

# Differences and similarities between service design and UX design: a proposal

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## Abstract

This article aims to review service design (SD) and UX design (UXD) with the intention of proposing a delineation of the differences and similarities between service design and user experience design. The focus of this proposal is to emphasize service design as a field of knowledge and to enable future explorations of UXD contributions to SD and not the other way around. The specific purposes are: 1) differentiate the particularities of service design; 2) differentiate the particularities of the UX design; 3) list points of convergence between service design and UXD; mitigate terminological ambiguities. It is expected to find in the literature eminent ideas that allow us to imagine models of macro structures aiming to produce a comparative framework between different approaches when it comes to practice in SD and UXD.

Keywords: service design, user experience design

## Introduction

The discussion about the differences and similarities between SD and UXD is not new (e.g. Roto, 2021), but it still produces cloudiness in the market for the design practice. Therefore, this article proposes to contribute to this debate through a comparative analysis derived from the literature review.

For Roto et al. (2021), service design can be represented by 3 broad characteristics, among them: service design interfaces, production of shared value among all stakeholders, in addition to the integration between matter and human behavior. Roto et al. contrasts service design (SD) by describing user experience design (UXD) as

design practice oriented to unveil user needs in the context of digital interfaces. This article brings SD and UXD through 8 categories.

According to the Nilsen Norman Group (2021), complete service experiences must consider the user, employees and processes concurrently. This means that a good service in market needs to equate service design and user experience.

This paper uses a systematic integrative bibliographic research method with limitations. In order to allow direct comparisons between SD and UXD, 8 categories were highlighted: scope level, design model characteristics, design object, inference model, stakeholder involvement, field origin, disciplinary intersections and socioeconomic importance. The preliminary results point towards a similarity in the approach related to the human-centered design (HCD) and to the creative inference model used in projects of both disciplines. Furthermore, both UXD and SD are concerned at some level with schematizing interactions and interfaces.

Finally, there is a logic of scope size and complexity of action between UXD and SD, therefore, service design has a greater level of coverage than user experience design. However, digital interfaces that emerge as a service touchpoint can produce intense design challenges. The two disciplines have substantial relevance to the HCD approach, yet one discipline may encompass the other.

## Objective

This article aims to review definitions of SD and UXD with the intention of proposing a delineation of the differences and similarities between service design and user experience design. The focus of this proposal is to emphasize service design as a field of knowledge and to enable future explorations of UXD contributions to service design and not the other way around. 1) differentiate the particularities of service design; 2) differentiate the particularities of the UX; 3) list points of convergence between service design and UX; mitigate terminological ambiguities.

## Methodology

The integrative literature review method was used (Torraco, 2005) with some of the review steps produced in a systematic way but with limitations. Not all search strings had the same search criteria. The greatest rigor was directed towards the first systematic review with limitations, aimed at “user experience design” (UXD). From



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this, this research aimed to understand the relationships between user experience design (UXD) and interaction design (IxD) in order to better delineate the universe of user experience. Thus, the searches in the scientific databases Web of Science and Scopus began. The search string defined for the search in both databases was: “ux” (abstract) or “user experience design” (abstract) or “interaction design” (abstract). It was designated that the search location would occur in the “abstract” of the papers because the intention was not to restrict the search but to observe if historically there would be a preliminary discussion comparing UXD and IxD. It was noted that, compared to the field of service design, the field of user experience design has a more consolidated academic framework in terms of the number of relevant publications. This was one of the reasons why it was decided to give greater rigor to the first review of the literature alluding to UXD, as in this case, rigor would not eliminate relevant papers. In addition, it was decided that the search horizon would be between the year 2012 and 2022 and in the English language. In this way, it was possible to see the evolution of the field in a decade of globally accessible papers.

Due to the short period of maturity in the field of service design regarding methods for professional practice, it was necessary to conduct several research strategies, such as maintaining the relevance of the analyzed publications in order to make this article viable. Thus, exploratory research on the field of service design began, dialoguing with expert researchers in the field, aiming to map the main global authors, main platforms that facilitate service design definitions and main universities that are reference in service design. In January 2022, I spoke with Professor Fernando Secomandi from the School of Industrial Design at the State University of Rio de Janeiro and with Professor Milene Gonçalves from Delft University of Technology. In addition, in March 2022, I talked to Professor Carla Cipolla from the Federal University of Rio de Janeiro and to Professor Manuela Quaresma from the Pontifical Catholic University of Rio de Janeiro.

