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Exploiting Resource Fluidity for Digital Transformation – A Revelatory Case Study

Short Paper

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Abstract

Digital transformation (DT) is a prevalent phenomenon across multiple industries with substantial impacts at the organizational, industry, and societal levels. Although DT have been explored in various contexts, most studies have taken for granted that the focal organizations could afford and own the human, technological, and monetary resources required for successful DT. , not all organizations would want to bear the costs of owning these resources, and could seek to access them, but not own them, in a dynamic and transient arrangement. Using the case study of a mega church in New Zealand, we find that successful DT of such organizations is underpinned by attaining resource fluidity, which consists of 3 phases: the (1) Acquisition, (2) Activation, and (3) Application phases. This paper elaborates on each of these phases and presents a framework that could guide organizations to leverage resources they have access to, but not own to enact DT.

Keywords: Digital transformation, resource management, not-for-profit, COVID-19, case study, New Zealand

Introduction

Digital transformation (DT) refers to a process of reconstruction across all levels of an organization to exploit benefits of digital technologies (Nadkarni and Prügl 2021), which induces fundamental changes to its business processes, operations, and structures (Fenech et al. 2019). DT also has profound implications for individuals and society in general that is beyond the scope of a single organization (Vial 2021). The transformative benefits and opportunities derived by digital technologies and strategies have underscored the strategic significance of DT (Singh et al. 2020) in almost all industries and contexts in the contemporary world (Hanelt et al. 2021). Moreover, the COVID-19 pandemic has further forced organizations to initiate and/or accelerate DT to combat new challenges emerged in the pandemic (Hanelt et al. 2021; Weinberger-Litman et al. 2020). However, DT often brings about new challenges to the focal organizations regarding costs to acquire, and efforts to manage, new or reallocate existing technological and human resources (Nadkarni and Prügl 2021). DT resources may possess characteristics that the resource-based (RBV) view that describe as organizational strategic resources, which are valuable, rare, imitable, and firm-specific (Barney et al. 2021), and semi-permanently tied to the focal firm (Piccoli et al. 2020; Wernerfelt 1984). Nevertheless, not all organizations can afford the costs of obtaining, developing, and mobilizing such resources for DT purposes (Li et al. 2018). Moreover, the rapid advancement of digital technologies has enabled a strategic form of imitation that helps organizations avoid the costs of extensive research and development (Gurbaxani and Dunkle 2019). DT resources as such could be particularly valuable for organizations that are constrained by resources on hand, as they tend to be less costly without funds and expertise required by in-house R&D (Hanelt et al. 2021).

However, not all organizations would want to bear the costs and burden of owning the resources required for DT, and could seek to maintain access to them, but not own them, in a dynamic and transient arrangement. For instance, there is a significant proportion of organizations that are public or not-for-profit in nature, which rely extensively on fluid resources that are shared or voluntarily contributed (Candler and Dumont 2010). Even for-profit firms may engage in collaborative consumption where they are not tied to an exclusive partnership with a single vendor that provides a holistic solution to all aspects of its DT initiatives, but instead piece together discrete solutions provided by a myriad of vendors (Zhong and Myers 2016). In this way, the firm may need to constantly search for, and maintain relationships with, multiple vendors. Although these arrangements help them to avoid the costs and burden of resource maintenance, there may be contracting and requirement engineering issues like in the context of traditional outsourcing (Cabral et al. 2014). Moreover, coping with changes brought by having to coordinate with external partners could result in unexpected costs and strategic turbulence to the focal organization (Cabral et al. 2014). Conversely, the majority of existing studies on DT assume resource ownership (e.g., Matt et al. 2015), without accounting for accessing and managing resources required for successful DT initiatives in the context of these dynamic and transient arrangements. The uniqueness of these arrangements could also render the traditional prescriptions of the RBV less relevant or applicable (Liu et al. 2011). Therefore, utilizing a case study of the City Impact Church (CIC), a mega church based in New Zealand that is required to manage their DT resources in this manner, the objective of this study aims to fulfill this knowledge gap by addressing the research question: “*How can a resource-fluid organization enact effective DT?*”

