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Abstract

The increasing shift in value creation activities from the clients to the service providers accompanied by pervasive digital penetration is disrupting the Information-Technology enabled-Services (ITeS) outsourcing industry. The outsourcing service providers (OSPs) in the Digital Transformational Outsourcing (DTO) context now play significantly larger roles than in the extant traditional scenario. Providers thus need a uniquely different set of capabilities as they adapt to handle complete business functions on behalf of their clients and become partners in delivering digital value propositions with strategic business outcomes. We study 26 of the largest global ITeS providers and, by taking the dynamic capability view, theoretically identify the capabilities salient in the DTO scenario. Using fsQCA, we explore recipes for provider success and failure in DTO by analysing a novel firm capability dataset that we created using industry analyst reports and databases. We find the capability recipes to vary by the narrow/broad scope of OSPs.

Keywords	Digital Transformation; Outsourcing; Dynamic Capabilities; Service providers; ITeS
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To

The Editor
International Journal of Information Management

Dear Prof. Dwivedi

Greetings!

Trust you, your family and your colleagues are safe and healthy in these difficult times.

I write to you to submit my paper to your esteemed International Journal of Information Management. As part of my Ph.D. thesis, I have been studying the impact of digital transformation in the IT-enabled services outsourcing domain. The empirical study conducted as part of this research received a special mention in a recently concluded leading international conference, and I am submitting a paper based on this for consideration for publication.

In the paper, my co-author/research-guide and I investigate the outsourcing service provider capabilities using fsQCA and using a novel customized dataset on the outsourcing industry, which we have created from primary and secondary sources. Our paper is rooted in the dynamic capabilities view (Teece, 2007). While most of the existing research takes a client perspective, our key differentiator lies in taking a service provider perspective. Our results provide evidence of asymmetricity in the recipes of outsourcing service providers' success and failure and varying by the firm's narrow/broad scope. The paper offers unique practitioner insights leveraging my over two decades of industry experience, with my current responsibilities lying in driving the digital transformation initiatives for one of the global leaders in IT-enabled outsourcing.

We feel that our paper would be a good fit for your journal as it attempts to explore provider firm capabilities in digital transformation as a critical emergent area in information outsourcing research augmented by practitioner insights and reflections, which your esteemed journal endeavors to focus on.

Looking forward to your consideration and support in taking this research ahead for publication.

With kind regards,

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Highlights

- Value creation shifts significantly to providers in transformational outsourcing
- ITeS providers need unique dynamic capabilities to meet digital expectations
- The dynamic capabilities do not work in isolation but in complex configurations
- The capability configurations differ between narrow and broad scope firms
- Narrow scope firms strengthen existing while broad scope acquire newer capabilities

Decoding Digital Transformational Outsourcing:

The Role of Service Providers' Capabilities

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Decoding Digital Transformational Outsourcing:

The Role of Service Providers' Capabilities

1. INTRODUCTION

> *"Of the top ten global companies by market capitalization ten years ago, only two have maintained their positions today; many of the rest were replaced by digital natives. And we expect the list ten years hence to be at least as different from today's: we know that only one-third of companies faced with industry disruption thrive, while the remaining two-thirds languish or fail." BCG Henderson Institute, April 30, 2019*[1]

To address the challenges posed by digital transformation, firms are often compelled to reconfigure their core and reimagine their traditional value creation paths (Tanriverdi and Lim, 2017;Vial, 2019) to sustain competitive advantage (Verhoef et al., 2019). While digital transformation has disruptive ramifications for the ITeS (Information Technology enabled Services)[2] outsourcing industry, we know little about how this industry responds to the above challenge, despite extensive research by both academia and practice on digital transformation (Bharadwaj et al., 2013; Fitzgerald et al. 2014;Vial, 2019).

Outsourcing, commonly understood as the shifting of non-core and non-critical business processes outside the firm boundaries through arms-length contracts, has expanded over the last two decades to include both critical and core activities (Mazawwi, 2002). Simultaneously, to productively engage with digital savvy end-users, client firms are competing directly and indirectly in the acquisition and deployment of digital technologies (Reis, Amorim, Melão, & Matos, 2018; Zinder & Yonatova, 2016). Consequently, as adaptive responses to increasing client digitalization, associated technical innovation and complexity, the outsourcing partners of the firms need to embrace digital technologies (Emidio, Dorton & Duncan, 2015; Reis et al. 2018) rapidly to survive in the dynamic environment (Hess, Matt & Benlian, 2015;Warner and Wäger, 2018). The above changes demand a rethink of our extant

[1] BCG Henderson Institute (April 30, 2019) Digital Transformation: Disruptions, Delusions, and Defences. https://bcghendersoninstitute.com/digital-transformation-disruptions-delusions-and-defenses-4baf32ae76cc

[2] ITeS- Information Technology enabled Services

knowledge on ITeS outsourcing and explore the changing role of capabilities in digital transformation.

The step-change brought forth by digital transformation requires alterations in a firm's service outsourcing policies and practices (Liu & Deng, 2015). For instance, hierarchical contracts need to be increasingly substituted by relational arrangements (Mudambi & Tallman, 2010) to address the nuances of both the intra-organizational expectations (i.e., flexibility, core reconfiguration and capabilities) and the digital world demands (i.e., speed, innovation, and dynamically changing expectations). Extant research explores how organizations embark on digital transformation, underscoring the role of capabilities as critical success factors with performance implications (Vial, 2019; Warner and Wäger, 2018). However, the above studies predominantly take the perspective of the outsourcing (client) organizations, while the locus of value-adding activities shifts significantly to the outsourcing service provider (OSP)[3] in this transformed scenario. With digital transformation of outsourcing (DTO)[4], the OSPs need to go beyond "sweating assets harder" to acquire absent capabilities (Hätönen & Eriksson, 2009), to not only digitally augment their service offerings (Westerman and Bonnet, 2015) but also graduate to become collaborating allies of clients (Kedia and Lahiri, 2007). They need to develop the ability to understand and redefine client business (Linder, 2004; Mazzawi, 2002), thus enabling the clients as well as themselves to sustain competitive and comparative advantage. Despite a clear and early recognition that success through outsourcing is a significant function of resources and capabilities of the OSPs (Goles, 2002; Levina and Ross, 2003), academic research has paid surprisingly little attention to the latter's perspective (Liang, Wang, Xue & Cui, 2016) (for exceptions see Bharadwaj and Saxena, 2010; Feeny, Lacity and Willcocks, 2005), despite calls for studies (i.e., Lacity et al., 2015). The shift from traditional to transformational outsourcing and the simultaneous aggressive adoption of digital

[3] OSP – Outsourcing Service Provider
[4] DTO- Digital Transformational Outsourcing

technologies by firms and OSPs have multiplied the complexities of the already multifaceted outsourcing scenario, thus creating gaps in our understanding. Specifically, the role of OSP capabilities in enabling digitally transformed outsourced services (i.e., which capabilities are important and why, and how do these manifest and operate) eludes our understanding. Grounded in the dynamic capabilities' literature (Teece, 2007: Warner & Wäger, 2019), this paper seeks to address this gap, taking the OSP perspective.

We review the literature on outsourcing, service innovation, and digital transformation to firstly identify the key capabilities that OSPs need to engage with clients in the DTO environment. Secondly, using secondary data (analyst reports, databases, annual reports, and press releases), we measure the identified capabilities and carry out fuzzy set Qualitative Comparative Analysis (fsQCA)[5] (Dul, 2016; Huarng, 2015; Ragin, 2006, 2008) to identify recipes that lead to OSP success or failure in the DTO context. We employ fsQCA as it has emerged as an attractive analytical technique to address the many shortcomings of conventional regression analysis (Roig-Tierno, Huarng, & Riberio-Soriano, 2016). It has been deployed for configurational analysis across diverse contexts such as biotechnology (Huang & Huarng, 2015); healthcare (Huarng & Yu, 2015); and IT enabled innovation (Oritz & Raymond, 2020). Organization capability studies, similar to ours, have also been conducted using fsQCA in the public sector environment (Andrews, Beynon, & McDermott, 2016).

The study makes theoretical contributions by identifying capabilities unique to the rapidly evolving DTO context. Though identified as important in other settings, these capabilities have not received adequate attention in the ITeS outsourcing literature, thus demanding deeper exploration. Additionally, we provide evidence that all capabilities are not equally important for all firms, and they also need to exist/not exist in specific configurations for success/failure. Our empirical contribution lies in using the fsQCA methodology (Dul,

[5] fsQCA- fuzzy set Qualitative Comparative Analysis

2016; Ragin, 2006, 2008) to study digital transformation, addressing recent calls in the literature to explore the idiosyncratic needs of the studied context (i.e., Vial, 2019; Warner and Wäger, 2018). Furthermore, our focus on OSP capabilities extends the existing literature by highlighting the aggregated and multidimensional nature of OSP dynamic capabilities (Barreto, 2010).