## Conceptual structuring of the review

### Human-centered design (HCD) and user experience design (UXD)

In 2013, Resch et al. (p.1020), presented the definition of human-centered design (HCD) for interactive systems, based on ISO 9241 part 210 (2010), stating that: a person's perceptions and responses that result from the use and/or anticipated use of a product, system or service not only apply to use exclusively, but also the preferences of the user, their functional and mental attitudes, including affect, desire and sensory behavior. Therefore, human-centered design is oriented to experience



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design that contemplates “performance, interactive behavior and support of a user's physical and psychological state related to their experiences, attitudes, skills, personality and context of use” (Resch & Zimmer, 2013, p.1020).

Throughout the 2010s until today, some authors define a starting point that includes all perspectives of the HCD and the context of using something (Schoonderwoerd et al., 2020). The HCD also designates the possibility of something happening and the deep reasons are also indispensable to have relevant information in the projected context. Thus, guiding questions for an action plan such as: (i) main expected benefits; (ii) main functionalities that answer hypotheses; (iii) main answers given for the increment of the human-system interaction, are crucial for an analysis guided by HCD. According to Schoonderwoerd et al. (2020), this analysis should be called “domain analysis”, as the design of this project produces substantial human value.

### **User experience (UX) descriptions**

Aizpurua, Harper & Vigo (2016), understand that the primary definition of user experience (UX), derived from the HCD, provides a theoretical framework that allows understanding the way in which users conceive an “interactive artifact” (system, product, service), considering properties. Among these properties, it is possible to list aesthetic-functional aspects, emotions, reliability, etc. Not differently, considering a web-browser interface experience, it is also possible to identify the main aspects of an interactive artifact, among them: subjectivity and ease of access.

In addition, the nomenclature “UX” alludes, not directly, to the way of collecting quantitative, behavioral and psychological data from users who where there is interactivity between man-system, through “questionnaires, focus groups and interviews” (Aizpurua, Harper & Vigo, 2016, p.3). It is less difficult to dialogue with users about experiences, emotions, desires, anxieties and frustrations than about technical ergonomics issues (Aizpurua et al., 2016).

In 2018, Hassenzahl expanded the structure of preamble UX goals that includes three distinct levels: (a) “why”, or motivation; (b) “what”, or definition of creative design object and its functions that respond to latent needs; (c) “how”, the way to do it, aspiring to the “well-being” of users in direct interactivity with the artifact. Garrett (2010) suggests a user experience model called “UX elements”, although primarily designed for interfaces in web browsers.

Garrett's framework (2010) states that “elements of a plane can influence adjacent planes” (Zaina et al., 2020). At the bottom of Garrett's structure, it is possible to identify a logic that approximates the needs generated by users' pain to the artifact's purposes. Next, there is a plan that demonstrates the way content is arranged and



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how the user relates to the system. This last plan refers to aspects of greater concreteness such as interface design, content, which are part of the information design and, also, the design that projects navigability. In this way, the user has a complete experience that allows them to perform tasks successfully (Zaina, Sharp & Leonor, 2020, p.8).

The growing and general understanding that the pure and simple interactivity between man and machine was not meeting human needs made the user experience (UX) gain strength in human-computer interaction (HCI). In this way the systems, in addition to being reliable could be designed considering stimuli and human enjoyment (Oyibo & Vassileva, 2020).

Regarding UX from HCI and ergonomics, there is no consensus on a specific and generalizable definition. However, academic researchers in the area of HCI tend to be unanimous regarding both usability (UT) and user interface (UI), as both are considered fragments of UX (Oyibo et al. al., 2020). On the other hand, Oyibo et al. (2020), defend the existence of three fields, where usability and UX have different scope logics: “(1) UX encompasses usability; (2) UX advises usability; and (3) UX is one of the many components that constitute usability” (Oyibo et al., 2020, p.3). The first field sees UX as an amplified approach, which only includes usability (UT). The second field, on the other hand, perceives UX as a simple supplementary approach to classical usability research. The third field stipulates the UX as one of several elements that configure usability.

