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Sustaining Digital Transformation: The imperative to innovate continuously in the Australian financial services sector

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SUSTAINING DIGITAL TRANSFORMATION: THE IMPERATIVE TO INNOVATE CONTINUOUSLY IN THE AUSTRALIAN FINANCIAL SERVICES SECTOR

Research in Progress

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Abstract

Established organisations in all industries face significant competition from digital disruptors. This is particularly prevalent in financial services, where nimble IT-based start-ups that focus on implementing financial service innovations (FinTechs) pose significant challenges for established organisations. Executives have identified the ability to respond through digital transformation (DT) as a top priority. However, there is a lack of understanding of the specific sub-capabilities required to continuously adapt and how these capabilities can be embedded. This paper presents research in progress on DT as a continuous process in the Australian financial services sector. Specifically, it aims to identify the landscape of key factors that affect the ability of organisations in the Australian Financial Services sector to continually adapt . A preliminary analysis of 19 semi-structured interviews with DT leaders reveals 15 sub-capabilities that support sustained DT.

Keywords: Digital Transformation, Dynamic Capabilities, Financial Services

1 Introduction

Established organisations face significant competition from digital disruptors, affecting as much as 30% of their revenue growth and 25% of their growth in earnings before interest and tax (EBIT) (Bughin & van Zeebroeck 2017). This phenomenon is prevalent in financial services, where nimble IT-based start-ups that focus on implementing financial service innovations (FinTechs) pose significant challenges for incumbent organisations (Zetsche et al. 2017). Executives of incumbents have identified the ability to respond through digital transformation (DT) as a top priority (Hess et al. 2016; Mithas, Tafti & Mitchell 2013). However, almost 90% of DT initiatives fail to realise their expected benefits, leading to an estimated $1.3 trillion in annual wasted spend (Tabrizi et al. 2019; Wade & Shan 2020).

A critical problem appears to be that organisations frequently manage DT as a once-off initiative to respond to a specific external development (Sia, Soh & Weill 2016) rather than a continuous process of rapid and proactive innovation (Warner & Wäger 2019). Organisations tend to respond to new digital threats and opportunities in an ad-hoc manner (Sia, Soh & Weill 2016), further research is thus required to help develop models and related strategies to support organisations in sustaining their DT.

The ability to address digital disruption is critical for firms in the financial sector (i.e., Financial Services Institutions (FSIs)), this is largely due to significant competition, increasing reliance on information technology (IT), and shifting consumer preferences. This sector has been the single largest purchaser of IT products and services since the mid-1990s (Jegher et al. 2015). However, established FSI's have experienced a significant and demand-driven change in consumer preferences since the global financial crisis in 2008, where a deteriorating public perception and regulatory scrutiny has led to "a mindset shift … from a retail customer perspective as to who has the resources and legitimacy to provide financial services" (Arner, Barberis & Buckley 2015, p. 15). Australia's financial service sector is the fourth largest in the world (Dirou 2021) and includes some of the leading Australian examples of DT in pursuit of becoming "future ready" (Weill, Dery & Woerner 2020), making it worthy of study.

From a research perspective, studies of DT have tended to be exploratory or descriptive and have therefore not been able to explain *how* organisations can sustain DT. This paper presents research-in-progress on DT as a continuous process in the Australian financial services sector. Specifically, it aims to answer the question of "what is the landscape of key factors that affect the ability of Australian FSIs to continually adapt?". The focus of the study adds to the body of research by extending the capabilities, external factors, and internal factors identified by Teece, Pisano and Shuen (1997), Warner and Wäger (2019), and Witschel et al. (2019) to the context of digital disruption in the Australian financial services sector. Drawing on initial findings from semi-structured interviews with 19 DT leaders, the study identifies 15 dynamic sub-capabilities that support DT success. This paper concludes by presenting the plan for further research and identified potential limitations of the study.

