

Digital Servitization Bridging Relational Asymmetry

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Digital Servitization Bridging Relational Asymmetry

Abstract

Purpose – This paper aims to investigate how firms such as Xerox, which have transitioned to a digital servitization business model, bridge relational asymmetry. It continues the theme of sustainability from the traditional three pillars—environmental, economic, and social sustainability—to relational in terms of the quality of the relationship between the service provider and the customers.

Design/methodology/approach – Using an exploratory method, qualitative data from the case of Xerox, a pioneering company that embraces servitization business models, has been gathered. The combination of exploratory archival and literature searches allows for a more in-depth understanding of servitization and how it bridges (or does not bridge) the relational asymmetry.

Findings – The results reveal that a relational dimension is inherent in the servitization business model, whereas in order to achieve sustainability, it must leverage transparency, which may be either an enabler or an impairing factor. A borderline for a transparent relationship that distinguishes these two parameters is established.

Research limitations/implications – The study's single-case firm was limited to Xerox as an industry forerunner and could only represent mature and multinational enterprises.

Practical implications – With the purpose of providing high-quality service, this exploratory paper gives managers rational insight into whether and when it is sustainable to fill the relational asymmetry between them as service providers and their customers.

Originality/value – This paper examines servitization from a new perspective, proposing that the relational asymmetry bridged by servitization will determine the future of organizations that differentiate themselves through quality relationships.

Keywords: Digital Servitization; Product Service System; Quality Relationship; Relational Asymmetry; Transparency; Value Co-creation

Article Type: Research paper

Introduction

Servitization, which refers to adding services to products to enhance value, has gained significant attention in scholarly and practical contexts (Vandermerwe and Rada, 1988; Corrêa, 2018). It represents a shift from selling standalone products to offering customer-focused packages that include products, services, support, and knowledge to create value in use (Slack, 2005). While the adoption of servitization as a competitive manufacturing strategy has been widely explored (Wise & Baumgartner, 1999; Oliva & Kallenberg, 2003), there is a growing interest in capturing sustainable value creation and transitioning towards a circular economy (Retamal & Schandl, 2018; Stål & Corvellec, 2018).

Companies have realized that delivering products is insufficient for maintaining competitiveness and have started to provide solutions to increase market share and customer satisfaction (Yu et al., 2008; Sakao et al., 2009). One approach to achieve this is by incorporating services into products, known as a product-service system (PSS). The goal of PSS is to enhance a company's competitiveness and profitability while also reducing product consumption through alternative usage scenarios (Geng et al., 2010).

The development of the PSS as a business model has brought attention to the environmental, economic, and social dimensions of sustainability (Corrêa, 2018). Servitization has the potential to positively impact economic and environmental sustainability by extending the life cycle of products through the provision of services. Additionally, by influencing customers' consumption patterns, servitization can also contribute to the social dimension of sustainability (Annarelli et al., 2019).

Within the servitization context, the quality of interaction between providers and customers is crucial in delivering customized and valuable solutions (Kohtamäki et al., 2013; Lerch & Gotsch,

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3 2015). The closeness and quality of this interaction are vital for value co-creation (Grönroos &
4 Voima, 2013; Sjödin, 2019), requiring a collaborative innovation approach and shared production
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6 resources between partners (Luz Martín-Peña et al., 2018). Knowledge transfer between the
7
8 provider and customer is key in capturing the servitization process (Hara et al., 2016). However,
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10 little research has been done to identify how servitization bridges the gap between providers and
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12 customers to co-create sustainable value.
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17 While prior research has examined customer satisfaction issues from various perspectives (Baines
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19 et al., 2017; Berry, 1995; Barnett et al., 2013), there is a lack of clarity on the root causes of
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21 relational imbalance in the 21st century, resulting in unsatisfied customers. Therefore, the purpose
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23 of this research is to identify the factors impacting relational asymmetry between providers and
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25 clients, focusing on the case of Xerox and its model of maximizing digital transformation (Harris
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27 and Wonglimpiyarat, 2020).
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31 Although recent studies have explored how providers and customers transform their relationships
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33 to achieve benefits in digital servitization (Kamalaldin et al., 2020), this study extends the analysis
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35 by considering not only the business-to-customer (B2C) relationship but also the provider-
36
37 customer interface using the lens of relational asymmetry. In business relationships, asymmetry is
38
39 common but does not necessarily imply provider dominance. Relationships can be customer-
40
41 dominated or supplier-dominated, and the goal is to achieve compatible and collaborative
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43 relationships (Johnsen and Ford, 2001). This study investigates reciprocal engagements within
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45 digital servitization, where both parties operate within a collaborative ecosystem.
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49 Building upon previous studies and adopting the perspective of relational asymmetry, this paper
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51 contributes to the existing literature on digital servitization in management contexts by addressing
52
53 the following research question: *How can the digital servitization model bridge the relational*
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3 *asymmetry between providers and customers?* To answer this question, a single case study
4 approach is adopted, examining the case of Xerox as a pioneer in digital servitization and its
5 relationship with clients.
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10 The findings of this study have both scholarly and practical implications. From a scholarly
11 perspective, this research identifies transparency as the pivotal cause of asymmetric relationships
12 within servitization. The enhanced digital interaction between providers and customers must
13 address possible adverse behaviors to ensure sustainable relationships. Additionally, the case of
14 Xerox highlights the dual effect of transparency, which can either enable or impair value co-
15 creation, depending on the intention. From a practical standpoint, the Xerox case suggests the
16 importance of frequent interactions or real-time sense and respond sessions with clients,
17 community-promoting transparency, and the recognition that incomplete information exchange
18 does not necessarily lead to manipulative or deceptive techniques.
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33 **Theoretical Background**

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35 According to the current servitization research field, there are numerous advantages for
36 manufacturers to shift to servitizing their products. Servitization is perceived as a major strategy
37 because of the financial (Neely, 2008), strategic (Baines & Lightfoot, 2014; Kowalkowski et al.,
38 2017), and marketing (Gebauer et al., 2017) benefits it brings to their present product offerings.
39 Notably, it is seen as a strategic option for product innovation (Carlborg et al., 2014) and
40 standardization (Baines et al., 2007), a method to combat commoditization (Matthyssens &
41 Vandembemt, 2010), and a chance to develop unique, long-term customer connections (Tukker,
42 2004). Servitization is a potentially complex field with contributions from numerous interrelated
43 research communities.
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The Servitization Using the Product Service System Model (PSS)

Our focus is on the relational dynamics between the provider and the customer in servitization as the primary means of survival and income maximization in today's highly globalized market demands (Guerola-Navarro et al., 2021). According to Tukker (2004), the Product Service System (PSS), a business model that represents the most suitable way to achieve servitization (Annarelli et al., 2019; Reim et al., 2015), offers a better means of ensuring client loyalty than the mere purchasing of products. The PSS is characterized by "tangible products and intangible services designed and combined so that they may jointly meet specific consumer demands" (see, e.g., Tukker and Tischner et al., 2017, p24).

There are various classifications of PSS, but most classifications make a distinction between three main categories: product, use, and result orientations. The study on PSS as a system underlines the combination of tangibles (the goods) and intangibles (the services) to meet particular client demands. In product servitization, manufacturing companies are more willing to produce "results" rather than just "commodities" as distinct artifacts, and customers are more willing to consume such products as "solutions." These three main categories—product-oriented, use-oriented, and result-oriented—are further elaborated by Tukker (2004) into eight sub-categories to identify the more specific PSS types, including different economic and environmental characteristics.

The PSS model indicates that when a client's reliance on the product as the primary component of the PSS decreases, the client's demand becomes more abstract. In addressing the client's genuine end demand, the provider has a little more flexibility. In contrast, abstract requirements are usually difficult to translate into actual (quality performance) measures. Providers are unclear about what they have to offer, and customers are unsure if they received what they wanted.