Literature Review

Digital Transformation

In past few decades, DT has been gaining an increasing attention from almost all industries (Hanelt et al. 2021). Incumbent organizations from a number of traditional sectors enacted DT for the exploitation of benefits and opportunities derived from digital advances and procedures, in order to combat threats posed those “born-digital” businesses (Sebastian et al. 2017, p. 198) and “sync with the contemporary world” (Kioko and Musau 2020, p. 74) to remain competitive. It is widely recognized that the enactment of DT has led to numerous improvements to both the focal organizations and their industries, resulting in benefits such as enhanced customer experiences, operational efficiency optimization, and emerging business opportunities (Piccinini et al. 2015). Furthermore, the global COVID-19 pandemic has abruptly forced a number of organizations that hesitated to enacting DT, especially due to resource concerns, to engage in DT and adapt new operating methods to account for health risks and uncertain working environment (Chand et al. 2021). In addition to organizational level influences, DT also brings broader benefits at the individual, industry, and societal levels (Vial 2021). For example, in the waste management sector, DT initiatives that are developed upon combinations of big data, analytics, and IoT, have been substantially applied and widely adopted across industries such as agricultural and manufacturing industries to monitor and reduce relevant waste (Feroz et al. 2021). Moreover, DT of the waste management further encouraged organizations to transform their business processes and supply chains to the more sustainable ones so that waste is controlled from its source (e.g., Ren et al. 2019). Therefore, understanding DT in a holistic manner to uncover how it can be enacted effectively is important as it is valuable to across multiple levels of society. The existing literature on DT can be classified into three main streams.

The first stream is centered on the **antecedents and drivers of DT** that influence the vision and rationale behind DT, govern and allocate organizational resources, as well as ensure managerial commitment to DT initiatives. Studies belonging to this stream seek to identify the drivers and triggers of DT that allow the focal organization to achieve strategic coherence, which in turn provides guidance to stakeholders on the value and direction of DT initiatives (Hanelt et al. 2021). For example, one study found that a DT strategy is of significance as it serves as a blueprint that coordinates the various building blocks for it (Matt et al. 2015). Moreover, building on this study, another study suggests that the formulation of a DT strategy is an ongoing process without a “foreseeable end,” which requires continuous interaction and interaction between the strategy-making process and the organizational changing contexts (Chanas et al. 2019).

The second stream focuses on the **nature and process of DT**. Studies contributing to this stream are aiming to identify the components and steps of DT, along with explaining how DT strategies are translated to steps and actions to manage change across the enterprise (Tilson et al., 2010). One study, for instance,

investigates the process of DT by perceiving it as a unique instance of business process management (BPM). The generative nature of and needs of deep organizational structure changes that accompany it during the process of enacting organizational DT make the traditional logics of BPM inapplicable in the DT context. Hence, the study suggests the three BPM logics in the context of DT, which are (1) light touch processes that are designed to be modifiable, (2) infrastructural flexibility that allows for flexible and configurable process of data flow, and (3) mindful actors that enables the agency of employees to evaluate the context for decision making on appropriate BPM actions (see Baiyere et al. 2020).

The third research stream centered on DT is related to the **benefits and unintended consequences of DT**. Studies related to this stream are centered on the outcomes of DT implementations, which, as many researchers have discovered, can have dual effects on stakeholders. For example, one study perceives DT as a process of renewing the traditional retailing value chain. It suggests that DT provides new ways of fulfilling long-standing consumer needs by adding five new sources of value creation (i.e., automation, individualization, ambient embeddedness, interaction, transparency and control). The new sources of value creation further brings new perceptions to customer-perceived benefits of convenience, relevance, experience, empowerment, and savings (see Reinartz et al. 2019).

Research Gap: Accessing and Managing DT Resources without Ownership

Our review of the DT literature reveals at least three knowledge gaps from the literature review. First, although the existent DT studies have explored how organizations from different industries could enact DT, most of them have taken for granted that the focal organizations would be able to afford and own the human, technological, and monetary resources that are required for successful DT (e.g., Singh et al. 2020). Only a handful of studies have pointed out that there are organizations that may not want or have the capacity to own and maintain dedicated resources for DT. Moreover, of these studies, they have only pointed out the problems of resource ownership for certain types of organizations without offering a solution (e.g., Kioko and Musau 2020), or proposed a solution that tends to be heavily reliant on a third party platform to intervene and facilitate the focal organizations' DT initiatives (e.g., Li et al. 2018), which may not be ideal given the long-term dependencies these arrangements can create.