Oyibo et al. (2020) argues that UX needs to behave in a more systemic and consolidated way, in order to contemplate “pragmatic and hedonic elements of the design of the HCI system” (Oyibo et al., 2020, p.3). Still on the subject, the author mentions that these two factors must differentiate the term usability from the term utility and encompass beauty and pleasure as crucial characteristics. Thus, in order to be able to incorporate all the topics mentioned above, it is necessary that UX be defined as “the overall experience that users obtain when using or interacting with an HCI system, including how easy or pleasant it is” (Oyibo et al. al., 2020, p.3).

### **Service design (SD) and historical foundations**

Andrew Polaine et al. (2013), reveals historical bases of service design considering its disciplinary origins in modern design and consequently in industrial design, referring to both the North American vision and the German vision of the Bauhaus school. According to Polaine et al., the evolution of industrial design and its impacts produced a new need for a social and economic response: “our focus shifted from efficient production to lean consumption and the set of values shifted from standard of living to quality of life” (Polaine, Lovlie & Reason, 2013, p.18).



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According to Sangiorgi and Prendiville (2017), since the early 2000s, the field of service design has evolved similarly to the field of service marketing and service innovation, where first there was a phase of building credibility from the service itself. The authors understand that as of 2017, the academic moment has been one of understanding the field of service design itself. For Forlizzi and Zimmerman (2013), service design as a practical and disciplinary field comes from the response “to the transition” of several countries after industrial development, from the production and sale of goods to the “provision of services” (Forlizzi & Zimmerman, 2013, p.2). Also according to professors at Carnegie Mellon University, the research base for service design goes back to operational marketing research, considered to be under-mentioned disciplines in the field of interaction design (IxD). However, Forlizzi and Zimmerman (2013) do not disaggregate service design from its matrix: interaction design.

Thus, Forlizzi and Zimmerman (2013) point out that before talking about service design, it is necessary to observe the growth of the service sector in the economy of high-income countries. The authors present numbers and argue that digital interfaces driven by the internet have generated opportunities for economic growth in the service sector. This occurred because there is greater ease of communication and access to qualified information. On the other hand, from the perspective of operations management, Susan Goldstein et al. (2002, p.122), narrates the history of the term “service design [...] in a more restricted way”, arising more perceptively from deterministic initiatives of the author Gummersson (1991), who understands that service design becomes substantiated through “drawings, flowcharts” and “specifications” (Norling, 1992). In addition to the instruments used for the purpose of delineating the term service design, it is also possible to identify consubstantiations of the fullness of the service process (Goldstein et al., 2002), such as: “others have used the term service design to cover the entire the process, from idea to specification” (Goldstein et al., 2002, p.122).

### **Elementary concept of service design**

For Marc Stickdorn and Jakob Schneider (2014), service design is “an emerging area, focused on creating carefully planned experiences, through the use of the combination of tangible and intangible media” (Stickdorn & Schneider, 2014, p.32). These tangible and intangible media, according to Secomandi, 2014, p.76, are generated from an essential craft: the “interface design between users and service providers”. Secomandi (2014) also emphasizes that the interface between service providers and users is also known by the term 'touchpoint'. Therefore, in order to enhance Secomandi's explanation, Polaine et al. (2013), argues that the individual touchpoints of service providers are not enough to satisfy the user (or customer), as



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users consider the entirety of the interface system to understand the set of functions being offered. Users or customers “base their judgment on how well everything works together to provide value to them” (Polaine et al., 2013, p.22).

However, Carla Cipolla and Ezio Mazzini (2009) in the article “Relational Services”, reflect that service interfaces have essentially particular characteristics, notably with regard to the comparison to “machine/device” interfaces. The article that deals with “Relational Services”, supports the understanding that interfaces composed by human beings cannot be fully visualized and controlled (Cipolla et al., 2009). Thus, Cipolla and Manzzini's service design, considers the possibility that there is no human being capable of predicting a service in its entirety, as services are defined and redefined during their execution (Cipolla et al., 2009, p.49). Therefore, it adds to the formal disciplinary teaching of service design, the difficult mission of trying to design unpredictable aspects.

The authors Pfannstiel et al, p.VL (2022), are concerned with defining the expression service design as a service design process, where the influence of this design exceeds its implication only in the service but also includes “products, processes, systems and technologies” (Pfannstiel et al., 2022, p.VI), developing innovations derived from “customers' needs and desires and the creativity of stakeholders”. Thus, it is observed that the touchpoints described by Secomandi comprise the 4 (four) aspects of Pfannstiel et al.

