Service Design for a systemic and dynamic understanding on well-being

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Abstract

As the world has become more interconnected and complex, there is an increasing awareness of the importance of considering well-being collectively. This paper aims to explore how service design can contribute to the shift from an individual well-being perspective to a more systemic and dynamic understanding. The authors first conducted literature reviews about three key well-being constructs: resource-challenges equilibrium (individual well-being), balanced centricity in value networks (network well-being), and actor ecosystems (community well-being). Using these constructs as lenses, the authors have then selected three service design interventions to describe service design approaches and contributions at different well-being levels. Finally, the authors suggested developing a holistic and integrated service design approach to link individuals with network and community well-being for a growing service ecosystem.

Keywords: Service Design, Well-being, Transformative Service Research, Service Ecosystem

Introduction

Well-being has been identified as one of the top seventeen sustainable goals by the United Nations (United Nations, 2015) and has attracted attention across disciplines, including psychology, healthcare, sociology, service research, and design (Diener, 1984; Dodge et al., 2012; Huta & Waterman, 2013).

Transformative Service Research (TSR) is a field of research that focuses on creating “uplifting changes” aimed at improving the well-being of individuals, families, communities, society, and the broader ecosystem (Anderson et al., 2013). Despite most of transformative service studies that focus on understanding how service can

influence the focal actor's well-being (Rosenbaum et al., 2011; Black & Gallan, 2015), only a few service studies explored the dynamics of multi-actor's well-being and service system well-being at a collective level (Leo et al., 2019; Chen et al., 2020). The missing systemic lens can lead to an imbalanced condition of multi-actor's well-being in service design and delivery, especially in a highly complex service system featuring vulnerable actors (Groven et al., 2021).

Service Design, as a human-centred and iterative approach to service innovation, has developed research aimed at improving individual well-being (Stacey & Tether, 2011; Ilhan, 2017; Bertolotti et al., 2018). More recent service design studies adopted a holistic and systemic lens to consider the well-being of various stakeholders across multiple levels (Patrício et al., 2018; Vink et al., 2020). However, even though service design studies have started to consider value conflicts from different perspectives, only a few Service Design studies integrate well-being with a systemic perspective (Patrício et al., 2018; van der Bijl-Brouwer et al., 2021) and relate it to an ecosystem view (Vink et al., 2019; Anderson & Xue, 2022).

This paper is therefore exploring how service design could contribute to the shift from an individual well-being perspective to this more systemic and dynamic understanding. It does so by identifying key well-being constructs such as resource-challenges equilibrium (individual well-being) (Dodge et al., 2012; Chen et al., 2020), balanced centricity in value networks (network well-being) (Groven et al., 2021) and actor ecosystems (community well-being) (Gallan et al., 2019), and relate them to three main levels of service design interventions: design for individual well-being, design for network well-being to the latest design for community well-being.

Exploring the systemic and dynamic perspective of well-being in the service systems

From a commonly held perspective, well-being often refers to subjective well-being (Diener, 1984; Diener, 2009). This perspective primarily focuses on capturing an individual's subjective evaluation and appraisal of their own lives, with less emphasis on considering how external factors may influence their well-being.

Recent studies emphasize a more holistic view of well-being and consider it as a concept with a dynamic and multifaceted nature (Seligman, 2011; Dodge et al., 2012; Armitage et al., 2012). Well-being can fluctuate, which means it "can deteriorate or improve and depends on each actor's context" (Chen et al., 2020, p.389). In order to explain the dynamic nature of well-being and how the external context can influence

a particular well-being state, Dodge et al. (2012) suggest the existence of a balanced point (or set-point), named resources-challenges equilibrium (RCE) point. Well-being has been therefore defined as “the balance point between an individual's resource pool and the challenges faced” (Dodge et al., 2012, p. 230) (see Figure 1). To achieve a well-being balanced state, the individual has to “reduce psychological, physical, and social challenges and integrate psychological, physical, and social resources” (Chen et al., 2020, p. 386). In this paper, the authors adopt the resource-challenges equilibrium framework to define individual well-being and propose a systemic understanding of well-being based on this definition.