Second, the existing prescriptions for traditional outsourcing may also be inadequate or less relevant in the present context since small organizations, in enacting DT, are increasingly turning to multiple vendors in the age of collaborative consumption, especially when they are unable to afford a comprehensive, packaged solution from one large vendor (Zhong and Myers 2016). In addition, they are likely to overweigh low price over good service quality, whilst simultaneously do not have as much accumulated experience collaborating with external vendors, which further increase the risks of coordination failure (Jørgensen 2014). Moreover, well-known outsourcing problems such as contracting issues do not only hinder the enactment of DT, but could create long-term dependencies on a single vendor and financial burdens as well (Cabral et al. 2014).

Finally, if organizations are seeking to access the resources required for DT without owning them, they often have to contend with the challenges of dynamic scheduling and constrained availability. This is because these resources are commonly obtained through network sponsorship/investment, free/low-cost open sources (Semrau and Werner 2014), and insourced non-permanent intellectuals (Milfeld and Haley 2022). Thus, the way of managing and deploying them tends to be substantially more challenging in these arrangements. Nevertheless, utilizing such resources could mean that the focal organizations can access the resources they require without the costs and burden of ownership (Candler and Dumont 2010). Thus, if managed effectively, these organizations could potentially enact DT with greater speed and cost efficiency. And yet, the enactment of DT in the context of these dynamic and transient arrangements has not been extensively explored in the existing literature. Addressing this knowledge gap is the goal of my study.

Research Method

The case study method is employed and is particularly appropriate for our study because it is especially appropriate for addressing "how" questions (Walsham 1995), examining processes (Orlikowski and Baroudi 1991), and exploring multi-faceted phenomena that are inextricable from their natural context (Klein and Myers 1999) – all conditions are relevant to our study. To address our research question, we established two case selection criteria. First, the selected case needs to be an organization that has a track record for effectively accessing and managing the resources required for DT without owning those resources so that it

can shed light on the nature and implications of these dynamic and transient arrangements. Second, the selected organization should have successfully enacted DT to enhance the efficiency and effectiveness because we are looking to develop theory based on proven, if not best, practices (Au et al. 2020). Based on these criteria, the case of CIC was selected because it has successfully leveraged its resources efficiently to enable multiple DT initiatives that have generated significant benefits to both the church and its community, especially in the face of the unfolding COVID-19 pandemic. This makes CIC an “extreme”(Gerring 2008, p. 10) or “revelatory” (Yin 2003, p. 43) case for the purpose of our study.

Established in 1982, CIC is a Pentecostal church based in East Coast Bays, New Zealand. CIC now has a presence in six countries, including New Zealand, Canada, India, Mexico, Philippines, and Tonga, with 18 campuses built. In addition, a number of digital initiatives have been launched as part of the DT of CIC in response to the unfolding COVID pandemic, including an online campus that is accessible by members from all around the globe. To leverage its community influence, CIC also runs a television program called *Impact for Live*, which has been regularly screened on local channels in six countries. CIC also hosts a number of Community Impact initiatives to serve their local communities, including mobilizing approximately 700 volunteers to visit and help local schools, hospitals and disadvantaged households. At the international level, CIC has been sponsoring or building orphanages, schools, health clinics across rural areas in India, Tanzania, and China to support their local educational and medical needs.