2. LITERATURE REVIEW

2.1. Evolution of Outsourcing

Outsourcing has been an integral part of the firm strategy for over three decades now. Increasing globalization, disruptive innovations, and digitalization have, however, changed its fundamental nature and scope (Schmeisser, 2013). By outsourcing of peripheral and tactical business processes, firms had traditionally sought cost reduction and access to resources residing outside firm boundaries (Gefen et al., 2011; Tambe and Hitt, 2011). Over time, with an increased focus on core competencies (Prahalad & Hamel, 1990), firms moved large parts of non-core business segments into the hands of service providers, in what is commonly referred to as strategic outsourcing (Brown and Wilson, 2007; Kedia and Lahiri, 2007; Loh & Venkatraman, 1992 a, b). The emergence of transformational outsourcing, by the turn of the century, has brought forth step changes in business operation models, products, and processes. Often referred to as the third generation of outsourcing (contrasting from tactical and strategic outsourcing, which are referred to as the first and the second generations of outsourcing, respectively), transformational outsourcing has fundamentally disrupted the way firms conduct business. Besides maintaining an operational priority, transformational outsourcing increasingly focusses on creating value, managing uncertainty, aligning business processes with strategic goals while relying on a network of partnerships, and sustaining value creation through business change and re-engineering (Mazzawi, 2002). To illustrate the significantly altered and broadened scope of such an outsourcing model, K. Gopalakrishnan, founder

CEO/MD of Infosys technologies, a global leader in the ITeS sector, states *"When we deliver HR (Human Resources) outsourcing we are the HR department for the client company, we run all the business processes for them, take responsibility for the license cost and the maintenance cost of the application, and we also take care of the infrastructure, including the physical infrastructure. So, the* ***entire stack*** *is delivered by Infosys. We may outsource the back end to some other companies or partners." (*Moorthi, 2011)

2.2. Digital Transformation

Rapid digital penetration across industries, functions, and geographies has a marked impact on firms. Inherently disruptive, digital transformation changes consumer behavior, customer expectations, competitive landscape, and availability of data, thus posing "both game-changing opportunities and existential threats to companies" (Sebastian et al., 2017). As firms embrace digital technologies to engage with digitally savvy end-users and client organizations (Reis et al. 2018; Zinder & Yonatova, 2016), digital transformation emerges as a potential source of competitive advantage (Karimi and Walters, 2015; Svahn, Mathiassen & Lindgren, 2017a). It improves operational efficiencies and business processes while enhancing firm-level innovativeness, growth options, and reputation (Vial, 2019). However, the widespread changes in ways of doing business often demand transformation of the core business model (Verhoef et al., 2019) by encompassing digital assets, bringing in digital agility, introducing digital networking capability, and incorporating new elements such as big data and associated analytics (Vial., 2019), while delicately balancing competing new and existing innovation demands (Svahn et al., 2017). Digital transformation requires markets to be viewed alternatively for penetration, development, platform-driven co-creation, and diversification (Verhoef et al., 2019). Digitally driven value creation in client-provider relationships thus emerges as an opportunity, which is often far greater than the traditional cost reduction benefits of outsourcing arising out of labor arbitrage. Consequently, digital transformation brings about

significant changes to the already evolved model of transformational outsourcing, with disruptive changes in business models, revised definitions of markets, addressing of new capability demands and a significant blurring of the firm boundaries (Vial, 2019, Verhoef, et al., 2019).

Combining the perspectives of digital transformation and transformational outsourcing, we define Digital Transformational Outsourcing (DTO) as "*an outsourcing model involving significant changes in the client and service provider relationships, through a combination of information, computing, communication, automation, and connectivity technologies, to bring about a rapid and step-change improvement in enterprise-level performance."*

2.3. Service provider's perspective

The extant research in ITeS outsourcing primarily emphasizes the value generation potential for the client, i.e., how the clients derive outsourcing benefits (Lacity et al., 2004; Mahmoodzadeh et al., 2009). However, DTO has shifted the locus of value chain activities significantly from the client to the OSP. Despite an early recognition in the literature on the value creation potential of OSP characteristics (Goles, 2002; Levina & Ross, 2003), there has been scant research from the latter's' perspective (Liang et al. 2016), making the study area nascent. Extant research tends to view the service providers as passive delivery agents who specialize in executing well-defined business processes, on arms-length transactional terms, to bring about cost control, fill in peripheral capability gaps, and often a one-time release of capital (Levina & Ross, 2003). Hence, there exists a distinctive need for studying ITeS outsourcing in the context of digital transformation, which emerges very different scenario from the above traditional, with the service providers taking up significantly broader, deeper collaborative and innovative roles, warranting a more extensive exploration of the providers' perspective and capabilities.

2.4. Service provider capabilities

Goles (2002) conceptually hypothesized that vendors require three distinctive capabilities, namely technical, relationship management, and understanding of the customer's business. Levina & Ross (2003) identified a set of experience-based vendor core competencies by which firms could deliver value to their clients. These were the ability to address client needs and market conditions, exhibit complementarities that leads to efficient service delivery, and vendor's control over and centralization of decision rights over multiple projects and clients. Feeny, Lacity & Willcocks (2005)[6], through a study of multiple engagements, proposed a high-level capability map and identified three broad capability groups (delivery, relationship, and transformation) with 12 underlying capabilities that any outsourcing provider needs to focus on to meet the needs of a client. Subsequently, in the context of offshored outsourcing, Jarvenpaa, and Mao (2008), studying Chinese vendors, identified their operational capabilities to lie in client-specific, process, and human resources. Bharadwaj and Saxena (2010) extended the earlier studies to argue for the management of business processes, human resources, IT, outsourcing, and relationships as the key capabilities for provider success.

In the digital transformation context, Vial (2019) and Warner & Wager (2019), trace the conceptual foundation of the capabilities to the dynamic capabilities' framework (Teece, 2007), underscoring their inherent transformational and rapidly evolving nature. More specifically, Den Hertog et al. (2010) identified and reflected upon a set of dynamic capabilities that any firm requires for service innovation. As digital transformation demands institutionalization of service innovation (Emidio et al., 2015; Warner and Wager, 2019; Verhoef et al., 2019) hence,

[6] Though, Feeny et al. (2005) did identify some capabilities as relevant for transformation, the study was conducted in 2005, when digital transformational outsourcing as we know it now did not exist. Their studied context spoke about incremental continuous enhancements in service delivery for clients, with little recognition of the role of innovation required for managing disruptive changes to the business-model, demanded by digital the transformational outsourcing that we experience a decade later. Further, they too take a client perspective by examining the capabilities that the client should look for in an OSP.

these identified capabilities are relevant to the context of our research. Refer to table 1 for a summary of the existing literature.

Insert Table 1 about here

2.5. Service provider capabilities in DTO

The OSP capabilities identified in extant literature are primarily operational, aiming to maintain status-quo (Helfat et al., 2009) in traditional outsourcing (tactical and strategic) scenarios. In the significantly complex DTO context marked by dynamism and innovation, the above capabilities are unlikely to remain relevant as-is. They leave firms vulnerable to the rapid changes in the environment which digital brings forth and hence need to evolve. From a service innovation perspective, OSPs seek capabilities which allow them to innovate in response to clients' changing expectations, to enhance levels of service quality and performance, and to avoid the risks of shrinking returns and operational inflexibility (Leonard-Barton, 1992; Pöppelbuß et al., 2011) thus demanding dynamic capabilities (Hertog et al., 2010; Janssen, Castaldi, & Alexiev, 2016). The disruptive demands of DTO require the OSPs to develop dynamic capabilities to "sense," "seize," "reconfigure," (Teece, 2007) & build "learning mechanisms" (Zollo and Winter, 2002) which support "evolutionary fitness" and enable firms to change how they "presently make a living" (Helfat et al., 2009; Helfat and Winter, 2011). The context also demands the OSPs meet client requirements with agility (Fitzgerald 2016b) and ambidexterity (Li, Su, Zhang, & Mao, 2017) while envisaging innovative and collaborative service solutions, with differentiated value propositions, through a combination of exploration of the new and exploitation of the extant resources (Barret, Davidson, Prabhu & Vargo,2015; Yoo et al., 2010b). Theoretically aggregating the capabilities identified in the literature on outsourcing, digital transformation, and service innovation, we conceptually derive six key OSP dynamic capabilities relevant in the DTO scenario.

We subsequently identified 18 Expert Informants (industry leaders with 15-25 years of outsourcing experience and actively involved in DTO) through the privileged contacts which one of us enjoyed being embedded in the ITeS industry, and subsequent snowballing.Through semi-structured interviews, the above Expert Informants helped us to validate our identified capabilities and derive our proposed definitions[7] (refer table 2 for the capabilities).

