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IT Outsourcing Relationships in the Context of Digital Transformation: From Transactional Relationships to Ecosystem Partnerships

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ABSTRACT

Digital Transformation (DT) reshapes the IT function and its ecosystem. This transformation affects multiple domains of the IT function, including IT outsourcing (ITO) and relationships with outsourcing partners. While several studies explored shifts in ITO relationships, there is a lack of systematic understanding of how DT changes the nature of organizations' ITO relationships. Previously published ITO taxonomies still reflect the dimensions and characteristics of traditional ITO practices. We propose that the DT alters the dimensions and characteristics of ITO. We thus revisit and advance existing taxonomies by employing a systematic literature review of recent ITO studies. Based on this review, we update existing taxonomies' dimensions and characteristics to reflect the DT-induced change in ITO relationships. The updated taxonomy reveals a shift from transactional relationships to ecosystems of partnerships in ITO. This shift provides directions for future research of ITO relationships and for managing today's IT service networks.

KEYWORDS

IT outsourcing; digital transformation; taxonomy; IT outsourcing relationships

Introduction

Digital Transformation (DT) is one of the most transformative forces reshaping organizations and their IT function (Verhoef et al., 2021). This transformative force not only impacts the IT function but also the corresponding IT outsourcing (ITO) relationships, which marks a decisive shift away from traditional outsourcing models that were primarily focused on cost savings or access to competencies. Instead, we observe a move toward leveraging outsourcing for DT through strategic partnerships, aimed at co-creating value, which represents a significant paradigm shift (Dibbern & Hirschheim, 2020). This shift reflects the changing landscape of ITO in the DT context and heralds the emergence of a new phase in ITO dynamics.

Over the past decades, ITO has undergone several evolutionary phases. Initially, ITO concentrated on contract management and, as DT came into the spotlight, gradually shifted to emphasize digital value management (Dibbern & Hirschheim, 2020). The outsourcing of IT services started in 1963, but the real ITO boom began in 1989 with the full IT outsourcing of Kodak (Dibbern et al., 2004). This successful outsourcing deal spurred the growth of ITO in subsequent years (Arnett & Jones, 1994). At that time, many businesses considered IT as a commodity that did not provide a competitive advantage, and they focused on their core competencies. Therefore, IT was not perceived as a part of the core competencies in most companies. Consequently, ITO was implemented as a means to reduce costs and improve operational efficiency (Hopper, 1990). In the following phases, ITO evolved from single and total sourcing arrangements to the adoption of multi-sourcing as the standard operating mode leading to complex ITO relationships (Lacity et al., 2009; Palvia et al., 2010).

Today, reducing costs is still on the top of sourcing agendas. However, DT entailed that organizations recognize IT as a change catalyst of their business model (Vial, 2019), which reshapes the role of ITO (Dibbern & Hirschheim, 2020). By fostering a more interconnected and technologically advanced ecosystem, DT has enabled the outsourcing of more complex and specialized IT services, where companies can access global expertise and cutting-edge tools more easily and efficiently (Venters & Whitley, 2012; Weinhardt et al., 2009). DT has also led to increasing integration of ITO with business models and business strategy, as companies seek to leverage technology to gain a competitive advantage (Dibbern & Hirschheim, 2020). With the advent of DT, companies are now looking for ITO

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partners that can help them stay ahead of the curve and seek partners who can provide innovative solutions, help them adopt emerging technologies, and support their DT initiatives (Kotlarsky et al., 2016). Accordingly, DT multiplies the complexity of already intricate outsourcing scenarios (Mazumder & Garg, 2021). ITO has traditionally been characterized by its emphasis on standardization, strict adherence to service level agreements (SLA), and rigid enforcement of predetermined terms and rules. In contrast, DT embraces a culture of innovation and often challenges established norms (Dibbern & Hirschheim, 2020). While several publications outlined multiple facades of ITO relationship change due to DT, the diverse streams and findings are not yet integrated in a framework which allows to trace the change dimensions and their attributes. This lack of a unified understanding underscores the need for a refined ITO relationship taxonomy, one that not only encapsulates how DT alters the essence of ITO relationships but also offers a structured method to comprehend and articulate this shift.

Therefore, our study aims to systematically conceptualize how DT changes the nature of ITO relationship. Recognizing that existing ITO taxonomies fail to capture the complexities introduced by DT, we propose an updated ITO relationship taxonomy that incorporates characteristics pertinent to today's DT-driven ITO environment. This endeavor is crucial for both research and practice as it offers a comprehensive framework to understand and navigate the evolving dynamics of ITO relationships. This research thus addresses the need to analyze and understand how DT has fundamentally transformed the nature of ITO relationships, leading to our research questions:

RQ1: How should existing taxonomies be extended to reflect DT's impact on ITO relationships?

RQ2: How does the revised taxonomy of ITO relationships reflect the evolution and emerging dynamics in ITO relationships?

Through a systematic literature review, we updated existing ITO relationship taxonomies with characteristics pertinent to the DT context, thus providing a more nuanced understanding of ITO relationships. Based on the created taxonomy, we trace the evolution of ITO relationships and identify the beginning of a new ITO phase. We validate the taxonomy via the analysis of two distinct use cases: one exemplifies a traditional ITO scenario, while the other is embedded within a DT context. The updated taxonomy provides a contemporary and comprehensive framework that aligns with current ITO practices and facilitates navigation through the increasing complexities of ITO relationships in the DT context. This is particularly relevant as we are witnessing a major shift in recent ITO relationship structures.

The evolution of ITO relationships

ITO is a well-established research field with a high level of activity. Cheon et al. (1995) define ITO "as the organizational decision to turn over part or all of an organization's IS functions to external service provider(s) in order for an organization to be able to achieve its goals." Often, the terms sourcing and outsourcing are used interchangeably (Amiri et al., 2021). However, the terms are different with respect to internal and external sources. IT sourcing refers to the process of procuring IT resources and services from various sources, which can include both internal and external providers (Dibbern et al., 2004). In contrast, ITO specifically refers to contracting with external vendors for IT services or resources (Jayatilaka & Hirschheim, 2009). Since our research is centered on outsourcing relationships, we use the term ITO.

The history of ITO can be understood through the evolution of distinct phases (see Figure 1), each marking a shift in the focus and approach of businesses to outsourcing their IT needs (Barthel et al., 2020; Feliciano-Cestero et al., 2023; Hanelt et al., 2021; Nadkarni & Prügl, 2021; Verhoef et al., 2021; Vial, 2021). According to Willcocks and Whitley (2018) ITO has evolved through four phases, initially emphasizing a transactional view in phase 1 focusing on managing the contract and costs. In phase 2 (competency view) the focus shifted from mere cost-cutting to accessing competencies as well. With the maturation of the ITO industry and the emergence of global delivery models, companies began in phase 3 (relational view) to emphasize the importance of relationship dynamics and governance. The fourth phase integrates all of the preceding views and focuses on integrative partnerships to drive innovation and transformation in a rapidly evolving digital landscape. Willcocks and Whitley (2018) see the fourth phase's focus on collaborative innovation, driven by new technologies and necessitating updated business models. Similarly, Dibbern and Hirschheim (2020) recognize three interlinked 'phases of change,' marking an evolution in ITO toward innovative value propositions, the rise of cloud computing, platform ecosystems, and a shift toward robotic process automation and software bots. Consequently, as part

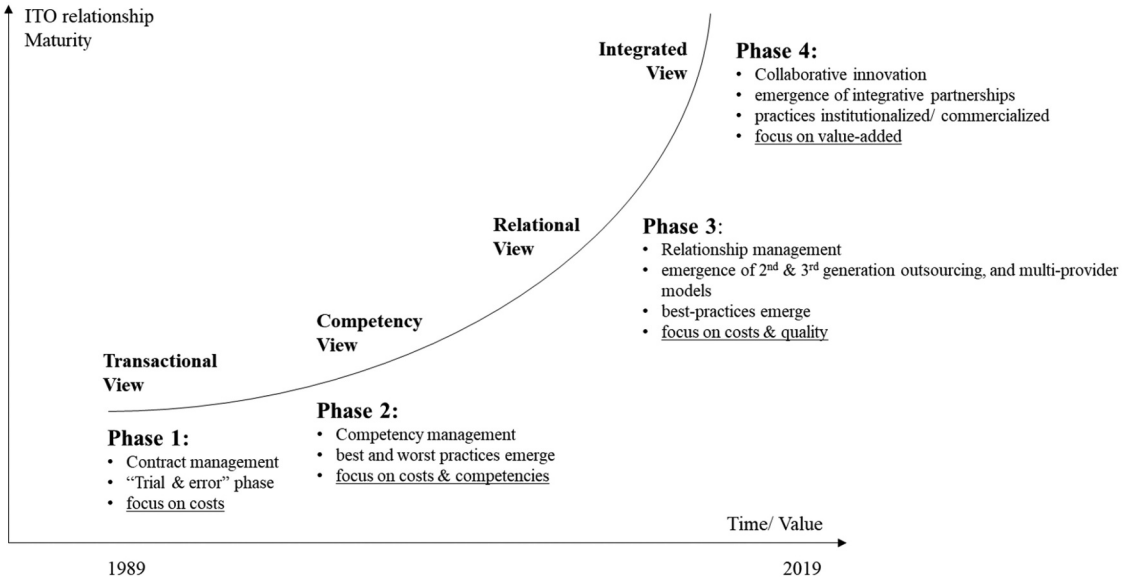

Figure 1. ITO evolutional phases (Willcocks & Whitley, 2018) and ITO relationship views (Mehta & Mehta, 2017).