According to Stickdorn and Schneider (2014), service design is an interdisciplinary practice that incorporates different capabilities of “design, management and process engineering” (Stickdorn et al., 2014, p.32). Service design contributes to the schematic materialization of new business models empathetic to user needs, reinforcing the orientation to user needs, desires and aspirations cited by Pfannstiel et al.

Also, for Lara Penin (2017), service design is not dissociated from the philosophical approach of “human-centered design” (HCD), where the design project considers so many physical, cognitive, emotional and social aspects. These aspects aim to design projects that enable a full experience for these same users (Penin, 2013). Furthermore, Lara argues that an ideal service design has 5 (five) fundamental principles: a) service design is human-centered; b) service design depends on participation and co-design; c) service design is communicated through service narratives; d) service design includes the material side of services; e) service design is holistic (Penin, 2013, p.360-372).

Service design helps organizations see their services from the customer's perspective. It is an approach to designing services that balances customer needs



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and business needs to create fluid, quality service experiences. Service design is anchored in design thinking and offers a creative, human-centered process for service improvement and new service design. Through collaborative methods involving customers and service teams, it helps organizations gain holistic and significant improvements (Stickdorn et al., 2020, p.20).

Lia Patrício et al. corroborate Stickdorn et al., reaffirming that it is through design thinking that service design provides a “holistic and human-centered view” (Patrício, Gustafsson & Fisk, 2017 p. 1). Stickdorn et al. (2020), organizes service design from 5 (five) important perspectives: 1) mental model; 2) process; 3) tools; 4) interdisciplinary language; 5) management approach (Stickdorn et al., 2020, p.23).

Although service design (SD) is considered a subfield of industrial design evolved into the service design object (Downe, 2021) because the SD has multiple origins, its design and research methods produce considerable cloudiness and a multiform methodological structure in the knowledge field regarding service design research (SDR) (Teixeira & Patrício, 2019). Among the different disciplines originating from service design, there are: (a) marketing that creates a favorable environment for service systems; (b) interaction design and user experience design analyzing the design of service interfaces (Zimmerman et al., 2011); (c) operations management working to enhance the control, management and logistics of backstage operations (Shostack, 1984); (d) information system that provides the information technology content, necessary for the organization of technological service systems (Glushko & Nomorosa, 2012).

### Comparison table between UXD and SD

Based on the literature review of both UXD and SD a table was built capable of producing a direct comparison between UXD and SD, in addition to highlighting a relational synthesis between both disciplines.

	<b>USER EXPERIENCE DESIGN (UXD)</b>	<b>SERVICE DESIGN (SD)</b>	<b>SYNTHESIS</b>
<b>Scope Level</b>	Ergonomics in expanded field (Garrett, 2010; Oyibo et al., 2020)	Business model and value proposition (Stickdorn et al., 2014; Pfanntiel et al., 2020)	Both consider the interaction within their specificities (Cipolla et al., 2022)





