Chapter

Research Directions for Value Co-Destruction in Banking Digital Transformation

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Abstract

Digital transformation imposes an invisible legacy on managers: the destruction of value. Technology's ability to make services intangible can lead to irreparable losses of value to businesses, resulting in a decline in economic potential and imposing a dictatorship of gratuitousness. To research how this happens and propose solutions, I analyze the trend of value co-destruction (VCD) in banking digital transformation. The ability to understand and predict such changes is important to guide the planning, implementation, and evaluation processes of business decisions, since the application of expert systems in decision support is common. Value creation is a central concept in business literature since companies create value through their operations and the delivery of services and products that meet the desires of their customers. However, the value can also be destroyed, causing the bankruptcy of companies and significant changes in the market. Through a semi-systematic review of the literature, I seek the theoretical guidelines of VCD in the context of online banking services. We found 112 articles related to the theme, and part of the systematic analysis of these articles is arranged in this work. The main objective of this theoretical essay is to evidence research propositions for analysis of VCD in the context of digital banking transformation.

Keywords: value co-creation, value co-destruction, dominant service logic, banking, digital transformation, expert systems

1. Introduction

Digital transformation has recognized capacity to generate opportunities, while, as a social and economic trend, it forces public and private companies to adapt to the changes imposed by the diffusion of emerging technologies [1]. Its challenges affect individuals, organizations, ecosystems, and society. The ability to understand, conduct, and predict such changes is important to guide the processes of planning, implementation, and evaluation of business decisions [2].

As an interdisciplinary theme, digital transformation has a broad definition according to the context of the study. In the work Verhoef [3], digital transformation is understood as the process of using information technology (IT) to facilitate change,

create value, restructure businesses to gain competitive advantage, create business opportunities, create new business models, interconnect products, and link production systems to global networks. The way IT contributes or impairs the creation of value in business has aroused the interest of researchers [4–6]. Investments in IT have intensified in recent times, growth not accompanied by empirical research on the effects of digital transformation through the insertion of online services and, consequently, the potential loss of value resulting [7].

Organizations create value through their operations, services, products, and business models that meet the desires of their customers [8]. However, Vargo and Lusch [9] propose the use of the term value co-creation (VCC), justifying that value is built by the customer, in the use of the service. VCC is defined as the process in which consumers team up with service providers or other consumers to generate user-perceived benefits in the consumption process. That is, it assumes that value creation takes place through the service in use [10].

Many studies on VCC are supported by the theoretical lens of the service-dominant logic (SDL), which is defined from the dynamics of value co-creation through the integration of resources in a specific context, and not embedded by the company in the production process or in the execution of the service [9, 11]. Plé and Cáceres [12] criticized marketing's failure to understand the processes related to value creation more broadly [11] and how its potential results can also be negative [13]. Value co-destruction (VCD) is conceptualized as the decrease in value that occurs when the customer uses the product and also when value is realized collaboratively during the interaction between customer and seller [14]. Starting from the premise that interactions can result in value co-creation, they considered it logical for the existence of value co-destruction (VCD) through the same interaction processes and the misuse of services by customers [12, 15].

The technology has helped companies to create value, since it allows them to expand the services capillarity and personalization, and branding capacity. For example, the use of artificial intelligence and machine learning can generate economies of scale, improve process efficiency, and enhance business penetration, but such technologies can also destroy business value and sometimes with serious and irreversible consequences [7, 16–20]. Organizations have the task of balancing the potential and limitations of technologies in order to generate adequate value propositions, which becomes a critical aspect for any business model [21]. Echeverri and Skålén [22] recognize that interactive value formation does not just occur during dyadic interactions between customers and suppliers, as many VCD studies informed. Therefore, VCD and VCC can be performed through the interactions between several types of actors.