of the DT journey, ITO relationships are affected by these three phases of ITO (Dibbern & Hirschheim, 2020). Both Dibbern and Willcocks' analysis of the current ITO phase underscore a commitment to (digital) value management, emphasizing the creation of added value and support for DT initiatives.

With the different phases of ITO a number of perspectives have evolved on ITO to explain the respective relationships. Namely, four theoretical perspectives shape ITO relationships: transactional, competency, relational and the integrative view which synthesizes the first three perspectives (Mehta & Mehta, 2017). The transactional perspective views outsourcing as a means to reduce production and process costs. It balances the benefits of economies of scale against internal coordination costs, aiming to optimize efficiency (Bharadwaj et al., 2010). On the other hand, the competence perspective advocates for outsourcing non-core activities. This strategy focuses on enhancing core competencies that offer competitive advantages (Gottschalk & Solli-Sæther, 2006). The relational perspective emphasizes the value of strategic alliances and mutual goals. It seeks to generate relational rents and cooperative gains, highlighting the importance of strong, mutually beneficial partnerships (Koh et al., 2004). The integrated approach considers both value creation and value claiming as essential for successful ITO. It suggests that balancing resource and cost considerations within strategic partnerships is crucial (Verwaal et al., 2009). This approach combines insights from the transactional, competency, and relational perspectives to form a more holistic view of outsourcing. Different factors shape these perspectives, including operational conditions like client objectives or its ITO history, environmental conditions such as the availability of knowledge or the regulatory environment, and relational dynamics such as trust and relational capabilities (Mehta & Mehta, 2017). These elements influence the respective perspective on ITO relationships and underscore the importance of tailoring strategies to specific organizational needs and contexts. Table 1 presents the objectives, theoretical foundation, and associated partnership characteristics according to Mehta and Mehta (2017).

Since Mehta and Mehta (2017) introduced their framework for ITO perspectives, the field has undergone a significant evolution. Several literature reviews have been conducted in recent years to access the current state of ITO (Gambal et al., 2022; Hanafizadeh & Zareravasan, 2020; Könning et al., 2019; Kotlarsky et al., 2020; Lacity et al., 2017; Pankowska, 2019). In general, scholars are reporting a surge in publications on ITO, particularly on topics such as innovation through ITO. Dibbern and Hirschheim (2020) noted that although innovation as a goal of ITO was recognized early in the outsourcing literature, it has recently regained momentum considering today's DT developments. DT refers to a process that triggers significant changes in organizations' business models (Vial, 2019). These changes surface in altered value creation, value proposition, and identity (Svahn et al., 2017; Vial, 2019; Wessel et al., 2021). Indeed, compared to IT-enabled transformation, DT entails new organizational value proposition and identity, while the former reinforces organizations' existing value offering and identity (Wessel et al., 2021). This mirrors existing work that found that organizations increasingly recognize the strategic value of IT innovation (Wynn & Ferratt, 2019). Indeed, the changes in value

Table 1. ITO relationship perspectives, theoretical orientations and relationship characteristics (Mehta & Mehta, 2017.)

Outsourcing Perspective	Objectives & theoretical orientations	Relationship Characteristics
Transactional View	Reduce costs (transaction cost theory; agency theory)	Arm's length partnership; tactical partnership; partner seen as a supplier; water-tight contract; cost-driven model
Competence View	Maintain core competencies (resource-based theory)	Strategic alliance; partner seen as a business associate; flexible contract; focus on productivity and key competencies; strategy-driven model
Relational View	Develop new capabilities (resource dependency theory; social exchange theory)	Relational alliance; partner seen as a valued business ally; relational contract; shared governance infrastructure; relational capital; shared goals and resources; resource-driven model
Integrated View	Develop flexible capabilities while achieving long-term cost efficiencies and maintaining core competencies (social exchange theory; dynamic capability perspective)	Transformational alliance; partner seen as a valued business ally; relational contract; shared governance infrastructure; relational and social capital; shared goals and resources; shared costs, risks, and benefits; shared capability development; sustained innovation and cooperative advantage; innovation- and value-driven model

proposition and identity stem from repositioning IT as a commodity to IT as a strategic resource. Accordingly, IT functions' role changes from a cost center to a driver of organizations' DT. This role change involves bimodal IT setups (Haffke et al., 2017) as well as digital innovation units outside organizations' IT functions (Barthel et al., 2020). However, some also outsource their digital innovation activities (Su et al., 2016). The latter entails reshaping the nature of ITO relationships, which echoes DT scholars' observation of DT changing organizational identity.

Digitally transforming, organizations' identity changes (Hanelt et al., 2021). While Wessel et al. (2021) report these identity changes at the organizational level, other scholars found that this occurs also at the level of groups (Gierlich-Joas & Zimmer, 2023; Horlach et al., 2017) or at the level of individual roles (Urbach et al., 2019). These changes are also reflected in the transformation of the IT function, which evolves from a supporting role to a central, strategic one (Haffke et al., 2017). Regardless of the level of study, this existing work shows that DT changes how organizations (groups or individuals) see themselves as well as relate themselves toward others. The latter means that the nature of relationships among internal units (e.g., IT and business units, Baiyere et al., 2025; Dremel et al., 2017; Jöhnk et al., 2022) but also to external partners changes. The evolution of the IT function significantly influences this dynamic by introducing new forms of collaboration and service delivery, thus redefining the nature of internal and external relationships (Baiyere et al., 2025; Warner & Wäger, 2019).

Building on Vial's (2019) DT framework, which highlights the impact of DT on organizational structures and value creation processes, it becomes evident that DT also fundamentally disrupts traditional ITO relationships. Rather than focusing solely on transactional cost-efficiency, organizations increasingly engage in ITO to access specialized digital capabilities, foster innovation, and co-create value. Transformation of organizational value creation, from isolated entities to interconnected ecosystem participants, thus reflects in organizations' ITO relationships and transforms the nature of these relationships. That is, ITO relationships are evolving from contract-based service delivery models toward dynamic, trust-based collaborations embedded within broader digital ecosystems (Oshri et al., 2024). In these partnerships, clients and providers jointly share risks, expertise, and rewards to enable agile responses to digital disruption. Thus, the influence of DT manifests not only in the nature of services exchanged but also in the underlying logic and structure of the relationships themselves.

Certainly, the ITO literature shows that because of DT, ITO relationships change (Dibbern & Hirschheim, 2020). However, we have little understanding of how these ITO relationships change meaning, how we can grasp or explain these changes. ITO taxonomies can provide answers to how DT changes the nature of ITO relationships, but this requires an update of these taxonomies.

The recent changes in ITO require that this development be systematically captured to advance the progress of knowledge and the development of new ITO models. However, current ITO taxonomies fall short in offering a systematic categorization of these new influencing factors on ITO relationships, while continuing to reflect conventional ITO paradigms. Cullen et al. (2007) described a model for an organization's ITO configuration. Similarly, Diedrich et al. developed an ITO Taxonomy, which Krcmar and Leimeister subsequently adapted (Krcmar, 2015; Leimeister, 2010; von Jouanne-Diedrich et al., 2005). These works remain central and frequently cited in the field. While many studies have referenced these foundational works, adaptations have generally been

minor, reflecting specific trends and periods in ITO research (Amiri et al., 2021; Demirbas et al., 2018; Felser & Wynn, 2020; Linden & Hovestadt, 2017).