<p><b>Design Model Characteristics</b></p>	<ul style="list-style-type: none"> <li>. Studies the usability of interactive systems in the HCI context; <b>(Oyibo et al., 2020; Følstad et al., 2016)</b></li> <li>. Stimulates pragmatic and hedonic elements in system design (HCI); <b>(Zaina et al., 2020; Law et al., 2008)</b></li> <li>. Focuses on controlled human-computer interaction (HCI); <b>(Oyibo et al., 2020)</b></li> <li>. Favors aesthetic-functional aspects in the experience design; <b>(Aizpurua et al., 2016; Zaina et al., 2020)</b></li> <li>. Prioritizes customer needs. <b>(Aizpurua et al., 2016; Garret, 2010)</b></li> </ul>	<ul style="list-style-type: none"> <li>. Studies service system touchpoints; <b>(Secomandi, 2014; Polaine et al., 2013)</b></li> <li>. Stimulates unpredictable elements in the junction of relationships; <b>(Cipolla et al., 2009)</b></li> <li>. Focuses on the not completely controllable human-human interaction (HHI); <b>(Cipolla et al., 2009)</b></li> <li>. Favors innovations in holistic service design; <b>(Pfannstiel et al., 2022)</b></li> <li>. Equalizes customer needs with business needs. <b>(Stickdorn et al., 2020)</b></li> </ul>	<ul style="list-style-type: none"> <li>. Both are based on the human-centered design (HCD) approach; <b>(Resch et al., 2013; Schoondersoerd et al., 2020; Penin, 2017; Patrício et al., 2017)</b></li> <li>. Both collect quantitative, behavioral and psychological data from humans; <b>(Aizpurua et al., 2016; Stickdorn et al., 2020)</b></li> <li>. Both respond to latent (tacit) human needs; <b>(Hassenzahl, 2018)</b></li> <li>. Both translate abstract aspects of an interactive experience; <b>(Resch et al., 2013; Schoondersoerd et al., 2020)</b></li> <li>. Both design experiences; using tangible and intangible media; <b>(Stickdorn et al., 2014)</b></li> <li>. Both operate with collaborative methods; <b>(Hassenzahl, 2018; Penin, 2017)</b></li> <li>. Both work designing interactivity; between man-system or man-man; <b>(Garrett, 2010; Glushko et al., 2012)</b></li> </ul>
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<p><b>Design Object</b></p>	<ul style="list-style-type: none"> <li>. Design navigability; <b>(Zaina et al., 2020)</b></li> <li>. Design web-browser interface; <b>(Aizpurua et al., 2016; Zaina et al., 2020)</b></li> <li>. Design digital interfaces. <b>(Zaina et al., 2020)</b></li> </ul>	<ul style="list-style-type: none"> <li>. Design service development processes; <b>(Goldstein et al., 2002)</b></li> <li>. Designs the interface between users and service providers. <b>(Secomandi, 2014; Stickdorn et al., 2020)</b></li> </ul>	<ul style="list-style-type: none"> <li>. Both design interactive artifacts: experience, system, product, service. <b>(Aizpurua et al., 2016; Pfannstiel et al., 2022)</b></li> </ul>
<p><b>Inference Model</b></p>	<ul style="list-style-type: none"> <li>. It is anchored in Design Thinking; <b>(Forlizzi et al., 2013)</b></li> <li>. It stems from a creative process; <b>(Hassenzahl, 2018)</b></li> <li>. Driven by networking thinking. <b>(Polaine et al., 2013)</b></li> </ul>	<ul style="list-style-type: none"> <li>. It is anchored in Design Thinking; <b>(Stickdorn et al., 2020; Patrício et al., 2017)</b></li> <li>. It stems from a creative process; <b>(Stickdorn et al., 2020)</b></li> <li>. Driven by networking thinking. <b>(Polaine et al., 2013)</b></li> </ul>	<ul style="list-style-type: none"> <li>. Bore are anchored in Design Thinking; <b>(Forlizzi et al., 2013; Stickdorn et al., 2020; Patrício et al., 2017)</b></li> <li>. Both stem from a creative process; <b>(Hassenzahl, 2018; Stickdorn et al., 2020)</b></li> <li>. Both are driven by networking thinking. <b>(Polaine et al., 2013)</b></li> </ul>
<p><b>Stakeholder Involvement</b></p>	<ul style="list-style-type: none"> <li>. Look through the customer's perspective; <b>(Aizpurua et al., 2016; Garret, 2010)</b></li> <li>. Absorption of user needs, desires and aspirations. <b>(Zaina et al., 2020; Law et al., 2008)</b></li> </ul>	<ul style="list-style-type: none"> <li>. Look through the perspective of all stakeholders; <b>(Secomandi, 2014; Stickdorn et al., 2020)</b></li> <li>. Stakeholders participate in the design process (Codesign) <b>(Penin, 2017)</b></li> </ul>	<ul style="list-style-type: none"> <li>. Both look through the customer's perspective; <b>(Secomandi, 2014; Stickdorn et al., 2020)</b></li> <li>. Both absorb the user's needs, desires and aspirations. <b>(Zaina et al., 2020; Law et al., 2008; Penin, 2017)</b></li> </ul>
<p><b>Field origin</b></p>	<p>It started from the interaction design. <b>(Resch et al., 2013; Schoondersoerd et al., 2020)</b></p>	<p>It started from service marketing and the recontextualization of industrial design. <b>(Polaine et al., 2013; Sangiorgi et al., 2017; Zimmerman et al., 2011; Downe, 2021)</b></p>	<p>Both design interaction from its origin. <b>(Forlizzi et al., 2013)</b></p>