Insert Table 2 about here

***a) Consultative Capability*:** In the DTO context, OSPs need to engage with digitally proficient client organizations and their associated end-users (Zinder & Yonatova, 2016). This requires the OSPs to demonstrate "sensing" abilities (Teece, 2007) in understanding the end-user needs using structured orthodox as well as empathy induced collaborative approaches (Janssen et al., 2016), display entrepreneurial alertness (Agrawal & Selen, 2009) and resort to scouting with a digital mindset (Monterio and Birkinshaw, 2017; Verhoef et al., 2019; Warner and Wager, 2019). Further, the OSPs also need to exhibit digital agility (Verhoef et al., 2019; Vial 2019), rapid prototyping ability (Warner & Wagner, 2019) and engage in market-focused innovations (Hogan et al., 2011) with associated digital scenario planning (Dong et al., 2016; Warner & Wager, 2019) to conceptualize solutions to client problems and propose innovative digital offerings. We bundle and label these OSP capabilities as *Consultative Capability* in the DTO context and define it as, "*the providers' ability to proactively identify the clients' stated and unstated needs (based on domain, technology, and market knowledge), using orthodox as well as empathy-driven unorthodox approaches, and conceptualize innovative digital offerings for the client."*

b) Orchestration capability. The DTO context demands the OSP to leverage its own digital and non-digital resources (including its network partners) and also those of its clients (including

[7] Due to paucity of space the Expert Informant inetrviews are not elaborated in this paper, details can be shared if required

their network partners). To be able to deliver innovative digital offerings (conceptualized as part of the consultative ability) through novel configurations of the resources lying across different network elements (Van der Aa and Elfring, 2002), OSPs need to unbundle, enrich, blend, and regroup the above resources (Zhou, Zhang, Chen, and Han, 2017). The above requires extensive harmonization across digital and non-digital processes, systems and subsystems (Normann, 2002) while simultaneously ensuring that the threats of security and compliance breach are addressed (Vial, 2019; Newel and Marabelli, 2015; Piccininni et al., 2015b) during the transfer of larger portions of clients' value creating activities to the provider, specially in cloud enabled scenarios (Ali, Warren and Mathiassen, 2017). Thus, this emerges as a 'seizing' capability in the dynamic capability framework (Teece, 2007). In the DTO context, we identify this as an *Orchestration Capability* and define it as, "*the providers' ability to seamlessly integrate non-digital and digital resources (of itself as well as those of its network partners) to those of their clients' (as well as their network partners) while addressing concerns of information security and compliance."*

***c) Standardization capability*:** Having evolved significantly beyond the tactical and strategic outsourcing models, DTO demands a greater need for agility and efficiency in and across the processes and activities (Warner and Wager, 2019; Verhoef, 2019; Vial, 2019). Standardization enhances efficiency by allowing the OSP to reuse and replicate standardized components across multiple client scenarios. Through this, it enables multi-partner interoperability, as well as smooth interconnections between providers, integrators, and end-users **(**Weyer, Schmitt, Ohmer, & Gorecky, 2015). Furthermore, standardization boosts business and operational agility by allowing for easy building of variations around the standard components (Westerman and Bonnet, 2015), thus emerging as a "reconfiguration" capability in the DTO scenario (Teece, 2007). We define *Standardization Capability* in the DTO context as, "*the provider's ability to set up, implement and adopt digital technology solution components (i.e., platforms,*

processes, systems, and routines), such that they can be reused and replicated across multiple client scenarios with minimal adaptations, and with minimal loss of their value."

***d) Network building and management capability*:** The complexities of DTO require firms to source multiple, unique, and emerging capabilities through collaborative innovation (Agarwal & Selen, 2009), co-designing, and co-producing (Hertog et al., 2010). Idiosyncratic to the digital context, this requires the ability to make digital interconnections (Koch & Windsperger, 2017), digital networking (Verhoef et al. 2019), navigating innovation ecosystems and balancing digital portfolios (Warner & Wager, 2019) thus making it a "seizing" capability (Teece, 2007). We define the *Network Building and Management Capability* in DTO *as "the ability to identify, set up, and manage multiple digital network partners, i.e., alliances, joint ventures, minority equity stakes, and acquisitions."*

***e) Knowledge access capability*:** OSPs in DTO, while in continuous receipt of knowledge from the network ecosystem (including clients, and network partners), need to resort to episodic and relational learning (Salunke et al. 2011) to learn and adapt (Hertog et al., 2010) and improve digital maturity (Warner & Wager, 2019). However, innovation in the volatile and complex DTO environment is associated with rapidly changing and diverse knowledge elements, including many which are often at large distances from the OSP's extant knowledge base (Vasudeva and Anand, 2011).The above makes the traditional model of comprehensive knowledge absorption difficult and often an unviable option for the OSPs. Grant and Baden-fuller (2004) recognized this challenge and argued that in such scenarios, firms evolve unique mechanisms to only absorb the "residual knowledge" –the bare minimum duplication of knowledge required to orchestrate the accessed components and create the integrated offerings. The ability to work with residual knowledge thus emerges as a unique "learning mechanism" and a second-order dynamic capability (Zollo and Winter, 2002) in the DTO context, which we label as *Knowledge Access Capability*. We define it as *"the provider's ability to access a*

broad and diverse pool of digital knowledge components (with limited absorption), either through network leverage or internal build."

***f) Generation and sharing of actionable insights capability*:** The true value in a digital ecosystem emerges from the ability to exploit and create unique insights from the large volumes of "big' and "smart" data generated as part of digitally enabled and augmented business processes (Warner and Wager, 2019; Bozic & Dimovski 2019).The domains of Artificial Intelligence, and Machine Learning, ranking very high in importance in the digital age, focus on the above idea (Du et al., 2016; Ross et al. 2017; Verhoef et al. 2019; Vial 2019 : Galetsi, Katsaliakia, Kumar, 2020). Moving beyond descriptive reporting (as in traditional outsourcing), OSPs in DTO need to enable their clients to make behavioral predictions as well as real-time business and operational change decisions (Warner and Wager, 2019; Božič and Dimovski, 2019; Ross et al., 2017, Gunther et al., 2017, Akter, 2016; Xu and Kim, 2014) thus emerging as a "reconfiguration" dynamic capability (Teece, 2007). We define it as," *the provider's ability to generate and share actionable insights to build response strategies (resource commitments, modular processes, learning systems, and governance mechanisms) for self and client, from routinely generated digital data, using cutting-edge data acquisition, storage, and retrieval techniques supported by predictive & prescriptive (including cognitive) algorithms."*

Our theoretical review thus enabled us to identify six distinct OSP capabilities, which are salient in the DTO scenario. These dynamic capabilities of sensing, seizing, reconfiguring, and learning mechanisms have significantly evolved from those relevant in the traditional outsourcing model and are deeply embedded in the digital context (Piening, 2013). As OSPs have over time differently adapted to DTO, we expect these capabilities to be possessed by the former in different configurations. Hence, there emerges the need to identify and assess the necessity and sufficiency of these capabilities in enabling OSPs to successfully/unsuccessfully

make the transition to DTO from traditional outsourcing. This makes us propose our research question for empirical analysis,

RQ: How do the capabilities of outsourcing service providers in consultative, orchestration, standardization, network building and management, knowledge access, and generation/sharing of actionable insights, enable their success/failure in the Digital Transformational Outsourcing context?

3. SAMPLE AND METHOD

3.1. Sample

We study OSP capabilities in DTO in the Information Technology enabled Services (ITeS) industry using Business Process Outsourcing (BPO) as a representative context. As some OSPs do not publicly report BPO revenue separately in their financial reports (they combine BPO and IT outsourcing revenues), we decided to start with the global top 50 BPO organizations by revenue estimates (54 firms by numbers) for the year 2016-17 – a list which is routinely compiled by leading Industry Analysts (i.e., Hfs, 2016 and Everest, 2016). The sampling frame was representative of this highly fragmented industry, with the firms beyond the top 50 having less than 0.2% market share individually. We collected information on the BPO activities of the 54 OSPs from multiple secondary sources, i.e., analyst reports (e.g., Hfs, Everest, IDC, and Gartner), industry databases (e.g., Thomson One, FACTIVA, CRISIL), company annual reports, press releases and webpages. Some OSPs specialized in highly commoditized spaces (such as document management or customer contact services) and did not show credible and material pieces of evidence of moving on the digital transformation path and thus were not relevant to our study. We removed 17 such OSPs, thus reducing the sample size to 37. Among the remaining, we could collect detailed secondary information for 26, which constitutes our studied sample. The final sample delivers 65% of the total business of the top 50.

In the BPO OSP landscape, two kinds of firms exist, i.e., standalone BPO firms and BPO arms of large technology OSPs. As we aimed to identify common capabilities across the BPO industry spectrum, we first ensured that our reduced sample of 26 firms had adequate representation of both of the above types. Our sample consisted of 15 standalone BPO firms (often referred to as pure-play firms in practice), and nine firms which were BPO arms of technology OSPs. Further, some BPOs specialize only in a single service (e.g., only human resources or document management), while others have multiple service offerings (e.g., accounting, customer relationship management, procurement, and business intelligence). Our sample includes nine single services OSPs and 15 providing multiple services to clients. Table 3 provides the details of OSPs along with their above mentioned orthogonal attributes (service offerings and scope). By covering the above spectrum, we were able to fulfill the requirements of maximum variation purposeful sampling requirements (Patton, 2002), which enables identification of common traits across large, diverse samples.