Existing ITO taxonomies are largely static and structurally focused, offering limited insight into the dynamic and evolving nature of ITO in the context of DT. They primarily emphasize transactional arrangements and overlook the strategic, relational, and contractual governance dimensions that have become increasingly critical. As a result, these taxonomies fail to capture co-creative aspects such as shared governance structures, partnership-based engagement models, joint capability development, as well as deeper integration and automation of services. For example, Felser and Wynn's (2020) taxonomy, which focuses on a limited set of traditional ITO dimensions, such as onsite versus offshore delivery or transitional versus transformational outsourcing, overlooks ITO configurations that are essential for DT success, particularly regarding strategic alignment (e.g. shared decision rights), organizational agility (e.g. decision rights), and continuous value co-creation (Willcocks et al., 2023). However, to the best of our knowledge there is no commonly accepted ITO relationship taxonomy that adequately captures the evolving dynamics of current ITO developments. Considering the recent developments of ITO, it is imperative to update the existing ITO taxonomies. This update is crucial to accurately capture the nature of ITO relationships, thereby ensuring that both research and practice can advance with a nuanced understanding of these critical changes.

Research approach

Taxonomies are an established representation of relevant literature in the field of IS (Oberländer et al., 2019). A taxonomy is a classification system for organizing conceptually or empirically derived dimensions and their collectively exhaustive characteristics into a structure for knowledge representation in the field (Nickerson et al., 2013). Its purpose is to provide a comprehensive understanding of a field and enable researchers to investigate relationships between identified dimensions (Nickerson et al., 2013). To update existing ITO taxonomies with dimensions and characteristics from identified studies we followed Nickerson et al.'s (2013) taxonomy development method and Brocke et al.'s (2015) guidelines for the selection & filtering process in a systematic literature review. Nickerson et al.'s framework offers both the rigor through empirical validity and conceptual clarity, necessary to develop a credible taxonomy, and the flexibility,through its iterative approach, to address the dynamic and uncertain environment introduced by DT in ITO, while maintaining a clear focus by defining explicit meta-characteristics.

Our initial taxonomy is based on the work of Felser and Wynn (2020), which builds upon preceding research (see Appendix D.1). To update this taxonomy, we conducted a comprehensive data collection process through a systematic literature review of studies on DT and ITO using Wolfswinkel et al.'s (2013) guidelines (see Figure 2). To define the relevant keywords, we reviewed recently published literature reviews on DT

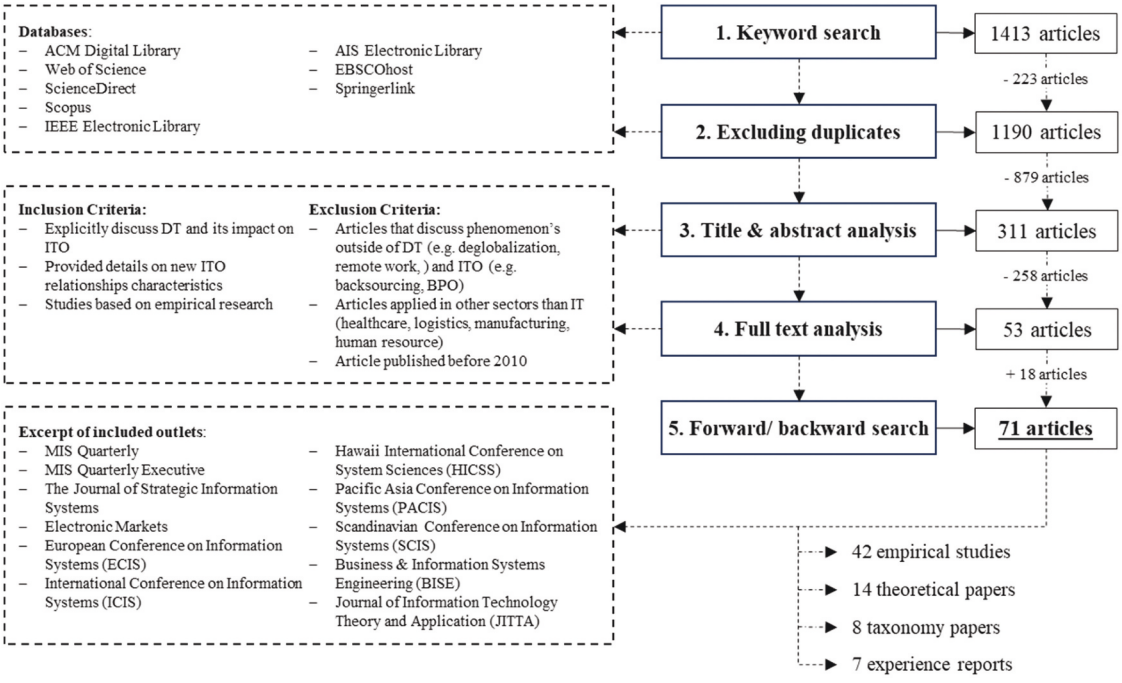

Figure 2. SLR process.

and ITO, identified commonly used phrasing, and extracted the most frequently used keywords. In addition, we consulted highly cited articles and practical reports to refine our keyword-based database searches. We used the following search terms in our database queries: "digital transformation" AND ("outsourcing" OR "partner ecosystem"). We conducted the literature search between April and June 2023 using broad keywords to gain a comprehensive understanding of the extensive research field of ITO and DT, identifying potentially novel aspects within ITO relationships.

Our search was conducted on several databases, including ACM Digital Library, Web of Science, ScienceDirect, Scopus, IEEE Electronic Library, AIS Electronic Library, and EBSCOhost, Springerlink in the research area of Computer Science. Since DT only gained recognition as a focal point of IS research in the early 2010s and considering the subsequent identification of several distinct ITO variables by Könning et al. (2019), we chose to omit papers published prior 2010.

The keyword-search produced 1413 studies. Removing 223 duplicates and screening titles and abstracts, we narrowed the pool to 311 articles for full-text review. Our research specifically targeted studies that address ITO in the context of DT initiatives and excluded studies not related to IT such as supply chain management, logistics, smart cities, software engineering, manufacturing, healthcare, or procurement from our analysis. In addition, we did not consider papers that had their focus on factors influencing ITO beyond DT, such as deglobalization, supply chain resilience and the rise of remote work, as they are not exclusively driven by DT. Following the full-text review we excluded 258 studies and conducted a thorough analysis of the identified 53 articles for examining both their forward and backward citations. After conducting forward/backward search until we identified no new papers, we arrived at our final sample of 71 articles.

We followed Kundisch et al.'s (2021) iterative steps in developing our taxonomy. Kundisch's work enhances the taxonomy development methodology originally put forth by Nickerson et al. (2013), which has become widely accepted for taxonomy design (Möller et al., 2022). The first step (1) is to identify and motivate the problem. Existing ITO taxonomies need to be updated to accurately capture the evolving dynamics of ITO relationships, primarily influenced by the rapid changes brought about by DT. Furthermore, we define our target group, comprising practitioners and researchers specialized in the field of ITO and DT. Our goal is to assist this audience in gaining a deeper understanding of the characteristics of ITO relationships, broadening the scope of research in this domain, and providing practical insights for effectively managing contemporary ITO relationships.

In the second step (2), the objective of the solution is defined by specifying the meta-characteristic: "key characteristics of ITO relationships." To ensure the taxonomy's completeness, we set objective ending conditions based on Nickerson et al. (2013) recommendation, including examining all objects, classifying at least one object under every characteristic of each dimension, and ensuring no new or merged dimensions or characteristics were added in the last iteration. Additionally, we ensured that each characteristic was unique within its dimension and not repeated. For subjective ending conditions, we followed Nickerson et al. (2013) five suggestions of a concise, robust, comprehensive, extendible, and explanatory taxonomy.

In the third step (3), we conducted two iterations of data analysis to develop our taxonomy (see Figure 3). The first iteration employed a conceptual-to-empirical approach, analyzing studies from the SLR through a coding process facilitated by MAXQDA. We utilized deductive reasoning to assess the relevance of characteristics identified in existing ITO relationship taxonomies against contemporary research. Subsequently, using inductive reasoning in a bottom-up approach, we identified new, previously unconsidered characteristics of ITO relationships. These characteristics, along with those confirmed through deductive analysis, were grouped into dimensions to form the initial framework of our taxonomy. The initial open coding phase emphasized concepts pertaining to ITO relationships within the DT context, drawing on data from the reviewed literature. We then examined the frequency and co-occurrence of themes to verify their significance in existing research. Axial coding linked various characteristics, and selective coding defined our taxonomy's dimensions. This methodical approach enabled us to update the ITO relationship taxonomy, capturing both traditional and emerging dynamics in the DT field. Appendix A details the coding scheme, and Appendix B presents a concept matrix correlating SLR findings with our taxonomy, based on Webster's framework (Webster & Watson, 2002).