2 Literature Review

2.1 Digital Transformation

DT is defined as "a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies" (Vial 2019, p. 221). DT targets the reshaping of products, processes, and business models, going beyond IT strategies that focus on IT infrastructure management (Downes & Nunes 2013; Hess et al. 2016). While digital business strategy defines *what* the fusion between IT and business strategy will be (Bharadwaj et al. 2013; Sebastian et al. 2017), DT strategy describes *how* an organisation reaches this desired end-state (Matt, Hess & Benlian 2015). Digital transformation is an externally-focused evolution of IT-enabled transformation that has been richly studied in IS literature (e.g. Dehning, Richardson & Zmud 2003; Zuboff 1988) that responds to digital disruption by shifting the impetus (society and industry-led vs. organisation-led), scope (wider society vs. immediate value network), means (combinations of digital technologies vs. single IT artefact) and the expected outcome (product, process and business model transformation vs. process improvement) (Vial 2019; Wessel et al. 2021).

The procedure to implement a DT is referred to as the *process of change*, and often consists of four stages; formulate, implement, evaluate, and adapt. The first step is to *formulate* the digital business strategy by fusing the IT and business strategy and translating them into the DT strategy (Bharadwaj et al. 2013; Hess et al. 2016; Matt, Hess & Benlian 2015). Once defined, organisations then *implement* the DT strategy, which generally requires modifications to organisational structures, processes, and skillsets (Hess et al. 2016; Matt, Hess & Benlian 2015). To implement the DT strategy, organisations pursue a series of DT projects that exploit digital innovations in products and services, and processes and business models, which work collectively to add to the whole transformation (Barthel & Hess 2019; Kohli & Melville 2019). The next phase is identified as the *evaluation* phase during which organisations must continuously reassess the DT strategy to ensure alignment with their overall goals. In the event of a disruption (e.g., in the external environment), the organisation will be required to *adapt* their DT strategy to facilitate alignment with their goals (Hess et al. 2016; Mithas, Tafti & Mitchell 2013).

Research supports that the DT process is a continuous cycle of change where strategic change is not an event (Hirschheim & Sabherwal 2001), nor an end-state, (Benbya & McKelvey 2006) but an ongoing process of adaptation (Soluk & Kammerlander 2021; Tortora et al. 2021; Warner & Wäger 2019; Yeow, Soh & Hansen 2018) sometimes noted as digital transformation normalisation (Carroll & Conboy 2020). It also finds that DT strategies are never finished but must be continuously reinvented due to external and internal forces (Chanias, Myers & Hess 2019; Oswald & Kleinemeier 2017). Externally, firms navigate a dynamic landscape that includes changing stakeholder demands (Foss & Saebi 2017), changing competitors' actions (Reynolds & Yetton 2015) and new opportunities resulting from digital technologies (Witschel et al. 2019). Internally, firms are attempting to achieve changing targets when aligning the DT strategy (which is an extreme emergent activity) with the business and IT strategy and resources (Chanias, Myers & Hess 2019; Yeow, Soh & Hansen 2018). Thus, there is an imperative to sustain DT efforts.

Enablers and *barriers* to DT, coupled with the triggers, act to accelerate or decelerate the transformation process. Enablers identified in the literature include executive sponsorship (Fitzgerald et al. 2014; Warner & Wäger 2019); IT infrastructure, such as data, automation, and networks (Schallmo, Williams & Boardman 2017); and organisational culture, capabilities, and structure (Osmundsen, Iden & Bygstad 2018; Warner & Wäger 2019). Inertia and resistance have been identified as the primary barriers to DT (Vial 2019). Inertia occurs when path dependencies and core rigidities from existing resources and capabilities hinder an organisation's ability to effectively reinvent itself (Islam, Buxmann & Ding 2017; Kohli & Melville 2019). Resistance to disruptive technologies introduced to the organisation is also a barrier, with sources including innovation opponents (Cavusoglu et al. 2010), innovation fatigue (Fitzgerald et al. 2014), a misaligned culture (Kohli & Melville 2019), and tensions between the old established businesses and new economic reality (Warner & Wäger 2019).