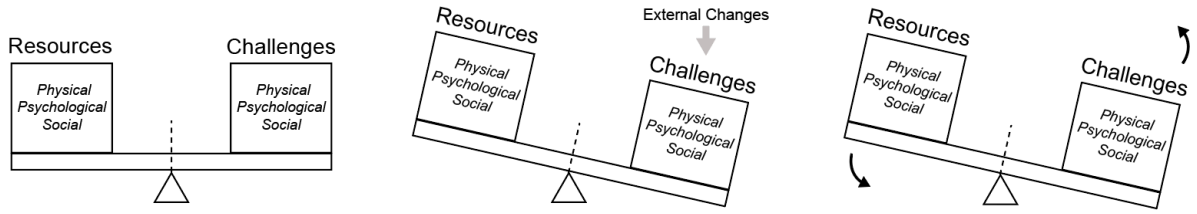

Figure 1. Definition of well-being (elaborated from Dodge et al., 2012)

Since we as humans are not alone but embedded in and surrounded by systems (Fisk et al., 2016), our individual well-being is inevitably influenced by the service systems and actors around us, and vice versa. Service systems have been defined as “an arrangement of resources (including people, technology, information, etc.) connected to other systems by value propositions” (Vargo et al., 2008, p.149). The interactional and relational aspects of service systems are central to a service-dominant logic perspective, as they enable the integration of resources between actors (Normann, 2001). The service-dominant logic view of value co-creation intended as "the process through which multiple actors jointly contribute to an actor's well-being" (Vargo & Lusch, 2018, p.740), is described by TSR as a potential transformative value meaning “a social dimension of value creation that generates uplifting change for greater well-being among individuals and collectives” (Blocker & Barrios 2015, p. 265). Therefore, Chen et al. (2020) proposed that all actors involved in service systems interact within a "joint well-being co-creation sphere," in which they contribute not only to their own well-being but also to that of others. The individual subjective well-being (SWB) of these actors is an outcome that is related to this value co-creation process (see Figure 2).

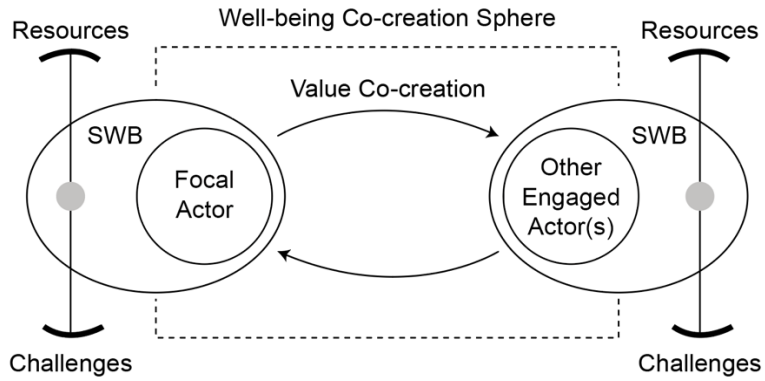

Figure 2. Well-being co-creation in service systems (source: elaborated from Chen et al. 2020)

However, value co-creation may lead to an imbalanced well-being state for engaged actors (Anderson et al., 2013; Verleye et al., 2017). For example, a new service provision for dementia care may result in an excessive burden for family caregivers (De Cola et al., 2017), or new Covid emergency procedures might have caused heavier workload for healthcare providers (Mehta et al., 2021). Thus, it is important to consider not only the beneficial outcomes of value co-creation, but also the potential of value co-destruction in the service systems (Plé & Cáceres, 2010).

The notion of “balanced centricity,” which was first introduced as a marketing concept to meet all actors’ needs (Gummesson, 2008), has been adopted to describe the temporary state when services create beneficial outcomes for all actors to increase both individual and network well-being (Groven et al., 2021). Network well-being (or service system well-being) has been defined as “an aggregated perspective of nested actor’s assessment of a system’s present conditions in terms of fulfilling its needs and contributing to the betterment of itself” (Leo et al., 2019, p.770), and the balanced centricity can be seen as an indicator of network well-being. In line with this reasoning, recent studies indicate that recognizing and managing "tensions and alignments in interests and needs across different actors" is crucial for enhancing both individual and network well-being (Groven et al., 2021) (see Figure 3).

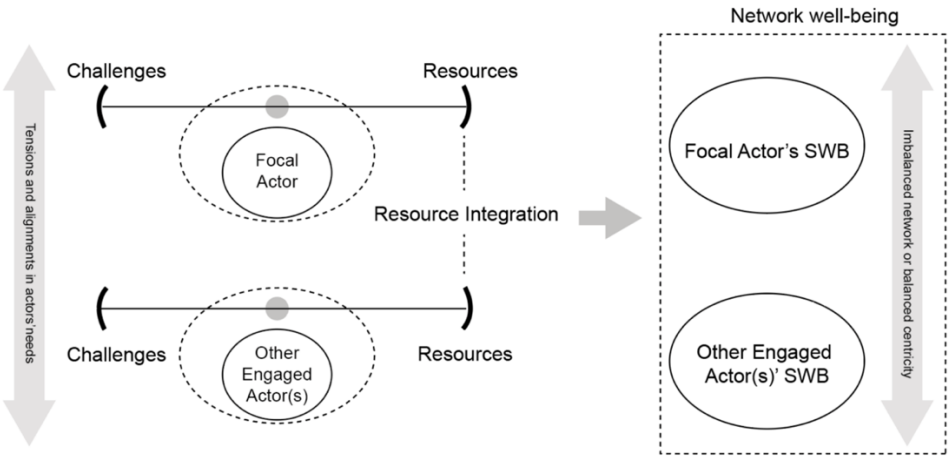

Figure 3. Network well-being (source: elaborated from Groven et al. 2021)

