Exploring Boundaries and Synergies Between Inclusive Design and Service Design

Daniele Busciantella-Ricci[1(✉)], Libertad Rizo-Corona[2], and Carlos Aceves-Gonzalez[2]

[1] Design Research Lab, Department of Humanities, University of Trento, Trento, Italy
d.busciantellaricci@unitn.it
[2] Ergonomics Research Center, Universidad de Guadalajara, Guadalajara, Mexico
libertad.rizo.din@gmail.com, c.aceves@academicos.udg.mx

Abstract. Service design is assuming a strategic role in contemporary society. From a design for inclusion perspective, this paper tries to outline a theoretical reflection based on the assumption that describes the possibility to identify four categories for understanding how service design and inclusive design can establish a relationship, i.e. (i) inclusive service design; (ii) design for inclusive services; (iii) service design for inclusion; (iv) inclusive design for service design. After a systematic literature review, the authors provide theoretical case studies from deliberately selected academic papers for each category. The result is the identification of a set of relationships between design for inclusion and service design to be studied in the inclusive design research field. Discussion and conclusions underline how these relationships can be helpful to practitioners in design and design researchers that would like to orient their activities understanding multiple ways of relating service design and design for inclusion.

Keywords: Design for inclusion · Service design · Inclusive service design

1 Introduction

Service design is assuming a strategic role in public and private organizations and, as it is being applied in several fields such as education, healthcare, policy making, and for spreading social innovation. Therefore, significant attention is required in the principles and approaches that drive the design process. As Sangiorgi [1] points out, the evolution of service design from service systems to value constellation and service ecosystem presents new challenges in practising service design. This requires "new design strategies and principles" [1]. In this sense, and with an emphasis of the attention to the human behaviour, capacity and needs, it is also possible to observe a structured shift in terms of meaning and approaches from service design to 'design for services' (cf: [2]; [3]). However, in the last decade, principles of service design among the practitioners are still anchored to some common points. Indeed, in 2009 Mager [4] describing the service design principles highlighted that it is a work with a holistic approach; it is an

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interdisciplinary and co-creative work; it is based on the visual thinking and it has a radical approach. Successively, Stickdorn and Schneider [5] identified five principles of what they coined as service design thinking; it is user-centred, co-creative, sequencing, evidencing, holistic. Recently, Stickdorn [6] proposed six service design principles i.e. (i) human-centred, (ii) collaborative, (iii) iterative, (iv) sequential, (v) real, and (vi) holistic (cf: [6]).

From a 'design for inclusion' perspective, the first two principles might be the most significant. However, 'human-centred' is not necessarily inclusive and in service design is not always described as seen in inclusive design. 'Human-centred' replaced 'user-centred' in the late version with the aim of express the inclusion of all members, customers as well as staff in the organization [6]. Even so, the notion of the user remains mainly as a customer. The authors of this paper argue that it is still not clear how the two principles should guarantee a real inclusive approach in the whole design process. Despite "contemporary service design is described as a collaborative and inclusive practice" [7], recent studies [8] introduced the "service inclusion" paradigm as an egalitarian system that "provides customers with fair access to a service". This emphasizes that "service exclusion can be significantly reduced by designing service solutions that respond to human diversity and by making resources available to consumers that facilitate access to services" [8]. Also, [8] underline that "service inclusion is multifaceted and comprises four key pillars"; these pillars are (i) enabling opportunities; (ii) offering choice; (iii) relieving suffering; (iv) fostering happiness. Thus, how service design recognizes the 'diversity' as a value? Furthermore, are the practitioners ready to be truly inclusive? These questions have driven the authors in searching how design for inclusion approaches (such as inclusive design) can establish a fruitful relationship with the service design principles and practice.

1.1 The Inclusive Service Design Approaches

Recent multidisciplinary studies in the field of human-factors allowed the identification of the inclusive service design (ISD) approach [9]. It comprises and taking advantage of the principles and methods of the domains of ergonomics, inclusive design and service design.