We posit that DT is *a continuous process of rapid proactive innovation in response to external developments, rather than a once-off initiative.* This is an extension of concepts such as digital maturity (Kane 2017) and future readiness (Weill, Dery & Woerner 2020), and describes the ability to adapt through successive waves of digital innovation. Organisations that focus on enabling continuous DT have technology opportunism and entrepreneurial alertness capabilities to identify new opportunities (Kohli & Melville 2019) using low-cost probes into the future (Brown & Eisenhardt 1997). New digital innovations are embedded into existing IT and organisational structures (Wiesböck & Hess 2020) that are fluid. These organisations have a digitally-savvy top management team and a digital culture that is externally oriented, flexible, and adaptable, and internally directed (Weritz, Braojos & Matute 2020).

There are several gaps in the literature on DT suggesting a lack of clarity on how best to sustain the initial DT as a continuous process. First, there appears to be a lag between the academic understanding, and practice on how organisations should manage DT. Typically, organisations respond to new digital threats and opportunities in an ad-hoc manner (Sia, Soh & Weill 2016) and as such there is a need to undertake further research to explore and propose models and related strategies to support organisations in sustaining their DT. Second, there is a call to understand the strategic change in the context of the DT of incumbent firms (Warner & Wäger 2019). Third, there is a view that it is more helpful to focus

on explaining *how* to continuously reinvent, rather than the *end-state* of a DT (Yeow, Soh & Hansen 2018). Fourth, there is a call for further research into geographical and industry-specific contexts for sustaining DT (Witschel et al. 2019). Our study aims to address these four gaps.

2.2 Dynamic Capabilities

Dynamic capabilities theory explains how an organisation can build and sustain their competitive advantage when facing hyper-competition or increasingly turbulent environments (Pisano 2017; Teece, Pisano & Shuen 1997). While rooted in the strategic management domain, the increasing requirement for IT to pursue business objectives means that dynamic capabilities theory has an important role in future IS research to explain "how IT can be leveraged as a strategic driver of change" (Steininger et al. 2021, p. 3). In particular, the dynamic capabilities perspective has a notable overlap with studying digital disruption, which covers both competition and environmental turbulence (Cozzolino, Verona & Rothaermel 2018). This lens has also been proposed as a compelling research avenue to study how DT enables strategic renewal (Vial 2019) and has been leveraged by a handful of DT studies (e.g. Karimi & Walter 2015; Witschel et al. 2019). Hence, dynamic capabilities theory is a suitable lens for studying DT as a continuous process.

Research describes three main mechanisms to explain how dynamic capabilities enable an organisation's sustained competitiveness: *sensing* new opportunities and threats, *seizing,* and capturing their value, and *transforming* their organisational assets and ecosystem in direct response Teece (2007, 2018). Each capability is underpinned by several micro-foundations – "distinct skills, processes, procedures, organisational structures, decision rules, and disciplines" (Teece 2007, p. 1319) – that are the responsibility of management to develop. These micro-foundations are also known as dynamic sub-capabilities (Day & Schoemaker 2016). *Sensing* means to constantly scan, search, and explore across technologies and markets—both 'local' and 'distant'—for opportunities (Teece 2007). It involves the identification, development, co-development, and assessment of technological opportunities relating to customer needs (Teece 2007, p. 332). Examples of sensing sub-capabilities include peripheral vision and vigilant learning (Day & Schoemaker 2016), digital scouting, scenario planning and mindset crafting (Warner & Wäger 2019), and integrating customers and partners into ideation (Weritz, Braojos & Matute 2020; Witschel et al. 2019). *Seizing* entails addressing opportunities with new products, processes, or services via investments in development and commercialisation activities (Teece 2007). It involves the "mobilization of resources to address needs and opportunities and to capture value from doing so" (Teece 2007, p. 332). Research to date on seizing sub-capabilities include rapid probe-and-learn prototyping (Warner & Wäger 2019; Yeow, Soh & Hansen 2018), strategic agility (Weritz, Braojos & Matute 2020; Witschel et al. 2019), and balancing digital portfolios between current demands and future opportunities (Day & Schoemaker 2016; Warner & Wäger 2019). Finally, *transforming* is the ability to recombine and reconfigure assets and organisational structures as the enterprise grows and as markets and technologies change (Teece 2007). It is the "continued renewal" (Teece 2007, p. 332) of the organisation as its resources are reconfigured to strategically seize opportunities and respond to threats (Vial 2019). Underpinning transformation sub-capabilities includes a future-oriented organisational redesign (Day & Schoemaker 2016; Witschel et al. 2019), navigating innovation ecosystems and external partnerships (Warner & Wäger 2019; Witschel et al. 2019), and developing key competencies (Karimi & Walter 2015; Witschel et al. 2019).