However, some practitioners and critics stated that in a very complex service system that includes vulnerable actors, the balanced centricity of network well-being may not be possible (Verleye et al., 2017), and the imbalance might emerge in practice because of conflicting values and institutional logics among actors (Frow et al., 2016; Verleye et al., 2017).

For this reason, recent research from Gallan et al. (2019, p.380) adopted the notion of "community well-being," which has been recognized as "a dynamic concept that takes an asset approach and connects to the concept of flourishing and community development." Different from a more static view of network, this perspective urges for a comprehensive approach to takes into account the dynamic interplay between the context of people's lives and the collective efforts and relationships that influence their well-being (McLeroy et al., 2003; Frow et al., 2016). For example, in the healthcare field, Gallan et al. (2019) introduced the concept of a patient ecosystem management (PEM) as a means to improve both individual actor's well-being and that of community (see Figure 4). This approach highlights the significance of actively utilizing and connecting wider community resources to expand patient ecosystems. As patient ecosystems expand, new actors can bring additional resources and co-create value in more effective ways, which can improve both individual actors' and community well-being. However, this emergent and iterative approach requires continuous fine-tuning, which in turn necessitates a significant shift in culture. It requires a multidisciplinary, multi-stakeholder strategy to enable it to become routine in practice.

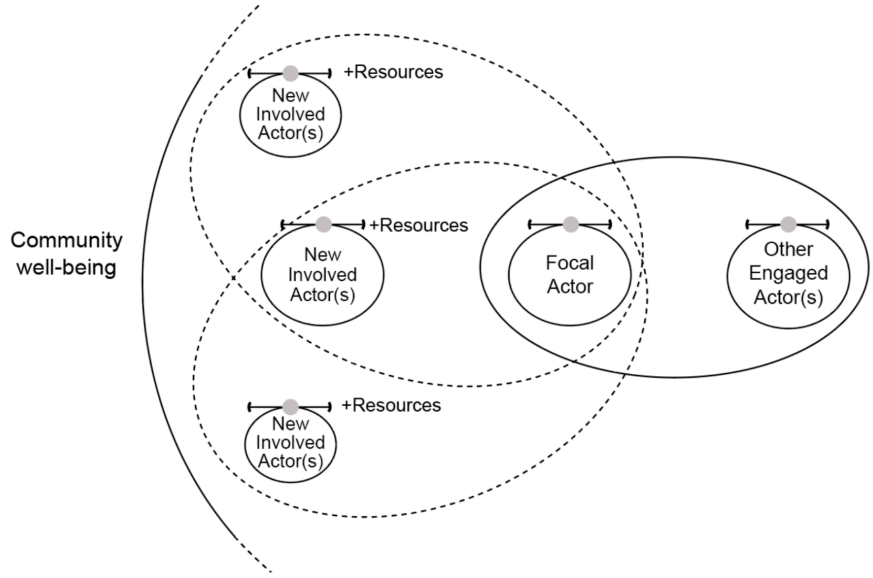

Figure 4. Community well-being (source: elaborated from Gallan et al., 2019)

The studies mentioned above offer valuable perspectives and approaches for shifting the focus from individual well-being to understanding collective well-being. Table 1 summarized the evolution from the balance point of the individual to the balanced centricity of network well-being and lately to the dynamic balance from an ecosystem perspective. In the following section, the authors will describe three service design interventions according to these three key well-being constructs.

Service system for	**Individual well-being**	**Network well-being**	**Community well-being**
Aim for	Balance point between resources and challenges of individual.	Balanced centricity between a network of actors.	Dynamic balance: actor ecosystems expanding, evolving and linking.
Conditions	Expand pool of resources, service encounters, a supportive system.	Value co-creation, negotiation, converging value proposition.	Ecosystem management.
Limitations	Focus on individual (focal actor) experience, not considering the impact on	Normative approach to designing interactions for mutual value, while imbalance might emerge in practice	Emergent and iterative approach that requires continuous fine-tuning. It

other engaged actors' balancing conditions.	because of conflicting values and institutional logics.	requires a significant shift in culture.