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3 In this sense, servitization needs to be considered as a relational process approach to co-creating a
4 tailored and integrated bundle of commodities and services as solutions. A solution, according to
5 servitization, is a combination of customer-supplier relationship actions that involve trust and
6 innovation (Johnsen and Ford, 2001). Failure to adhere to these standards by suppliers may result
7 in lost sales opportunities, disgruntled customers, and lower profitability. According to Tuli et al.
8 (2007), solution providers might benefit from replacing their product-centric perspective on
9 solutions with a relational process view.

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19 Despite the fact that the PSS model represents a viable method to help firms transition to digital
20 servitization, there seems to be a lack of evidence on what makes a digitally servitized firm
21 relationally sustainable in the long run. In other words, what binds service providers and clients to
22 effectively co-create value in order to provide a *quarter-inch hole rather than a quarter-inch drill*
23 (Corrêa, 2018).
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33 ***Servitization and the Relational Dimension***

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35 Prior studies indicate that, as in the publishing industry such as Xerox, digital servitization
36 transforms the business environment, its supply chains, and business linkages (Vendrell-Herrero
37 et al., 2017). As a result, the supplier's value creation in digital servitization is based on its capacity
38 to guide its customers to success (Rymaszewska et al., 2017) by providing value-added services
39 via a range of digital and customer-oriented business models (Luz Martín-Peña et al., 2018;
40 Kohtamaki et al., 2013; Paiola and Gebauer, 2020). High-quality supplier-customer relationships
41 are increasingly becoming an essential competitiveness driver that manufacturing companies may
42 leverage and explore via the Internet and digital technology (Gaiardelli et al., 2014).
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3 Researchers interested in the emerging topic of relational transformation caused by digital
4 servitization see this phenomenon—the shift from product-centric to relational service-oriented
5 engagement—as a source of future competitiveness due to its ability to unlock new value creation
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10 (Kamalaldin et al., 2020).

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12 The relational dimension between the provider and the customers in servitization has been
13 sustained in literature as a cornerstone for engagement longevity, a source of reciprocal value
14 creation, and an established concept in industrial marketing literature (Ulaga and Eggert, 2006;
15 Athanasopoulou, 2009). It has been analyzed how these relationships are transformed to achieve
16 revenue-generation opportunities (Kamalaldin et al., 2020), and the quality of these relationships
17 and their components have been identified (Grandinetti et al., 2020). However, from the
18 perspective of relationship asymmetry, it is unclear whether the provider-customer relationship is
19 inherently sustainable in a digital servitization economy.
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30 ***Servitization and the Relational Asymmetry***

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32 The terms "asymmetry" and "symmetry" have tended to be used in industrial marketing literature
33 to refer to the asymmetrical nature of relationships such as commitment, power, or dependence
34 (e.g., Gundlach et al., 1995). Asymmetry, defined as a situation where at least one party possesses
35 "private" information unknown to but beneficial to the other party or parties (Akerlof, 1970), is a
36 cornerstone of management research. Although the concept is primarily studied in terms of
37 information imbalance between the principal and the agent, supply chain management researchers
38 have begun to reconsider asymmetry from a relational perspective (e.g., Michalski et al., 2018;
39 Talay et al., 2019; Johnsen et al., 2020). The past studies in this research strand aim at mitigating
40 the likelihood of adverse behavior (Reim, 2018), traditionally attributed to the opportunistic
41 behavior of providers. It is where the customer has to cope with asymmetric information related
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3 to the provider's activities (Homburg & Stebel, 2009; Singh & Sirdeshmukh, 2000). Transparency
4 issues become more acute as customer relationships become more complex (Sufi, 2007). By
5 shifting from transactional to relational interaction (Reim et al., 2018), digital servitization tends
6 to create closer provider-customer relationships characterized by transparency (Eggert et al., 2022)
7 that enable providers to offer customized digital solutions.
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11 In line with Dapko's conceptual work (2012, p71) which defines transparency as "the extent to
12 which a stakeholder perceives a firm's conduct is forthright and open regarding matters relevant
13 to the stakeholder," the literature supports the claim that there is a negative correlation between
14 transparency and asymmetry (Liu et al., 2015; Kumar and Yakhlef, 2016). By increasing
15 transparency between the provider and customers, asymmetry is reduced. However, as far as we
16 know, what must be transparent in the provider-customer relationship in order to bridge relational
17 asymmetry is still understudied.
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21 Transparency can be defined from the customer's or supplier's perspective. Eggert and Helm
22 (2003, p1) define relationship transparency as "an individual's subjective perception of being
23 informed about the relevant actions and properties of the other party in the interaction." In a
24 business-to-business (B2B) setting, they demonstrate that transparency delivers value to the
25 customer, increases customer satisfaction, and ultimately leads to favorable behavioral intentions.
26 From the supplier's perspective, transparency refers to the "process of making explicitly and
27 openly available (disclosing) some information that can then be exploited by potential users for
28 their decision-making processes" (Turilli and Floridi, 2009, pp. 105–106).
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32 Buell and colleagues (2017) argue that the value co-creation is generated by the term "reciprocal
33 transparency." Their laboratory studies reveal that transparency, by visually revealing operating
34 processes to consumers and beneficiaries to producers, generates a positive feedback loop through
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3 which value is created for both parties. The section that follows will look at reciprocal transparency
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5 in the context of Xerox, which is regarded as a forerunner of servitization (Finne et al. 2013;
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7 Matsumoto and Kamigaki 2013) and the epitome of a servitized enterprise (Visintin, 2014).
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10 11 **Methodology**

12 13 **Research design and data collection**

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15 This study, grounded in the relational asymmetry perspective (Smith, 1998; Kamalaldin et al.,
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17 2020; Cimini et al., 2021), aims to answer the following research question:

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19 *How can the digital servitization model bridge the relational asymmetry between providers and*
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21 *customers?*
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25 To find interesting answers, this study is based on a single case study (Yin, 2009). The choice of
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27 a single case study rather than multiple case studies follows the persuasive arguments of Dyer and
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29 Wilkins (1991) and is consistent with the precedent of many influential studies in organizational
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31 theory in general (Ram, 2001). Moreover, it is in line with Patton's suggestions (1990, p230),
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33 which underline that the "logic and power of purposeful sampling lie in selecting information-rich
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35 cases for study in depth. Information-rich cases are those from which one can learn a great deal
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37 about issues of central importance to the purpose of the research". Specifically, this study is based
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39 on the Xerox case study for two main reasons: the first refers to the fact that the photocopier
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41 industry is undoubtedly one of the forerunners of servitization; the second is related to the fact that
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43 Xerox Corporation, a leader in this industry, can be considered the pioneer in the implementation
44
45 of servitized business models, as underlined in a large amount of academic articles (Finne et al.,
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47 2013; Matsumoto and Kamigaki, 2012; Visintin, 2014; Ulaga & Kowalkowski, 2022). In light of
48
49 these reasons, Xerox seems to be a relevant case to analyze with the aim of uncovering new and
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51 interesting insights in the field of servitization.
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3 Data were collected from two main sources: 1) academic peer-reviewed articles that refer to Xerox;
4 and 2) historical, digital archival documents, the official website, and other documents retrieved
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6 online. Ventresca and Mohr (2017) suggest that the study of historical records is one of several
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8 activities used in archival research methodologies, which also entail the analysis of texts and
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10 documents generated by or concerning organizations. The examination of digital texts, such as
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12 those found in electronic databases, emails, and web pages, may also be done using archival
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14 techniques. They argue that archival research should be used as a tool to reinforce other research
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16 methodologies; in our study, we combined it with a literature search of peer-reviewed articles that
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18 refer to the Xerox case, with a specific focus on servitization. This is due to the fact that archive
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20 data, according to Das and colleagues (2018), is particularly vulnerable to experimenter bias,
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22 which may tempt researchers to formulate commodious hypotheses. The research design employed
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24 to develop this work was adapted from Makri and Neely (2021) and minimally elaborated to fit
25
26 the objectives of this study.
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32 *Steps-based protocol for literature and archival research*