We identified a range of characteristics and dimensions that pertain specifically to internal DT capabilities, such as internal organizational or governance structures. These factors do not directly impact the ITO relationship and have therefore been excluded from our analysis. Furthermore, we have also excluded certain ITO characteristics, such as the degree of sourcing (total or selective). While the concept of selective and total outsourcing remains relevant, it has become less rigid, with distinctions better reflected through

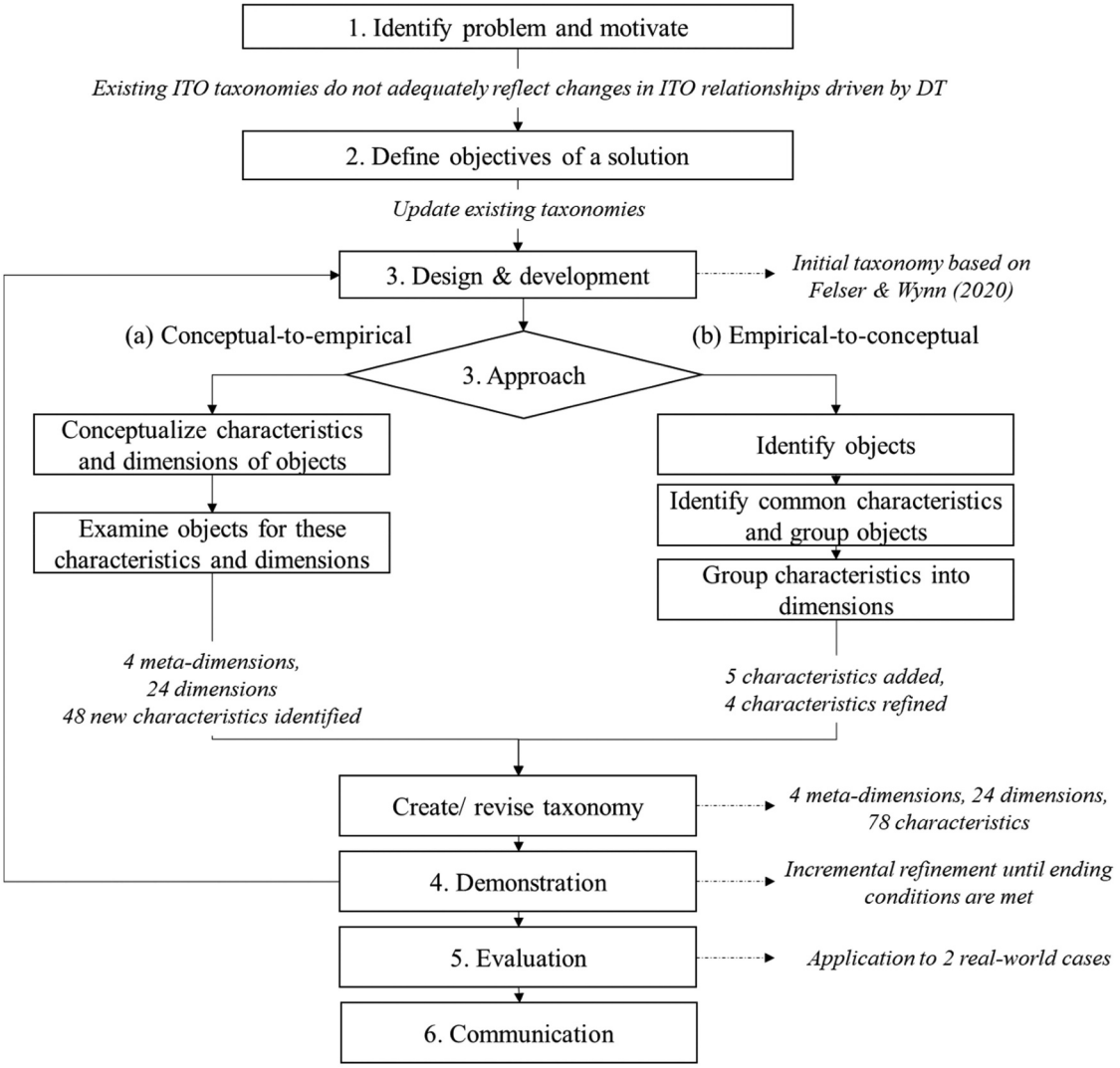

Figure 3. Iterations of data analysis for taxonomy development.

other ITO dimensions, such as ITO scope (Dibbern & Hirschheim, 2020). To ensure coding consistency and reliability, we employed a collaborative consensus approach. The initial coding was conducted by the first author, after which discrepancies were systematically reviewed and resolved through an iterative discussion process aimed at achieving a shared understanding of the codes and emerging themes. To further support consistency, a detailed codebook was developed and continuously refined throughout the coding process, serving as a stable reference for subsequent analysis. In the first iteration, open coding yielded 7 meta-dimensions, 30 dimensions, and 513 characteristics. Through subsequent axial and selective coding, these were refined to 4 meta-dimensions, 26 dimensions, and 94 characteristics (see Appendix D.2). Changes to the initial taxonomy of Felser and Wynn (2020) are shown in appendix D.1. In the second iteration, we took an empirical-to-conceptual approach by incorporating insights from practitioners in the field. For the evaluation of the taxonomy, we conducted expert interviews with two ITO and two DT advisors to verify the understandability and expected usefulness. Each interview consisted of three parts, i.e., (1) taxonomy dimensions (2) taxonomy characteristics, and (3) additional feedback. Based on the insights received, we refined and updated the taxonomy accordingly. While no new dimensions were introduced during these consultations, we did incorporate additional characteristics within existing dimensions. Specifically, the dimensions related to provider role, contract duration, contractual agreements, performance measurement, organizational structures were refined and expended. This iterative process allowed us to enhance the comprehensiveness and applicability of our framework based on real-world insights. The changes to the taxonomy are shown in Appendix D.3.

The fourth step (4) is dedicated to demonstrating the taxonomy (Kundisch et al., 2021). To achieve this, we assess whether the objective end conditions established in step 2 have been met. If these conditions are not yet satisfied, the iterative process for taxonomy development, as described, continues until all conditions are successfully met.

In the fifth step (5) (Kundisch et al., 2021), we checked whether the taxonomy met all subjective end conditions (see final changes in Appendix D.4). After examining all objects and adding no new dimensions, we evaluated the updated taxonomy in a research and practice context. As part of this step, we analyzed the dimensions and characteristics of our taxonomy to ensure it reflects the evolution of ITO and the respective views within the field. This approach helps to ground our taxonomy in established research and capturing the field's evolving understanding. To validate our taxonomy's practical applicability in depicting contemporary ITO relationships, we conducted evaluations using two real-world ITO case studies provided by a sourcing firm. Through this evaluation, we demonstrate that the taxonomy satisfies the necessary conditions and evaluation criteria, establishing its usefulness to reflect current ITO relationships in the DT context as well as traditional ones.

Taxonomy for ITO relationships in the context of DT

In the following, we present a comprehensive updated taxonomy for ITO relationships as the key finding of our study. Our taxonomy comprises four meta-dimensions, which encompass 24 dimensions (refer to Table 2). New characteristics not previously included in identified taxonomies are highlighted in bold. The complex nature of ITO relationships between customers and their suppliers, coupled with the utilization of diverse service and contract models, results in a broad spectrum of 78 characteristics across these dimensions. This extensive variety renders most characteristics non-exclusive since they are frequently combined within an ITO relationship between a customer and their provider nowadays. The detailed description of the respective taxonomy characteristics is provided in Appendix C with E/N indicating if they are "exclusive" or "non-exclusive."

Identified meta-dimensions of ITO relationships are ITO strategy, ITO scope, relational governance and contractual governance. **ITO strategy** describes the foundational framework guiding an organization's configuration of ITO elements to achieve success in ITO (Jae-Nam et al., 2019). The **ITO scope** delineates the extent of ITO across various dimensions, encompassing IT functions, IT activity levels and geographical location (Demirbas et al., 2018). **Relational governance** is based on informal social arrangements, while **contractual governance** is characterized by formal written contracts (Roehrich et al., 2020). Both are integral parts of inter-organizational governance and are strong complementary capabilities which are important to make an ITO relationship successful (Lacity et al., 2010).