Data Collection and Analysis

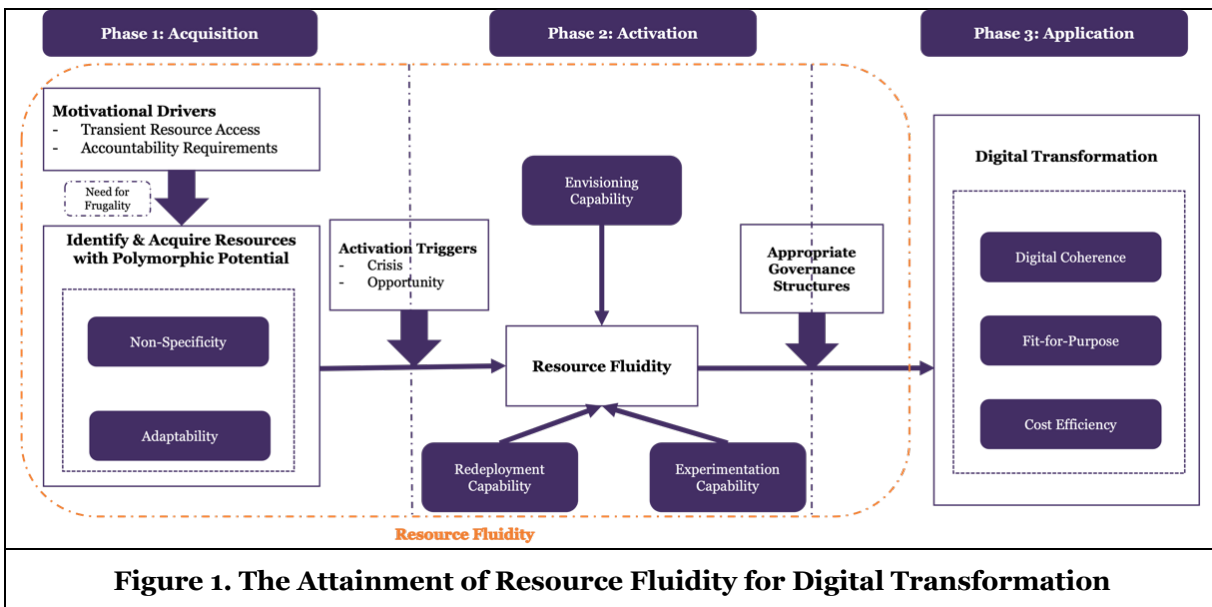
Case access was granted in October 2020 and the study has been ongoing for the past six months. The study was designed and conducted with two phases: the preparatory phase and the interview phase. In phase one, we were focusing on collecting and analyzing secondary data from various sources (e.g., webpages, presentation slides, biographies). A close review of these “nontechnical literature” enabled us to gain an overview of CIC and its operations, which served as the basis of formulating our interview questions in the subsequent phase. Primary data collected specifically to address our research question during this phase was to explore how DT was enacted at CIC (Pan and Tan 2011). To date, 10 face-to-face semi-structured interviews have been conducted virtually via Zoom. Each interview took an average length of 65 minutes and was guided by a list of open-ended questions on multiple aspects of CIC’s resource management and DT initiatives. Each informant was also asked questions that are specific to their roles and positions (Myers and Newman 2007). This form of interview allowed us to elicit data relevant to our purpose of study while also capturing additional emergent information (Galletta and Cross 2013). The informants were identified by the ‘gatekeeper’ of CIC via chain referral sampling (Biernacki and Waldorf 1981) because we as external researchers lacked the knowledge to do so independently (Pan and Tan 2011). The informants included multiple stakeholders at CIC, including representatives of CIC’s top management team (e.g., senior Pastors), technical support function and other functional units (e.g., online marketing unit), as well as their volunteers, to represent “a variety of voices” (Myers and Newman 2007, p. 22). All interviews were digitally recorded and transcribed to ensure data accuracy and completeness (Walsham 1995).

Data analysis was carried out simultaneously with data collection to fully leverage the flexibility of the case study method (Eisenhardt 1989). The temporal bracketing, visual mapping, and narrative strategies were first applied to organize the voluminous data on hand (Langley 1999). In particular, the temporal bracketing and visual mapping strategies enabled the identification and documenting of the distinct temporal phases of CIC’s DT process (Langley 1999). The narrative strategy, on the other hand, allowed a coherent account of the evolution of CIC’s operations over time to emerge. Meanwhile, concepts were derived from the DT literature to serve as a preliminary coding schema that guided our data collection (Gioia et al. 2013). The collected data was then coded via a mix of open, axial, and selective coding (Strauss and Corbin 1998). Open coding was used to apply conceptual labels to the data collected that constitute first-order concepts (e.g., “lack of permanent staff with IT skills,” “volunteers with strong digital expertise”), while axial coding was then applied to group these first-order concepts into a set of second-order themes (e.g., “Transient Resource Access”). Finally, selective coding then enabled further abstraction of the second-order themes into a number of aggregate dimensions (e.g., “the “Motivational Drivers” of DT). The concepts, themes, and dimensions will be continuously adjusted (i.e., added, modified, replaced, or deleted) as part of the coding process when new data emerge that add to, or conflict with the existing evidence (Walsham 2006). Our emergent theoretical framework is, and will continue to be, verified with our subsequent informants to ensure the validity of our interpretation (Klein and Myers 1999). As our study is ongoing, this process of

iterating between data, analysis, and the emerging framework will continue until the state of theoretical saturation is reached (Glaser and Strauss 1967).