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35 The steps-based protocol outlined below has been tailored to collect Xerox data pertinent to the
36
37 interplay between its digital servitization and relational symmetry.
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40 Step 1. A literature review was carried out to find pertinent theoretical areas connected to our
41
42 research subject under the broad category of an exploratory study employing a qualitative
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44 technique. Utilizing the aforementioned keywords, an analysis of peer-reviewed scientific journals
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46 that were accessible over the Internet was conducted using interdisciplinary search engines. In
47
48 order to capture the relational component of this business model, the literature search sought
49
50 relevant published case studies of Xerox from the relational dimension as a pioneering company
51
52 in product servitization. Table 1 shows the list of peer-reviewed articles that were consulted.
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Table 1 here

Step 2. An archival investigation goes hand in hand with the literature search. To evaluate productivity, we study organizational archives such as corporate annual reports as well as websites and media articles on value creation that emphasize the customer experience. The detailed list of archival data types, resources, and periods covered is presented in Table 2.

Table 2 here

It can be argued that archival data combined with a literature search may play a threefold role in contemporary-oriented research. First, the data obtained can be used to add theoretical depth to the study by illuminating the topic and enabling the verification of existing data from other sources. Then, data from the archives and published literature are particularly well-suited to generating developmental explanations or explaining processes of change. Finally, as evidenced by relational asymmetry, the combined data allows us to integrate hard and soft skills, which may serve as an organizing structure for doing empirical research, and, perhaps most importantly, allows us to shift continually between theory and empirical evidence and generate theoretical insights.

Data analysis

We analyzed the data using an inductive approach (Eisenhardt et al., 2016; Eisenhardt, 1989). In the first step, we independently reviewed the primary and secondary data, highlighting the material reflecting Xerox’s client relationship. Then, we examined each of the relevant documents, creating chronologically structured descriptions of each of them while extracting compelling evidence such

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3 as the effects of Xerox customer relationship management on product innovation, the dynamic
4 strategy in creating its own position in the market, its TQM-based strategic management, the best
5 practices on managing customer satisfaction, the development and changes in the Xerox Product,
6 and the Xerox servitization and sustainability phenomenon.
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12 In the second step, we iterated between empirical evidence and theoretical logic to form tentative
13 relationships between constructs. For example, we observed that the literature on Xerox was
14 characterized by common recurring elements (i.e., servitization, innovation, the customer value
15 co-creation process, and digitalization). At the same time, these elements acted in different ways
16 and occurred with different intensities in different Xerox sales locations, resulting in culturally
17 influenced relational nuances. Thus, we iterated between theory and data, sharpening the construct
18 definitions, theoretical relationships, and underlying logical arguments. This process yields a
19 panoramic *Xerox servitization perspective* across regions.
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31 In the third step, we developed our emergent theoretical framework, identifying three major
32 concepts that emerged from other data sources and labeling them as: *Xerox co-creation as a two-*
33 *way process toward transparency; Xerox co-creation as a community promotes transparency; and*
34 *Xerox transparency as bounded bi-directional dynamics.*
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40 **Findings**

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42 Our data analysis yielded some intriguing results. In this section, we presented the Xerox
43 servitization perspectives as revealed by peer-reviewed articles (see Table 1) and the three major
44 concepts as they emerged from other data sources (see Table 2). All of the evidence reported here
45 focused solely on the relationship between Xerox and its clients in search of providing
46 personalized, quality service, either from Xerox or from their clients' experiences and testimonials.
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Xerox Servitization Perspective

Xerox recognizes that, in order to provide more value to customers, build long-term relationships, and increase profits, they must broaden their offerings beyond simply selling and maintaining hardware products, thus including solutions that ensure the optimization of the processes (Visintin, 2014; Oyenuga et al., 2019; Harris and Wonglimpiyarat, 2020).

In reality, in the second half of the 1990s, Xerox Corporation was the first corporation to provide this sort of solution to the US market (Matsumoto and Kamigaki 2013). It pioneered the deployment of servitized business models and has amassed significant system integration, application development, and consulting skills over time. External and internal factors have now motivated nearly all of the major photocopier firms to enter the solution sector. However, providing answers is far from straightforward. It necessitates the implementation of a new, more customer-focused, relationship-based company strategy. It also necessitates that the producer acquires new skills. Indeed, some photocopier companies have succeeded in the transition, while others are still transitioning and/or lagging behind.

On the other hand, the photocopier industry was one of the first to challenge the "razor and razor blade" business model, which was based on the provision of product-related services, with an innovative and more servitized business model rooted in use-oriented rental services. The Haloid Company (as Xerox was named at the time) created such a business model in the late 1950s in order to build the first modern photocopier.

The Xerox Model 914 (1959) was projected to cost \$2,000 to build, whereas rival photocopiers cost approximately \$300. Haloid finally chose to leave the dominating "razor and razor blades" business model and began leasing its 914 model for \$95 per month, covering the first 2,000 copies each month with further copies paid at \$4 per copy. This price concept was certainly appealing.

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3 Finally, to assuage consumers' concerns about this new and creative service, Haloid enabled
4 contract termination with only 15 days' notice (Chesbrough and Rosenbloom 2002).
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7 Haloid was able to make the product affordable to a far greater number of clients by utilizing such
8 a strategy. As a result, a rapidly developing and valuable aftermarket emerged, with rivals totally
9 shut out. The Federal Trade Commission, however, filed an antitrust complaint against Xerox in
10 January 1972 for its claimed monopolization of the office photocopier market. As a result of the
11 antitrust litigation, Xerox was compelled to revert to its pre-1959 "razor and razor blades" business
12 model. In a market where Xerox no longer held a monopoly, a formerly integrated solution was
13 unbundled, and goods and services were provided separately.
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17 IBM and Kodak were the first businesses to enter this newly developed sector (Markides 1999).
18 The strategies of IBM and Kodak emphasized gaining market share by providing better goods
19 and/or better maintenance services at lower prices. Their strategy failed mostly because of the
20 great loyalty of Xerox's business clients.
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24 *Xerox Co-creation as a two-way process to transparency*

25
26 What Xerox accomplished to transform customer satisfaction from an industrial-age process to a
27 post-industrial system anticipates some of the new management competencies demanded by a new
28 managerial thinking. This represents a paradigm change from an industrial-age "Make & Sell"
29 paradigm to a post-industrial "Sense and Respond" approach. The underlying idea is that in an
30 increasingly volatile environment, the task of an organization is to sense and respond effectively to
31 a sudden shift in client preferences.: *Our customer experience is the key to our success. By listening
32 to customers and enhancing our work based on their input, we are able to develop both meaningful*
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3 *relationships and quantifiable analytics to continuously improve our programs and processes*
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5 *(Xerox Website).*

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8 Initially, Xerox gathered client feedback using 20-question periodic questionnaires. The issue was
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10 that finding transpired only once or twice a year, and usually after the fact. By that point, the
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12 relationship damage may have been irreversible. As a result, Vaccarelli and von Bergman (from
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14 the Xerox marketing research team) developed a Customer Satisfaction Assurance System design
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16 termed Sentinel: *Sentinel's sense and respond technology has been shown to bring out the best in*
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18 *people. By creating real-time conversations that can be seen by all, Sentinel strengthens*
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20 *relationships, improves performance, and takes ideas and solutions to new levels. Hearsay is*
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22 *replaced with direct dialogue. Myths are replaced by facts. Sentinel is and has always been*
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24 *compliant with EU General Data Protection Regulation (GDPR) (Xerox Support YouTube).*