In the meta-dimension **ITO Strategy**, we added value focus in ITO as a dimension and extended characteristics for provider strategy and roles. Gambal and Asatiani (2019) suggested examining various types of innovation in ITO (value focus) by assessing their influence on the functional IT core, the application of IT products and services to the client firm's administrative core, and their potential strategic impact through integration with the client firm's core business. Additionally, we added the option to implement ITO relationships with few providers (strategic partnerships) in the provider strategy as it balances the approaches of single and multi-provider sourcing. It is well-suited for situations where a balance between specialization, simplicity, and risk mitigation is crucial for achieving the respective business objectives (Hund, Wagner, & Gewald, 2019). In the section of provider roles, we added "strategic partnerships and joint ventures" as an option, reflecting research that highlights how such partnerships foster innovation through shared commitment, extensive joint action, long-term relationships, and a perception of the external party as a business partner rather than a traditional service provider (Gambal & Asatiani, 2019). Listing "solution provider" as a distinct provider role is essential because it acknowledges the shift in ITO relationships from traditional service execution to partnerships that deliver integrated, customized solutions and drive DT (Lacity & Willcocks, 2014).

In the **ITO Scope** section, we have introduced new dimensions for "interoperability of scope," "scope automation level," and "sourcing output," which reflect the increasing automation, individualization, and interconnection within the ITO scope. The characteristics of the other dimensions in this section remain unchanged. Jöhnk et al. (2017) highlights that the three levels of IT integration – isolated, partially, and seamless – support the need for seamless data exchange, while isolated systems can also shield innovation from restrictive regulations. Lacity and Willcocks (2021) outlines a continuum of automation solutions ranging from manual to cognitive (hyper) automation. Similarly, Gambal et al. (2022) identify a major shift toward increased automation in outsourcing practices and notes the rising individualization of sourcing output.

Table 2. Taxonomy for ITO relationships in DT context.

Meta-Dimension	Dimension	Characteristic					E/N
ITO Strategy	strategic intention	cost leadership	competency-based differentiation	improve business and delivery performance	innovation & competitive advantages		N
	value focus	functional IT core	administrative core	core business			N
	provider strategy	single provider	few providers (strategic partnerships)	multi- provider (best-of-breed)			E
	provider role	body shop	project partner	service provider	solution provider	strategic partnership & joint venture	N
ITO Scope	sourcing model	out-tasking	managed service	managed capacity	staff augmentation		N
	shoring model	on-site	onshore	nearshore	offshore		N
	sourcing scope	IT infrastructure	IT end-user management	applications & solutions			N
	interoperability of scope	**isolated**	**partially**	**seamless**			E
	scope automation level	**manual**	**basic**	**RPA**	**IPA**	**hyperautomation**	N
	sourcing output	**standard**	**customized**	**individual**			N
Relational Governance	**responsibility**	**IT department**	**business department**	**separate department**	**separate legal entity**		E
	attitude	transitional	transformational	**collaborative**			E
	collaboration scope	**Tactical co-creation**	**service co-creation**	**product co-creation**	**value co-creation**		N
	organizational structures	**project-oriented**	**service-oriented**	**product-oriented**			N
	knowledge sharing scope	**technology**	**service**	**process**	**domain**		N
	decision-making	**centralized**	**decentralized**	**case-by-case**			N
Contractual Governance	contract duration	short-term (less than 1 year)	medium-term (1–4 years)	long-term (more than 4 years)			E
	contract specificity	low contract specificity	selective contract specificity	high contract specificity			N
	contractual agreement	**project agreement**	**service agreement**	**partnership agreement**			N
	performance measurement	**service-oriented**	**experience-oriented**	**business-oriented**			N
	pricing model	fixed prices	time & material	**performance-based**	**value-based**		N
	service model	**IaaS**	**PaaS**	**SaaS**	**XaaS**		
	investments	**client-funded**	**provider-funded**	**joint-investment**	**individual framework**	**case-by-case**	N
	Intellectual Property Ownership	client-side	vendor-side	joint venture			N

He also states that ultimately, the question of the individualization of the output seems to boil down to the degree to which the strategic innovation is tailored to the client.

Research highlights the importance of **relational governance** in DT-driven ITO relationships, emphasizing the value of informal information exchange for enhanced understanding and successful collaboration (Amiri et al., 2021; Crowley et al., 2017; Gambal & Asatiani, 2019; Hund & Wagner, 2019). We introduced the dimension of "responsibility" to account for the dynamic nature of ITO relationships, acknowledging that the exclusive management responsibility increasingly fluctuates among the different available options (Jöhnk et al., 2017). We expanded the "attitude" dimension, which reflects intent and relationship orientation, by incorporating a collaborative approach, recognizing that contemporary ITO relationships extend beyond merely transitional or transformational (Mazumder & Garg, 2021). While transitional engagements emphasize the transfer of existing services, systems, and processes, and transformational engagements prioritize driving substantial changes, a collaborative attitude centers on fostering strategic partnerships and close cooperation to achieve mutually shared goals (Gambal & Asatiani, 2019). The collaboration scope describes the range of co-creation activities, spanning from tactical and service-related collaborations to product development, and ultimately, to value co-creation (Warner & Wäger, 2019). Organizational structures in ITO relationships encompass project-oriented, service-oriented, and product-oriented approaches. Project-oriented practices focus on managing initiatives with specific scopes, timelines, and deliverables (Kusanke & Winkler, 2022). Service-oriented practices concentrate on delivering IT services in alignment with business requirements (Kumbakara, 2008). Product-oriented approaches foster end-to-end responsibility within a team for a business domain, a concept that has been widely adopted across industries (Urbach et al., 2019). Research emphasizes the significance of ambidexterity within organizational structures, which entails the simultaneous pursuit of digital innovation exploration and leveraging existing resources through exploitation based on different organizational structures (Vial, 2021). Knowledge sharing can encompass technologies, services, processes, or domain knowledge (Felser & Wynn, 2020). The decision-making processes in ITO can take different forms. Case-by-case decision making involves ad-hoc decisions without predefined processes, granting flexibility but potentially lacking consistency (Bea & Lloveras, 2007). Centralized decision making establishes a dedicated body or board responsible for making strategic decisions. Decentralized decision making distributes decision-making authority across different organizational units, granting autonomy and adaptability (Trautmann et al., 2009).

Contractual governance mechanisms are used to align incentives and individual interests in outsourcing partnerships via contractual agreements (Gambal et al., 2022). The level of contract specificity varies, with some advocating for highly detailed contracts and well-defined service-level objectives (trust-but-verify-approach), while others suggest low contract specificity to enable provider-led innovation and explorative initiatives (Gambal & Asatiani, 2019). Additionally, organizations may choose a selective contract specificity to balance control and flexibility. We added the dimension "contractual agreements" as they are fundamental in outlining the terms, conditions, and expectations between the client and the service provider. A project agreement outlines the terms, conditions, and specific details of a project. Service agreements provide a more detailed description of the scope of work. They may incorporate specific frameworks like RACIs (Responsible, Accountable, Consulted, Informed) and SLAs (Service Level Agreements) to clarify roles, responsibilities, performance expectations, and service quality standards (Rose & Indelicato, 2011). Partnership agreements are specifically designed for long-term partnerships creating innovation or joint ventures and encompass various elements (Crowley et al., 2017; Hund & Wagner, 2019). They outline gain-/profit-sharing clauses, defining how the benefits or profits will be distributed among the partners (Gambal & Asatiani, 2019). Additionally, partnership agreements address decision-making processes, knowledge sharing, cooperation frameworks, and procedures for dissolution, providing a comprehensive framework for the partnership (Hund & Wagner, 2019). Performance measurement is crucial for evaluating the effectiveness and efficiency of the outsourcing engagement. This area can vary in focus, encompassing service-oriented measurement (e.g. SLAs) to evaluate service provider performance, experience-oriented measurement (e.g. XLAs) to assess perceived quality from the customer's perspective, and business-oriented measurement like (e.g. OKRs or BSC) to gauge alignment with desired customer business outcomes (Karamouz et al., 2021). As a successful DT aims to enhance customer experiences, optimize operational processes, and support new business fields, the targeted implementation of all three performance measurement methods is important in ITO (Fitzgerald et al., 2013). The pricing model may be based on fixed prices, T&M (Time & Material),

performance-based (e.g. per sprint or story point) or value-based for example for achieved cost savings, revenue generation or KPIs achieved (Amiri et al., 2021; Demirbas et al., 2018). As DTs drive the adoption of agile approaches, research has revealed a growing tension between traditional specifications and the adaptable nature of agile, resulting in an emerging issue of unresolved agile pricing models and an increasing trend among suppliers to charge based on "time and materials" to navigate this challenge (Aoufi et al., 2022). Additionally, the increasing implementation of modular service models, such as IaaS, PaaS, SaaS, or XaaS fosters collaboration in today's ITO relationships through cloud sourcing (Warner & Wäger, 2019). Investments can be determined on a case-by-case basis, funded by the client or the provider individually (Gambal & Asatiani, 2019), combined in a joint-venture (Felser & Wynn, 2020), or follow a pre-defined individual framework that outlines which party is responsible for which investments at specific stages (Gambal & Asatiani, 2019).