Value creation is a central concept in business literature [23]. Organizations create value through their operations that deliver services and products to meet the wishes of their users [8]. Digital transformation assists companies in creating value, considering their contribution to personalization, capillarity, integration, and optimization [24]. However, organizations have the task of considering the potentialities and limitations of technologies in order to generate appropriate value propositions, which becomes a critical aspect for the business model [21].

The main objective of this theoretical essay is to evidence research propositions for analysis of VCD in the context of digital banking transformation. To enable the delivery of the general objective described, it is necessary to: 1) delimit the concepts related to digital transformation and VCD; 2) understand how the VCD process is

configured; 3) define the mechanisms related to VCD; and 4) gather characteristics of the financial services segment in the context of digital transformation.

2. Service-dominant logic

Value creation has been the subject of several studies over time. Despite the numerous studies, there is no consensus on the way the value is formed. In the midst of conceptual differences, it is possible to identify three competing theoretical structures [25, 26]. The first movement comprises the value as embedded in the product or services when made available to users. From this perspective, the value is defined in monetary measures, comparing costs and revenues. The separation is very clear: consumers on the outside and the value created within the company [26, 27]. This logic did not consider the effects of relationship networks, political positions, personal influence, and other adjacent issues.

Interactive value formation describes value creation in buyer-vendor interaction. In this sense, the integration of resources such as content and the service system is defined as context [28]. The literature brings us different perspectives on the service, among them: 1) service-dominant logic (SDL) [9], 2) service logic [29], and 3) client-dominant logic [30]. In all these lenses, the formation of value arises from the provider-user interaction, however, differs in the definition of how value, and especially VCC, relates to services and actors [28].

Service logic understands value creation as a result of the value created by the provider and then complemented in direct user interaction [29]. SDL considers all value as co-creation [9] including that indirect interaction between provider and user. Finally, the logic of the dominant client considers that the value is created by the user from the offer reached by the provider, that is, it is independent of the interaction between customer and seller [30].

Among the perspectives presented, SDL was chosen as the theoretical lens because it is considered more complete in its multifaceted perspective, which includes the formation of interactive [28], VCC [11], VCD [12, 14], the integration of resources [29]. It was also considered the adequacy that the lens presents in applications in service systems [7, 31] and their suitability for digital services analysis [31–34].

2.1 Co-creation of value

Vargo and Lusch [9] proposed the revision of the logic prevailing at the time focused on tangible resources. The new perspective focused on intangible resources, co-creation of value and relationships, elected the provision of services as a fundamental way for exchanges. The origin of the term VCC comes from Vargo and Lusch [9, 11], who considered all users as co-creators of value. VCC has gained prominence in management research, precisely by proposing the alternative view to the concept of value embedded in the product and arguing that providers co-create the value of services and products in collaboration with their users [11]. This view was complemented by Grönroos [29], who described the activities of users as agents of economic value creation, emphasizing, however, that VCC requires two or more economic factors, such as users, suppliers, employees, and other resources. In this sense, it is pertinent to consider that the adoption of online services, such as financial services, places the user as a co-creator of value, reducing the company's control over the value proposition of the business [35].

2.2 Value co-destruction

VCD is a concept proposed by Plé and Cáceres [12] in addition to the work of Vargo and Lusch [11]. The authors recognized that interactions between the parties can result in VCC; however, by the same logic, it is possible to consider that the value can also be co-destroyed. The fundamental premise of the concept is that it would not be possible to guarantee the absence of error in services, thus it was possible to affirm that the VCD results from the misuse of resources during interactions in service systems [29, 36] or inappropriate relationship practices [12, 14].

Both concepts, VCC and VCD, are linked to the service-dominant logic theory (SDL), which, among other things, emerged as an alternative way of thinking about the creation and exchange of value. SDL initially proposed that value creation emerged from the use of the service, something the authors called value in use [9]. Later, other studies questioned some gaps in the theory, among them, the relationship of resources with the creation of value [29], the lack of recognition of the potential negative effects that interaction could generate [12, 14], the lack of consideration of other stakeholders [37, 38], and the participation of employees of supplier companies [39]. In this sense, the construction of value is not linked to factors directly related to commercially traded products or services, the focus is on the experiences, logic, and the ability of the user to extract value from the products and other resources [26].