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27 *The positive feedback we receive is just as valuable as the problems. Clients tell us about*
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29 *employees who worked through the night or went above- and-beyond to get a project done-*
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31 *Barbara von Bergman, co-inventor and program manager for Sentinel (Xerox WebBoard). The*
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33 *revolutionary changes in customer satisfaction demanded by Xerox management in 2000*
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35 *necessitated a rethinking of the goal, structure, and measures of "customer satisfaction": We*
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37 *actively listen to, and engage in, conversations generated by consumers in public forums and*
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39 *social media. This enables us to better understand consumers' experiences with our products and*
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41 *processes and their perceptions of our brand (Xerox Website).*
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49 ***Xerox knowledge-sharing as a community promotes transparency***

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51 Xerox employs Eureka to assist its customer care engineers who repair copiers and printers at
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53 client locations. Eureka enables Xerox's support group to generate and reuse intellectual capital on
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3 a global scale while also greatly improving customer service and corporate financial performance.
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5 The system expands on the work processes of the service technician by fostering a knowledge-
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7 sharing community that promotes customer service. Knowing what end users were experiencing a
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9 while earlier would be useless if Xerox was not organized to capitalize on that knowledge via its
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11 frontliners.: *Even in huge organizations, it's important to have employees at all levels feel*
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13 *accountable for profits, revenue and customer satisfaction- Lynn Blodgett, former president of*
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15 *Xerox Services (The New York Times, 2011).*

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19 *For example, in Brazil a customer had problems with a Xerox DocuColor 40 production color*
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21 *copier/printer to the point where the technicians were going to replace the \$40,000 machine.*
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23 *Using Eureka, the technicians in São Paolo discovered a tip from Canada that suggested replacing*
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25 *a 90-cent connector. The technicians replaced the connector and fixed machine. That tip was sent*
26
27 *back to manufacturing and the problem could be remedied at the source. A little knowledge, insight*
28
29 *and experience went a long way toward the bottom line and customer satisfaction (KMWorld*
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31 *Magazine, 1999).*

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35 The primary repercussion of the Eureka initiative has been the formation of "virtual global work
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37 groups" in which employees from various countries across the world may exchange their technical
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39 skills. It has broken down boundaries across various technological communities that previously
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41 only exchanged knowledge when asked to do so. Eureka fosters a genuine sense of "community"
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43 among its customer support representatives: *Maybe the "Xerox family," she says, should act a bit*
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45 *more like a real family. "When we're in the family, you don't have to be as nice as when you're*
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47 *outside of the family," she says. "I want us to stay civil and kind, but we have to be frank and the*
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49 *reason we can be frank is because we are all in the same family- Ursula Burns, former Xerox CEO*
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51 *(The New York Times, 2010).* While implementation has been challenging at first, key benefits
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3 have been transparency and a common language for involving key stakeholders in the management
4 of strategy.
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7 8 9 *Xerox Transparency as bounded bi-directional dynamics*

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12 This study sustains that the role of transparency in meeting customer needs is a bounded
13 bidirectional interaction. This means that while customers are compelled to supply firms with all
14 the necessary information to meet their product requirements, firms are only expected to disclose
15 information regarding product creation, its components, and subsequent service delivery. In other
16 words, companies are responding with increased openness, with one big exception: their costs.
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21 In the case of Xerox, the literature is silent about how it deals with cost transparency, but what
22 seems interesting is the clients' response to their pricing strategy, called Value-Based Pricing. It
23 refers to setting the price of goods and services based on how much value the customer attaches to
24 them rather than the cost of production: *In the printing industry, we often talk to salespeople about*
25 *trying to solve a customer's problem—treat them like you would treat your best friend, knowing*
26 *their product and objectives better than their bosses, identifying and helping overcome pain points,*
27 *enhancing their buying experience or convenience—strategies that will help them better achieve*
28 *their goal (Digital Printing blogs, Xerox).*
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43 The notion of pricing based on value is most often used in marketplaces where purchasing a
44 product may positively affect a consumer's perception of themselves or open doors to previously
45 unattainable life experiences. Therefore, this perceived value indicates the worth customers are
46 prepared to ascribe to an item. As a result, it directly impacts the price consumers eventually pay
47 for the product. Quantifying customers' perceived values and attaching a price to them is not an
48 exact science; companies may establish a price via marketing strategies (e.g. save through the
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3 power of association, pay per print). These strategies adapted by Xerox let the clients manage print
4 services for them to increase productivity, transparency, and control over client's printing costs
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8 *(Xerox Website).*

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10 *Xerox was the first vendor to offer digital business development support, and its offerings, like the*
11 *new Value Based Pricing Guide, are second to none in the graphic communications industry,-*
12 *(Andy Tribute, managing partner of Attributes Associates, an internationally oriented consulting*
13 *company specializing in marketing and technology issues for the printing, publishing, and media*
14 *markets). Xerox's Value-Based Pricing Guide, part of its industry-leading Profit Accelerator*
15 *Digital Business Resources Collection, helps print shops address the challenge of developing*
16 *"value-based" versus "cost-plus" pricing (What They Think Magazine, 2008): Brandon helped us*
17 *order the part and delivered it the next morning. While he was here we had some questions about*
18 *the copier since it's a brand new system to us and he took the time to walk us through some things*
19 *and answered all of our questions. He is always on time, friendly and goes the extra mile. We wish*
20 *we could make copies of him! (What Customers are Saying about us, Xerox Capital Business*
21 *System).*

32 33 34 35 36 37 38 39 **Discussions and Implications**

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42 The aim of the paper, focusing on the Xerox case study, was to address the research question: *How*
43 *can the digital servitization model bridge the relational asymmetry between providers and*
44 *customers?* The findings shed light on different perspectives regarding Xerox's servitization
45 strategy, co-creation practices, knowledge-sharing, and price transparency.
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52 Regarding Xerox's servitization perspective, the company recognizes the significance of
53 expanding its offerings beyond hardware products to enhance customer value, establish long-term
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3 relationships, and increase profitability. This viewpoint is supported by peer-reviewed articles
4 highlighting the need for Xerox to concentrate on solutions that optimize processes. Xerox was
5 one of the pioneers in introducing servitized business models in the 1990s, leading other
6 photocopier firms to enter the solution sector. However, successfully transitioning to a solution-
7 oriented approach requires a customer-focused strategy while capitalizing on technology.
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12 In terms of Xerox's co-creation as a two-way process to transparency, Xerox embraced the post-
13 industrial "Sense and Respond" paradigm, which holds that the function of a business in an
14 increasingly unpredictable environment is to sense and respond effectively to rapid shifts in
15 customer preferences, as opposed to the traditional "Make & Sell" approach. Xerox is highly intent
16 on resolving customer issues as quickly as possible. That is why the Sentinel was created. A
17 technology that assists clients in communicating difficulties and collaborating with Xerox in
18 resolving them in real time, in full view of the client. Sentinel sends a brief email and/or gives a
19 link with the customer's consent that invites one of three responses: send a comment, make a
20 suggestion, or notify Xerox of a particular trouble. The system notifies Xerox, generates an
21 electronic problem ticket, prompts the party in charge, and triggers a tenacious system that makes
22 the problem impossible to ignore until it is remedied.
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42 Regarding Xerox's knowledge-sharing as a community that promotes transparency, the company
43 utilizes the Eureka system to capitalize on knowledge among its customer care engineers. This
44 system fosters a sense of community where technicians can exchange information, suggestions,
45 and guidance. Trust is built through community participation, and knowledge sharing is based on
46 reliable information. The system respects the natural sharing habits of the technicians and
47 promotes continuous learning as a part of their everyday activities.
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3 In view of Xerox's transparency as a bounded bi-directional dynamic, transparency plays a crucial
4 role in meeting customer needs, but it is a bounded bi-directional interaction. Customers are
5 expected to provide the necessary information, while firms are expected to disclose information
6 about product creation, components, and service delivery. However, firms often withhold cost
7 information due to concerns over competition, profit margins, and customer perceptions. The
8 literature on cost transparency presents varying perspectives on the risks and benefits associated
9 with it, with perceived product quality being a significant predictor of profitability. The availability
10 of information on the internet has increased transparency, giving consumers more power, but
11 consumers still rely on heuristics in their decision-making process.
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25 As to pricing, Xerox adopts a Value-Based Pricing strategy, where prices are determined based on
26 the value customers attach to the products and services rather than the production costs. This
27 approach enables Xerox to capture incremental revenue by offering non-print services alongside
28 applications.
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35 Overall, the findings highlight Xerox's endeavors to adopt a customer-focused, solution-oriented
36 approach, promote co-creation and knowledge sharing, and balance transparency with strategic
37 considerations, particularly in pricing strategies.
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43 **Contributions and implications**