Applying the taxonomy to empirical cases

To showcase the practicality of the developed taxonomy, we classified two real-world outsourcing scenarios provided by a sourcing advisory firm according to the taxonomy (see table 3).

The alpha outsourcing case pertains to a full outsourcing effort undertaken in 2021 by a German manufacturing company. In this initiative, the company outsourced its IT operations, including SIAM (Service Integration and Management) and application management, to a new provider. Given that they were already in their second generation of outsourcing, they had already set up an established internal retained organization and IT services were highly standardized. Consequently, they adopted a service-oriented organizational and contract model, forging a transactional partnership with the provider. The pricing model was based on fixed prices for the IT services and T&M rates for projects. At the time of this outsourcing engagement, the company had just embarked on their DT journey, focusing primarily on cloud migration and implementing smaller solutions within the DT scope.

The Beta outsourcing case involves an outsourcing initiative from 2020 by a global logistics company seeking a development and service partner for a critical software solution that would significantly impact their business operations in Europe. The company required an AI-driven software capable of processing a vast amount of data within seconds, performing complex operations to support and streamline their business activities. Upon realizing that off-the-shelf solutions could not fully meet their requirements and that existing solutions needed customization, the company reached an agreement with a solution provider to adapt his current offering in an agile manner. This collaboration involved close cooperation with the customer's business units. To foster this agile and collaborative approach, they implemented more flexible organizational and contract models, jointly co-creating the solution in

Table 3. Exemplary application of taxonomy.

	Assigned Characteristics for	
Taxonomy Dimensions	Alpha ITO case	Beta ITO case
strategic intention	cost leadership, improve business and delivery performance	innovation & competitive advantages
value focus	functional IT core	core business
provider strategy	multi-provider	single provider
provider role	service provider	strategic partnership & joint ventures
sourcing model	managed service, managed capacity	managed service, managed capacity, staff augmentation
shoring model	on-site, onshore, nearshore, offshore	on-site, onshore
sourcing scope	IT infrastructure, IT end-user mgmt., applications & solutions	applications & solutions
Interoperability of scope	partially	seamless
scope automation level	basic, RPA	IPA
sourcing output	standard	customized
responsibility	IT department	separate department
attitude	transitional	collaborative
collaboration scope	Service co-creation	Product co-creation, value co-creation
organizational structures	project-oriented, service-oriented	service-oriented, product-oriented
knowledge sharing scope	technology, service, process	service, process, domain
decision-making	centralized	case-by-case
contract duration	long-term	medium-term
contract specificity	high contract specificity	selective contract specificity
contractual agreement	project agreement, service agreement	service agreement, partnership agreement
performance measurement	service-oriented, experience-oriented	service-oriented, business-oriented
pricing model	fixed prices, time &material	fixed prices, time & material, value-based
service model	IaaS, PaaS, SaaS	SaaS
investments	provider-funded	individual framework
intellectual property ownership	client-side	client & vendor side

a product-oriented manner. The agreement also included gain-sharing clauses, where the success of the solution's implementation was tied to business benefits realized. This incentivized both parties to work together toward achieving mutually beneficial outcomes.

The two use cases effectively demonstrate the taxonomy's ability to encompass both traditional and DT-driven ITO relationships. Furthermore, these cases serve as compelling illustrations of contemporary ITO configurations, distinguishing between the outsourcing of standardized IT services through traditional models and the pursuit of DT-driven initiatives through agile and collaborative partnerships aiming at value co-creation.

We selected these two cases to highlight the continued importance of traditional transactional ITO relationships and to illustrate an ITO scenario that is intricately linked with the DT context, where an ecosystem partnership establishes a connected value creation pathway. Applying the taxonomy to these two distinct cases demonstrates its capacity to accurately reflect the current spectrum of ITO relationships. Naturally, there exists a continuum of scenarios between these two extremes. However, the taxonomy's adaptability to these diverse ITO situations highlights the extensive range it can cover. Applying our developed taxonomy to these cases illustrates that existing ITO taxonomies (Amiri et al., 2021; Demirbas et al., 2018; Felser & Wynn, 2020; Linden & Hovestadt, 2017), with their focus on a limited number of dimensions such as sourcing model, shoring model, sourcing scope, and attitude, are not fully equipped to reflect the full complexity of today's ITO relationships. Further analysis of diverse cases using the taxonomy will help in identifying the nuanced facets and models within ITO relationships.

Discussion & conclusion

Theoretical contributions

Theoretical models have been widely applied in research to describe ITO relationships. Cheon et al. (1995) describe transaction cost theory, agency theory, resource-based theory, and resource-dependency theory as foundational frameworks for defining a firm's outsourcing strategy and respective relationships. Later the social exchange theory (Schoenherr et al., 2015), dynamic capability perspective and network theory (Bhatt et al., 2007), complex adaptive systems theory (Denicolai et al., 2015), ecosystem theory (Bhalla & Terjesen, 2013), knowledge-based view (Han et al., 2008) and relational exchange theory (Chen & Bharadwaj, 2009) where used for advancing the understanding of ITO relationships. Mapping the additional characteristics of the created taxonomy, which were not part of previously published taxonomies, to these theories for characterizing ITO relationships reveals that existing ITO views remain relevant but are insufficient to fully reflect recent changes (see table 4).

The ecosystem view in ITO is informed by five key theories: complex adaptive systems theory, network theory, ecosystem theory, the knowledge-based view, and relational exchange theory. These theories emphasize adaptability, interconnectedness, and collaborative value creation in business ecosystems. Complex adaptive systems theory explains ecosystem functionality through non-linear interactions, emergent behaviors, and adaptive processes among actors (Roundy et al., 2018). In ITO, this helps service providers adapt to changing technology trends and client needs through collaborative innovations. Network theory examines connections between entities, focusing on information, resource, and influence circulation (Aarikka-Stenroos & Ritala, 2017). It highlights the importance of strategic alliances and knowledge sharing for fostering innovation and efficiency. Ecosystem theory broadens these concepts, emphasizing cooperation, co-evolution, and a balance between competition and collaboration. In ITO, symbiotic relationships between vendors, clients, and third-party providers facilitate value co-creation and collective advancement. The knowledge-based view highlights knowledge as a vital resource driving innovation and competitive advantage. Effective knowledge creation, sharing, and utilization enhance the value of outsourcing engagements, requiring strategic knowledge management and a collaborative culture. Relational Exchange Theory emphasizes trust, commitment, mutual dependence, communication, and relational norms. Strong relational exchanges lead to effective and sustainable outsourcing arrangements, improved performance, reduced costs, and greater adaptability. Overall, these theories illuminate the complexity of partner ecosystems, revealing a landscape characterized by (a) competition and evolution, (b) emergence and disruption, (c) stable business exchange and (d) value co-creation (Aarikka-Stenroos & Ritala, 2017). The integrative view, while focusing on collaboration and shared goals within bilateral partnerships, falls short in addressing the complexities of today's interconnected digital partner landscapes, necessitating the broader, more dynamic approach offered by the ecosystem view to effectively navigate and leverage the multifaceted networks of ITO relationships, technology integration, and collective innovation required for sustained success. Oshri et al. (2024) contend that ITO should pivot from integrating individual providers to

Table 4. Mapping of new taxonomy characteristics to ITO relationship views.