The evolution of production in the researched theme was followed by important advances, as highlighted in **Figure 1**. Until 2010, the main elements of the theme, that is, VCC, VCD, and SDL were postulated. Between 2011 and 2016, theoretical support mechanisms were developed, such as the VCD process, VCD relationship between companies, and VCD background. From 2015, contexts related to IT and digital transformation motivated empirical works.

3. Digital transformation in banks

The financial services segment is strongly marked by competition, intensively in knowledge and technological [40], a position that generates market pressures for the provision of online self-service [7]. Financial technology companies (fintechs) are

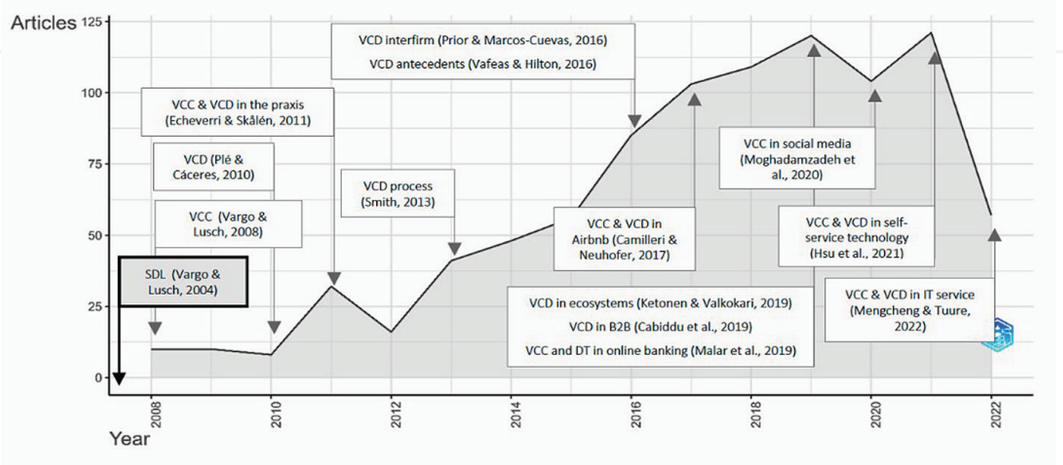

Figure 1.
Annual scientific production.

gaining market ground, in part by countering the high prices of services operators by traditional banks [41] but also taking advantage of the lethargy of traditional institutions that, by not knowing the profound effects of engaging users in value creation, promote digital transformation cautiously [42].

The move toward disruptive technology taken by fintechs is not unique to the financial services industry. However, due to the ability to act on gigantic user bases, predictability of the evolution of the sector and a regulatory basis already consolidated, digital transformation in the sector lacks urgency in the dimensioning of damages and, mainly, in the survey of alternatives to mediate the effects of co-destruction [41]. The abrupt loss of value in the financial services segment can generate damage, since these are structures that condense economic factors and balance the financial dynamics that sustain and give flow to economic assets. Thus, a mass deterioration of these economic agents can generate chain losses and profoundly compromise the economy of a society, such as the recent case of Lehman Brothers [43].

Despite this, research published in a recent report by McKinsey [44] evaluated the level of digital maturity in several sectors in Brazil. The best positioned sectors in the study are financial services, retail, and telecommunications and technology, they scored on the average of the other sectors: advanced industries, basic industries, transportation and infrastructure, and consumer goods. The research adopted the following dimensions in the evaluation: strategy, capacities, organization, and culture and used a scale of 100 points in which the financial sector scored 75, the highest in the Brazilian context and the second largest in the world. Specifically, the financial services sector is the one with the highest degree of maturity in models and tools and has greater regularity in all dimensions. The sector is composed of insurers, payment companies, and banks.