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46 This study shows scholarly and practical contributions.
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50 *Theoretical implications*

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53 For scholars, this research contributes to the literature on digital servitization. Although the
54 literature recognizes its relational dimension (Ulaga and Eggert, 2006; Athanasopoulou, 2009;
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3 Kamalaldin et al., 2020; Grandinetti et al., 2020), the analysis is fragmented, and insights into how
4 such relationships between the provider and customer are either preferred or required to be bridged
5 in a servitization business model have yet to be identified. The current study addresses this gap by
6 defining and exemplifying the type of connection inherent in digital servitization from the
7 standpoint of relational asymmetry through the case of Xerox. This study identifies the essential
8 dimension of asymmetric relationships—the transparency dynamics—by employing the relational
9 lens through a literature search coupled with archival investigations (Dapko, 2012; Buell et al.,
10 2017; Eggert et al., 2022). This offers a novel yet methodical approach to determining what level
11 of relationship-based transparency exists or is required for a long-term partnership in servitization.
12 The current study on Xerox demonstrates empirical evidence of the importance of openness in
13 value co-creation and establishing a sense of community through knowledge-sharing.
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29 The research in both servitization and asymmetry (Reim, 2018; Kamaldin et al., 2020) emphasizes
30 that adverse behavior is a common issue that must be addressed, but it does so in a fragmented
31 manner that fails to give the identifier needed to minimize its effect. This research explores
32 transparency as a source of relationship asymmetry as well as the main critical factor that mitigates
33 it. Depending on the stimulus, it may be useful or detrimental to the firm and its clients.
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42 The main contribution of this research is to significantly advance the literature on digital
43 servitization by addressing the relational dimension and providing insights on bridging the inherent
44 asymmetry between providers and customers. While previous studies have recognized the
45 significance of relationships in servitization (Ulaga and Eggert, 2006; Athanasopoulou, 2009;
46 Kamalaldin et al., 2020; Grandinetti et al., 2020), there has been a lack of comprehensive analysis
47 on how to establish and maintain these relationships within the servitization business model. This
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3 study successfully fills this gap by examining the relational asymmetry in digital servitization,
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5 using the case of Xerox as a compelling example.
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9 A key finding of the study is the identification of transparency dynamics as a critical dimension of
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11 asymmetric relationships. By adopting a relational lens and employing a systematic methodology,
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13 including literature search and archival investigations, this research offers a unique approach to
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15 determining the necessary level of relationship-based transparency for long-term partnerships in
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17 the context of servitization. The empirical evidence obtained from the Xerox case study further
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19 emphasizes the pivotal role of transparency in facilitating value co-creation and fostering a sense
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21 of community through knowledge-sharing.
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25 Moreover, this research addresses a significant gap in the existing literature regarding the
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27 identification of strategies to minimize adverse behaviors within servitization. While previous
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29 studies have acknowledged the presence of such behaviors (Reim, 2018; Kamaldin et al., 2020), a
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31 comprehensive understanding of the specific factors required to mitigate their negative effects has
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33 been lacking. By exploring transparency as both a source of relationship asymmetry and a critical
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35 factor in mitigating it, this study provides valuable insights. It reveals that the impact of
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37 transparency is context-dependent, with potential benefits or drawbacks for both firms and their
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39 clients.
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45 Overall, this research significantly contributes to our understanding of how to bridge relational
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47 asymmetry in the realm of digital servitization. By shedding light on the crucial role of
48
49 transparency dynamics and their implications for value co-creation and community building, this
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51 study offers valuable guidance to practitioners and scholars in the field. It provides a solid
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3 foundation for future research endeavors and encourages further exploration of effective strategies
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5 to enhance relationships and achieve successful digital servitization outcomes.
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8 9 ***Practical Implications***

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12 This research also makes practical recommendations. The findings have significant implications
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14 for marketing and operational managers who are in charge of selling and delivering PSS to a wide
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16 range of customers.
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20 First, the example of Xerox, a pioneer in product servitization, informs managers that, while the
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22 PSS model portrays how to foster lasting relationships, it does not occur automatically, and so
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24 relational asymmetry must be confronted. Both the supplier and the clients feel the fundamental
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26 foundation of value, which is co-created, as a result of the transparency that allows co-creation.
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28 Managers must thus discover innovative and smart methods to provide "common space" to their
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30 consumers on a frequent basis, if not in a real-time Sentinel approach.
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35 Second, managers need to take a radically new approach to rekindling the bond between
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37 themselves as providers and their clients. In the traditional value generation process, companies
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39 and consumers have different roles in production and consumption. Xerox's product servitization
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41 incorporates this difference, as clients participate in both the defining and producing of value
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43 processes. In a community that promotes transparency, managers must decode the organization's
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45 most valuable knowledge, which includes the mostly undocumented ideas, insights, and know-
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47 how of its people (Nonaka and Takeuchi, 1995). In a transparent community where members share
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49 practices and knowledge, communication between them can draw on background understanding
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51 or knowledge that doesn't have to be explicitly stated.
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3 Third, in a digitally powered business, recognizing what needs to be transparent is critical because
4 it involves information about decision-making processes and other people's behavior. This study
5 provides managers with a bird's-eye view of how transparency overcomes relationship imbalances.
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7 According to N'Goala (2015), many sorts of transparency must be handled in exchange
8 relationships, one of which is information transparency. While it might be morally neutral (Turilli
9 and Floridi, 2009), it can quickly become an “enabling” or “impairing” factor. Xerox portrays that
10 incomplete information sharing is not ethically immoral in and of itself, provided it does not lead
11 to manipulative or misleading techniques.
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23 **Limitations and Further Research**

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26 Although the current study's findings clearly contribute to the digital servitization literature, the
27 study does have several limitations that should be acknowledged when assessing the findings and
28 addressed in future research. The first is that the case firm was confined to Xerox as an industry
29 forerunner and could only represent mature and multinational enterprises. Nonetheless, because
30 we only analyzed one example firm, generalizations are difficult; further cases would bring new
31 insights that the current study cannot supply. As a result, more empirical research is needed to
32 validate the current study's conclusions while also considering levels of transparency. The other
33 is that, because Xerox is present worldwide, a technique from the relational transparency
34 dimension may differ elsewhere. Therefore the results may differ in various cultural or industrial
35 situations. A future study should discover whether these conclusions hold true in different settings.
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50 **Conclusion**

