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Literature Review

# Are the Boards of Financial Firms in New Zealand Ready to Navigate the Digital Transformation Wave?

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## ABSTRACT

Digital Transformation (DT) presents both opportunities and challenges for corporate governance. This literature review examines whether boards of directors in New Zealand's financial firms are equipped to navigate the wave of digital transformation. It synthesizes current research on the evolving concept of DT, the strategic outcomes and risks associated with DT initiatives, and the importance of board-level digital competence in guiding successful transformations. The review highlights that organizations with digitally savvy boards tend to achieve better performance and resilience, yet many boards, especially in New Zealand's financial sector, lack sufficient digital expertise. This gap raises concerns about oversight of technology-driven initiatives and risk management. By exploring theoretical frameworks (agency, stewardship, and upper echelons) and comparing international practices, the review underscores the need to integrate digital literacy and experience into board capabilities. We conclude that while awareness of DT's importance is growing, New Zealand boards remain in early stages of readiness. Strengthening board digital competence is essential for aligning digital initiatives with strategy, enhancing innovation, and mitigating emerging risks in the financial sector.

*Keywords: Digital Transformation*, *Corporate Governance*, *Board of Directors*, *Digital Expertise*, *Financial Sector*, *New Zealand*

## INTRODUCTION

Corporate governance provides the framework through which boards direct organisational performance, manage risks, and safeguard stakeholder interests. Its scope has increasingly extended to strategic priorities such as technological disruption and digital risk management (Alabdullah et al., 2019; Kalia & Gill, 2023; Orazalin et al., 2025). Boards are now expected to guide digital strategies that ensure organisational resilience and competitiveness amid rapid technological change (Institute of Directors in New Zealand, 2024; Papagiannidis et al., 2025). In this study, Digital Transformation (DT) is understood as a strategic process of organisational renewal enabled by the integration of digital technologies to enhance operations, improve customer experiences, and develop new business models. This process is supported by board-level digital expertise to ensure effective governance and sustainable advantage (Awad & Martín-Rojas, 2024; Gong & Ribiere, 2021; Wahyudiono et al., 2024). Board competence in this context refers to the collective knowledge and capabilities of directors, including digital literacy and experience, which enable robust oversight, informed strategic decision-making, and effective risk governance (Bendig et al., 2023; Valentine & Stewart, 2015).

Despite the strategic importance of digital transformation, approximately 50% of DT initiatives fail to meet their objectives. This high failure rate highlights the critical need for effective governance and board-level digital competence (Benitez et al., 2022; Nwachukwu & Hieu, 2021). Competent boards can better oversee technology investments,

ensure cyber resilience, and align digital initiatives with strategic goals (Bendig et al., 2022; Firk et al., 2021). While roles such as Chief Information Officers (CIOs) and Chief Digital Officers (CDOs) have been studied extensively, empirical research on board-level governance of DT remains limited – particularly in New Zealand's financial sector (Bandodkar & Grover, 2022; The Reserve Bank of New Zealand & The Financial Markets Authority, 2023; Valentine & Stewart, 2015).

New Zealand provides a useful context for examining these governance issues because, as a small and globally connected economy, its financial firms face pressures from digitalisation and regulatory requirements similar to those in larger markets (Alabdullah et al., 2019; Kalia & Gill, 2023; Orazalin et al., 2025). Insights from this setting can inform international best practices by illustrating how boards in a highly regulated, small-market context develop digital oversight capabilities, enhance strategic agility, and build governance capacity. Accordingly, this study explores whether New Zealand's financial firm boards possess the digital expertise required to steer successful DT initiatives. The goal is to provide insights that can strengthen governance, digital leadership, and strategic decision-making in the face of accelerating digital transformation.

## OVERVIEW OF DIGITAL TRANSFORMATION

### Evolution of digital transformation

Despite increasing global attention, a universally accepted definition of "digital transformation" remains elusive, as its scope is context-dependent and continually evolving (Reis et al., 2018). Early research in the 1980s and 1990s focused on IT-enabled organisational change, exploring how emerging digital tools reshaped hierarchies, communication, and innovation (Bloomfield & Coombs, 1992; Drucker, 1988; Johnston & Vitale, 1988). Although the term digital transformation was not yet used, the idea of "IT-enabled business transformation" emerged during this period, highlighting the role of information technology in reshaping workflows and business processes (Chatfield & Bjørn-Andersen, 1997; El Sawy et al., 1999). Additionally, management initiatives such as Business Process Reengineering (BPR) and Enterprise Resource Planning (ERP) aimed to enhance efficiency and reduce costs through automation of repetitive, rule-based activities (Keller, 1993; Vidgen et al., 1994).