The banking subsector has the highest digital maturity in Brazil, lagging only in the strategy dimension, in which the entities of means of payment are superior. The perception of the potential for change identified in the financial services sector was highlighted in the research, as well as the *extensive experience in analytics*, whose percentage of companies in the practice of models and tools stood at 82%, against 35% in the other sectors. Specifically in the capabilities dimension, the financial services sector stood out for the dissemination of themes of user experience, digitization of processes, and implementation of the agile method [44]. In this sense, it is relevant to understand how digital transformation can affect the financial services sector and what alternatives managers can use to prevent potential losses and co-destruction of value [7, 45].

3.1 Expert systems in banks

There are many different expert systems already in use, especially in banks, which have slightly different characteristics. Such systems provide knowledge from different domains that are mutually dependent. Domains often have similar subsets of knowledge [46]. Expert systems are technological systems with substantial domain knowledge that can find solutions that resemble those that would be found by human beings faced with significant problems [47]. Expert systems have several applications, such as virtual assistants [48], artificial intelligence [49], geo-information management [50], and among others. In the banking segment, it is common to apply expert systems in decision support. In banking planning, it is of vital importance for the decision-maker to understand the dynamic behavior of the system he must control. However, your ultimate goal is rather to make a decision that takes this system to a

certain position [51]. Another common application is in virtual customer service and in the provision of digital services previously offered by human attendants [52]. The VCD is triggered when expert systems are applied to the service, since, in such situations, the interference of users is more and definitive in the construction of value [53].

4. Value co-destruction in banking digital transformation

Society is increasingly digital, and it is evident that digitization delivers benefits to consumers, industries, and service providers, in addition to enabling entrepreneurship in various social layers, generating opportunities through facilitated access to the business environment provided by technology [20, 54, 55]. In the context of large companies, the digitization of society requires facing several challenges, such as greater control of the consumer market that tends to take unexpected directions and increase concentration, especially in the service sector [56–58]. Leading companies in digital maturity in the world have performance in EBITA up to five times higher compared with other companies [44].

The introduction of online financial services presents risks and challenges that are not yet dominated by organizational managers, in addition to the lack of research covering VCC in the context of digital transformation in financial services [7]. In the field of fintechs, there are difficulties in monetization since users refuse to pay for digital financial services [59]. This hinders the development of business models and highlights the difficulty of organizations in creating value for a digital service. Considering that the service was charged before it was digital, we can infer that there was destruction of value. It is important to note that the advent of web 3.0 places collaboration and co-creation of value in a changing and decentralized [45]. However, there is a lack of a clear definition of value and co-creation, its dimensions, and antecedents. Given the various assumptions proposed by the researchers, the concept of co-creation is still complex and has gaps, making theoretical application difficult [60]. The arguments presented illustrate the research problem identified.

The inconsistency in SDL accused by Plé and Cáceres [12] about the lack of consideration of the negative aspects in VCC denotes that such aspects are related to the misuse, whether accidental or intentional, of system resources, causing unexpected results that can destroy value. However, there are no specific frameworks that assist in the treatment, prevention or modification of such conditions that can lead to VCD. Another aspect that was mentioned in the seminal work of Vargo and Lusch [9] and was not contemplated in the aspirations of the VCD or even better developed in later research is the role of knowledge as an obstacle to the creation of value [5, 36].

Studies on VCC and VCD in SDL focused on specific sectors, such as tourism [6, 16, 45, 61–63], transportation [14, 33, 64], ecosystems [39, 65, 66], and social media [19, 20, 55, 61, 67, 68]; in addition to other scattered surveys across multiple sectors. However, few studies have been dedicated to the challenges of digital transformation, especially in the financial services segment, which has advanced in digitization, and its operations affect several other sectors [44].