Insert Table 3 about here

We collected firm-level data to identify the extent to which OSPs negotiated transition from traditional outsourcing to digital transformational outsourcing (the outcome of interest) and the capabilities that the OSPs possessed. Detailed data on the number and nature of alliances formed by OSPs, key product, and service offerings, focus on big data & analytics, application of new-age digital technologies and engagement methods (such as IoT, blockchain, AI, cognitive, robotics, digital customer experience, design thinking), acquisition rationales, investments made and envisaged by firms, among others, was collected from analyst reports to calibrate firm capabilities (described in detail later). As all analysts do not report in all industry segments and do not cover all OSPs, we had to look through multiple reports over multiple years, to find relevant mentions. In total, we scanned 109 analysts' reports on the BPO industry, firms, and offerings (for the years 2015-2017) published by leading analysts, including Hfs,

Gartner, & IDC. In some cases, the same aspects were reported by multiple analysts. While broadly, these multiple reports were consistent, in the rare cases of inconsistency, we examined the reporting nomenclature/definitions and consulted industry experts to bring in consensus. A few gaps (less than 10%), due to lack of analysts' reporting on specific aspects, were filled up through information from other secondary sources like OSP website pages, annual reports, press releases (400+ sources in total) and public databases like Thomson One, Factiva, and CRISIL. Further, we identified and created a group of three industry leaders, each with 15+ years of experience in the outsourcing industry (both traditional and transformational) to validate the multiple calibrations of industry data that we required at each stage of the analysis.

Our choice of a single industry (BPO) *helped control for potential variations across industry structures, size, and pattern of growth and composition* (Bhattacharjee and Chakrabarti, 2015). As the OSPs chosen had significant and mature operational footprints across similar/identical global geographic locations, our sample enables *balancing out variations across country-specific factors and institutional contributors* including cost arbitrage, favorable resource endowments, lower infrastructural costs, related and supporting institutions (educational, enablers including hardware) and favorable government policies (Bhattacharjee and Chakrabarti, 2015). Also, all OSPs in our sample are mature firms and have been in existence for over a decade and a half, thus *controlling for variations in performance due to firm age* in the sample. We also include firm size as a control in our analysis to account for the *effects of firm size variation.*

3.2. Method

We employed a fuzzy set Qualitative Comparative Analysis (fsQCA) to answer our research question. QCA traces its origin to political science and sociology (Rihoux, Álamos-Concha, Bol, Marx, & Rezsöhazy, 2013), and is now widely used in management research (Huarng,

2015). In comparison to correlation techniques like regression, which identify isolated impacts of predictor conditions on an outcome, QCA employs set-theoretic reasoning to identify combined effects of multiple causal conditions (Greckhamer, Misangyi, Elms, & Lacey, 2008; Mellewigt, Hoetker, & Lütkewitte, 2018). QCA recognizes '*equifinality,'* i.e., multiple configurations of predictor conditions leading to the same outcome. Also, QCA allows for '*conjunctural causation*,' i.e., co-occurring conditions leading to different effects of a predictor condition on an outcome (Mellewigt et al., 2018). These features of QCA allow for an analysis of causal asymmetry, which implies that paths to failure of the desired outcome may not necessarily be the inverse paths of success. Methodologically, it allows modeling in small/medium N scenarios (20-50), which are quite common in complex social and organizational contexts due to the paucity of samples and limited diversity (Ragin, 2000). Last but not least, the QCA method, unlike its traditional peers, allows for deep contextualization, allowing researchers to leverage their experiential and contextual knowledge to identify, prioritize, and calibrate the predictors and outcomes. As our research questions seek to identify configurations, we are expecting equifinality, causal asymmetry, and conjunctural causation in our analysis. Furthermore, we have a medium N (26) scenario for our study; and our measures of capabilities would need deep contextualization, thus making QCA an ideal choice for our analysis. We use the fsQCA tool (Ragin, 2008) in conjunction with the NCA module in R (Dul, 2018) for the analysis.

3.2.1. Outcome condition

Being a new area of research, an established measure of DTO performance does not exist. To address this shortcoming, we adopt and adapt earned OSP revenue, an established measure of firm performance in traditional outsourcing research as an OSP performance measure in the DTO context. However, the extant traditional model, being driven by labor arbitrage, typically demonstrates revenue linearity, implying earned revenue increases in direct proportion to the

number of employees (Jiang, Frazier, & Prater, 2006; Thouin, Hoffman & Ford, 2009). In contrast, transformational outsourcing aspires for revenue non-linearity (Moorthi, 2011), where earned revenue decouples itself from employee count. The CEO/MD of Infosys BPO, a leading Indian OSP, validates this argument when he states, *"We are definitely moving on the path to non-linearity"* and adds, *"This will only increase as we go from being a transaction BPO to a transformational BPO" (*Sabharwal, 2012). The above aspirational nonlinearity is a key feature of DTO and is driven among others through acquisition of firms, turnkey operations, innovative pricing models, automation, and leverage of intellectual property through products, platforms, and solutions (Economic Times, 2012; Moorthi, 2011). As a metric for revenue nonlinearity, we use OSP's average revenue per employee (Chakravarthy, 1986), which is a measure of the firm's labor productivity. The above is relevant in the context of ITeS outsourcing, where human capital is the predominant factor of production. Also, being a ratio, it enabled us *to control for firm size variations.*

We collected data on revenue per OSP employee from multiple secondary sources. As the revenue per employee varies by the geographic workforce distribution due to variation in per-unit labor rates across countries, there emerged a need for calibration against the above disparity. As per Hfs, a leading industry analyst, for the same skill, labor rates vary by up to five times when compared among India, North America, Europe, and the other Asia Pacific locations. To bring in uniformity, the revenue per employee for all OSPs in the sample was scaled to full-time Indian market equivalents, using employee count and labor rate variations across geographies as captured by analyst reports (Hfs, Everest).

To identify OSP success and failure in DTO, we similarly calibrated and adapted the average revenue per employee benchmark proposed by NASSCOM (the leading body for IT/ITeS in India) and CRISIL to a value of USD 20,000 per person per annum for the year 2016. OSPs with revenue per employee higher than the above-calibrated value was designated

as successful, while we identified those with revenues below as failures. Our expert group validated these calibrations.

3.2.2. *Predictor Conditions*

*Firm Scope***:** In the DTO scenario, adapting from Zinn and Parasuraman, (1997), we refer to the OSP's scope as the range of service offerings in its portfolio. We classified specialist OSPs with a limited number of service offerings (typically <= 2) as narrow scope while the rest with multiple offerings as broad scope (Refer Table 2 for details). Table 4 lists the outcome and all the predictor conditions and their calibrated thresholds.

Insert Table 4 about here

a) Consultative Capability: Referring to the "sensing" ability to identify diverse client needs and propose innovative solutions, the consultative capability has two complementary attributes, which are the ability to consult and the ability to indulge in design thinking. While the consulting ability allows for comprehensive, structured assessments of the end-user requirements (Fischer, 2010; Davies 2004, Van der Aa and Elfring, 2002), the design thinking ability enables solving "wicked problems" where traditionally structured orthodox consulting skills fail. The sensibility and empathy of a designer, combined with the analytical approach of a consultant, enable identification of feasible and suitable business solutions (Rittel, 1973) in such scenarios. To measure consultative capability, we combine the firm's focus on building traditional consulting ability and its focus on design thinking, using logical OR as proposed by Ragin (2000). We primarily used the reports of analyst firms Forrester and IDC on the maturity of traditional consulting capabilities of firms to assess an OSP's strength in this area. We analyzed Hfs *design thinking as a service blueprint* reports to identify an OSP's design thinking capabilities. We calibrated the combined macro variable formed after logical OR to a four value fuzzy set in the range 0-1, with 0 (fully out) signifying complete absence of capability

and 1 (fully in) if the OSP had separate and sellable entity or evidence of significant investments (acquisition/ JV/minority stakes) in consulting.[8] (Refer to table 4 for details)

b) Orchestration Capability: A "seizing" dynamic capability, this refers to the OSP's ability to integrate its resources (as well as its network partners) with those of the clients (as well as their network partners) while maintaining regulatory compliance and minimizing risks of information security breaches. As the integration of digital resources, with inadequate information security breach mitigation safeguards, is potentially risky, we combine OSP capabilities in each of the above areas (integration and information risk management) using a logical AND to create the predictor condition of orchestration capability (Ragin, 2000). We measured an OSP's ability to integrate resources from its maturity in *system integration* (sourced from IDC reports on system integration Marketscape), while we assessed the OSP's ability to manage information security risks and associated compliance from its maturity on *cybersecurity* (sourced from Hfs report on cybersecurity as a service). Subsequently, similar to the approach adopted for consultative capability, we calibrated the combined macro variable to a four value fuzzy set with values ranging from 0, signifying complete absence of capability (fully-out), to 1, signifying the presence of a separate sellable capability or evidence of significant investments (acquisition/ joint-venture/minority stakes).[9]

c) Standardization Capability: Higher efficiency and interoperability demands the development of standards and modules which can be easily and repeatedly deployed across systems, thereby requiring firms to possess the 'reconfiguration' dynamic capability of standardization. In the DTO scenario, the presence of cloud-enabled subscription-driven delivery models are pieces of evidence of standardization capability. For instance, while SaaS,

[8] For instance Firm G, was identified as a Leader by IDC in consulting and also identified as a member of the Winners Circle in design thinking by Hfs, thus highlighting evidence of an independent sellable capability. Hence, it was calibrated with a score of 1 on both dimensions leading to a combined macrovariable score of 1

[9] For instance Firm O, claimed presence of both system integration as well as cybersecurity on its website and press releases. However, the claims were not ratified by any of the analysts, hence it was calibrated with a fuzzy score of 0.33 in both leading to a combined macrovariable score of 0.33.