Table 1. Three well-being constructs from service research (source: the authors)

The contributions of Service Design for well-being

As a human-centred and iterative approach to service innovation, service design can prompt the initiation of a favourable impact on human well-being directly, such as designing new service encounters (Ilhan, 2017), providing enjoyable experience (Stacey & Tether, 2011; Vignoli et al., 2021), or through the co-design process itself (Vink et al., 2016). The recent service design studies raised attention to exploring the relationship between multiple actors and contributing to a collective level of well-being rather than only focusing on individual behaviour and activity, such as service design for value network method (Patrício et al., 2018), and co-evolutionary and transdisciplinary approach for university well-being (van der Bijl-Brouwer et al., 2021). However, there is still a limited understanding on how service design can simultaneously and positively contribute to both individual well-being and collective well-being in an integrated manner.

Well-being is a notion with multifaceted nature. In order to make different well-being levels comparable, scholars have suggested to choose a specific context to deepen research (Chen et al., 2020). Healthcare has been considered as a significant area to explore the concept of multi-level well-being, where individual well-being can be achieved only through the joint efforts of interrelated actors (Patrício et al., 2018).

Therefore, starting from the review of the well-being constructs summarized in table 1, the authors have reviewed existing service design interventions, choosing three examples of healthcare projects that have been approaching the three levels of well-being and using them as materials to reflect on the potential for an integrated approach.

Individual well-being: service design of individual experience

Most prior service design research on well-being focused on designing new service touchpoints or interfaces to support individuals' experience (Raij & Lehto, 2008; Ilhan, 2017). Service design can provide valuable insights of individual resources and challenges emerged by applying ethnographic approaches (Yu & Sangiorgi, 2018), such as interview, observation (Segelström et al., 2009), or cultural probes (Sanders

& Stappers, 2014). In particular, service design offers a new lens to understand the invisible relationships and emotional bonds that can affect individual well-being (Stacey & Tether, 2011). The following example illustrates how service design was used to enhance the emotional well-being of cancer patients through the design of individual experiences.

Service design example 01: Maggie's Centre

The Maggie's Centre is a place for cancer patients and their families to ask for help, with more than fifteen branches in the United Kingdom. The Maggie's Centre provides workshops, courses, one-to-one and group support to help people to change the way they live with cancer. As cancer usually affects patients' sense of self-worth, independence, and well-being, these supportive services are in high demand.

The project of designing emotion-centred product service systems in Maggie's Centre was conducted in January 2009 and lasted seventeen months. The aim was to improve the patient's emotional well-being. Service designers collected personal narratives from patients and their families, project instigators, and designers to understand different perspectives of Maggie's Centre (Stacey & Tether, 2011). Then, through co-design sessions with supporting emotion-based analysis tools (see Figure 5), they especially focused on analysing cancer patient's emotions, emphasizing the co-creation of memorable and positive experiences potentially involving a constellation of tangible and intangible touchpoints.

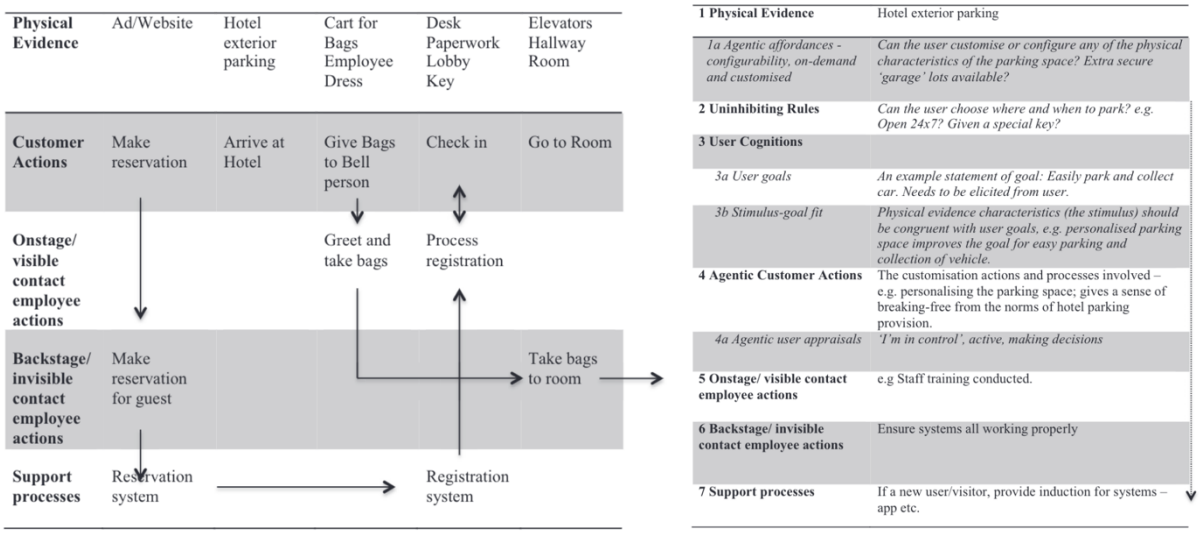

Figure 5. Emotion-based Blueprint (source: Stacey & Tether, 2011)