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53 Companies can no longer function autonomously, inventing goods, devising manufacturing
54 methods, crafting marketing messages, and controlling sales channels with little or no customer
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3 intervention. Clients now attempt to exert influence on many aspects of the corporate system.
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5 Armed with new technologies and dissatisfied with current options, they want to connect with
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7 enterprises and thereby co-create value.
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11 In this study, we demonstrated that the relationship between provider and client in the servitization
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13 business model is digitally strengthened. However, in order for it to be sustainable, it must address
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15 the potential actors' adverse behavior. From the relational asymmetry perspective, we shed light
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17 on the aspect of transparency, which is a pivotal cause of any asymmetric relationship. Through
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19 the case of Xerox, the study further sheds light on the dual effect of transparency, which could
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21 either be an "enabling" or an "impairing" factor. Putting it together, the use of interaction as a basis
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23 for co-creation is at the crux of our emerging reality – an important determinant in building
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25 profitable customer relationships.
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31 **References**

- 32
33 Akerlof, G. A. (1970). 4. The market for 'lemons': quality uncertainty and the market mechanism. *Market*
34
35 *Failure or Success*, 66.
36
37 Annarelli, A., Battistella, C., & Nonino, F. (2019). *The road to servitization: How product service systems*
38
39 *can disrupt companies' business models*. Springer.
40
41 Athanasopoulou, P. (2009). Relationship quality: a critical literature review and research agenda. *European*
42
43 *journal of marketing*.
44
45 Baines, T. S., Lightfoot, H. W., Evans, S., Neely, A., Greenough, R., Peppard, J., ... & Wilson, H. (2007).
46
47 State-of-the-art in product-service systems. *Proceedings of the Institution of Mechanical Engineers*,
48
49 *Part B: journal of engineering manufacture*, 221(10), 1543-1552.
50
51
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55
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60

- 1
2
3 Baines, T., & Lightfoot, H. W. (2014). Servitization of the manufacturing firm: Exploring the operations
4 practices and technologies that deliver advanced services. *International Journal of Operations &*
5 *Production Management*.
6
7
8
9
10 Baines, T., Ziaee Bigdeli, A., Bustinza, O. F., Shi, V. G., Baldwin, J., & Ridgway, K. (2017). Servitization:
11 revisiting the state-of-the-art and research priorities. *International Journal of Operations & Production*
12 *Management*, 37(2), 256-278.
13
14
15
16
17 Barnett, N., Parry, G., Saad, M., Newnes, L. B., & Goh, Y. (2013). Servitization: is a paradigm shift in the
18 business model and service enterprise required?
19
20
21
22
23 Berry, L. L. (1995). Relationship marketing of services—growing interest, emerging perspectives. *Journal*
24 *of the Academy of marketing science*, 23, 236-245.
25
26
27
28 Bertini, M., & Gourville, J. T. (2012). Pricing to create shared value.
29
30
31 Bobrow, D. G., & Whalen, J. (2002). Community knowledge sharing in practice: the Eureka story.
32 *Reflections: The SoL Journal*, 4(2), 47-59.
33
34
35 Bove, G., & Okada, A. (2018). Methods for the analysis of asymmetric pairwise relationships. *Advances in*
36 *Data Analysis and Classification*, 12(1), 5-31.
37
38
39 Buell, R. W., Kim, T., & Tsay, C. J. (2017). Creating reciprocal value through operational transparency.
40 *Management Science*, 63(6), 1673-1695.
41
42
43 Carlborg, P., Kindström, D., & Kowalkowski, C. (2014). The evolution of service innovation research: a
44 critical review and synthesis. *The Service Industries Journal*, 34(5), 373-398.
45
46
47 Chesbrough, H., & Rosenbloom, R. S. (2002). The role of the business model in capturing value from
48 innovation: evidence from Xerox Corporation's technology spin-off companies. *Industrial and*
49 *Corporate Change*, 11(3), 529–555.
50
51
52
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55
56
57
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59
60

- 1
2
3 Cimini, C., Adrodegari, F., Paschou, T., Rondini, A., & Pezzotta, G. (2021). Digital servitization and
4 competence development: A case-study research. *CIRP journal of manufacturing science and*
5 *technology*, 32, 447-460.
6
7
8
9 Corrêa, H. L. (2018). Servitization meets sustainability. *Future Studies Research Journal: Trends and*
10 *Strategies*, 10(2), 358-364.
11
12
13 Dapko, J. L. (2012). *Perceived firm transparency: Scale and model development*. University of South
14 Florida.
15
16
17 Das, R., Jain, K. K., & Mishra, S. K. (2018). Archival research: A neglected method in organization studies.
18 *Benchmarking: An International Journal*.
19
20
21 Denzin, N. K., & Lincoln, Y. (2000). *Handbook of qualitative research* (second ed.). Thousand Oaks, CA:
22 Sage.
23
24
25
26 Dyer Jr, W. G., & Wilkins, A. L. (1991). Better stories, not better constructs, to generate better theory: A
27 rejoinder to Eisenhardt. *Academy of management review*, 16(3), 613-619.
28
29
30 Eggert, A., & Helm, S. (2003). Exploring the impact of relationship transparency on business relationships:
31 A cross-sectional study among purchasing managers in Germany. *Industrial Marketing Management*,
32 32(2), 101-108.
33
34
35
36 Eggert, C. G., Winkler, C., Volkmann, A., Schumann, J. H., & Wunderlich, N. V. (2022). Understanding
37 intra-and interorganizational paradoxes inhibiting data access in digital servitization. *Industrial*
38 *Marketing Management*, 105, 404-421.
39
40
41
42 Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*,
43 14(4), 532-550.
44
45
46 Eisenhardt, K. M. (2021). What is the Eisenhardt Method, really? *Strategic Organization*, 19(1), 147-160.
47
48 Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges.
49 *Academy of Management Journal*, 50(1), 25-32.
50
51
52 Eisenhardt, K. M., Graebner, M. E., & Sonenshein, S. (2016). Grand challenges and inductive methods:
53 Rigor without rigor mortis. *Academy of Management Journal*, 59 (4), 1113-1123.
54
55
56
57
58
59
60

- 1
2
3 Finne, M., Brax, S., & Holmström, J. (2013). Reversed servitization paths: a case analysis of two
4
5 manufacturers. *Service Business*, 7(4), 513-537.
6
7 Gadde, L. E., & Snehota, I. (2000). Making the most of supplier relationships. *Industrial marketing*
8
9 *management*, 29(4), 305-316.
10
11 Gaiardelli, P., Resta, B., Martinez, V., Pinto, R., & Albores, P. (2014). A classification model for product-
12
13 service offerings. *Journal of cleaner production*, 66, 507-519.
14
15 Gebauer, H., Saul, C. J., Haldimann, M., & Gustafsson, A. (2017). Organizational capabilities for pay-per-
16
17 use services in product-oriented companies. *International Journal of Production Economics*, 192, 157-
18
19 168.
20
21 Geng, X., Chu, X., Xue, D., & Zhang, Z. (2010). An integrated approach for rating engineering
22
23 characteristics' final importance in product-service system development. *Computers & Industrial*
24
25 *Engineering*, 59(4), 585-594.
26
27 Grandinetti, R., Ciasullo, M. V., Paiola, M., & Schiavone, F. (2020). Fourth industrial revolution, digital
28
29 servitization and relationship quality in Italian B2B manufacturing firms. An exploratory study. *The*
30
31 *TQM Journal*.
32
33 Grönroos, C., & Voima, P. (2013). Critical service logic: making sense of value creation and co-creation.
34
35 *Journal of the academy of marketing science*, 41(2), 133-150.
36
37 Guerola-Navarro, V., Oltra-Badenes, R., Gil-Gomez, H., & Gil-Gomez, J. A. (2021). Research model for
38
39 measuring the impact of customer relationship management (CRM) on performance indicators.
40
41 *Economic research-ekonomska istraživanja*, 34(1), 2669-2691.
42
43 Gundlach, G. T., Achrol, R. S., & Mentzer, J. T. (1995). The structure of commitment in exchange. *Journal*
44
45 *of marketing*, 59(1), 78-92.
46
47 Hara, T., Sato, K., & Arai, T. (2016). Modeling the transition to a provider–customer relationship in
48
49 servitization for expansion of customer activity cycles. *CIRP Annals*, 65(1), 173-176.
50
51 Harris, W. L., & Wonglimpiyarat, J. (2020). Strategic foresight of Xerox servitization: Look back and look
52
53 forward. *foresight*, 22(3), 351-366.
54
55
56
57
58
59
60