PaaS, IaaS (Software-as-a-Service, Platform-as-a-Service, Infrastructure-as-a-Service) are primarily about the technology applications and infrastructure standardization, its later cousin BPaaS (Business Process as a Service) adds standardized business process to them to provide a comprehensive, integrated offering (Accorsi, 2011; Wang et al., 2010). While the elements like SaaS and IaaS are limited to individual solution components such as software and infrastructure, BPaaS emerges as an all-embracing driver for change in business models through the integration of people, processes, and technology. Such standardization facilitates the replication of complete business segments across multiple clients, thereby enhancing efficiency and providing economies of scale. Hence, BPaaS offerings as a percentage of the total service offerings portfolio of a firm, provide an assessment of the standardization capability of an OSP.

The analyst reports on service offerings of OSPs, which provide data on the different service offerings of an OSP, i.e., SaaS, IaaS, PaaS, BPaaS, etc. provided the basis to assess this OSP capability. Similar to above, a four value fuzzy set range was used, with 0 (fully out) representing no BPaaS offerings, and 1 (fully in) if >=81% of the offerings were ratified as BPaaS by analysts. [10]

d) Network building and management capability; An OSP's ability to identify, setup, and manage multiple digital network partners is its 'seizing 'dynamic capability of network building and management. We measured the above as the average number of network elements in the OSP's key offerings. The measure is similar to the network research measure of average degree centrality (Borgatti, 2005).

To create the measure, we considered the top five offerings of OSP firms, which together contributed more than about 70% by share of revenue (as estimated by Hfs). For firms with

[10] For instance, firm D, a single service firm had converted its complete offering into BPaaS and was ratified by Hfs, thus receiving a Fuzzy score of 1

less than five service offerings, such as narrow scope ones, we considered all of their offerings. We counted the total number of unique network elements (alliances, joint ventures, minority equity stakes, and acquisitions) with whom the OSP sourced parts and modules to provide its top five service offerings and subsequently calculated the average. In this case, an OSP was calibrated as 0 (fully out), if it had a degree centrality of less than five, and calibrated as 1 (fully in), if it had a degree centrality greater than 16. [11]

e) Knowledge Access capability: We measured the "learning mechanism" *of accessing (with limited absorption) a broad and diverse pool of digital knowledge components,* from the list of knowledge components required for the key offerings of each firm, as available in the Hfs reports (Blueprints and buyers guides 2016-17). We considered a diverse set of knowledge components such as IoT, blockchain, accelerators, mobility, robotics, cognitive, artificial intelligence, and machine learning, whose capability primarily lay elsewhere, but were accessed by the OSP. As the spectrum of desired knowledge components in DTO is wide, we adopted the 15 item classification of OSP technologies by Everest (2017) and simplified it into five aggregated categories, namely i) core technology and domain, ii) basic process accelerators, iii) advanced process accelerators (including cognitive), iv) next-generation digital differentiators (Including IoT, Blockchain, additive manufacturing) and v) customer experience. We created a measure of *knowledge breath* from the count of the number of categories in which OSPs accessed external knowledge, very similar to the measure of *collaboration breadth* used in innovation and knowledge research (Grimpe & Kaiser, 2010; Laursen & Salter, 2006). Subsequently, using firm-level data from *the buyers-guide and blueprint reports* from Hfs, we calibrated and classified the firms into a fuzzy four value set.

[11] For instance, firm G, had 36, 40, 24, 18 and 15 network components in its five offerings. Its average degree centrality was calculated as (36+40+24+18+15)/5= 26.6, such that it received a fuzzy score of 1.

We calibrated OSPs that possessed one or less in knowledge breath as 0 (fully out), while and OSPs with four or more in knowledge breadth as 1 (fully in).[12]

f) Generation and sharing of actionable insights: To measure this "reconfiguration" capability, we assessed the OSPs' maturity in generating and sharing actionable insights from the data routinely generated from business operations, beyond the levels of basic descriptive reports typical of the pre-transformational outsourcing scenarios. We assessed the OSP's maturity qualitatively from the reported internal build capability as well as from the alliances formed and the investments made in acquisitions, JVs, and minority stakes. We obtained information for the above from the Analytics blueprint reports, as well as the firm-level buyer guide reports from Hfs. We calibrated the capabilities on a four value fuzzy set, with OSP's possessing basic traditional descriptive reporting insights calibrated as 0 (fully out), while those with analysts reported matured insights capabilities, independent sellable insights offerings, and/or demonstrating significant investments calibrated as 1 (fully in).[13]

Insert Tables 5, 6 & 7 about here

4. ANALYSIS

Necessity analysis: The first step in conducting a fsQCA analysis is the identification of conditions or combinations of conditions which are "necessary" or "almost always necessary" (Sjodin, Parida, & Kohtamaki, 2019; Andrews et al., 2016, Fiss, 2007; Fiss, 2011). We used the NCA module in R (Dul, 2018) to conduct necessary condition analysis. For success as an outcome, we found the effect sizes for *insights capability* and *knowledge assimilation capability* to be 0.424 and 0.441, respectively, which are "large effects" (Dul, 2008; values between 0.3 and 0.5 are large effects). As a robustness check, we carried out a simulation

[12] For instance, Hfs reports ratified presence of all 5 components for Firm J in our sample. Hence, , thus receiving a score of 1 while Firm N, showing ratified presence of 3 out of 5 received a score of 0.67.
[13] For instance, Hfs reports ratified the presence of insights as an independent sellable capability for firm P thus receiving a fuzzy score of 1.

analysis for success as an outcome with the above two necessary conditions for 10000 test repetitions (Dul, 2018). We could reject the hypothesis ($p>0.05$) that the necessary conditions have occurred by chance (Dul, 2018). Following QCA's best practices, we removed these necessary conditions from subsequent sufficiency analysis (Sjödin et al. 2019). However, we discuss the implications of these necessary conditions in the discussion section.

Similarly, we analyzed the necessary conditions for failure as an outcome and found that ~*standardization capability* (absence of standardization capability) has an effect size score of 0.503, indicating a large effect. Subsequent robustness check gave a p-value of 0.14 (>0.05) after 10,000 test repetitions, confirming that this was a necessary condition. As above, we removed the predictor condition of standardization from the subsequent sufficiency analysis

***Sufficiency analysis*:** Following QCA's best practices, we report the causal conditions in the form of truth tables (Meyer, Tsu, & Hinnings, 1993), separately for success (Table 4) and failure as outcomes (Table 5). Each row in the table identifies the number of cases possessing a combination of predictor conditions, with cases having strong membership (≥0.5) assigned a value of 1 and cases with weak membership (<0.5) assigned a value of 0. The consistency scores in the last column represent the strength of the relationship between the predictor and the outcome (success/failure) for that combination. We choose a consistency cut off of 0.72 for success and 0.71 for failure.[14]

Scholars often criticize QCA for not distinguishing real from random data, with the model being underspecified (Marx, 2010). We tested our model and found it adequately specified with six conditions and 26 cases for success as an outcome, and seven conditions and 26 cases for failure as an outcome. These numbers are within limits arrived at by Marx (2010) with

[14] While Ragin (2006, 2008) recommended a cut off of 0.75, he acknowledges that such may not always be feasible due to limited diversity and paucity of samples in real scenarios.The cutoffs chosen here were closest to the recommended guideline (0.75), which consisted of at least 1 case in the Truth Table and reflected a step changes from the next consistency value.

probabilities of less than 0.00 and 0.00-0.1 chance of fitting a model based on random data. During the analysis, we adopted the strategies proposed by Magetti and Levi-faur (2013) to reduce the five possible types of errors in QCA (i.e., condition errors, systematic errors, random errors, calibration errors, and deviant case errors). Our results remained robust to the three strategies of i) changing calibration thresholds, ii) changing frequency and consistency thresholds, and iii) relative sensitivity of the crisp and fuzzy set analysis (Skaaning, 2011).