New taxonomy characteristics	Theory	Description	ITO relationship perspective
Administrative core (value focus); isolated (interoperability of scope); manual (scope automation level); standard (sourcing output); separate department (responsibility); tactical co-creation (collaboration scope); project-oriented (organizational structures); service agreement (contractual agreement); service-oriented (performance measurement)	transaction cost theory	This theory explains that firms outsource IT services to minimize the costs associated with transactions and contracting. It highlights the importance of reducing transaction costs to enhance efficiency and governance structures (Williamson, 2010).	**Transactional View**
basic (scope automation level); separate legal entity (responsibility); centralized, decentralized, case-by-case (decision making); project agreement (contractual agreement); performance-based (pricing model); client funded (investments)	agency theory	This theory focuses on the relationship between principals (clients) and agents (service providers), emphasizing the need to manage conflicts of interest and align incentives to ensure effective outsourcing arrangements (Cheon et al., 1995).	
Solution provider (provider role); partially (interoperability of scope); RPA (scope automation level); product co-creation (collaboration scope); business department (responsibility); provider funded (investments)	resource-based theory	This theory posits that firms outsource to access external resources and capabilities that are not available internally, enhancing their competitive advantage and operational efficiency (McIvor, 2009).	**Competence View**
Functional IT core (value focus)	resource dependency theory	This theory suggests that firms outsource to manage dependencies and secure critical resources from external providers, which can influence their strategic decisions (Cheon et al., 1995).	**Relational View**
	social exchange theory	This theory examines trust formation and relationship management in outsourcing, emphasizing the role of social interactions and trust in establishing effective partnerships (Schoenherr et al., 2015).	**Relational View; Integrated View**
IPA (scope automation level); complex (scope automation level); customized (sourcing output); service co-creation (collaboration scope); service-oriented (organizational structures)	dynamic capability perspective	This theory highlights the need for firms to continuously develop and adapt their capabilities to manage outsourcing relationships effectively, ensuring long-term success and adaptability in a changing environment (Bhatt et al., 2007).	**Integrated View**
Case-by-case (investments); product-oriented (organizational structures)	complex adaptive systems theory	This theory views outsourcing relationships as dynamic and evolving systems, requiring firms to adapt their strategies and structures to maintain effective collaboration (Denicolai et al., 2015).	**Ecosystem View**
Seamless (interoperability of scope); IaaS, PaaS, SaaS, XaaS (service models); business-oriented (performance measurement)	network theory	This theory emphasizes the importance of social networks and relationships in facilitating outsourcing arrangements, allowing firms to leverage network resources and capabilities (Bhatt et al., 2007).	
value co-creation (collaboration scope); collaborative (attitude); value-based (pricing model)	ecosystem theory	This theory focuses on the broader ecosystem of partners and stakeholders involved in outsourcing, highlighting the interdependencies and collaborative efforts required to achieve mutual benefits (Bhalla & Terjesen, 2013).	
IT department (responsibility); core-business (value focus); technology, service, process, domain (knowledge sharing scope); individual framework (investments)	Knowledge-Based View	This theory focuses on the strategic importance of knowledge and expertise in outsourcing, suggesting that firms outsource to access specialized knowledge and enhance their learning capabilities (Han et al., 2008).	
Few providers (provider strategy); strategic partnerships & joint ventures (provider role); individual (sourcing output); partnership agreement (contractual agreement); experience-oriented (performance measurement); joint investment (investments)	Relational Exchange Theory	This theory examines the role of long-term relationships and trust in outsourcing, emphasizing the importance of relational governance mechanisms in managing outsourcing partnerships (Chen & Bharadwaj, 2009).	

orchestrating vendor innovation ecosystems (VIEs). Whereas the integrated view forges a closer dyadic bond, the ecosystem view facilitates dynamic value networks.

In conclusion, while the provided taxonomy offers valuable insights into the evolving nature of ITO relationships, it also reveals a gap in fully accounting for the complexities and dynamics of modern digital ecosystems. The introduction of an ecosystem view is not merely an expansion but a necessary evolution to capture the essence of current ITO practices. This view acknowledges the interconnected, adaptive, and co-innovative nature of relationships, urging organizations to adopt a more holistic, flexible, and network approach to ITO. The objective, theoretical orientation and characteristics of the ecosystem view are shown in table 5.

The revised taxonomy of ITO relationships shows this significant shift toward an ecosystem-centric view, by integrating new dimensions and characteristics that underscore the evolution from transactional engagements to strategic collaborations within a value network. This transition is highlighted by the introduction of elements such as "strategic partnerships & joint ventures, "partnership agreements," and

Table 5. Relationship characteristics, objectives and theoretical orientations for the ecosystem view.

ITO Perspective	Objectives & theoretical orientations	Relationship Characteristics
Ecosystem View	Enabling DT and innovation via collaborative partner ecosystem embedded in the value network (complex adaptive systems theory, network theory, ecosystem theory, knowledge based view, relational exchange theory)	Network alliance; partners are integrated to value network; agile ecosystem capability development; focus on leveraging technology collaboratively to drive DT; ecosystem-wide flexible governance; collective goals and shared resources; distributed costs, risks and benefits; value- and collaboration centric model; holistic value-co-creation

a pronounced focus on "core business" operations, which collectively foster a move toward synergistic collaboration. The adoption of a "collaborative" attitude and an expanded collaboration scope aimed at "value co-creation" are at the heart of this shift. This encompasses "domain" knowledge sharing and the extension of responsibilities to various units beyond the traditional IT department. Such practices signify a departure from purely transactional dealings, pivoting toward partnerships that fuel collective innovation and value creation. This evolution is further accentuated by the emergence of "product-oriented" organizational structures, "business-oriented" performance metrics, and shared investment models. These components reflect a dedication to agility, mutual benefits, and shared objectives across participating organizations, which are fundamental to the ecosystem approach. This paradigm shift implies a move away from conventional governance models toward a framework that values distributed governance and joint value creation. This is evident in the taxonomy's broader inclusion of service models ranging from IaaS to XaaS, along with an enhanced focus on automation, interoperability, and customized sourcing outputs. Such developments support DT and technology integration, advocating for seamless, automated integration and modular collaborative innovation. The ecosystem view acknowledges the pivotal role of infrastructure in facilitating comprehensive ecosystem collaborations, a facet overlooked in previous models. The presence of multiple characteristics in ITO relationships, such as value co-creation, strategic partnerships, individual sourcing output, and high levels of automation and integration, indicates an ecosystem of partners actively engaged in the value creation path of the customer.

The emergence of complex, interconnected networks of service providers, clients, and various stakeholders marks the advent of the fifth phase of ITO (Polese et al., 2021). It follows the preceding phases with an evolution from a focus on cost, competency, quality, and integrating these elements within bilateral relationships, to adopting a more holistic approach that prioritizes value co-creation, agility and DT (see Figure 4). In this phase, organizations no longer engage with service providers in isolated, one-on-one relationships but rather as integral parts of the value creation path in an

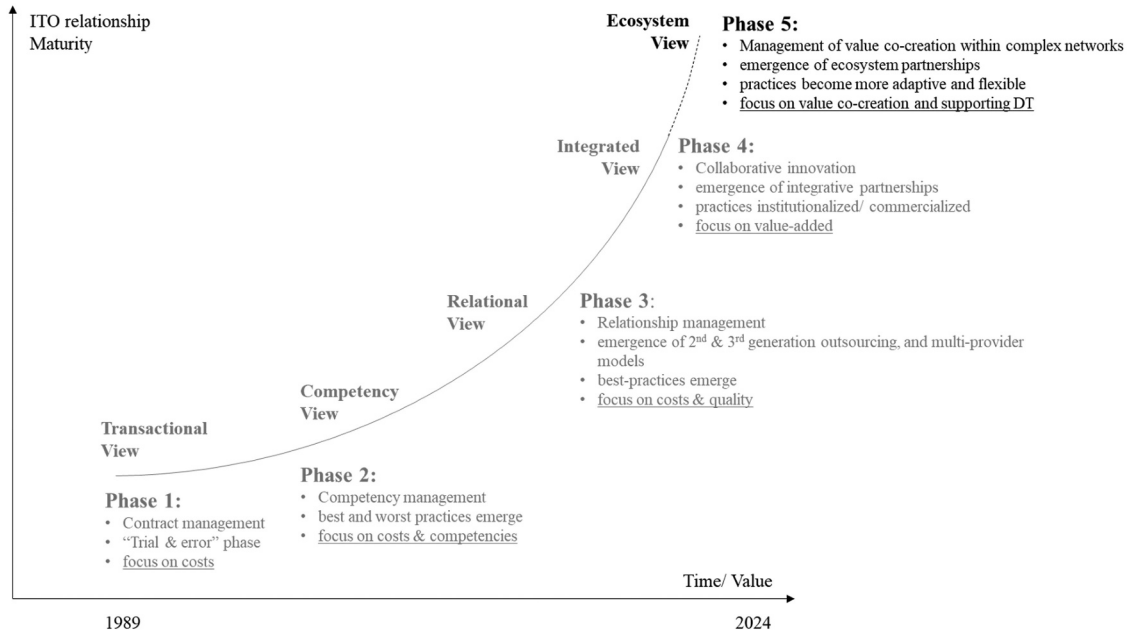

Figure 4. Ecosystem view in the evolution of ITO Phases.

interconnected ecosystem (Valjakka & Valkokari, 2015). They collaborate with a variety of partners to innovate and adapt to rapid technological changes, shifting from a simple buyer-seller dynamic to forming strategic alliances that can flexibly respond to new opportunities and challenges (Frutiger et al., 2014). This progression reflects an ITO landscape where creating shared value and leveraging digital technologies become key to achieving sustained business growth and transformation. This shift aligns with the three interlinked "phases of change" identified by Dibbern and Hirschheim (2020), which show an evolution toward innovative value propositions, the rise of cloud computing and platform ecosystems, and the shift toward automation. These phases of change are integral to the new phase of ITO, focusing on ecosystem partnerships built on technological platforms, automation, and modular cloud service models to enable shared value creation.