Preliminary Findings

The preliminary findings of our ongoing CIC study suggests that to access and manage the resources required for DT if a focal organization does not own those resources, there is the need for resource fluidity. This, in turn, is attained and applied over a process of three phases. First, there is an **acquisition** phase where the focal organization should seek to acquire resources with polymorphic potential. Second, there is an **activation** phase that is subsequently triggered by external crises and opportunities where the resources are mobilized and readied for various purposes. Finally, appropriate governance structures of the organization are installed and applied in the third **application** phase, where the activated resources are fluidly allocated or deployed to address the focal organization's DT needs across multiple operational areas.



Phase 1: Acquisition

Acquisition refers to identifying and obtaining the resources necessary for DT for the aim of generating strategic and organizational benefits (adapted from Maritan and Peteraf 2011). As with many non-profit organizations, CIC's DT resource base is primarily constituted by resources voluntarily contributed for free or very low cost by their network (Semrau and Werner 2014), including time, effort, donated hardware, and free digital software. As such, there is **transient resource access** for what is required for their DT initiatives as these resources could be withdrawn or made unavailable anytime (Kioko and Musau 2020). In addition, CIC also had to be mindful of its **accountability requirements** because they are especially reliant on the goodwill of the resource owners. These two form the **motivational drivers** that underpin a **need for frugality**, which meant that CIC had to **identify & acquire resources with polymorphic potential** to maximize the efficiency of resource use and consumption.

The term *polymorphism* originates from biology that describes “the occurrence together in the same habitat of two or more distinct forms of a species in such proportions that the rarest of them cannot be maintained by recurrent mutation” (Ford 1945, p. 73). Adapting this concept, we define resources with polymorphic potential as those can take on multiple forms and be deployed for different purposes according to the varied organizational objectives. Specifically, our findings suggest that these resources present two distinctive features: (1) **non-specificity** – they are designed for general-purpose use without firm-specific or usage/function-specific characteristics (Sohl and Folta 2021); (2) **adaptability** – the resources can be easily modified, either exogenously (i.e., resources are actively shaped) or endogenously (i.e., resources have the capacity to self-adapt), to suit an organization's changing needs (Tuominen et al. 2004). CIC's

Production Technician illustrated their motivation to find dynamic alternative resources: *“We always try and find that... because we always one of the cultures that we have at the church is excellence, so we always make sure we try and aim for everything to be excellent, but we also we always tight on budget since we always make sure like there’s a cheaper way to do something with something else, like a different software.”*

Phase 2: Activation

Activation is defined as a process through which resources are transformed into “independent actors” with the ability to develop, “direct and combine” their own resources (Harrison and Håkansson 2006, p. 231). More specifically, our finding suggests the activation phase can be triggered by either a **crisis** or an **opportunity** that creates an awareness of an anomalous state and the need for organizational action (Weick 1988). In the case of CIC, the crisis that provided the impetus for DT was the COVID-19 pandemic, which resulted in an extended emergency lockdown across New Zealand. This was also unfolding against the backdrop of the surge in social media use, which has changed the way that information is conveyed and consumed (Berman 2012). In other words, as the younger generation begin to see social media platforms as “an indispensable part of life” (Duffett 2017, p. 20), there is an opportunity to utilize social media to better reach this audience and cater to their preferences. A Campus Pastor from CIC explained: *“The world is online, and we’re crazy if we don’t see that as an opportunity... rather than shaking people to come to the church and expecting them to walk in our doors. Let’s go to them, and let’s present our stories and our message to them and believe that God can touch them and change them where they are.”*

Our findings also suggest that there are three types of organizational capabilities that are crucial for the attainment of **resource fluidity**, where the polymorphic properties of the resources identified previously are primed so that they can be readily deployed subsequently. CIC’s IT manager illustrated mobilization of fluid digital and human resources with an example: *“Somebody donated a projector to our campus... and donated some cameras, digital and analogue cameras. We were also in the middle of a building change. So we blacked out the windows or removed the windows, bought another projector, and then made the leap to pushing out PowerPoint to the screens, and putting all the words out that way. That was probably the first big step... to a digital world.”* First, the management team of the organization requires an **envisioning capability**, which is defined as the ability to strategically see the potential usage and different ways of deploying their resources, while also to craft and provide guidance for resource allocation and action. The National Children’s Ministry Pastor explained the importance of management envisioning: *“The church has seen the need for us to be online through our media team has come into the support that, and people I’m working with have such massive talents that I don’t have.”* Second, there is a need for a **redeployment capability** that enables the focal organization to repurpose and recombine its resources to meet its specific needs (Tu et al. 2001). Finally, an **experimentation capability** is required to enable the focal organization to probe, experiment with, test, and effectively execute its envisioned and customized ways of repurposing and redeploying its resources. (Chang et al. 2012). The three types of capabilities would catalyze and activate the polymorphic traits of non-specificity and adaptability of the acquired resources, which in turn, actualizes the potential of the resources so that they can be subsequently applied in various ways for the benefit of the focal organization.