The outcome of this project was a friendly and simpler environment compared to the former hospital. It enabled more natural human connection by redesigning service touchpoints, as for example, the newly designed safety signage and more accessible and private space. In this case, designers integrated service design methods with emotion analysis tools to understand cancer patients' emotional needs. The design outcome provided more emotional support to the cancer patients, such as an increased availability of free and private space, more professional psychological support services and less institutional restrictions.

Hence, we could suggest that this new service has integrated psychological and social resources to reduce cancer patients' psychological challenges, contributing to their individual balance point.

Network well-being: service design for value networks toward balanced centricity

As the first example shows, the early research about service design focuses on designing service encounters, interfaces, or touchpoints to influence an individual's well-being directly (Stacey & Tether, 2011). It emphasizes the dyadic service interactions and experience, without considering though how this new service might have an impact on other actors. For example, would more flexible patient management have a negative impact on the hospital? Would the emotional support services add to the workload of other doctors or nurses?

With the introduction of the Service-Dominant Logic framework in service design research (Vargo & Lusch, 2004; Wetter-Edman et al., 2014), there has been a shift from "design of service encounters, interfaces, or touchpoints" to "design for new kinds of value relation across actors" (Gummesson, 2008; Meroni & Sangiorgi, 2011; Vink et al., 2021). However, multiple actors may have different or conflicting value propositions, which can diminish well-being by destroying value for the engaged actors (Čaić et al., 2019). Therefore, the focus on service design has expanded with studies on service design for value networks (SD4VN) (Patrício et al., 2018) and pluralistic actor networks (Čaić et al., 2019), which aim for balanced centricity. The service design approach, including the participatory, visual models and tools used across different design stages, can support negotiation among multiple actors (Teixeira et al., 2019; Sangiorgi et al., 2022) as illustrated in the following service design example.

Service design example 02: The Portuguese national Electronic Health Record (EHR)

Portugal has universal health coverage through its financed public health service (called the Serviço Nacional de Saúde, SNS) and private healthcare sector service. In order to make clinical information available to all citizens, healthcare professionals, and other healthcare practitioners, the Portuguese Ministry of Health launched the national Electronic Health Record initiative in 2012 (Patrício et al., 2018; Teixeira et al., 2019).

A critical approach applied in this project was the Service Design for Value Networks (SD4VN) methodology, which was used to enable and facilitate value co-creation among network actors (Patrício et al., 2018; Patrício et al., 2021). It involved three main processes: "(1) mapping the healthcare value network; (2) understanding healthcare actor experiences and value network interactions; (3) designing the value network service concept and service architecture" (Patrício et al., 2018, p.82-87).

Differently from the first example, the design team considered multiple actors' (e.g., citizens, nurses, doctors, and healthcare practitioners) goals and potential conflicts by mapping their various interactions. For instance, the citizens want the clinical information to be filtered, while the doctor and nurses hold the idea that too much control damages healthcare provision (see Figure 6-a). In order to meet different needs and promote mutual understanding, the design team facilitated several participatory design workshops and voting sessions among multiple actors to prioritize Individual EHR Services (including information sharing, security and privacy, and quality of clinical information) aiming for a balanced centricity of the engaged value network (Patrício et al., 2018) (see Figure 6-b).