Recent DT research has highlighted the importance of value networks due to their growing complexity and need for greater integration and control (Vial, 2021). Gambal et al. (2022) emphasize the significance of a value network perspective in ITO, based on the open innovation paradigm. They note that competition has shifted from individual firms to networks, requiring strategic innovations that go beyond a single firm's knowledge. Providers must integrate as valuable network nodes and differentiate by offering customized solutions that support clients' core activities (Gambal et al., 2022). The key distinction lies in their focus as partner ecosystems center around a key firm (1:n relationship), fostering innovation and resource sharing for mutual benefit (Williamson & De Meyer, 2012), whereas value networks focus on the path of value creation, involving various intra- and interorganizational actors (n:n relationships) to support a shared business model (Vial, 2021). In ITO, relationships typically involve structured interactions between customers and partners (Gambal et al., 2022), whereas value networks emphasize collaborative value creation among all involved parties (Petrik, 2023).

Practical implications

The developed taxonomy serves as a practical tool for systematically analyzing and structuring ITO relationships. As a descriptive framework, it enables the classification of ITO scenarios along key dimensions, supporting comparison, evaluation, and alignment with strategic goals. It assists both clients and service providers in identifying the characteristics, patterns, and strategic positioning of existing engagements. By fostering a common language and shared understanding across functions such as IT management, procurement, and strategy, the taxonomy facilitates better informed decision-making. It also helps reveal structural inconsistencies or blind spots in current setups, providing a foundation for targeted improvements. The following three scenarios illustrate how the taxonomy can be applied in diverse organizational contexts to support decision-making and strategic alignment in ITO relationships.

Scenario 1: portfolio analysis of a customer and service provider

The developed taxonomy can be used as a tool for portfolio analysis, enabling both customers and service providers to categorize their existing ITO partnerships. This categorization helps to assess whether current relationships align with the intended strategic objectives and the appropriate type of engagement. Based on the insights gained, organizations may decide to adjust their partner selection criteria, renegotiate contracts, or reevaluate risk management strategies. For example, the analysis might reveal that several partnerships are structured as transactional relationships, even though the organization's goals would be better served by strategic collaborations. Conversely, it may highlight the need to evolve certain transactional partnerships into more strategic ones to support long-term DT initiatives.

Scenario 2: customer perspective – development from transactional to strategic ITO relationship

Some ITO relationships evolve significantly over time, transitioning from basic, transactional engagements to more strategic and integrated partnerships. This evolution can be examined through various analytical lenses or ITO perspectives, such as the transactional, competence-based, relational, integrated, or ecosystem view. Each of these perspectives highlights different assumptions regarding value creation, coordination mechanisms, and governance. Viewing the relationship through an ecosystem perspective and applying the taxonomy as a structuring tool enables organizations to deliberately realign the partnership and adapt contractual arrangements in ways that better support collaborative, innovation-driven value creation.

For instance, a mid-sized manufacturer that initially outsourced its IT infrastructure commodity services to a third-party provider could leverage the taxonomy for analyzing and potentially redesigning its outsourcing partnerships. As trust and collaboration between the partners deepen, the relationship may expand to include the joint development of innovative technologies, such

as AI-driven platforms, thereby aligning more closely with the manufacturer's DT strategy. When applying the ecosystem perspective, which emphasizes the collaborative use of technology, flexible governance structures, and the distribution of goals, risks, and benefits, the relationship can be intentionally developed with the taxonomy serving as a diagnostic and design framework. In such a context, the partners may choose to implement value-based pricing models, engage in domain-specific knowledge sharing, adopt product-oriented organizational structures, and introduce performance measurement systems that are aligned with a value focus on the core business.

Scenario 3: service provider perspective – moving up the value chain

The IT service provider industry faces constant pressure to evolve, as innovations quickly become commoditized. To remain competitive, especially in saturated markets, providers aim to move up the value chain by becoming strategic partners that drive innovation and deliver business value (Qi et al., 2023). The developed taxonomy supports this shift by mapping current and target positions across chosen dimensions, helping providers identify capability gaps and reflect on potential transformation paths. While it does not imply direct causal links, the taxonomy helps explore which attribute combinations align with higher-value roles such as moving from cost-driven, standardized services toward innovation-focused, collaborative models. This may involve adopting advanced automation, value-based pricing, and long-term governance structures that enable sustainable, strategic partnerships.

Limitations and future research

While our study contributes to the understanding of ITO relationships by providing an up-to-date taxonomy and introducing the ecosystem partnership as an emerging fifth phase, we acknowledge certain limitations in our study and propose respective avenues for future research. The taxonomy, although comprehensive, may not capture every nuance of the rapidly evolving ITO landscape. Future work should continuously validate and refine the taxonomy to ensure its relevance and applicability to emerging ITO practices. Further studies can evaluate current ITO relationships with the help of the taxonomy and identify which archetypes or best-practice models have emerged in the market. Additionally, the use cases presented, while illustrative, may not cover the full spectrum of potential scenarios. Empirical studies applying the taxonomy to a broader range of industry contexts and geographical regions will contribute to its validation and refinement. The identification of the ecosystem partnership phase is primarily based on observations from the developed taxonomy and current research. The conceptualization of this phase could benefit from further empirical validation through case studies, longitudinal research, and quantitative analyses to establish a deeper understanding of its characteristics, benefits, and challenges. Exploring how emerging technologies are reshaping ITO relationships by facilitating new forms of collaboration and creating value within ecosystem partnerships represents another promising area for future investigation. Overall, this study should be viewed as a step toward a more comprehensive understanding of the evolving nature of ITO relationships. It provides a foundation for further research to build upon, with the hope that future studies will address these limitations and continue to advance the field.

Conclusion

In recent years, DT has significantly impacted the IT function, its ecosystem, and consequently, the dynamics of ITO relationships. While the implications of DT on the IT function and business ecosystems have been extensively explored in academic research, the corresponding evolution in ITO relationships remains underexamined. Traditional ITO taxonomies, which predominantly reflect traditional sourcing models, are increasingly misaligned with the contemporary landscape and require comprehensive updates to effectively analyze and understand the current development of ITO relationships. Therefore, our study revisits and advances existing ITO taxonomies through a SLR of studies focused on DT within ITO. To illustrate the practical application and relevance of the updated taxonomy, we applied it to analyze two recent ITO use cases. Based on the taxonomy created, we have traced the evolution of ITO toward the emergence of ecosystem partnerships and respectively identified a new perspective on ITO, the ecosystem view. Our research contributes an updated taxonomy for ITO relationships, identifying a new ITO phase and view characterized by ecosystem partnerships. The resulting change in the value proposition of ITO, alongside its relationship identity, reflects a shift from cost-driven, transactional outsourcing to value-focused, ecosystem-based partnerships that prioritize agility, value-co creation, and the support of DT initiatives.

The characteristics of the taxonomy reflect the different phases of ITO relationships and showcase the spectrum of various ITO relationships that exist in current practice. This taxonomy, based on current research and applied to selected use cases, highlights the ongoing relevance of each evolutionary phase, with a clear trend toward an integrated and ecosystem-centric view in recent years. This evolution requires a significant shift in the perception of the value proposition of ITO and its relationships. ITO can no longer be seen merely as a traditional tool for cost reduction but must also be considered a strategic tool to leverage DT and promote joint value creation. This paradigm shift redefines ITO relationships, which evolve from purely transactional engagements to holistic ecosystem partnerships. In these partnerships, outsourcing partners are not just service providers but essential components of the organization's value network, where the service providers must position themselves accordingly. Moreover, customers must be able to carefully design their necessary partner ecosystems, choosing partners whose capabilities and technologies complement and enhance the strategic goals of their company, as well as demonstrate reliability and the desired innovation. Accordingly, new models for ITO relationships need to be developed and corresponding capabilities on both the customer and service provider sides identified to enable the establishment of successful relationships that meet the various requirements in ITO.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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The authors report there are no competing interests to declare.

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