Phase 3: Application

Finally, our findings suggest that the resource fluidity can be leveraged in a final application phase, through which the resources would be effectively allocated to effect DT in the form of new technology-enabled processes, reduced costs, and enhanced operations (Huesch 2013). At CIC, the activation phase required **appropriate governance structures** to be installed to plan and navigate DT (Haniffa and Hudaib 2006). In particular, the polymorphic resources are deployed across the organization according to decisions that eventuate from the governance structures. These deployments are subsequently managed and dynamically adjusted to ensure the effective enactment of DT. That is, the polymorphic resources applied for the realization of three primary objectives. First, the resources are distributed to ensure **digital coherence**, which is defined as the consistency of digital-oriented strategies across different organizational levels that in the case of CIC is aligned with what the church deems its spiritual guidance. CIC’S Creative Director explained: *“The use of IT and computers was not just for administration tasks and the running of the practicality of the church, but also in creating content, and housing the systems that*

were put in place to create things that we would call creative mediums to build atmosphere.... All those systems we implemented here because we have the heart to reach the world”.

Second, the resources being deployed are aimed at being **fit-for-purpose**, to avoid waste or potential shortage from misallocation of resources. Third, the deployment of resources allows the focal organization to realize **cost efficiency** by fully leveraging the benefits derived from fully exploiting the resources that CIC had on hand. A Campus Pastor provided an example: “We used an existing CRM system to track attendance...CRM stands for customer relationship management, right? And that's what it is. We are here to serve people... So I guess we are using it in its purest form...to actually know who (our church members) are so that we can actually serve them best. And that's exactly what it's done for us over this time, because it's bridged the gap between people feeling lonely and people feeling connected.” This is of particular significance to non-profit and resource-constrained organizations because the enactment of DT tends to require substantial investments in human, capital, and technological resources, which these organizations typically do not own outright (Kioko and Musau 2020).

Discussion and Concluding Remarks

Although still in progress, our work to date already hints numerous potential theoretical contributions. First, the theoretical framework we developed based on our preliminary data introduces the notion of resource fluidity as means of enabling DT in organizations who have to access and manage the requisite resources in dynamic and transient arrangements. More specifically, our findings suggest that this form of DT is a process that consists of three phases: (1) Acquisition, (2) Activation, (3) Application. Second, our theoretical framework represents an important conceptual innovation as it demonstrates that resource ownership may not always be necessary. Instead, by identifying resources with polymorphic potential, activating this potential, before fully capitalizing on them for value generation (Maritan and Peteraf 2011), DT can still be effectively realized in a more efficient manner. Third, our study extends the knowledge on DT by providing a source of “specific, actionable... and viable prescriptions” (Pan and Tan 2011, p. 174) to organizations that may find it challenging to acquire the resources required for DT on the enactment of DT with limited human, capital, and technological resources (Kioko and Musau 2020). This is especially important as this is a group that has been traditionally neglected in the DT literature. Fourth, our study hints at the importance of “selective bricolage” (as opposed to “parallel bricolage” - see Baker and Nelson 2005, p. 344) in the enactment of DT in this specific context. Selective bricolage is about making judicious decisions on when to acquire new organizational resources and when to rely on the existing resources at hand, and our study suggests that it can support and drive the growth of an organization by uncovering observed capability development in organizations that do not own much of the resources required for DT. In terms of contributions to practice, our study also provides a more comprehensive understanding of how organizations can potentially leverage the resources they have access to, but do not own, for the enactment of DT. This can be valuable in the present age as the global pandemic has forced many of them to engage in DT regardless of their readiness and resources on hand (Weinberger-Litman et al. 2020).

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