The overall solution consistency for success recipes emerged as 0.78, with a coverage of 0.69, while the overall solution consistency for failure recipes emerged as 0.77, with a coverage of 0.46 (refer to Table 6) both meeting the 0.75 thresholds for consistency (Ragin, 2006). We relied on complex and parsimonious solutions to arrive at feasible configurational recipes (Ragin, 2008; Schneider and Wagemann, 2010), which we discuss in the next section.

Insert Table 8 about here

5. DISCUSSIONS

The necessity and sufficiency analysis of firm-level data of OSPs enabled us to uncover a key insight -- success and failure recipes in the DTO context vary by the *narrow* and *broad* scope of the OSP. We found two recipes for success, one each for broad and narrow scope OSPs, which we label as orchestrators and hyper-standardizers, respectively. The five identified recipes for failure also varied between broad and narrow scope firms, labeled as non-implementers (first three), unawares, and reluctants. However, these sufficiency paths need to be considered together with the necessary conditions that we identified as part of necessary condition analysis and did not include in the sufficiency study. We next discuss each of the above success/failure configurational recipes.

Orchestrators: This is one of the most common configurations of success, adopted by ten of the broad scope OSPs (i.e., cases F, G, H, I, J, K, L, M, U &V). The focus herein is on the

solutions approach. The OSP takes up responsibilities for complete value creation and value capture while aggregating and exploiting a diverse set of resources and making use of its capabilities in developing unique insights, accessing knowledge, and orchestrating resources. This recipe allows the OSPs to adopt a combination of structured and unorthodox creative/collaborative techniques to sense the clients' stated/unstated needs and conceptualize a solution offering. However, the central focus is on the orchestration capability, which is a part of both the parsimonious and complex solutions. The orchestration capability enables the OSP to combine the identified components and give shape to the solution in reality, while simultaneously assuring regulatory compliance and minimization of security breach threats. This approach is especially relevant for *broad scope* firms as they handle a wide spectrum of problems across industries and offerings, which exposes them to a diverse set of nuanced client requirements and possible solutions.

In line with our findings, an analysis by leading consulting firm Mckinsey on networked companies highlights the performance implications of orchestration, when it states that, *"Our analysis shows that network orchestrators have reached their market milestones more quickly and earned greater value per employee than have their peers, and it suggests that they will continue to outperform other top companies inside and outside their industries…. and they are better able to weather the damage usually inflicted by market volatility*.[15]

OSPs following this approach tend to underplay the standardization need, as they shun the one-size-fits-all approach. The sheer variety and idiosyncrasies in the diverse needs of clients make standardization a resource-intensive and inefficient approach in such scenarios. Corroborating with our findings, an industry leader states, *"The reality is that outsourcing isn't standardized*

[15] https://www.cnet.com/news/the-future-of-the-networked-company/

and every deal is unique to each client's business, technical, functional, and financial requirements. "(Tanowitz, 2018)

Hyper-standardizers: In contrast to the above, successful *narrow scope* OSPs emphasize standardization (i.e., cases A, B, and D). Pursuing this approach, narrow scope OSPs develop highly standardized industry solutions, which they configure and adapt to diverse client requirements. This approach emphasizes specialization and standardization, aimed at optimal resource utilization and achieving economies of scale through replication of standardized routines using digital enablers like the cloud. Such an approach is more suitable for OSPs that address a narrowly identified set of client needs, which they can take up for standardization. With deep and focused expertise, these OSPs convert significant portions of the clients' outsourced value chain within a narrowly identified need space, to standardized cloud-enabled offerings which they can replicate with minor adaptations across industries. Echoing our findings, the global head of digital transformation at a leading analyst firm, observes, *"There is a massive shift towards standard services to be moved to the cloud. Many enterprises are looking to move to off-the-shelf SaaS products in some way or the other. The public cloud market is expected to reach over USD 400 Bn by 2020, which will further fuel this shift." (Bhadada & Ramalingegowda, 2019)*

Non-implementers: As part of the failure recipes, we find that broad scope OSPs that lack orchestration capabilities fail in the DTO scenarios (i.e., cases E, R, S, P, W, X, Z) despite having some (or all) capabilities in consultative, insight generation, and knowledge assimilation. While being able to sense the clients' needs, possess knowhow of how to access knowledge, and/or the ability to develop and share unique insights, they fail to bring the diverse elements together to operationalize and implement the conceptualized theoretical solution in reality. A lack of orchestration capability is the primary cause of the above failure. The key role of orchestration in this context is affirmed in the point of view article by a practice head

of a leading global BPO when he states that, *"For success in this changing landscape, it is critical to have a well-defined service integration process. Service integrators should be at the heart of managing this change as a neutral party managing the cluster of services and accelerate the transformation, realize cost savings, and help customer businesses become more efficient, effective, and agile." (Dwipin, 2015)*

Unawares and Reluctants: Our QCA analysis also identifies two failure recipes for narrow scope OSPs. Both of these recipes are marked by the absence of consultative and orchestration capabilities, thus highlighting their deficiencies in sensing client needs and in being able to implement conceptualized solutions in reality.

One of the failure recipes additionally highlights the absence of the capability in generating and share unique insights from data (i.e., case N) supporting this argument. The above is in addition to the absence of standardization capability, which we found earlier to be a necessary condition. In these failure cases, the narrow scope OSPs are not only oblivious of the clients stated and unstated needs but are also unaware of the opportunities to improve their and their client's business through creative and valuable insights from data, which is an essential expectation in the DTO scenario. Hence, we call them **Unawares**. Notably, these OSPs tend to have large networks from which they have access to resources and also the ability to access knowledge from them. However, the absence of the ability to make sense of data to identify solutions and improvement opportunities leads them to failure in the DTO context. A global consulting leader, recognizes this aspect with his quote, *"Without big data, you are blind and deaf in the middle of a freeway."(Moore, 2012)* [16]

The second recipe for failure of narrow scope OSPs underscores the absence of knowledge access capability, besides the absence of consultative, orchestration, and standardization

[16] Source: https://siliconangle.com/2012/06/15/geoffrey-moore-discusses-big-data/

capabilities (i.e., case Q). These OSPs, while having access to networks and also the ability to develop insights, are unable/unwilling to acquire, articulate, and codify new knowledge (Zollo and Winter, 2002), which is critical in the rapid and dynamic digital transformational scenario. We label them as **Reluctants**. A recent news report while discussing the imperatives of digital transformation for knowledge management, recognizes this aspect, when it states that *"KM (knowledge management) today is not just about being able to support the just-in-time needs of the decision-making process or making managers more savvy in being able to anticipate and proactively change course on the strength of insights derived from time to time, but when coupled with digital transformation, it also has the propensity to alter the business model and reposition businesses*." (Financial Express, 2018)

We subsequently went back to some of the earlier identified Expert Informants who helped us to validate the above findings.

6. THEORETICAL & MANAGERIAL CONTRIBUTIONS

In an environment marked with rapid innovations, firms need dynamic capabilities to sustain superior performance (Teece, Pisano, & Shuen, 1997). However, capabilities that require enterprise-level sensing, seizing, reconfiguring, and learning are both difficult to develop and deploy (Teece, 2007). This problem is significant in the emerging contexts of digital transformation, where new capabilities routinely emerge, which firms require to identify and develop. In the ITeS domain, where DTO shifts the locus of value creation significantly from the client to the OSP, the latter is expected to build/acquire the above-desired capabilities. With scant literature on OSP capabilities in the DTO context, this study contributes theoretically by identifying the OSP capabilities unique to the above context through a review of outsourcing, service innovation, and digital transformation literature, our first contribution.

We found six dynamic capabilities, which could be categorized as sensing, seizing, reconfiguring, and learning mechanisms. These were OSP capabilities are in consultative, orchestration, network building and management, standardization, generation and sharing of actionable insights, and knowledge access. The above is an important contribution, as the emergence of the digital economy and the associated transformational outsourcing model have significantly changed the working principles of the ITeS industry not only through transferring significant sections of value-creating activities from client to service provider but also through expanding the outsourcing scope from non-core to include core business segments. And, while we know that capabilities are a source of competitive advantage, we had little idea of what the desired capabilities are to meet the challenges in the new digitally disrupted scenario. Building upon the arguments of Velu (2017) and Warner and Wäger, (2019) one can state that while some of the above capabilities, when viewed in isolation, could be potential contributors to non-digital change contexts too; however when viewed as a system represent the current theoretically derived view of the key ones driving digital transformation in service provider organizations. As dynamic capabilities are contextually embedded (Zahra et al., 2006; Zollo and Winter, 2002), this is an important endeavor.

Our second contribution lies in empirically analyzing how the identified capabilities lead to success/ failure of OSP's in the DTO context, it being the first study of this important context. Our finding that success/failure recipes vary by firm scope provides empirical support for the contextualization of dynamic capabilities. We found that broad scope firms are successful when they adopt an orchestrator's role, accessing and exploiting resources and capabilities strewn across the clients and OSP's networks (i.e., Orchestrators). In contrast, narrow scope firms are successful when they can resort to standardization, even without elaborate networks and alliances (i.e., Hyper-standardizers). The above dichotomy clearly illustrates that one size does not fit all! We also found three distinct recipes for failure, which arose out of lack of

implementation capabilities (i.e., non-implementers) for broad scope firms, and the inability to identify opportunities for self and client business improvement through insights and not being able to continuously acquire new digital knowledge, for narrow scope ones (i.e., unawares and reluctants).