- 1
2
3 Homburg, C., Fassnacht, M., & Guenther, C. (2003). The role of soft factors in implementing a service-
4 oriented strategy in industrial marketing companies. *Journal of Business to Business Marketing*, 10(2),
5 23-51.
6
7
8
9 Homburg, C., & Stebel, P. (2009). Determinants of contract terms for professional services. *Management*
10 *Accounting Research*, 20(2), 129-145.
11
12
13
14
15
16 Johnsen, R. E., & Ford, D. (2001). Asymmetrical and symmetrical customer-supplier relationships:
17 contrasts, evolution and strategy. In *Proceedings of the 17th Annual IMP Conference*.
18
19
20 Johnsen, R. E., Lacoste, S., & Meehan, J. (2020). Hegemony in asymmetric customer-supplier
21 relationships. *Industrial Marketing Management*, 87, 63-75.
22
23
24 Kamalaldin, A., Linde, L., Sjödin, D., & Parida, V. (2020). Transforming provider-customer relationships
25 in digital servitization: A relational view on digitalization. *Industrial Marketing Management*, 89, 306-
26 325.
27
28
29
30 Kohtamäki, M., Partanen, J., Parida, V., & Wincent, J. (2013). Non-linear relationship between industrial
31 service offering and sales growth: The moderating role of network capabilities. *Industrial Marketing*
32 *Management*, 42(8), 1374-1385.
33
34
35
36
37 Kowalkowski, C., Gebauer, H., Kamp, B., & Parry, G. (2017). Servitization and deservitization: Overview,
38 concepts, and definitions. *Industrial Marketing Management*, 60, 4-10.
39
40
41 Kumar, N., & Yakhlef, A. (2016). Managing business-to-business relationships under conditions of
42 employee attrition: A transparency approach. *Industrial Marketing Management*, 56, 143-155.
43
44
45 Lerch, C., & Gotsch, M. (2015). Digitalized product-service systems in manufacturing firms: A case study
46 analysis. *Research-technology management*, 58(5), 45-52.
47
48
49 Liu, Y., Eisingerich, A. B., Auh, S., Merlo, O., & Chun, H. E. H. (2015). Service firm performance
50 transparency: How, when, and why does it pay off?. *Journal of Service Research*, 18(4), 451-467.
51
52
53 Luz Martín-Peña, M., Díaz-Garrido, E., & Sánchez-López, J. M. (2018). The digitalization and servitization
54 of manufacturing: A review on digital business models. *Strategic Change*, 27(2), 91-99.
55
56
57
58
59
60

- 1
2
3 Makri, C., & Neely, A. (2021). Grounded theory: a guide for exploratory studies in management research.
4
5 *International Journal of Qualitative Methods*, 20, 16094069211013654.
6
7 Markides, C. (1999). Six principles of breakthrough strategy. *Business Strategy Review*, 10(2), 1–10.
8
9 Matsumoto, M., & Kamigaki, K. (2013). Development and changes in the industrial product service
10 systems—A case study of the photocopier PSS. In *The Philosopher's Stone for Sustainability* (pp. 167-
11 172). Springer, Berlin, Heidelberg.
12
13 Matthyssens, P., & Vandenbempt, K. (2010). Service addition as business market strategy: identification
14 of transition trajectories. *Journal of service management*, 21(5), 693-714.
15
16 Michalski, M., Montes, J. L., & Narasimhan, R. (2018). Relational asymmetry, trust, and innovation in
17 supply chain management: a non-linear approach. *The International Journal of Logistics Management*.
18
19 N'Goala, G. (2015). Opportunism, transparency, manipulation, deception and exploitation of customers'
20 vulnerabilities in CRM. *The dark side of CRM: Customers, relationships and management*, 122.
21
22 Neely, A. (2008). Exploring the financial consequences of the servitization of manufacturing. *Operations*
23 *management research*, 1(2), 103-118.
24
25 Nonaka, I., & Takeuchi, H. (1995). The knowledge-creating company: How Japanese companies create the
26 dynamics of innovation. *New York, NY*.
27
28 Oliva, R., & Kallenberg, R. (2003). Managing the transition from products to services. *International journal*
29 *of service industry management*.
30
31 Oyenuga, M., Andah, R. A., Orji, M. G., & Agabi, A. U. (2019). Effects of customer relationship
32 management on product innovation in Nigeria. A Case Study of Xerox HS Nigeria Limited. *American*
33 *Journal of Theoretical and Applied Business*, 5(4), 113-126.
34
35 Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
36
37 Paiola, M., & Gebauer, H. (2020). Internet of things technologies, digital servitization and business model
38 innovation in BtoB manufacturing firms. *Industrial Marketing Management*, 89, 245-264.
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56 Porter, M.E. (2001), "Strategy and the Internet", *Harvard Business Review*, Vol. 79 No. 3, pp. 62-78.
57
58
59
60

- 1
2
3 Ram, M. (2001). Family dynamics in a small consultancy firm: A case study. *Human Relations*, 54(4), 395-
4 418.
5
6
7 Reim, W., Parida, V., & Örtqvist, D. (2015). Product–Service Systems (PSS) business models and tactics—a
8 systematic literature review. *Journal of Cleaner Production*, 97, 61-75.
9
10
11 Reim, W., Sjödin, D., & Parida, V. (2018). Mitigating adverse customer behaviour for product-service
12 system provision: An agency theory perspective. *Industrial Marketing Management*, 74, 150-161.
13
14
15 Retamal, M., & Schandl, H. (2018). Dirty laundry in Manila: Comparing resource consumption practices
16 for individual and shared laundering. *Journal of Industrial Ecology*, 22(6), 1389-1401.
17
18
19 Rymaszewska, A., Helo, P., & Gunasekaran, A. (2017). IoT powered servitization of manufacturing—an
20 exploratory case study. *International journal of production economics*, 192, 92-105.
21
22
23 Sakao, T., Sandström, G. Ö., & Matzen, D. (2009). Framing research for service orientation of
24 manufacturers through PSS approaches. *Journal of Manufacturing Technology Management*.
25
26
27 Simintiras, A. C., Dwivedi, Y. K., Kaushik, G., & Rana, N. P. (2015). Should consumers request cost
28 transparency?. *European Journal of Marketing*.
29
30
31 Singh, J., & Sirdeshmukh, D. (2000). Agency and trust mechanisms in consumer satisfaction and loyalty
32 judgments. *Journal of the Academy of marketing Science*, 28(1), 150-167
33
34
35 Sjödin, D. (2019). Knowledge processing and ecosystem co-creation for process innovation: Managing
36 joint knowledge processing in process innovation projects. *International Entrepreneurship and*
37
38
39 *Management Journal*, 15(1), 135-162.
40
41
42 Slack, N. (2005). Operations strategy: will it ever realize its potential? *Gestão & Produção*, 12, 323-332.
43
44
45 Smith, J. B. (1998). Buyer–seller relationships: similarity, relationship management, and quality.
46 *Psychology & Marketing*, 15(1), 3-21.
47
48
49 Stål, H. I., & Corvellec, H. (2018). A decoupling perspective on circular business model implementation:
50 Illustrations from Swedish apparel. *Journal of Cleaner Production*, 171, 630-643.
51
52
53 Sufi, A. (2007). Information asymmetry and financing arrangements: Evidence from syndicated loans. *The*
54 *Journal of Finance*, 62(2), 629-668.
55
56
57
58
59
60