2.3 Digitalisation in Australian Financial Services

The focus of this study is the financial services sector in Australia, which demonstrates several unique qualities concerning digital disruption and DT as a continuous process. The sector is dominated by four established banks who have faced historically little existential threat, competition, or fear. While these institutions have led financial technology innovations and responded to external threats in the past (Reynolds, Yetton & Trevelyan 2009), it is yet to be determined how they will respond during the FinTech revolution. Though Australian organisations overall lag global counterparts, Australian FSIs are among some of the leading Australian examples of digitally transforming to become "future ready"

(Turner 2020; Weill, Dery & Woerner 2020). As an industry, financial services regulators have also spurred innovation and competition in the sector with initiatives such as Open Banking to share data between institutions, the New Payments Platform to enable real-time payments, and the FinTech Regulatory sandbox to support FinTechs testing their ideas with real customers (Cain 2020). Therefore, the Australian financial services sector is a suitable context to study sustaining DT.

Despite the importance, sophistication, and interest in the sector, there are limited studies that explore digitalisation in the Australian financial services sector. When combined with calls for further study of DT in geographic-specific contexts (e.g. Breidbach, Keating & Lim 2020), there is a need to further understand the dynamic capabilities that Australian FSIs require to sustain DT.

3 Research Methodology

The current study is explanatory in nature, assisting to explain the forces at play in triggering, enabling and/or hindering DT (Marshall & Rossman 1999). We adopted a qualitative approach, conducting semi-structured interviews with 19 practitioners deemed to be DT leaders within their organisation, including CIOs (Chief Information Officers) and IT leaders (PID01–PID19). In addition, we utilised the dramaturgical model (Myers & Newman, 2007) and an interview protocol to guide and assist data collection. The DT leaders were from 11 organisations within the financial services industry, deemed to be large by ASIC (2019). The selection of DT leaders was based on a method of purposeful sampling to focus on targeting elite participants able to provide data to address the aims of the study. Interviews were recorded and transcribed, observations and field notes were also documented and included for analysis. Data analysis on interview transcripts commenced early and was an iterative process guided by Van Maanen's approach (1979) and enhanced by Corley and Gioia (2004) and Braun and Clarke (2006). Qualitative data was analysed using thematic analysis, this involved familiarisation with the data, generation of 104 first order codes, representing the voice of the participants, and comprising 1200 entries. The process continued to the refinement and identification of 15 second order constructs and culminated in the emergence of six aggregate dimensions. Memos were created to capture the major themes that emerged and the memoing process continued throughout the whole data analysis process. Several member-checking interviews were conducted, providing an opportunity for participants to verify the interpretation of the data they provided (Merriam 1998) and improve the trustworthiness of the findings (Carlson 2010).

4 Preliminary Findings and Analysis

Preliminary analysis of the interview data has revealed 5 sensing, 5 seizing and 5 transforming sub-capabilities that support DT.

4.1 Sensing

The data revealed that Australian FSIs leverage 5 sensing sub-capabilities to remain alert and generate ideas for their DT (Table). To inform their strategy, FSIs *actively scan market, customer, and regulatory trends*. Having a *"360 degree lens to sensing" [PID 01]* enables FSIs to have proximity, intimacy, connection, and understanding of the opportunities and threats digital disruption presents across industries and geographies. In addition, it helps to uncover customer needs that the DT can address. FSIs then need to identify what the future organisation looks like to bring these ideas to life across their operations, digital platforms, and people and culture. In terms of operations, *detecting future organisational designs* is required to identify the potential future operating models and processes. In terms of digital platforms, FSIs *filter technology cycles* to interpret and prioritise new IT developments and technologies to embed in their technology platform. In terms of people and culture, FSIs then *learn future digital skills requirements* to *"constantly [get] people trained up and learning and developing those new skills" [PID 08]* that are required to adapt the DT. However, FSIs do not do all their sensing internally; they also *source new ideas from expert partners* to scale up the reach of their scanning and leverage specialised resources that can better interpret the opportunities and threats, such as start-ups or

consultants. They can also use these partners to *"[learn] from other organisations… [and work] out where you want to do it yourself versus where you want to leverage others" [PID 02]*.