On the side-lines, we also propose a definition for digital transformation outsourcing, where none existed for the benefits of academia and practitioners alike, and provide the first conceptualization of an aggregate multidimensional dynamic capability construct for OSP's in the ITeS segment (Barreto, 2010).

7. LIMITATIONS AND SCOPE FOR FUTURE DIRECTIONS

This study, a first in taking the service provider perspective in DTO, identifies dynamic capabilities relevant to this emerged context. While we rely on a review of relevant literature in outsourcing, service innovation, and digital transformation domains to identify six capabilities, there exists a need for a qualitative study across primary sources to identify other capabilities that may be relevant to this scenario. We also recognize the limitations lying in a small sample size, which we attribute to the context. We took care to include all the large OSPs operating in this sector, and a large sample firm-level study may not be feasible in this context. A large sample study would require an expansion of the domain space to other similar contexts, an area for potential future research. In this study, we take the service providers' perspective, as it had not been explored so far in the newly emerged DTO scenario. The client perspective in the above scenario remains unexplored, providing a rich avenue for future research to venture. Furthermore, while this study takes a cross-sectional view, future researchers can undertake a longitudinal study to assess how capability configurations change over time.

8. CONCLUSION

Digital Transformation has been changing the way firms work and run their businesses (Huang and Huarng, 2015; Verma et al., 2012). The above disruption has significantly impacted the Information Technology enabled Services (ITeS) outsourcing sector. As the sector endeavors to manage the disruptive changes effectively, a key challenge arises from the shifting of core value-adding activities from the outsourcing clients to their service providers. This study makes an initial attempt to understand this challenge by taking the service providers' perspective and identifying dynamic capabilities that OSPs need to negotiate the challenge. We examine the issue both theoretically and empirically, to arrive at recipes for success and failure using QCA, an emerging analytical tool in management research. Through a review of digital transformation, service innovation, and outsourcing literature, we find six capabilities important in the DTO context, namely, Consultative, Orchestration, Standardization, Network building and management, Knowledge Access and capability in generation and sharing of actionable insights. Furthermore, we find that the capabilities required by OSPs for success in the digitally transformed context vary by the scope of the service provider i.e., narrow or wide breadth of offering portfolios. While the capabilities in generation and sharing of actionable insights and knowledge access are necessary for all OSPs, the presence of capability in orchestration is sufficient for broad-scope OSPs success and standardization for narrow scope ones (accompanied by the absence of network management capability). The analysis also illustrates that the mere absence one/more success causes need not be the recipes for failure (Fiss, 2011). While the absence of standardization capability is necessary for OSP failure in DTO, the absence of orchestration capability for broad scope firms and missing out on knowledge access/insights for narrow scope ones would lead them respectively to failure in the above context.

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Table 1

Capabilities identified in outsourcing, service innovation, and digital transformation literature.

Sl No	Source	Area of study	Identified provider capabilities
1	Goles (2001)	Outsourcing provider capability	technical, relationship management, understanding of customers business
2	Levina and Ross (2003)	Outsourcing provider capability	address client needs and market conditions, complimentary for efficient service delivery, vendors control, and decision rights over multiple projects
3	Feeny Lacity and Willcocks (2005)	Outsourcing provider capability	Three broad groups: Relationship, Delivery, and Transformation which include governance, business management, domain expertise, sourcing, behavior management, leadership, program management, customer development, planning and contracting, organization design, process reengineering, technology exploitation
4	Jarvenpaa and Mao (2008)	Outsourcing provider capability	Client-specific, process, human resource
5	Bharadwaj and Saxena (2010)	Outsourcing provider capability	Business process management, human resource management, IT management, outsourcing management, relationship management
6	Agarwal and Selen (2009)	Service innovation capability	Customer engagement, entrepreneurial alertness, collaborative innovative, collaborative agility
7	Hertog et al. (2010)	Service innovation capability	Signaling user needs and technological options, conceptualizing, (un) bundling, coproducing and orchestrating, scaling and stretching, learning and adapting
8	Salunke et al. (2011)	Service innovation capability	episodic learning, relational learning, client-focused learning, combinative capability
9	Hogan et al. (2011)	Service innovation capability	marketing focussed innovation; client focussed innovation, technology focussed innovation
10	Henriette et al. (2015)	Digital transformation capability	Analytics, knowledge and skills, mobility, Internet technologies, Social network
11	Warner and Wager (2019)	Digital transformation capability	Improving digital maturity, digital scouting, rapid prototyping, strategic agility, digital scenario planning, digital mindset crafting, balancing digital portfolios, navigating innovation ecosystems, redesigning internal structures
12	Verhoef et al (2019)	Digital transformation capability	Big data analytics, digital agility, digital networking capability
13	Vial (2019)	Digital transformation capability	IoT and analytics, agility and ambidexterity,

Table 2

Service provider capabilities in the DTO context

Sl No	Key construct	Theoretical argument/ Proposed definition	Nature of Dynamic Capability	References
1	Consultative capability	The ability to proactively identify the clients' stated and unstated needs (based on domain, technology, and market knowledge), using orthodox as well as empathy-driven unorthodox approaches, to conceptualize innovative digital offerings for the client.	Sensing	Verhoef et al. (2019); Warner and Wager (2019); Monterio and Birkinshaw, (2017); Hertog et al. (2010)
2	Orchestration capability	The ability to seamlessly integrate non-digital and digital resources (of itself as well as those of its network partners) to those of their clients' (as well as their network partners) while addressing concerns of information security and compliance	Seizing	Vial (2019); Newel and Marabelli, (2015); Piccininni et al., (2015b); Hertog et al., (2010); Salunke et al. (2011)
3	Standardization capability	The ability to set up, implement and adopt digital technology solutions (i.e., platforms, processes, systems, and routines), such that they can be reused and replicated across multiple client scenarios with minimal adaptations, and with minimal loss of their value.	Reconfiguring	Westerman and Bonnet (2015); Weyer et al., (2015); Hertog et al. (2010)
4	Network building and management capability	The ability to identify, set up, and manage multiple digital network partners, i.e., alliances, joint ventures, minority equity stakes, and acquisitions.	Seizing	Warner and Wager (2019) ; Verhoef et al., (2019) ; Hertog et al. (2010); Koch & Windsperger (2017)
5	Knowledge Access capability	The ability to access a broad and diverse pool of digital knowledge components (with limited absorption), either through network leverage or internal build.	Learning Mechanism	Hertog et al. (2010); Salunke et al. (2011); Warner and Wager (2019); Henriette et al., (2015); Grant and Baden-fuller, (2004); Zollo and Winter (2002)
6	Generation and sharing of actionable insights capability	The ability to generate and share actionable insights, to build response strategies (resource commitments, modular processes, learning systems, and governance mechanisms) from routinely generated digital data, using cutting-edge data acquisition, storage, and retrieval techniques supported by predictive & prescriptive (including cognitive) algorithms	Reconfiguring	Hertog et al. (2010); Verhoef et al., (2019); Henriette et al., (2015); Vial, (2019); Du et al., (2016); Warner and Wager (2019); Ross et al., (2017); Xu and Kim, (2014); Akter (2016)

Table 3

Outsourcing Service provider types and scope

Firm Name	Service Offerings	Kind of Firms	Scope	Calibrated Revenues (2016)
A	Single Service - HRO	Pure Play	Narrow	69.56
B	Single Service - HRO	Pure Play	Narrow	40.89
C	Single Service - HRO	Pure Play	Narrow	61.47
D	Single Service - HRO	Pure Play	Narrow	51.3
E	Multi Service	Integrated	Broad	25.98
F	Multi Service	Integrated	Broad	26.37
G	Multi Service	Integrated	Broad	36.07
H	Multi-Service	Pure Play	Broad	25.69
I	Multi Service	Integrated	Broad	39.99
J	Multi Service	Integrated	Broad	25.36
K	Multi Service	Integrated	Broad	20.65
L	Multi-Service	Integrated	Broad	26
M	Multi Service	Integrated	Broad	21.55
N	Single Service - Customer Care	Pure Play	Narrow	12.81
O	Single Service - Customer Care	Pure Play	Narrow	10.7
P	Multi-Service	Pure Play	Broad	25.11
Q	Single Service - Customer Care	Pure Play	Narrow	8.55
R	Multi-Service	Pure Play	Broad	15.81
S	Multi-Service	Pure Play	Broad	13.86
T	Single Service - Customer Care	Pure Play	Narrow	9.26
U	Multi Service	Integrated	Broad	13.18
V	Multi Service	Integrated	Broad	26.28
W	Multi-Service	Integrated	Broad	8.04
X	Multi-Service	Pure Play	Broad	11.24
Y	Single Service - Customer Care	Pure Play	Narrow	4.36
Z	Multi-Service	Pure Play	Broad	9.77

Note:

- The names of the firms are replaced by pseudonyms to ensure confidentiality.
- Pure play firms are standalone firms, while integrated firms are BPO arms of technology firms.
- HRO is Human Resources Outsourcing.

