem layer on other layers that result in improving or destructing well-being of the IT service. Furthermore, by understanding and applying well-being drivers and determinants, decision makers could expect positive well-being outcomes for their IT service. Prior to discussing study results and insights gained, a background to well-being and IT services is provided, and the theoretical frame for the study is discussed.

2 BACKGROUND

2.1 Well-Being

Well-being has different meanings across disciplines (Smith, Case, Smith, Harwell, & Summers, 2013) and in most domains, the well-being concept relates to the experience of individuals. For example, in psychology, well-being refers to cognitive and affective evaluations of an individual's life (Diener, Suh, Lucas, & Smith, 1999). In organizational behaviour research, well-being reflects in the health of employees and the organization (Wilson, Dejoy, Vandenberg, Richardson, & Mcgrath, 2004), while in economics the effects of income and unemployment on well-being is the main focus (Frow et al., 2019). McCallum and Price (2016) propose an even more holistic definition of wellbeing in education sector,

highlighting the environmental, collective, and individual elements that interact across a lifespan. In service research, the focus of well-being is mostly on service consumer (Tikkanen, 2020) and service employee well-being (Rosenbaum, 2015). There is a paucity of research focused on well-being as a characteristic at a more collective and holistic level (Anderson & Ostrom, 2015). While some research at the collective level exists in service domains such as finance (Brüggen, Hogreve, Holmlund, Kabadayi, & Löfgren, 2017), health (Budrionis et al., 2020) and social services (Feng, Altinay, & Olya, 2019), there is a deficit in IT services. In IT services, the notion of well-being at a collective level is especially important as services, although co-created individually, are rather designed for the collective or segment (Anderson et al., 2013).

2.2 Service Ecosystem

A holistic perspective on well-being is facilitated by the concept of service ecosystems. Service ecosystem as one major theoretical orientation of S-D logic attracts attention within scholars due to its protential to capture the dynamic and multidimensional structure of changing world. The network view in S-D logic is not simply a static connection of resources, people, and products, but has a dynamic structure of service provision and service exchange (Barile, Lusch, Reynoso, Saviano, & Spohrer, 2016) that follows a purpose in the sense of individual well-being, as a partial function of collective well-being (Stephen L. Vargo & Lusch, 2017). A service ecosystem is defined as a 'relatively self-contained, self-adjusting system of resource-integrating actors connected by shared institutional arrangements and mutual value creation through service exchange'. Service ecosystem's structure are multi-level, that means higher level structures emerge from lower-level interactions (Stephen L. Vargo, 2019). For reaching to a better understanding of how value and well-being is cocreated, researchers should investigate value or well-being determination at and from multiple levels, as well as the relationships among those levels (Chandler & Vargo, 2011).

2.3 Well-Being in Service Systems and Ecosystems

Adopting the holistic view of service ecosystems facilitates an understanding of well-being as a characteristic of the system rather than only of the individual actors. Service system well-being (Laud et al., 2022; Leo et al., 2019) shows "the aggregate

perception of actor assessments of the system in terms of the fulfilment of their collective, and by implication, the satisfaction of their individual needs". Thus, the system-based conceptualisation represents how collective well-being emerges in a service system. Leo et al. (2019) introduced various domains of well-being namely strategic, governance, leadership, resource, community, social, collaborative, cultural, existential, and transformational, among service stakeholders that emerge at different levels of the service system. They claimed that over time, these levels have bidirectional influences on each other and contribute to sustainable overall service system well-being.

In ecosystems perspective, value can be defined as an improvement in system well-being and can be measured in terms of system adaptability (Stephen L. Vargo et al., 2008). Service ecosystem perspective focuses on contextual value as an increase in the viability or well-being of a system (Stephen L. Vargo et al., 2008). This interpretation means well-being has a dynamic nature and can be changed depending on the change in well-being of an individual or social system over time (Akaka, Vargo, & Schau, 2015). Hence, there are significant challenges related to identifying the characteristics of service ecosystem well-being. Some researchers believe well-being is an optimal end state that allows the whole system to collaborate (Mazzara, 2014), whereas others argue it has multiple goals across different layers of the ecosystem (Leo et al., 2019). Based on S-D logic, Frow et al. (2019) propose the conceptualization of service ecosystem well-being as "a holistic, dynamic, positive state that is contextually determined and is characterized by: practices that achieve aligned configurational fit; institutional arrangements that are purposefully guided by a shared worldview; levels of the ecosystem that are iteratively reinforcing, co-evolving and self-adjusting; resilience and an ability for the ecosystem to adapt to disruptions; emergence through the adoption of flexible, resource integrating practices; and resulting in shared value co-creation". Researchers call for more study to better understand aspects of well-being in service ecosystems (Dam et al., 2020).