The gap identified by this study is the lack of further deepening in the understanding of the structures that permeate the VCD and a framework that guides the treatment of issues related to VCD in the situation of digital transformation. The choice of the financial services segment seeks to take advantage of the opportunity to explore such structures in an industry with recognized digital maturity, large number of competitors, and an extensive user base.

5. Method

The systematic review of the literature aims to demonstrate the state of the art of research related to digital transformation, VCC, and VCD in the scope of SDL. The evidence will serve as a basis for critical discussion, identification of gaps, and research propositions. The research objective in this work is to explore VCD in the financial services segment in the context of digital transformation. However, as research on the subject is incipient, both in financial services and in digital transformation, articles from research in other contexts were sought that can help in the broad understanding of the theoretical lens and its nuances.

5.1 Procedures of systematic review of the literature

The review implemented in this work is a semi-systematic review of the literature, as defined by Snyder [69]. The systematic review has a narrow focus, analyzes quantitative articles, and seeks to contribute to evidence of the effects. The semi-systematic review has a broader focus, explores quantitative, qualitative, or theoretical research, and contributes to the demonstration of the state of knowledge in the field. The research procedures occur in a standardized and schematized way, to promote a broad understanding of the theoretical and empirical developments and thus identify patterns, gaps, and research trends. The research procedures are [69]: 1) project: definition of search terms, databases, inclusion and exclusion criteria; 2) conduction: systematic search of articles for sample construction, selection of articles by reading the title and abstract, selection of articles by full reading, and selection by the impact of the journal or document; 3) analysis: definition of research questions to guide the search for information, codification of excerpts, classification of findings and writing of analyses; and 4) to structure and write the review: statement of the purpose of the review, writing of the report with the findings, and manifestation of the contribution of the review.

The search terms for phase 1 were defined from the *reading of top journals of* the search field that were selected by search in Google Scholar from the number of citations. The list with the terms and references follows: co-creation [7], [12, 70–72]; co-destruction [7, 12, 70]; interactive value [70]; service-dominant logic [12, 70]; digital transformation [7, 73]; and value destruction [7, 74, 75].

The research bases chosen were Scopus (SCO), Web of Science (WOS), and Proquest (PRO). The definition of the bases had as criteria: possibility of configuration of filters, reduction of overlap, and support for exporting the list of articles.

From the list of terms, several *search strings were tested until you found the one that* gathered the necessary diversity of material within the field delimitation, as *follows: (Co-creation OR Cocreation OR "Value Construction") AND (Codestruction OR Co-destruction OR "Value Destruction") AND ("Interactive value*" OR "Dominant-Logic")*; resulting in 34 articles in the SCO, 43 articles in WOS, and 35 articles in THE PRO, totaling 112 articles.

In all cases, the filters used were searched by topic (title, summary, and keywords), articles only, without date limit, and English language. Thirty-one duplicate articles were removed from the sample, 19 that were considered out of scope after reading the abstract, 1 for inadequate material, 2 that were considered out of scope after reading the full article, and 1 because the article was not available. The articles considered more relevant, by the number of citations, are in **Table 1**. The content of the articles will be discussed throughout the literature review.

Article title and reference		H Index *1	SJR*1	Cit. *2
1. Co-creation and co-destruction: A practice-theory based study of interactive value formation	[14]	72	1699	997
2. Not always co-creation: Introducing interactional co-destruction of value in service-dominant logic	[12]	111	1599	836
3. Value co-creation and co-destruction in the Airbnb sharing economy	[76]	100	2288	280
4. The value co-destruction process: A customer resource perspective	[36]	110	1483	273
5. Co-Production, Interdependence And Publicness Extending Public Service-dominant Logic	[77]	78	1974	190
6. Studying customers' resource integration by service employees in interactional value co-creation	[15]	111	1599	158
7. Value co-destruction in interfirm relationships: The impact of actor engagement styles	[78]	72	1699	138
8. Consumer showrooming: Value co-destruction	[79]	104	2261	137
9. Antecedents to value diminution: A dyadic perspective	[80]	72	1699	115
10. Transformative service research and service dominant logic: Quo Vaditis?	[67]	104	2261	115

*Notes: [*1] The h index and SJR values were obtained in consultation with the Scimago website (https://www.scimagojr.com/) on 06/05/2022. [*2]The number of citations was obtained in a consultation conducted on the Google Scholar website (https://scholar.google.com.br/) on 05/25/2022.*

Table 1.
Most relevant articles by the number of citations in Google scholar.