Sub-capability	Description	Sustains DT by…
Actively scanning market, customer, and regulatory trends	The ability to keep proximity to the developments of competitors, adjacent industries, and customers	• Giving the organisation the widest lens to identify new ideas • Finding best practices on DT • Feeding an ongoing journey of meeting customer requirements • Evolving as customer needs change
Detecting future organisational designs	The ability to identify the structure, accountabilities, and business processes necessary to deliver future DTs	• Providing insight into how the organisation can respond to change • Being able to implement the strategy
Filtering technology cycles	The ability to interpret and prioritise new IT developments and technologies	• Enabling organisations to pursue use-cases that were not feasible previously • Responding quickly to increasingly shorter cycles of new technology
Learning future digital skills requirements	The ability to identify and plan the digital skills and talent required to sustain DT	• Ensuring the organisation has the technical capabilities to continuously deliver change and software in-house • Creating internal skills vs outsourcing
Sourcing new ideas from expert partners	The ability to leverage strategic partners to identify new opportunities and threats	• Keeping close to novel business models and solutions • Creating a continuous funnel of ideas • Alleviating limited internal resources

Table 1: Sensing Sub-Capabilities for DT as a continuous process

4.2 Seizing

Preliminary data analysis revealed that Australian FSIs leverage 5 seizing sub-capabilities to drive experimentation with digital initiatives and navigate DT (Table 2). They *sequence experiments* by timing the DT in relation to technological and organisational maturity, as well as building initial traction with quick wins. This is acknowledged by PID 10 who advised, *"having a transformation that is modular… is really critical"*. FSIs then decide to deliver the experiment internally or externally. For internal experiments, they *rapidly form teams* capable of running the experiment. They also '*ship' continuously with DevOps* to sustain DT by increasing delivery velocity and navigating uncertain outcomes. Essentially, FSI's need to *"discover what the customer truth is" [PID 12]* and treat DT initiatives as ongoing products rather than once-off projects. If built externally, FSIs leverage the ability to *place bets on future and non-core opportunities with external innovators* to sustain their DT by overcoming internal limitations to DT, creating adjacent products and experiences, and staying close to an opportunity to drive quicker internal enablement. Some FSIs also choose to *develop digital talent/culture in isolation*, such as a standalone team, business unit, or venture, to attract, develop, and retain new talent. While seizing capabilities enable opportunistic DT, Australian FSIs *transform* their organisation to embed and ultimately sustain DT.

Sub-capability	Description	Sustains DT by…
Sequencing experiments	The ability to modularise DT into discrete initiatives, decide whether to pursue internally or externally, and galvanise the organisation	• Considering the maturity of the FSI, technology, and partner • Delivering quick wins • Creating a self-sufficient cycle of funding that avoids annual funding cycles
Rapidly forming teams	The ability to rapidly and fluidly scale up new teams and processes to run experiments (e.g., agile squads)	• Enabling the flexible pursuit of new initiatives • Experimenting with new structures, accountabilities, and processes
Shipping continuously with DevOps	The ability to build, pilot, learn, and evolve digital products and services rather than deliver once-off DT projects	• Increasing delivery velocity • Emphasising customer-driven feature development • Treating DT initiatives as ongoing products rather than once-off projects.
Developing digital talent/culture in isolation	The ability to implement a sandbox environment independent of the legacy organisation to attract, develop, and retain new talent	• Navigating clash of cultures • Creating time to upskill
Placing bets on future and non-core opportunities with external innovators	The ability to create opportunities, business functions, and governance mechanisms to pursue multiple DT experiments with partners (e.g., invest in FinTechs, adopting emerging tech)	• Overcoming financial limitations to pursuing innovations internally • Creating adjacent products to deliver a holistic customer experience • Supporting quicker enablement internally