3 METHOD

The study is qualitative and is based on Grounded Theory (Charmaz, 2006; Gioia, Corley, & Hamilton, 2013) as the explanatory generation of theory based on peoples understanding and experience is a desired outcome (Birks & Mills, 2015) of current research.

To enable the study of well-being at the different levels, an interpretive case study approach was used to define the units of analysis (Walsham, 1995).

3.1 Study Setting and Data Collection

Given the complexity of service ecosystem, it should be examined in a specific context (Voss, Perks, Sousa, Witell, & Wünderlich, 2016). For the purpose of our study, we chose a higher educational context because of two main reasons. First, improving IT service is evidently a top priority for the organisation: According to the strategy plan 2020-2025 of our setting, university made a major investment around 350 million dollars on digital infrastructure including 20 million dollars on educational technologies such as virtual learning and digital research infrastructure to support major functions of learning and teaching, research, and engagement. It is clear that improving IT service is a priority for the organization and investigating dimensions of well-being in this context is extremely relevant and shows the practical significance of current research. The second, higher education sector is a large-scale organization, and its IT service has a complex and multi-level nature that suits the purpose of current study. This is consistent with the fact that as enterprises grow in size and complexity, the emphasis shifts from the micro level to the meso and macro levels (Stephen L Vargo & Lusch, 2019).

The research is set in the IT department (~ 320 workers) within a large Australian educational institution (~50,000 enrolments). The IT department has a complex structure with various internal and external stakeholders with 7 main IT domains: IT foundations, IT learning and teaching, IT research, IT service centre, IT operations and IT value management. Eac h IT domain comprises of different levels of IT directors, IT managers, IT supervisors and IT engineers who are dealing with variety of users (such as students, researchers, staff, and academics). As such, this empirical ground is suitable for the purpose of our study. Figure 1 shows the actor2actor ecosystem and the focus of current research which is in progress.

We sent our request for participation on a random basis through emails to potential candidates. Following snowball sampling approach, we find other stakeholders who are involved in IT service process as we went through open-ended interviews, and we get to know the ecosystem step by step. As the first phase of current study, we interviewed 14 IT decision makers including 5 business-focused IT directors, 3 IT heads, 4 IT managers and 2 IT
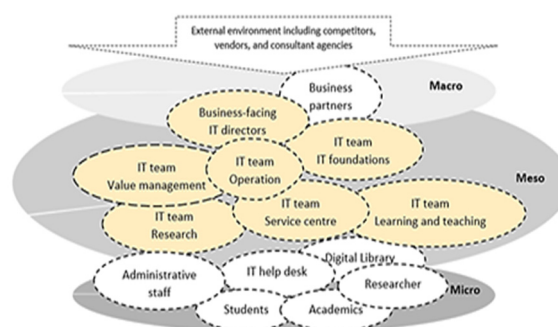

Figure 1: IT service ecosystem (actor2actor map) and the focus of current study (in yellow).

supervisors. We will conduct the second phase of the study based on the service user perspective. This 2-phases approach will also provide the opportunity to elaborate on the possible similarities and differences between service user and service provider perspectives. To ensure the validity of our interview guidelines we have conducted 4 pilot interviews to obtain feedback on questions and adjust our interview questions. The researchers managed potential informant bias by promising anonymity to the organization and informants and using open-ended questioning to give the informants wide scope to relate a question as they chose. The interview protocol aims to comprehend the perspectives of IT service ecosystem participants.