6. Presentation of data and discussion

The sample of articles was submitted to quantitative analyses to determine the degree of relevance of titles, sources, and authors. **Figure 2** shows the quantities of articles along the publication interval of the sample documents, as well as the sum of the number of citations in each period. As for the number of citations, the years 2010 and 2011 are highlighted, the citations are concentrated in *two specific articles "Co-creation and co-destruction: A practice-theory based study of interactive value formation"* [14] and *"Not always co-creation: Introducing interactional co-destruction of value in service-dominant logic"* [12]. The common point in the two studies is the treatment they gave to the VCD, which, at the time of the publications, had not yet been explored in depth. The work of Plé and Cáceres [12] is referenced as a pioneer in the introduction of VCD in the context of the SDL theory originally proposed by Vargo and Lusch [9]. The relevance given to these seminal works in the VCD demonstrates the interest that the theme raises in the literature. As for bibliographic production, the highlight was 2021 with 14 articles. The period between 2019 and 2022 corresponds to 63.79% of the production of the period and, in 2022, there are already seven articles published.

The financial services segment is recognized for the high level of maturity in the development of technologies [44]. Digital transformation plays a relevant role in the context of financial services; much of this recognition is due to the opportunities it is able to generate through information technology [1]. Technology lays the foundation for emerging business models, proposing a redesigned value creation and capture logic. The point is that technology is not just a business tool, it has the potential to

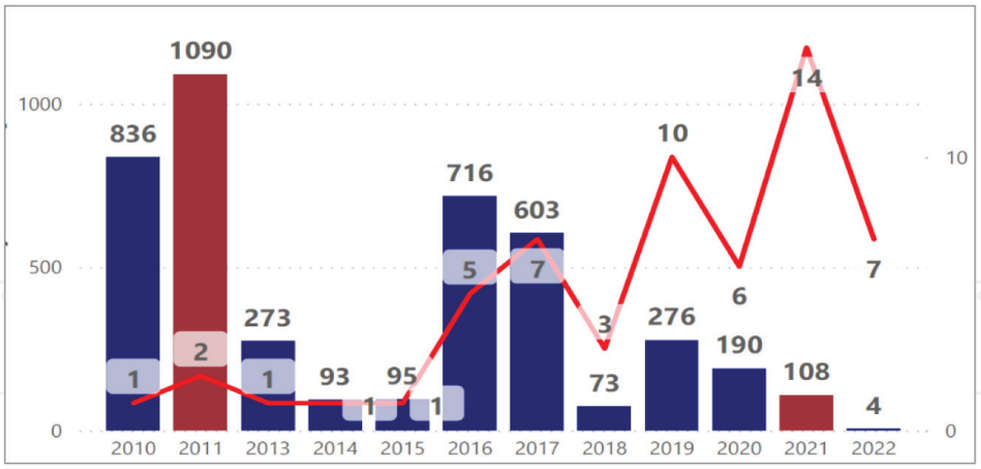

Figure 2.
Number of articles and number of citations per year of publication.