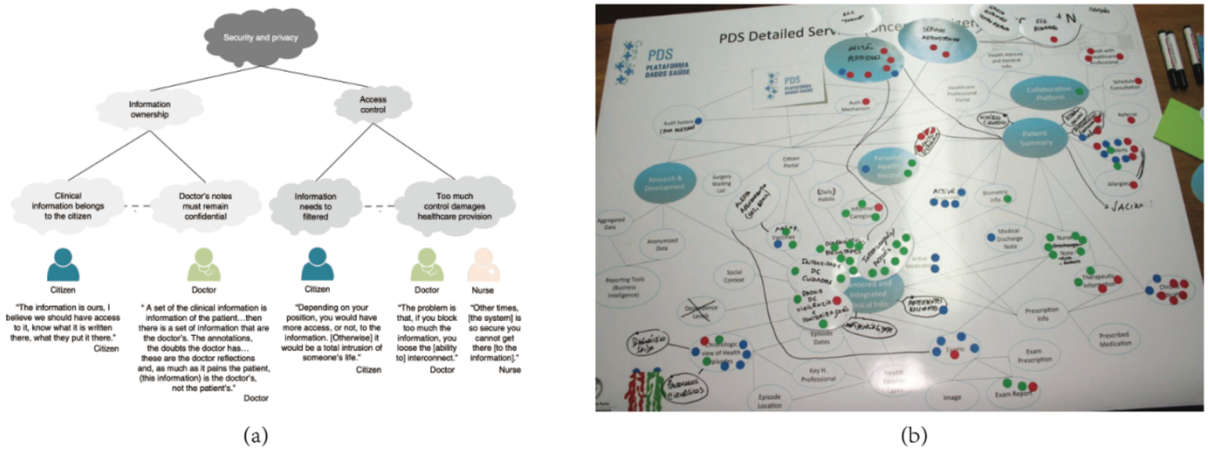

Figure 6. Goals and potential conflicts mapping and priorities voting (source: Patrício et al., 2018)

The outcome of the EHR development project is a service platform that enables users to potentially co-create value through interacting, sharing, and accessing information for increased care quality and system efficiency. Instead of focusing on only the one actor, the new service platform aims to support multiple actors' goals in a balanced way.

Community well-being: service design to facilitate actor ecosystem expanding

The second example illustrates how service design can help capture the dynamics between different actors' challenges and resources and ease the negotiation process between different actors toward an ideal balanced centricity in the service network. However, in practice balanced centricity can be temporary or it can be impeded by competition for value across multiple actors having different value propositions (Groven et al., 2021).

Multiplicity of perspectives and complexity require system thinking that embraces emergence intended as "new, novel, and/or unanticipated outcomes resulting from dynamic relationships of system's elements" (as cited from Vargo et al., 2022, p.2). When designing for and within complex systems, a normative approach can have a limited impact, while a continuous and developing approach can stimulate long-term collaboration and transformation (van der Bijl-Brouwer et al., 2021). The concept of community well-being also provides a similar perspective of expanding and evolving. As a transdisciplinary and multilevel approach, service design is working on developing a collaborative capacity (Patrício et al., 2021), building relationships and supporting creativity (van der Bijl-Brouwer et al., 2021), and promoting a service ecosystem[1] perspective (Vink et al., 2021), which can inform the value co-creation process. To reflect on this perspective, the authors present a project aiming to transform the mental health care ecosystem in two provinces in the North of Italy.

Service design example 03: Recovery.Net

Recovery.Net is a Fondazione Cariplo-funded project in the north of Italy that aimed to activate community (territory) resources and build capacity to transform local mental health care ecosystems for individuals informed by the principles of Recovery[2] and on Co-production (Boyle & Harris, 2009). Within this larger project,

[1] Service ecosystem can be 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" (Vargo & Lusch, 2017, p. 2958).

[2] The concept of Recovery values patients' lived experience and their collaboration and co-production (Sangiorgi et al., 2019)

the service design research team of Politecnico di Milano collaborated with patients, relatives, professional healthcare providers (e.g., ASST degli Spedali Civili di Brescia, ASST di Mantova), and community mental organizations (e.g., Ass. Alba per la promozione della salute mentale Onlus, Ass. Oltre la Siepe), to co-design three territorial laboratories - named Recovery Co-Labs - intended as experimental spaces outside institutions where to promote mental health and psychosocial well-being for and with the local community.

Service design was applied to facilitate a co-design process that led to the envisioning of future scenarios for the implementation of the three co-labs informed by the local resources and challenges of each territory. The implemented co-labs work with the local community and the territorial network to identify opportunities and needs in the local areas (e.g. migrant women searching for a place to meet or graffiti artists engaged by local associations) and co-produce dedicated initiatives (e.g. a social club or a graffiti art for the co-lab walls) in synergy with the specialist services so as to generate new possibilities of social inclusion and activation for patients and the community. Examples of activities in the Recovery Co-Lab in Brescia are (1) dynamic mapping of local resources; (2) the presence of a Community Manager that promotes the development of the local network; (3) and the co-planning and co-production workshops on mental health and personal well-being issues (Co-lab Torre Cimabue, 2022).