3.2 Data Analysis

Following the inductive principles of grounded theory, the first phase of data analysis began with open coding process considering perception of respondents of IT service well-being (using NVivo software). In this bottom-up approach we conduct a thematic coding procedure to identify, analyze and report themes emerging from our data, acknowledging the data's contextual focus. The themes emerged through a multi-step process (Charmaz, 2006), starting with an initial coding phase we identified micro-level, meso-level, macro-level, and inter-level codes in relation to IT service ecosystem well-being characteristics. The first order codes were raised to second order themes reflecting research centric categorizations of well-being. Throughout, we iterated between the data and extensive memo writing about emerging ideas. As new findings were uncovered in data analysis, more data were gathered to confirm the theoretical interpretations and final framework constructs. In an iterative process, relevant patterns of well-being drivers, determinants and outcomes identified in preliminary data analysis.

4 FINDINGS

Chandler and Vargo (2011) three-level conceptualization of context (micro, meso, and macro) was used to analyze IT service ecosystem well-being and the results bring to the fore well-being drivers, determinants, and outcomes at each of the three levels. Table 1 elaborates on definitions of levels and their interpretations in current study.

Table 1: IT service ecosystem levels of current research and related framework constructs.

levels	Definition (Chandler & Vargo, 2011)	Definition in IT service context
Micro	Service exchange among actors as dyads	IT user-service provider dyadic exchange
Meso	Service exchange among dyads as triads	Indirect service exchange through IT teams incl: engineers, supervisors, managers
Macro	Service exchange among triads as ecosystems	Indirect exchange through IT directors, business partners, external entities

Figure 2 shows the static data structure (Gioia et al., 2013) that provides an overview of the first order codes(informant-centric), second order codes (researcher-centric) and aggregated dimensions that represents the fundamental constructs of our framework. In the 1st-order analysis, we adhere to informant terms, while after considering similarities and differences to make categories, we treat ourselves as knowledgeable agents that provide 2nd-order theoretical level of themes. Then, we refine the emergent 2nd-order themes further into aggregate dimensions. The resulting grounded framework should be one that shows the dynamic relationships among the emergent concepts that explain the phenomenon and makes clear all relevant data-to-theory connections (Gioia et al., 2013).Study results enabled multilevel identification of IT service well-being drivers, determinants and outcomes (Figure 3).

4.1 IT Service Well-Being Drivers

4.1.1 Value-Driven Approach and Resources (Macro to Meso)

Interviewees agreed that value and value creation approach is a key factor for a well-functioning IT service. Hence, activity that does not create value is a waste of resources of IT department and the organization: "I *think a well-functioning IT service has a few critical elements, but really it all does tie back to value. and any kind of adjustment or change that you would make to that service, if doesn't tie into that value proposition, then it's kind of like a pointless exercise in some ways.*" Access to the adequate tangible (e.g., human resources) and intangible resources (e.g., expertise) was also raised. An IT supervisor noted: *"Well-functioning IT service is happy people with adequate resources and an adequate number of staff on deck. With the tools necessary to do the job. That's about it really. If we kept it to that, we wouldn't have a problem. particularly resource is important".*The value mindset must be user-centred to directs resources to value creative practices and processes and decreases the risk of wasting resources.

4.1.2 "In-depth" Understanding of Actors' Needs (Micro to Meso)