Table 4

Conditions and calibration thresholds

Condition	Proxy	Data source	Calibration
Nonlinear revenue (Outcome)	Revenue per employee: Calculated based on analyst revenue and employee estimates, calibrated for geo-specific tariff variations	Hfs, Everest, Factiva, Crisil, Thomson One, Organization websites, 10K/Annual reports, press releases	Continuous Set **Calibration** 1 - Fully In USD 35K USD per person per annum 0.5 - Crossover Point USD - 20K USD per person per annum 0.5 - Fully Out USD 15K per person per annum **External Referent** USD 20,000 per person per annum is the industry average, post-geographic variation calibration. (Nasscom Crisil Industry data)
Consultative Capability (Predictor)	Consulting capability and Design thinking capability maturity **Estimation** Mention in organization websites, analyst reports	Company Website, Hfs Report	0 - no mention of the presence of capability 0.33 - indirect mention of capability presence i 0.67 - presence in offerings and ratification by analysts 1 - separate sellable capability and/or evidence of significant investments Macro-variable of consulting and design thinking using logical OR
Orchestration Capability (Predictor)	System Integration capability and Risk and compliance assurance (Cybersecurity) maturity	Company Website, Hfs Report	0 - no mention of the presence of capability 0.33 - indirect mention of capability presence i 0.67 - presence in offerings and ratification by analysts 1 - separate sellable capability and/or evidence of significant investments Macro-variable of System Integration and Risk and Compliance assurance using a logical and
Network building and management capability (Predictor)	Average Degree Centrality **Ratio Estimation** **(**Number of network elements across key offerings)/Total number of key offerings	Hfs Report, Company website	0 (0<=Average Degree Centrality<= 5) 0.33 (6<= Average Degree Centrality<= 10) 0.67 (11<=Average Degree Centrality<=15) 1 (Average Degree Centrality >=16)
Standardization capability (Predictor)	Standardization capability maturity	Company Website, Hfs Report	0 Presence of only a standardization framework 0.33 <= 50% of key offerings ready as standard BPaaS (analyst ratified) 0.67 51-80% of key offerings ready as standard BPaaS (analyst ratified) 1 81-100% of offerings ready as standard BPaaS (analyst ratified))
Generation and sharing of actionable Insights capability (Predictor)	Insights capability maturity	Company Website, Hfs Report	0 - the presence of only descriptive capability 0.33 - indirect mention of advanced (predictive and prescriptive) capability presence and compliance 0.67 - the presence of advanced (predictive and prescriptive) in offerings (analyst ratified) 1 - as an independent sellable capability or evidence of significant investments (Acquisitions or Joint Ventures)

Condition	Proxy	Data source	Calibration
Knowledge Access capability (Predictor)	Knowledge Breadth **Estimation** (Number of knowledge components present/Potential total number of knowledge components)	Hfs Report, Company website	Continuous Set 0 – the presence of <= 1 knowledge component (out of a maximum 5) 0.33 – the presence of 2 knowledge components (out of a maximum 5) 0.67 – the presence of 3 knowledge components (out of a maximum 5) 1 – the presence of >=4 knowledge components (out of a maximum 5) Knowledge resources assess by giving scores as follows: 1. Core domain technology, 2. basic process accelerators, 3. advanced process accelerators (including cognitive), 4. Next-gen digital differentiators (including IoT, blockchain, additive manufacturing) and 5. Next-generation differentiators - above and also customer experience
Firm Scope	Narrow vs. broad service scope	Hfs classification	Crisp Set 0- Narrow scope (<=1 service offerings in portfolio) 1- Broad scope (>=2 service offerings in portfolio)

Table 5

Truth Table for success as an outcome in digital transformational outsourcing

Capabilities				Scope	Cases	Success	Consistency		
Consultative	Orchestration	Standardization	Network				raw	PRI	SYM
1	1	0	0	1	3	**1**	0.82	0.69	0.69
1	1	0	1	1	7	**1**	0.76	0.61	0.64
1	0	1	0	0	2	**1**	0.73	0.71	0.71
0	0	1	0	0	1	**1**	0.72	0.70	0.70
1	0	0	1	1	2	0	0.59	0.32	0.32
0	0	0	0	1	1	0	0.57	0.22	0.22
1	0	0	0	1	4	0	0.53	0.28	0.28
1	0	1	1	0	1	0	0.51	0.46	0.46
0	0	1	1	0	2	0	0.50	0.46	0.46
1	0	0	0	0	2	0	0.44	0.39	0.39
0	0	0	1	0	1	0	0.42	0.36	0.36

Table 6

Truth Table for failure as outcome in digital transformational outsourcing

Capabilities					Scope	Cases	Failure	Consistency		
Consultative	Orchestration	Insights	Network	Knowledge Access				Raw.	PRI.	SYM
1	0	1	0	0	1	1	1	1	1	1
0	0	0	0	1	0	1	1	1	1	1
0	0	1	1	0	0	1	1	0.80	0.80	0.80
0	0	1	0	1	1	1	1	0.77	0.70	0.70
1	0	1	0	1	1	3	1	0.71	0.64	0.64
1	0	1	1	1	1	2	1	0.71	0.64	0.64
1	0	1	1	1	0	1	0	0.57	0.57	0.57
0	0	1	1	1	0	1	0	0.50	0.49	0.49
1	1	1	0	1	1	3	0	0.47	0.32	0.32
1	0	1	0	1	0	4	0	0.46	0.45	0.45
1	1	1	1	1	1	7	0	0.43	0.29	0.34
0	0	1	0	1	0	1	0	0.33	0.33	0.33

Note: All combinations with at least one case in the sample are listed in the tables above. Limited diversity cases - theoretically possible but empirically non-existent – are not listed. (Cooper and Glaesser, 2011).

Table 7

Necessary Condition Analysis: Success and Failure

	Success		Failure	
Capabilities	**ce_fdh**	**cr_fdh**	**ce_fdh**	**cr_fdh**
Consultative	0.323	0.162	0.014	0.007
~ Consultative	0.007	0.003	0.017	0.008
Orchestration	0.139	0.069	0.010	0.005
~ Orchestration	0.086	0.059	0.068	0.034
Standardization	0.010	0.005	0.000	0.000
~ Standardization	0.010	0.005	**0.503**	0.350
Insights	**0.420**	0.210	0.061	0.041
~ Insights	0.000	0.000	0.000	0.000
Network	0.000	0.000	0.000	0.000
~ Network	0.073	0.036	0.020	0.010
Knowledge Access	**0.750**	0.375	0.015	0.008
~ Knowledge Access	0.001	0.000	0.005	0.002
Scope	0.000	0.000	0.000	0.000
~ Scope	0.020	0.010	0.020	0.010

Note:
~ represents condition not being present
ce-fdh: Ceiling Envelopment- Free Disposal Hull (Dul, 2018)
cr-fdh: Ceiling Regression – Free Disposal Hull (Dul, 2018)
ce-fdh values were chosen considering the underlying data as discrete (Dul, 2018)

Table 8

Configurational recipes for digital transformational outsourcing success & failure

Solution / Configuration	1	2	1	2	3	4	5
	Success		Failure				
	Orchestrators	Hyper Standardizers	Non-Implementers			Unawares	Reluctants
CONSULTATIVE CAPABILITY	●		●		●	⊗	⊗
ORCHESTRATION CAPABILITY	●	⊗	⊗	⊗	⊗	⊗	⊗
Insights Capability			●	●	●	⊗	●
Network Management Capability		⊗	⊗	⊗		●	●
Knowledge Access Capability				●	●	●	⊗
Standardization Capability	⊗	●					
Scope	●	⊗	●	●	●	⊗	⊗
Consistency	0.79	0.75	0.74	0.74	0.72	1	0.80
Raw Coverage	0.50	0.19	0.23	0.23	0.28	0.05	0.1
Unique Coverage	0.5	0.19	0.03	0.03	0.08	0.03	0.08
Complex Cases	F,G,H,I,J,K,L,M,U,V	A,B,D	E,R,S,X	E,R,S,Z	E,R,S,P,W	N	Q
Parsimonious Cases	F,G,H,I,J,K,L,M,U,V	A,B,D	E,R,S,P,W,X,Z	E,R,S,P,W,X,Z	E,R,S,P,W,X,Z	N	Q
Overall Solution Consistency	0.78		0.77				
Overall Solution Coverage	0.69		0.46				

- Black circles indicate presence of a condition, circles with “x” inside indicate its absence
- Large circles indicate core conditions, small circles indicate peripheral conditions
- Textured cells indicate necessary conditions

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