Following this direction, the authors of this paper try to outline a theoretical reflection for orienting researchers, practitioners and all those are engaged in interdisciplinary activities that require an inclusive approach in designing for and through services. The authors introduce an assumption that describes the possibility to identify four categories for understanding how service design and inclusive design can establish a reasonable relationship:

(i) inclusive service design; it means principles and methods of inclusive design, ergonomics and service design are used for designing services;
(ii) design for inclusive services; it is the design for an inclusive design result that is an inclusive service rather than focusing on the methods and the theoretical framework of the design process;

(iii) service design for inclusion (or service design for all); it means using service design for democratizing design or at least democratizing service design as a strategic tool for inclusion;
(iv) inclusive design for service design; it is the inclusive process of designing services through the inclusive design field of knowledge; in this case, the inclusive design attitude, praxis, approach and methods are used to design services.

Therefore, the aim of this paper is outlining the status quo of the categories for a first understanding of the efficacy of the framework.

2 Methodological Approach

Intending to understand this framework, the authors started a systematic literature review investigating specific sets of keywords in different search engines. The analysis was performed on the Web adopting "Google Scholar", "Scopus" and "Open Knowledge Maps" as search engines. "Inclusive service design", "inclusive design" and "service design", "design thinking" and "inclusive service", "service design" and "social inclusion" were the set of keywords the authors searched in the web engines respecting the use of the quotation marks for each single search session. No additional filters (e.g. date ranges) were selected except for Google Scholar where the default filter "citations" was deselected.

First, the results in searching for one set of keywords in Google Scholar were qualitatively filtered by the researcher by selecting relevant papers between the first 50 and 100 results. Successively, the selected articles have been in more depth analyzed through the following parameters:

- Relevance; how much the source is conceptually relevant with one of the hypothesized categories;
- Reliability; how much the source is reliable; the reliability value is determined by a subjective evaluation that considers the source of the item; e.g. a paper from a journal could be more reliable than a conference paper; also, the authors and their backgrounds have been considered as indicators for the reliability of the source;
- Impact; how much the contents of the source are or potentially are impactful on this research.

These parameters were used in a matrix for evaluating the single paper previously selected with a subjective score. Thus, for each selected paper, the three parameters were assessed with a value between 1 and 3. After this process, the same set of keywords were searched in Scopus. The researcher qualitatively filtered the results by selecting relevant papers. This search engine was used to confirm or add relevant papers among those found as relevant in google Scholar. Relevant papers that were found only in Scopus and not in Google Scholar were evaluated with the same matrix and parameters and same evaluation system. Finally, the same set of keywords were searched in Open Knowledge Maps following the same procedure as exposed before for the previous search engines. The duplicates were considered only one time.

The final selection is obtained by those papers had the highest score. Also, the matrix used for evaluating the relevant papers reports a section for additional cases. The authors used it for reporting cases and papers that did not appear in the search engines but are considered relevant from the authors perspective and backgrounds.

As a first investigation step on the framework, the authors limited the search process with keywords that do not explicitly report terms such as "design for all" and "universal design". This is one of the next steps identified after the research presented in this paper. As an additional limit of this work, search engines such as Google Scholar, create indexes according to the capacity of the source to be identified by the Google algorithm. This means that relevant papers that are not indexed by the algorithm may not have been detected. It is also acknowledged that important contributions might have been disregarded due to the filter of the researchers' perception.

3 Results

The result is the identification of a set of relationships between design for inclusion and service design to be studied in the inclusive design research field. Table 1 reports, for each set of keywords the total number of the found papers; the amount of the relevant papers; and the number of the papers were assessed with a score between 6 and 9. Table 2 reports the most relevant paper(s) for each hypothesized category.

Table 1. Number of papers for each set of keywords.

Set of keywords	N. of papers on Scholar/Scopus/Open Knowledge map	N. of relevant papers	N. of papers with a score between 6 and 9
"inclusive service design"	87/9/2	19	14
"inclusive design" and "service design"	928/89/3	51	18
"design thinking" and "inclusive service"	53/0/0	15	12
"service design" and "social inclusion"	3050/21/6	16	14

Table 2. The most relevant papers (score between 6 and 9) for each category.