Traditionally IT service decisions are top-down decisions and do not necessarily reflect on the actual needs of IT service actors. But it is the IT users and customers who are in direct contact with the technology and IT service are key to the success of implementing those decisions. Decisions should then be based on the bottom-up approach from micro level of users to meso level of IT department and macro level. This user-centric approach is vital for value-based decisions in macro and meso levels. "*Having the energy and driving within the tier zero and tier one (directors and top managers) to talk to the Level 3 engineers and make sure that all the teams work together to resolve that incident to make sure that the customers' needs are fulfilled."* Well-being is more than identifying needs. It is about understanding the roots of the needs and uncovering present and future needs of the users. *"...you might be coming in and saying: I want this to happen, or I wanted something particular, but that will only meet part of your need and it's kind of understanding the whole how we actually solve the problem."*
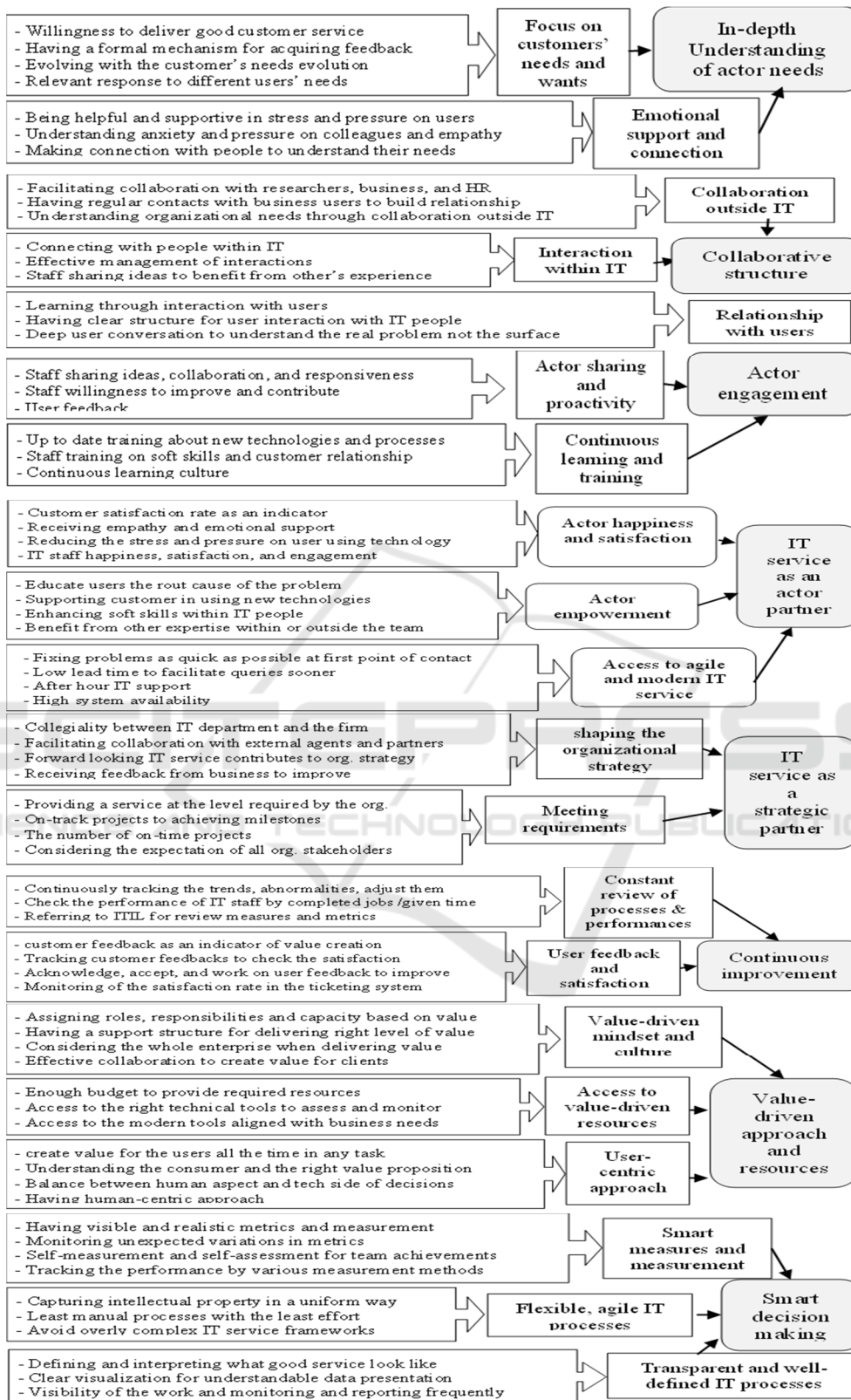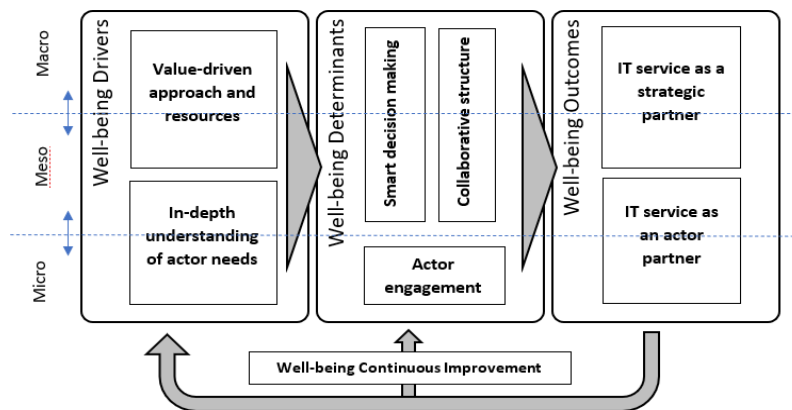
Figure 2: Data Structure.