Table 2: Seizing Sub-Capabilities for DT as a continuous process

4.3 Transforming

Data analysis highlighted that to embed and sustain their DT initiatives, Australian FSIs leverage 5 *transforming* sub-capabilities to redesign their organisation and ecosystem (Table 3). This is attained by *shifting to new digital products and services* in favour of the existing product(s). The analysis also revealed that *adapting organisational design* sustains DT by enabling teams to move quicker with increased responsiveness to sensing and seizing future digital opportunities. This supports *"digital organisations, and certainly digital initiatives… [to be able] to pivot" [PID 02]*. Alongside a flexible operating structure, Australian FSIs leverage the capability to *build a bimodal IT platform* that sustains the DT by enabling *"[plugging] into the latest … technology without being constrained to some legacy" [PID 08]* and unlocking their extensive data assets. Furthermore, *embedding digital leaders, talent, and experimental culture* within the organisation sustains DT by overcoming skill and mindset roadblocks. However, the transformation capability is not limited to internal transformation. *Integrating ecosystem partners' capabilities and assets into processes* sustains DT by increasing Australian FSIs' focus on core capabilities, expanding the products and services to meet their customers' needs, and providing access to specialist skills not available in-house. As described by PID 15, *"[we] traditionally were not huge on partnerships… [we thought] we could do it all ourselves… [but] we don't know everything"*.

Sub-capability	Description	Sustains DT by…
Shifting to new digital products and services	The ability to transition the organisation towards generating revenue from new digital products and services	• Storytelling to involve people in change • Reducing reliance on "analog" products • Getting the organisation ready to continually evolve its product set
Adapting the operating structure	The ability to flexibly adjust the operating structure and align it to changes in the business strategy (e.g., the creation of cross-functional teams, agile governance mechanisms)	• Elevating the importance of technology to the business • Creating teams that operationalise DT • Minimising political and prioritisation challenges to continuous change
Building a bimodal IT platform	The ability to reduce technical debt and extend the underlying IT platform so that it is flexible enough to pursue new digital opportunities	• Mitigating technical constraints to applying new technology • Unlocking funding for innovation
Embedding digital leaders, talent, and experimental culture	The ability to continually evolve leadership, team skills, and overall culture to be ready for a digital future	• Increasing org. commitment to DT • Building the foundational toolkit and mindset to leverage new technologies
Integrating ecosystem partners' capabilities and assets into processes	The ability to incorporate and collaborate with external innovation ecosystems to access their capabilities (e.g., integrating FinTechs, exchanging data assets)	• Increasing focus on core capabilities • Expanding products / services they offer to holistically meet customer needs • Accessing specialist skills not available in-house

Table 3: Transforming Sub-Capabilities for DT as a continuous process

5 Conclusion

This study explores the dynamic capabilities needed to enable established organisations to sustain DT and respond to continual environmental and digital disruption. Preliminary data analysis has revealed 15 sub-capabilities, contributing to the extant literature on dynamic capabilities and DT, preliminary findings also suggest that continuous DT is needed.

With further data analysis, practitioners (including DT leaders) can utilise this framework to benchmark their organisation and identify the sub-capabilities that they need to build to promote DT as a continuous process. These insights can be shared with peers to increase the level of digital maturity and leadership.

This work is a research-in-progress study, with future research plans including (i) identifying other key factors that affect continuous DT (i.e., external and internal enablers), (ii) determining the linkages between sub-capabilities and key factors (iii) explaining how the sub-capabilities and key factors link to continuous DT and (iv) conducting interviews with additional practitioners to confirm the 'value' of the sub-capabilities, key factors, and their associated linkages. We envisage that this study will make three contributions to the current body of research. First, it will be the first explanatory model of sustained digital transformation and value creation. Second, it will be the first study of digital transformation in the Australian financial services sector, extending digital transformation literature with insights from 11 Australian FSIs. Third, it will identify 4 explanatory mechanisms to describe the relationship between sustained digital transformation and value creation. This is despite limitations including applicability to contexts outside of the Australian financial services sector and the need to study how sustained digital transformation unfolds over time.

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