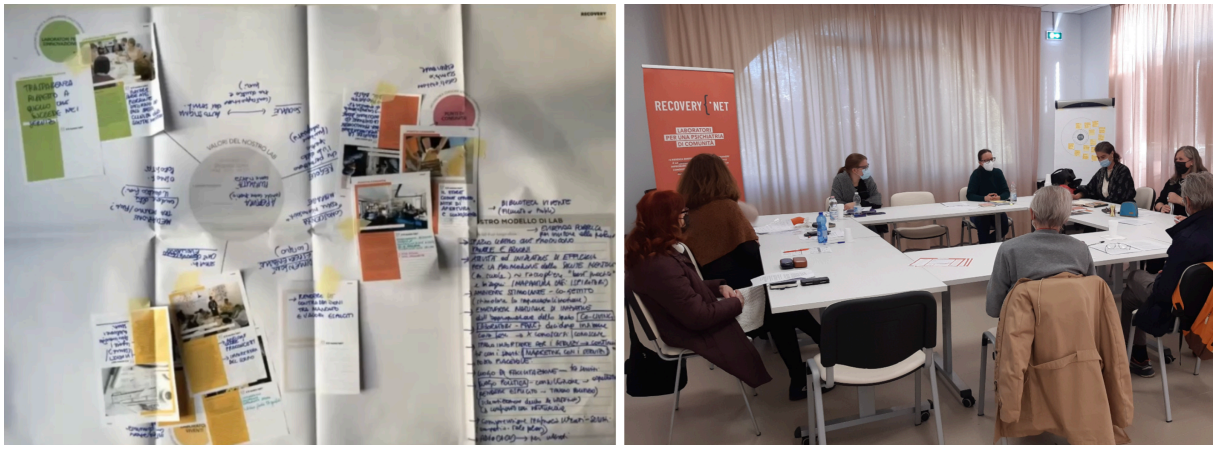

Figure 7. Actors' involvement in co-labs (source: Recovery.Net, 2021)

Thus, the co-labs are continuously expanding the patient ecosystems beyond the professional healthcare providers and family members, including local non-healthcare stakeholders and other supportive organizations; this dynamic and interactive process fosters the integration of new resources (e.g. unused funding opportunities, novel competences such as photography or music making, job

placement support programs) that can aid the individual recovery journeys and the development of an inclusive and cohesive community.

Discussion

As Anderson et al. (2013, p.1209) mentioned: “Long-term individual well-being cannot exist without collective well-being. This concept is especially critical for services because services, although co-created individually, are often designed not for the individual but rather for the collective or segment.” There is a call for both service providers and designers to therefore approach individual and collective well-being as part of the same complex system dynamics. While the perspective of resources-challenges equilibrium provides us with a dynamic and multifaceted knowledge of individual well-being (Dodge et al., 2012), the well-being co-creation concept from Chen et al. (2020) enables us to understand how the well-being of multiple actors fluctuates during the resource integration process in the service system.

Drawing from the well-being concepts from service research and reflecting on practical experiences in service design, below the authors have summarized the three levels of service design contributions and approaches to support the individual well-being, the network well-being, and the community well-being (see Table 2).

	Individual well-being	**Network well-being**	**Community well-being**
Service design example	Maggie’s Centre	Portuguese national Electronic Health Record (EHR)	Recovery.Net
Service design contribution	Service design of experience, relationship and touchpoints	Service design for value networks aiming for balanced centricity; Service design against/to acknowledge value conflicts and logic multiplicity	Service design to facilitate actor ecosystem expanding; Co-design of local collaborative laboratories as engines for system transformation
Service design approach	(1) Participatory design; (2) Integrate service blueprint with emotional theory (emotion-based	(1) Network mapping; (2) Mapping the experiences of different actors and	(1) Multidisciplinary & Multilevel approach; (2) co-design and co-

blueprint) to better capture individual's emotions.	their interconnections; (3) Designing the service for the value network.	production as dynamic and collective processes.

Table 2. Three service design examples, contributions and approaches (source: the authors)

When referring to individual and network well-being, service design emphasizes the experiences, relationships, and interactions "inside" the original service system. As table 2 shows, by redesigning service encounters, relationships, and touchpoints, service design is directly contributing to individual actors' experience and well-being. At the same time, service design can facilitate communication and negotiation among multiple actors to aim for a balanced condition for an ideal service network well-being.

The notion of community well-being introduces instead a more dynamic perspective that encourages service designers to consider how to facilitate the co-creation of more sustainable service ecosystems, intended as a continuous and collective effort to improve well-being. The example of the co-lab well represents this ongoing process of identifying opportunities for co-production to support patient recovery experience and expand patient care ecosystems.

Altogether, the three service design examples portrait the potential of a holistic and integrated service design approach, where the three levels of interventions for well-being could be potentially interconnected (see Figure 8). For example, the challenges and needs found at the individual level are essential "materials" at higher intervention levels. Individual and network level well-being understanding and intervention can support and stimulate co-creation capability in the broader community. And finally, an ecosystem perspective can aim for generating co-creation capability in individuals or multiple actors operating for individual and collective well-being. Service design could integrate these interconnected perspectives into a more holistic, dynamic, and iterative approach.