Figure 3: Empirically grounded framework for IT service ecosystem well-being.

4.2 IT Service Well-Being Determinants

4.2.1 Smart Decision Making (Macro to Meso)

Smart decisions assure the organization that *they invest time and capital on the right choices.* Smart managers not only consider the current requirement of the IT service but also, they will cover the future and probable requirement for that IT service to make sure that their plans have enough flexibility for the uncertain future and ever-changing user requirements. *"Decisions that will support not just the immediate requirement, but they support the future as well. It gives you room to move if you need to, with what the future might hold. So, to me it's also just constantly evolving."* Being future facing means being adaptable. Rigid, complex, overly bureaucratic systems can limit the ability to flex with change and are therefore a barrier to well-being: *"A lot of IT traditional frameworks and systems are overly complex, overly bureaucratic, overly governed, and it makes some very rigid and that's the problem when it comes to the real world and us needing to be agile and things change so often, but our processes and systems don't seem to flex with what's needed."*

4.2.2 Collaborative Structure (Macro to Meso)

Almost all informants believe collaboration and effective relationship within and across all levels (meso and macro) of ecosystem is substantial to well-being. The important role of good relationships among stakeholders was emphasised by respondents since relationships foster deep *conversation* is important for understanding the needs and wants of users and even finding the root cause of the problem

so its essential foundation for in-depth understanding of their needs. *"A healthy IT service is when you really having a lot of contact with my business users and having regular contacts and building that relationship so they can pick up the phone or attend regular catchups to share their concerns and needs."* Relationships should happen between IT department actors and across IT teams to connect the different types of expertise and IT tasks through sharing of information, expertise and experiences: *"A well-functioning IT service requires that collaboration with other teams and need to be able to provide that knowledge to us because at the end of the day, it's about providing value to the client, so the more information that other teams can provide us is the more the value that we can provide to a client."* The relationship with focal firm actors such as business actors in broader level of macro level plays an important role for creating value in micro level of users.

4.2.3 Actor Engagement (Micro)

Respondents identified sharing ideas, collaboration and proactivity of IT actors as the first sign of actor engagement. When people share and want to improve, they are motivated to contribute to the ecosystem: *"What I realized going in there, it's a sign of different health. How do people respond? Are needing to be agile and things change so often, but our processes and systems don't seem to flex with what's needed they putting new ideas out there? Are they trying to improve their processes? Are they engaged?"* Receiving continuous feedback from actors whether IT staff or IT service users, could be also an effective strategy to monitor contribution and engagement. Engagement is supported by a culture of ongoing and up-to-date training and learning to make sure that all actors are ready to participate to the

problem-solving process. This training is not limited to the technical and IT skills, but also should cover soft skills that are necessary for building effective relationships and co-creating value and well-being: *"We provide our team members with soft skill training such as customer relationship type of training. Because there is a human element that whether on the phone, face to face or other ways of dealing with the customer, they need there…"* This training is especially important in terms of *new technologies* and IT services and IT users need to receive adequate training and support until they feel comfortable with using the new system.