- 1
2
3 Sundin, E. (2009). Life-cycle perspectives of product/service-systems: in design theory. In *Introduction to*
4 *product/service-system design* (pp. 31-49). Springer, London.
5
6
7 Talay, C., Oxborrow, L., & Claxton, S. (2019). Types of relationship asymmetry and the implementation
8 of sustainable product development in fashion supply chains.
9
10
11 Tukker, A. (2004). Eight types of product–service system: eight ways to sustainability? Experiences from
12 SusProNet. *Business strategy and the environment*, 13(4), 246-260.
13
14
15
16
17 Tukker, A. (2015). Product services for a resource-efficient and circular economy—a review. *Journal of*
18 *cleaner production*, 97, 76-91.
19
20
21
22 Tukker, A., & Tischner, U. (Eds.). (2017). *New business for old Europe: product-service development,*
23 *competitiveness and sustainability*. Routledge.
24
25
26 Tuli, K. R., Kohli, A. K., & Bharadwaj, S. G. (2007). Rethinking customer solutions: From product bundles
27 to relational processes. *Journal of marketing*, 71(3), 1-17.
28
29
30
31 Turilli, M., & Floridi, L. (2009). The ethics of information transparency. *Ethics and Information*
32 *Technology*, 11(2), 105-112.
33
34
35 Ulaga, W., & Eggert, A. (2006). Value-based differentiation in business relationships: Gaining and
36 sustaining key supplier status. *Journal of marketing*, 70(1), 119-136.
37
38
39 Ulaga, W., & Kowalkowski, C. (2022). Servitization: A State-of-the-Art Overview and Future Directions.
40 *The Palgrave Handbook of Service Management*, 169-200.
41
42
43 Vandermerwe, S., & Rada, J. (1988). Servitization of business: adding value by adding services. *European*
44 *management journal*, 6(4), 314-324.
45
46
47 Vendrell-Herrero, F., Bustinza, O. F., Parry, G., & Georgantzis, N. (2017). Servitization, digitization and
48 supply chain interdependency. *Industrial Marketing Management*, 60, 69-81.
49
50
51 Ventresca, M. J., & Mohr, J. W. (2017). Archival research methods. *The Blackwell companion to*
52 *organizations*, 805-828.
53
54
55
56
57
58
59
60

- 1
2
3 Viljakainen, A., & Toivonen, M. (2014). The futures of magazine publishing: Servitization and co-creation
4 of customer value. *Futures*, 64, 19-28.
5
6
7 Visintin, F. (2014). Photocopier industry: at the forefront of servitization. In *Servitization in industry* (pp.
8 23-43). Springer, Cham.
9
10
11 Williamson, H. E. (1993). The Re-Emergence of Correctional Intervention.
12
13 Wise, R., & Baumgartner, P. (1999). Go downstream. *Harvard business review*, 77(5), 133-133.
14
15 Witcher, B., & Butterworth, R. (1999). Hoshin kanri: how Xerox manages. *Long range planning*, 32(3),
16 323-332.
17
18
19 Yin, R. K. (2009). *Case studies: design and methods*, 4th ed. Thousand Oaks: Sage Publications.
20
21 Yu, M., Zhang, W., & Meier, H. (2008). Modularization based design for innovative product-related
22 industrial service. In *2008 IEEE International Conference on Service Operations and Logistics, and*
23 *Informatics* (Vol. 1, pp. 48-53). IEEE.
24
25
26
27
28 Zairi, M. (2000). Managing customer satisfaction: a best practice perspective. *The TQM magazine*, 12(6),
29 389-394.
30
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33 **Table 1. Consulted Peer- Reviewed Articles**

Journal	Author	Title	Theme
Quality Management Journal, 1(4), 42-51	Hurley, R. F. (1994)	TQM and marketing: how marketing operates in quality companies	Voice of the Customer
Sloan Management Review, 40(3), 55-63.	Markides, C. (1999).	A dynamic view of strategy	The dynamic strategy of Xerox in creating its own position in the market.
Long range planning, 32(3), 323-332	Witcher, B., & Butterworth, R. (1999)	Hoshin kanri: how Xerox manages	Presents a case study of Hoshin Kanri practice at Xerox (UK)- a form of TQM-based strategic management, providing a link between strategic intent and its implementation in daily management, key benefits have been transparency and a common language.

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The TQM magazine, 12(6), 389-394	Zairi, M. (2000)	Managing customer satisfaction: a best practice perspective	Presents Xerox best practices on managing customer satisfaction which encapsulates not only the measurement aspects of customer satisfaction per se but rather as a long-term pursuit of improvement and a culture change.
Industrial and Corporate Change, 11(3), 529–555.	Chesbrough, H., & Rosenbloom, R. S. (2002)	The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies	The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies.
Reflections. The SoL Journal, 4(2), 47-59	Bobrow, D. G., & Whalen, J. (2002)	Community knowledge sharing in practice: the Eureka story.	The community knowledge-sharing systems of Xerox
Service Business, 7(4), 513-537	Finne, M., Brax, S., & Holmström, J. (2013)	Reversed servitization paths: a case analysis of two manufacturers	Focused on the reversed servitization developments of Xerox's model 914 from 1959 to 1975
In The Philosopher's Stone for Sustainability (pp. 167-172). Springer, Berlin, Heidelberg	Matsumoto, M., & Kamigaki, K. (2013)	Development and changes in the industrial product service systems—A case study of the photocopier PSS	Presents the development and changes in the Xerox Product
In Servitization in industry (pp. 23-43). Cham: Springer International Publishing (Book Chapter)	Visintin, F. (2014)	Photocopier industry: at the forefront of servitization	Provides a state of the art analysis of Xerox servitization phenomenon as well as a retrospective analysis of its evolution.
Future Studies Research Journal: Trends and Strategies, 10(2), 358-364.	Corrêa, H. L. (2018)	Servitization meets sustainability	Xerox Servitization and Sustainability
American Journal of Theoretical and Applied Business, 5(4), 113-126	Oyenuga, M., Andah, R. A., Orji, M. G., & Agabi, A. U. (2019)	Effects of customer relationship management on product innovation in Nigeria. A Case Study of Xerox HS Nigeria Limited	The effects of customer relationship management on product innovation in Nigeria, with emphasis on Xerox H. S Nigeria Limited.
Foresight, 22(3), 351-366	Harris, W. L., & Wonglimpiyarat, J. (2020)	Strategic foresight of Xerox servitization: Look back and look forward	Provides insights on Xerox's pursuit of specific servitization strategies in managing technological innovations in the midst of fierce market competition.

Authors' Elaboration

Table 2. Archival Data Sources

Type of Archival Data Used	Source	Period Consulted / Covered	Use
websites	Xerox Official Website	July 2022- March 2023	Cross-check Quality Customer Relations -Product / Customer Related Awards
			Customer Support Forum
corporate archives / corporate annual reports	Xerox Strategic Road Map	August - October 2022	Xerox Environmental, Social and Governance Sustainability (2020-2040)
Online Encyclopedia	Britannica Online	Aug-22	The history of Xerox
media articles	The New York Times Issues on Xerox	December 2000- March 2023	A 23-year Trend of Xerox Innovations and major breakthroughs- from the external point of view
websites	What Our Customer are Saying about us	December 2000- March 2023	Testimonials
Xerox WebBoard, Xerox's internal Web site for news and information for Xerox employees	A Sentinel That Redefines Customer Satisfaction	July 2022- March 2023	Sense and Respond
Youtube	Xerox Support Youtube	Aug-22	Sense and Respond- Sentinel
Published Magazines	KMWorld Magazine	Aug-22	Best Practices- Eureka

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