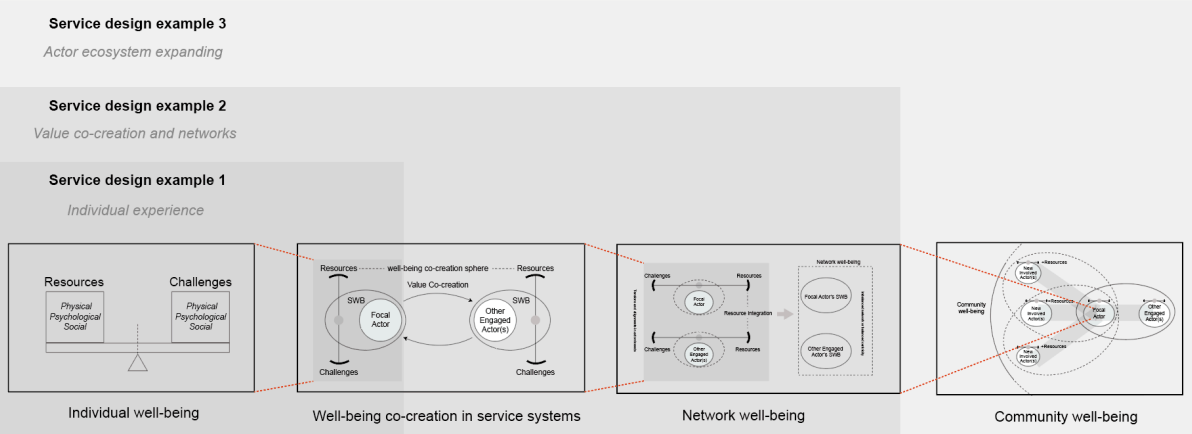

Figure 8. The interconnection between three levels of service design interventions and well-being (source: the authors)

Conclusion

This research explored service design contributions to the shift from an individual well-being perspective to a more systemic and dynamic understanding. It did so, by reflecting on three key well-being constructs: resource-challenges equilibrium (individual well-being), balanced centricity in value networks (network well-being), and actor ecosystems (community well-being). Using these constructs as lenses, the authors have then selected three service design interventions to describe service design approaches and contributions at different well-being levels. The authors finally suggested the need to develop a holistic and integrated approach to link individuals with network and community well-being for a growing service ecosystem.

While the paper proposition is based on some preliminary evidence and present some limitations, we think that the proposed integrated service design approach to individual and collective well-being opens up significant research questions for a more impactful practice that would require empirical studies and applications.

As a first limitation, when focusing on the multilevel dynamics of well-being, we acknowledge a lack of discussion of the relevant psychological theories. As anticipated earlier, a growing number of service studies are exploring how to integrate psychological theories to understand the dynamics of multiple actors' well-being in service. For example, Chen et al. (2020) applied Psychological Ownership (PO) Theory to understand the well-being co-creation process, and Groven et al. (2021) used Self-determination Theory (SDT) to align psychological conflicts among different actors. Due to the complexity and multifaceted nature of well-being as well

as the service system, it is considered impossible to find an invariant psychological theory that can match various conditions. Thus, scholars suggested selecting psychological theories according to the challenges in the specific context (Groven et al., 2021; Gardiazabal & Bianchi, 2021).

Furthermore, the authors used three service design examples in the healthcare context, which could lead to lack of contributions from other fields. Besides, the interpretation of the selected examples as having a focus on one of the three conceptualisations of well-being (individual, value network, or community), could diminish the implications of the summarized projects; for example the co-design of the EHR in Portugal was also intended as the design of an open platform that could foster the emergence of new value co-creation opportunities. In depth case study research could help to appreciate details and verify hypotheses.

Finally, this work has generated consequential questions that aim to deepen the different levels and their interconnection. For example, how can we relate designing for multiple individuals' well-being in a value network? How can service design for value networks integrate reflexivity to reveal and address value conflicts and their consequences on imbalance and value reduction in service implementation? How can service design support service providers in the development of ecosystems and their interconnection? How can service design facilitate cultural change in service providers to embrace an ecosystem perspective and adopt a multistakeholder and continuous process of community building and mapping?

We hope that these questions can help expand the research scope of service design for well-being while investigating specific contexts and conditions, for example in the wider field of healthcare, education, transportation and other emerging service fields. Reflections on the fundamental issues of funding, policy and decision-making in complex ecosystems should then be integrated in the developing model and practice.

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