4.3 IT Service Well-Being Outcomes

4.3.1 It Service as a Strategic Partner (Macro and Meso)

In macro and meso levels, IT service could be a strategic partner for the organization. This happens by first meeting the requirement that is set for IT service to accomplish: *"If I was using well-being in the context of systems, then well- being for me would be providing a service at the level that is required by the organization"*. IT service "intertwined" with the organization service, and we see IT service strategy as critical part of the of organizational strategy. On the other words, in a well-stablished IT service, IT service decisions and efforts are not only aligned with organizational strategy but most importantly are seen as an integrated part of the organization service. For example, one interviewee noted that: *"Well-being is about understanding what the impacts of a service on other services of organization are. It's all going well. It's not going well. This is why I'm advocate of that overall well-being"* or *"I think additionally good IT service should be helping build that strategy, not just delivering on whatever they the company strategy is"*. Modern IT service as our participants believe, is not an isolated silo that is a cost factor for the organization, but it's a competitive advantage that is capable to outstand the organization and co-create value in a strategic level: *"it's not sufficient for an organization to just continue what it was doing and bolt on IT on the side and they really need to be leading or having information technology lead the organization …"*.

4.3.2 IT Service as an Actor Partner (Meso and Micro)

In micro level, well-being means IT service is being seen as a partner that represent how individual actors feel and experience the IT service at the end of the day. Access to a modern and high-quality IT service is one aspect of this partnership i.e., an effortless service that is easy to learn and easy to understand is the ultimate expectation of such experience: *"To me it's about being seamless. So, I think it seamless and easy to navigate and you don't need to actually understand who does what."* It is fast and *straight forward in resolving incidents* that provides an agile and modern IT service ecosystem: *"The wait time should be very low…"*. Actor empowerment through learning and training is also important to the partnership. *"Learning is a curve. Because one technology phases out and new technology comes in"*. Such experience with IT service will enhance the user satisfaction and happiness. It is also important that the satisfaction and happiness of IT workers: *"it's about staff well-being as well, staff morale, staff turnover. So that's one side of the coin and you got to have a happy team to deliver a good service"* Well-being outcome in IT service is not only about customer and end users' happiness, but also is about having an ecosystem that facilitate the happiness and satisfaction of all actors within different levels of that ecosystem.

4.4 Well-Being Continuous Improvement (Micro-Meso-Macro)

Respondents believe that continuous improvement is a must for every part of the IT service: *"Everything that is working, we always have to constantly review. our processes, our procedures, our knowledge, documentation, our way of doing things now."* This helps IT service providers to find deviations quickly and adjust them in a timely basis. In doing so, they need to track all practices, processes, documentations and importantly performance of the service actors to assure that they achieve the milestones and meet the requirements based on defined measures and metrics. An important and effective way of monitoring and assessing is receiving feedback whether from IT users or business actors to check their satisfaction and continuously receiving their ideas about the service and get advice on how they can be changed and improved based on the up-to-date need and expectations: *"anything which does come back as any sort of feedback, we can improve on. We then acknowledge, accept, and actually work on those, so we reach out to people and say OK, what did we do wrong? How can we improve it?"*. A *formal* process for getting systematic feedback could facilitates the process.

5 DISCUSSION AND FUTURE RESEARCH

The current study guided by the main question of "How can well-being be conceptualized in an IT service ecosystem?" The emergent characteristics of IT service well-being: drivers, determinants and outcomes, occur at multiple levels. Based on the grounded framework, within and across each level, well-being drivers and determinants influence each other; enabling well-being outcomes and contributing to IT service quality, agility, and robustness. Value-driven approach in macro and meso levels with the deep understanding of needs in micro level are the well-being drivers. While smart decision making and collaborative structure in macro and meso levels besides actor engagement in micro levels are the major determinants of well-being in IT service ecosystem. One outcome of such well-functioning, well-structured and well-defined IT service is the experience of IT service as a strategic partner in macro and meso levels, for the organization. The other outcome is the partnership experience for IT user in meso and macro levels, which means that IT users benefit from IT service as a reliable and friendly partner to fulfill their needs and experience a better life with the help of such IT service. The continuous improvement in micro, meso and macro levels assure the sustainability and quality of the IT service overtime.

Our observations change the way we think about well-being concept as an individual characteristic to a holistic and multi-level phenomenon. This novel approach is especially significant for understanding the complex context of IT service that has critical priority in strategic goals of the organizations.