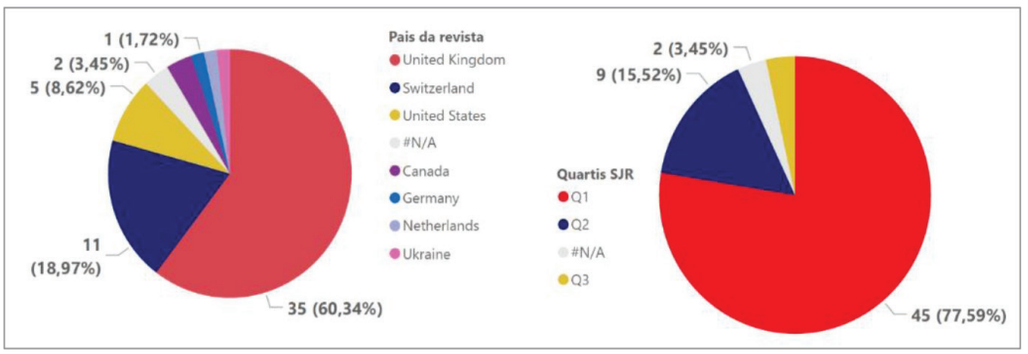

Figure 3.
Number of articles per country of the journal and quartile of the SJR.

modify relationships, raise standards, and change market rules [2]. The myopic perception of this process focuses only on the possibilities of obtaining competitive advantage as a way to create and add more value to users, to convert the supposed increase in value perception into profits [3].

The accelerated shift to digital channels in the banking sector is likely to continue, and this changes the way traditional financial institutions relate to customers, but also the options available to customers. Fintechs and large technology organizations are creating solutions aimed at the growing digital banking public, and this raises the challenge to different levels [81, 82]. Digital transformation efforts vary widely based on an organization's business objectives.

The graphs in **Figure 3** tell you about font characteristics. More than 60% of the articles were published in UK journals, wherein two articles with the highest sample citation, and already listed in **Table 1**, are concentrated in *the magazines "Marketing Theory"* and *"Journal of Services Marketing."* Another 19% of the articles were published in Swedish journals, all distributed in the journals *"Sustainability"* and *"Administrative Sciences."*

Regarding quartiles, most of the sample (77.59%) is concentrated in journals at level Q1 that has an H Index between 24 and 153. Quartile Q2 has H Index between 23 and 106. Thus, the graph in **Figure 2** attests to the relevance of the sample by

the degree of impact of the sources. This information was searched on the Scimago (https://www.scimagojr.com) website.

Some authors discuss other characteristic elements of the financial services segment that may aggravate the effects of VCD. In the work of Gilliam [53], they found information asymmetry as partially responsible for the apparent difficulty of banks in creating co-creative services. On the one hand, bankers cannot understand the attributions of consumers, and on the other, users have difficulty understanding financial services with breadth and depth. This is particularly interesting if we consider that the banking industry is one of the oldest and most highly used, but still needs to confront bilateral asymmetries.

7. Final remarks

SDL classified the resources as operational and operating. In goods logic, you are a resource operating alongside other tangible resources. In SDL logic, the user is an asset player, so knowledge, motivation, and skills are valued as inputs of value creation [9]. Operating resources, such as products and revenue, are tangible and static and need actions to generate value. Operating resources, including the actors' knowledge and skills, are intangible and dynamic, so they generate value through interactions [39]. The present literature review identified that research in VCD in digital banking transformation has potential for exploitation in two lines: 1) one highlights the role of resources and service systems [29, 45, 83, 84]; and 2) another focuses on practices [22, 85, 86].

The mapping of the topic through semi-systematic analysis confirmed the need for in-depth studies involving the relationships between the SDL and the concepts of VCD, and digital transformation, which can produce new insights. The following is a brief list of the main proposals research directions:

1. identification of antecedents associated with VCD in digital transformation [3];

2. a literature review to investigate the current theoretical field support for digital transformation demands and other antecedents related to digital services [87];

3. investigate which of the main expert systems are involved in the VCC and VCD process and which are the critical points that managers should focus on;

4. identification of practical lessons learned in the banking context, which already experiences digital transformation, seeking to list and compare variables and antecedents [7, 12, 88];

5. more robust investigations on VCC and VCD in the B2B context [14]; and

6. longitudinal survey to assess VCD constancy over time.

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