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<p><b>Disciplinary Intersections</b></p>	<p>Conceived from elements of interaction design, interface design, content and information design. (Aizpurua et al., 2016; Zaina et al., 2020)</p>	<p>Conceived in the interstice between Industrial Design, Marketing, Operations Management and Logistics. (Shostack, 1984; Polaine et al., 2013; Sangiorgi et al., 2017; Forlizzi et al., 2013; Zimmerman et al., 2011; Downe, 2021)</p>	<p>Both have interaction design as a common point. (Forlizzi et al., 2013; Zimmerman et al., 2011)</p>
<p><b>Socioeconomic Importance</b></p>	<p>. Contributes indirectly with the sale of service goods; (Forlizzi et al., 2013)                  . Provides an intelligent response to society and the economy in a decoupled way. (Forlizzi et al., 2013)</p>	<p>. Contributes directly to the sale of service goods; (Penin, 2017; Downe, 2021)                  . Provides an intelligent response to society and the economy at the same time. (Penin, 2017)</p>	<p>. Contribute directly or indirectly to the sale of service goods; (Forlizzi et al., 2013; Downe, 2021)                  . Sustained by a service economy. (Polaine et al., 2013; Forlizzi et al., 2013; Downe, 2021)</p>

Table 1: Overlaps and boundaries between UXD and SD

Source: Author

By observing the rows in the table, a comparative assessment between UXD and SD per cluster identified in the literature review was provided. Therefore, 8 clusters that could be compared were identified: (1) scope level; (2) design model characteristics; (3) design object; (4) inference model; (5) stakeholder involvement; (6) field origin; (7) disciplinary intersections; (8) socioeconomic importance.

## Findings and discussion: overlaps and boundaries between service design (SD) and user experience design (UXD) through direct comparison

### Scope level

In the first row of the table, the “scope level” cluster was appreciated, which aims to see the broader ends of each of the two disciplines. It was observed that, among the authors surveyed in the UXD literature review, the broadest topic cited, capable of covering both design model characteristics and design objects, was ergonomics.



Although, there is no consensus among the authors, ergonomics was the only discipline with sufficient breadth to contain all aspects tangential to UXD. It is important to remember that the ergonomics mentioned in the present discussion deals with ergonomics in the expanded field, that is, ergonomics not only related to industrial design but also related to engineering, architecture and interaction design. On the other hand, among the authors surveyed in the SD literature review, the broadest subject cited, capable of covering both design model characteristics and design objects, was the business model and its value proposition. In a more consensual way than UXD, service design authors tend to emphasize that SD has more systemic responsibilities regarding business modeling and value proposition for all stakeholders. It is noteworthy that both the UXD and the SD propose to design interactions within their specificities, with an ergonomic or business modeling purpose. I tend to understand that a business model is capable of encompassing ergonomics, but ergonomics is not capable of encompassing a business design. Also, in the Health Design Lab (HDL) of the Brazilian Albert Einstein Israelite Hospital, these differences between UXD and SD have directly implied in the practical performance and in the way of approaching internal and external customers to the hospital and its ecosystems. Coincidentally, the findings in table 1 and row 1 corroborate the practice of this area of innovation driven by service design, which frequently makes use of UX designs.

### Design model characteristics

In the second row of the table, the “design model characteristics” cluster was weighted, which aims to list actions that point out symptoms of differentiation between UXD and SD. For authors focused on user experience design, the central study of UXD aims to understand the usability of interaction systems in the context of human-computer interaction (HCI). On the other hand, for service design authors, the central study of SD aims to understand touchpoints in relation to a service system. The second aspect listed by the UXD authors was that the user experience fosters elements that are both pragmatic and pleasure-producing in the HCI system. However, the authors of SD listed: the service project fosters unpredictable elements in the encounter of human relationships. Furthermore, the authors of UXD emphasize the focus of user experience design is on trying to control human-computer interaction (HCI) while SD focuses on partially designing a non-controllable human-human interaction (HHI). UXD authors also claim that UX design favors aspects that simultaneously incorporate aesthetics and function into the human experience. However, SD authors point out that service design favors innovative propositions in the service system. At one level both UXD and SD interface with the business on which the interaction is designed. However, the two disciplines contemplate the business interface differently. In UXD, the design priority is on the customer's needs



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while in SD the design priority is on equalizing the customer's needs with the business needs.

Still in the second row of the table, it is revealed that both disciplines are based on the human-centered design (HCD) approach. Apart from that both disciplines can use mixed research methods, whether qualitative or quantitative. Also, both UXD and SD seek to respond to the tacit needs of the user, that is, both seek to decode languages that are not yet easily verbalized. UXD and SD use material and immaterial media to design an experience full of interactions, using creative and collaborative methods. Therefore, designing the interaction is a common intention for both disciplines although one focuses on the HCI interaction and the other focuses on the HHI interaction.