Categories	Most relevant papers
(i) inclusive service design	Aceves-Gonzalez [9, 10], Bue Lintho and Begnum [11]
(ii) design for inclusive services	/
(iii) service design for inclusion	Blomkvist and Holmlid [7], Bridge [12]
(iv) inclusive design for service design	Darzentas and Darzentas [13], Parker et al. [14], Nickpour et al. [15], Liu [16]

4 Discussion

As a confirmation of the hypothesis, the first category is fully represented by the work of Aceves-Gonzalez [9, 10] and Bue [11, 17]. In the first case, the relationship between service design and inclusive design is the holistic combination among their principles and methods within the domain of the ergonomics. Providing knowledge and tools for the evaluation, design, and improvement of inclusive services is the primary goal of the "inclusive service design" (ISD) approach. A similar and explicit taxonomy was found in Parker et al. [14] and in Bue [11, 17]. However, Parker et al. [14] do not explicitly define "inclusive service design", and the approach is more oriented to use an inclusive design approach for designing services that consequently are more inclusive, which locates that paper within the fourth category presented in this paper.

On the other hand, Bue's work [11, 17] is oriented to understand how integrating universal design methodologies in service design. They also proposed a definition of a service that "is universally designed when its customer journeys are usable to all people, to the greatest extent possible, without the need for adaptation or specialized design apart from choosing preferred touchpoints" [11]. Both Aceves-Gonzalez [9, 10] and Bue [11, 17] addressed the need for SD to provide a more inclusive approach for including potentially excluded users and taking into consideration the diversity as a value in the design process.

The results of the second category did not produce any items which had the previously mentioned characteristics and reached a score higher than 5. However, a significant number of items were found, which almost complete the aspects of this category but failing to develop a process from a design perspective, even though having, as a result, an inclusive service.

One of the most relevant paper for the third category is the Blomkvist and Holmlid's [7] work; they emphasize that "contemporary service design is described as a collaborative and inclusive practice". Thus, from their perspective, emerges an approach in considering service design as an inclusive practice because it is based on collaborative practices. Also, the set of keywords 'service design' and 'social inclusion' produced many relevant results that fit into the third category. Among these, the work of Bridge [12] resulted in one of the most relevant about the category description. This kind of results acknowledged services and service design as a tool to alleviate social issues which at its core are inclusion issues, although the main focus of the work was not on service design. About the fourth category Darzentas [13] in a paper related to the context of self-services, point out that "an inclusive Design for All approach to self-service can be a driver for service innovation". In this case, the philosophy of design for all is adopted as a driver for including the needs of vulnerable customers in the service design process. This is a representative case for the fourth category, where a design for all attitude is adopted to contemplate more inclusive services.

About valid results outside the categories framework, many of the identified items were services related and directed to a vulnerable user profile although not from a service design perspective [18]. Also, another emergent issue was the different meanings of inclusion by area of knowledge and the need for the prevalence of a more comprehensive and robust concept of inclusion in design, highly relevant in service

design. Which could have stronger consideration of economic issues of vulnerability for the users which has already been acknowledged in the work of Fisk et al. [8] and could be complemented with views from the sociology field where besides the economic also cultural, civic and interpersonal aspects are included [19]. This has also been recognized by Busciantella-Ricci et al. [20] as potential areas of analysis in inclusive service design similarly proposing them as "domains".

5 Conclusions

In conclusion, the identified set of relationships can be helpful to practitioners in design and design research that would like to orient their activities by giving a common ground for understanding multiple ways of relating service design and design for inclusion. However, to propose the categories as facilitators for the analysis and comprehension of the relations between service design and inclusive design the limits of these categories as well as their names might be clarified. Indeed, while the first, the third and fourth categories present papers to support the hypothesized definitions, the second category is not sufficiently supported. It means that the definition of this category need a strong reframe; or it means that the scenario of this category is still not enough investigated, or reported by the same practitioners. The reframing of the categories meaning is undergoing work. Also, in the course of the search, several projects which are not within the four categories have been found. These projects embody inclusive service design as outcomes and processes although not from the perspective of design. Finally, future work should include a more significant discussion on the literature that was identified in the course of the search process.

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