The disaggregation of the ecosystem levels enables the investigation of well-being factors within each level. There are interrelations and influences across levels that is evident in data analysis; the deeply interconnected levels influence and form each other as multiple actors (individuals, IT teams, IT department, business actors and external entities) engage in dynamic, interdependent interactions shaping and improving the ecosystem well-being. This is in line with previous research stating that the understanding of service ecosystems requires a multilevel perspective, considering an interplay between micro, meso, and macro levels of the ecosystem (Chandler and Vargo, 2011). We also extend on the understanding that well-being emerges within each level and among the levels influences and shapes the ecosystem (Frow et al., 2019; Leo et al., 2019) for the specific IT service context. Most

research in the IT service area are focusing on value creation aspects of such ecosystems as (Lempinen & Rajala, 2014) explored the value creation of multi-actor IT service processes but the well-being aspects of such services rarely being considered and explored.

Bringing together study results, the lens of service ecosystem (Stephen L. Vargo & Lusch, 2017) and the reference to the notion that "well-being is a holistic, positive and dynamic state that is contextually determined" (Frow et al., 2019), we propose the following conceptualization to IT service ecosystem well-being:

IT service ecosystem well-being is a holistic, positive, and dynamic state that is driven by value-based approach and in-depth understanding of IT actors' needs and determined by smart decision making, collaborative structure and actor engagement while continuously improved within and across micro, meso and macro levels of IT service ecosystem. Such well-defined, well-structured, and well-functioning IT service is not only a strategic partner for the organization but also is a reliable and sustainable partner for the IT users.

This study contributes to research on well-being in the context of IT service by providing the well-being characteristics and conceptualization in IT service context which has been barely investigated. Align with the increasing attention and expectation for taking midrange theoretical approach to enable being more prescriptive and conductive to empirical evidence (Stephen L Vargo & Lusch, 2019), this work contributes to the development of empirically grounded middle range theories (Brodie et al., 2011), bridging the S-D logic high-level conceptual perspective with empirical findings in a specific IT service context.

The multi-level understanding of IT service well-being provided by the study has practical and managerial implications for IT service decision makers. It highlights to decision makers that well-being is dependent on relationships within and among levels. As driver of well-being, business actors, IT directors and managers, IT supervisors should have a value-driven approach to have proper focus and direction in their mindset for decision making that create value and save time and money for the organization. Following that approach, increases the reliability of IT decisions and investments and gives a more strategic position to IT decision makers. This mindset is not complete without the determination to in-depth understanding of actors needs and wants in a micro level. Then IT decision makers needs to make smart decisions based on the right measures and

metrics and implement a collaborative structure that all actors can easily collaborate, share and contribute to the ecosystem and its well-being. Actor engagement is a critical determinant for IT managers to not only try to involve and activate all actors but also evaluate the collaboration and implementation of decisions. If managers and directors have the commitment to define, structure and implement the IT service considering well-being drivers and determinants, they will acquire significant strategic outcomes for the organization in general and the valuable and sustainable outcomes for the users and all of these outcomes will result in the betterment of the IT service as a whole.

It could be argued that this research relies on the data from only one educational institution. This focus enabled an in-depth analysis of the ecosystem well-being which is a context-specific phenomenon (Frow et al., 2019). Studying other diverse settings may provide new insights into how the nature of sector influence the well-being drivers, determinants and outcomes in different levels. It might be interesting to conduct a comparative study of education and other settings. We also refer to the thoughts around generalizability from the grounded theory approach and case study. Generalizability is achievable through grounded theory approach as the purpose of the grounded theory is to inductively construct a general theory in the absence or incompleteness of alternative existing frameworks (Carminati, 2018). And it is also possible to generalize from a case study if the case generates concepts with obvious relevance to other domain (Morgeson & Hofmann, 1999).The above claims are relevant to current study as IT service in any different organizational setting, has lots of similarities in terms of IT processes, practices, designs, and tools. For example, majority of organizations uses ITIL framework for the purpose of directing and managing IT service practices and processes. It is also important to emphasize that our intention is to generalize to theory (Bansal & Corley, 2011). This research deliberately focused on the IT decision makers' perspective when it comes to decision making for betterment of the system and enhancing the well-being in IT service. We will include other stakeholders (i.e., IT help desk, IT users) to reveal their values and pain points in the next phase of the study. Given that well-being can vary over time, a longitudinal study of well-being dynamics may provide further insights.

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