### **Design object**

In the third row of the table, the “design object” cluster was examined, which aims to identify the design subfields of each of the two disciplines. According to the authors of UXD, a user experience designer can design the user's navigability on some platform as well as design the web-browser. Likewise, SD authors describe that a service designer can design processes that develop the service and its experience, in addition to designing the interface between users and service providers. The point of confluence between the two disciplines regarding the design object is that both design interactive artifacts and this includes: products, services and systems.

### **Inference model**

The fourth row of the table focused on the “inference model” cluster, shows there is no difference between the disciplines when it comes to the use of logic applied to design objects. I understand that the HCD approach whose two disciplines are anchored uses design thinking to make abductive inferences, go through creative processes, in addition to organizing data and ideas with network thinking.

### **Stakeholder involvement**

In the fifth row of the table, the cluster “stakeholder involvement” was observed, seeking to understand the role of human centralization according to the design object of each of the disciplines explained in the table. In the UX context, user experience design is human-centric by capturing the customer/end-user perspective and absorbing their needs, desires and aspirations. In the service context, service design is human-centered by capturing the perspective of all stakeholders, including direct participation in the design process (codesign). In the comprehensive reasoning between the two disciplines, both understand the role of centralization in the human through the perspective of the one who is central to the interaction project from the



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absorption of their needs, desires and aspirations. I understand that the SD does not focus its attention, primarily on the end user, however it seeks to equalize interests and values between different stakeholders. While UXD primarily directs its attention to the end user. Therefore, in service design, co-design with stakeholder is more indispensable than in UX design.

### Field origin

In the sixth row of the table, the focus was turned to the historical principle of the disciplines in order to identify justifications for the distinctive or ordinary design behavior of UXD and SD. Thus, the cluster contemplated in this row is “field origin”. According to the authors of UXD, this discipline began known as interaction design and underwent continuous transformation until it became known as user experience design. The authors of SD present that this discipline started at the confluence of two other disciplines: service marketing combined with industrial design. I understand that, unlike UXD, SD is born multidisciplinary and that is why actors demanding these professional service designers in the Brazilian market may be confused.

### Disciplinary intersections

Continuing the historical theme, the seventh row of the table highlights the cluster “disciplinary intersections” that aims to point out the disciplinary intersections for the composition of the two disciplines discussed in this paper. The UXD disciplinary universe has been composed over the years by interaction design, interface design, content and information design. The disciplinary universe of SD was composed over the years by industrial design, service marketing, operations management and logistics. The two disciplines feed off interaction design in different ways as UXD deals with concrete human-machine interaction while SD deals with abstract human-human interaction. I understand that the disciplinary composition of service design includes design disciplines with different academic approaches and working methods, which makes SD a complex field of knowledge in epistemological terms.

### Socioeconomic importance

In the eighth and last row of the table, the “socioeconomic importance” cluster was analyzed, which aspires to understand how the two disciplines contribute to economy and society in a relational way. As mentioned by the UXD authors, this project activity contributes value indirectly with the sale of service goods. Furthermore, UXD promotes effective responses to society and the economy but not at the same time. The SD authors mentioned that this project activity directly contributes to the sale of service goods. In addition, the same SD authors pointed out that this discipline promotes effective responses to society and economy at the same time. Both



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disciplines contribute value to the sale of service goods either directly or indirectly. Also, the two disciplines discussed are underpinned by a service economy.

## Conclusion

This article was able to extract relevant findings both in the differentiation between UXD and SD and in the converging points between both disciplines. It is concluded that service design encompasses user experience design because UXD interfaces can be touchpoints of service systems. However, this does not mean that a professional service designer or a professional user experience designer can easily replace each other. Both SD and UXD demand specific skills and abilities that need to be learned and exercised.

It also confirms the initial expectation that service design cannot significantly contribute to the field of user experience, but UXD can bring contributions to the field of service design. Due to the level of scope of each discipline, service design is more complex because it deals with a greater number of variables than user experience design. The complex universe in which service design operates does not delineate the level of difficulty in facing UX challenges. In view of the analysis of the categories identified and organized in the table, it was noted that service design has skills in the scope of the business ecosystem, process mapping, business strategies, direct sale of service goods, work environment, service channels and human relations.

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