In the 2000s, DT gained prominence, though it was often conflated with related concepts like digitisation and digitalisation. Early conceptualisations in this decade emphasized process efficiency, operational optimisation, and supply chain improvements as key outcomes of digital initiatives (Bowersox et al., 2005; Brynjolfsson & Hitt, 2000). By the 2010s, DT was recognised as a strategic, evolutionary process that reshapes business models, organisational structures, and stakeholder relationships (Goran et al., 2017; Vial, 2019). Definitions of DT expanded to reflect broader strategic shifts: firms were leveraging digital technologies not only for incremental efficiency gains but to fundamentally transform operations and stakeholder interactions. In other words, digital transformation became established as a strategic imperative for competitive advantage (Frank et al., 2019; Gong & Ribiere, 2021).

Table 1 summarises the historical evolution of DT definitions, highlighting the shift from operationally focused views in early decades toward more strategic and holistic perspectives in recent years.

Table 1: Historical Overview of Digital Transformation Definitions

| Time Period | Selected Definitions of Digital Transformation | Source |
|---|---|---|
| **1990s** | Digitisation of information is reported to enable a parallel 'marketspace', a virtual, information-defined environment that reshapes competition, value creation, and firms' business models alongside physical marketplaces." The broad adoption of digital technologies across information, communications, and media has redefined commerce, creating networks that restructure work, organisations, and market interactions into a "digital economy." Business Process Reengineering (BPR) is the process of re-evaluating and redesigning core business workflows to enhance efficiency and quality, mainly by automating repetitive, rule-based activities. Enterprise Resource Planning (ERP) refers to advanced systems designed to integrate the functions of different departments into a unified enterprise-wide process through modern information technologies. | Rayport & Sviokla (1994), Tapscott (1996), Vidgen et al. (1994), and Keller (1993). |
| **2000s** | Digital technologies serve to innovate or adjust business processes and models, as well as to assist in reshaping organisational structures, resource allocation, and stakeholder interactions. Reinventing business processes to enable digital operations and strengthen relationships across the supply chain. | Brynjolfsson & Hitt (2000) and Bowersox et al. (2005). |
| **2010s** | DT is the use of technology to drive substantial improvements in organisational performance and scope. Executives utilise advances such as analytics, mobility, social platforms, and smart devices to reshape customer engagement, internal processes, and value delivery. DT is the comprehensive reshaping of businesses, underpinned by internet technologies and extending its influence across society at large. DT is the integration of businesses, customers, and other stakeholders across the entire value chain, enabled by the adoption of emerging technologies. DT is the process of upgrading organisations by leveraging combinations of information, computing, communication, and connectivity technologies to bring about significant shifts in their attributes. | Westerman et al. (2011), PWC (2013), Schallmo & Williams (2018), and Vial (2019). |
| **2020s** | DT is a strategic renewal process, fuelled by cognitive technologies that significantly boost innovation and reshape how value is created. DT involves improving an entity by driving major modifications in its properties using a combination of configuration, computing, communications, and connectivity technologies. DT is a transformative process that fundamentally reshapes organisations through the innovative application of digital technologies, combined with the strategic leverage of resources and capabilities. *(Cognitive technologies include tools such as Artificial Intelligence (AI), Machine Learning, and the Internet of Things (IoT).)* DT entails adopting digital technologies across enterprises to optimise customer interactions, enhance core processes, and establish or refine business models. | Cranney et al. (2025), Wahyudiono et al. (2024), Gong & Ribiere (2021), Verhoef et al. (2021), and Awad & Martín-Rojas (2024). |

*Note: The sources illustrate the conceptual evolution of digital transformation from a focus on operational efficiency in early decades to strategic, holistic change in recent years.*

Over time, digital transformation has clearly evolved from a set of operationally focused initiatives aimed at process automation and efficiency into a strategic, organisation-wide phenomenon reshaping business models, structures, and stakeholder interactions. Recent definitions emphasise advanced digital and cognitive technologies (e.g. AI, machine learning, IoT), highlighting the critical role of executives and boards in driving transformation and overcoming entrenched organisational mindsets (Awad & Martín-Rojas, 2024; Cranney et al., 2025; Wahyudiono et al., 2024).

Drawing on the range of definitions above; particularly Awad and Martín-Rojas (2024), Gong and Ribiere (2021), and Wahyudiono et al. (2024), this review defines digital transformation as a strategic organisational change process

enabled by innovative digital technologies. It is aimed at improving operational processes, enhancing customer experiences, and developing new or transformed business models, while leveraging key organisational resources and board-level digital expertise. Understanding this evolution of DT provides an important foundation for the governance focus of this study. It illustrates that boards must now possess the necessary digital capabilities to strategically guide DT initiatives, ensure alignment with organisational objectives, and manage the risks associated with transformation, particularly in New Zealand's financial sector context.

### Outcomes and challenges of digital transformation

Although digital transformation offers significant strategic advantages, its desired outcomes are far from guaranteed. Various studies report failure rates for DT initiatives around 50%, even among well-resourced firms (de la Boutetière et al., 2018). When implemented effectively, DT can improve internal coordination, increase resource flexibility, and boost overall organisational performance (Lusch & Nambisan, 2015; Trantopoulos et al., 2017). It enables firms to explore new digital business models, foster innovation, and create value through interconnected ecosystems (Jacobides et al., 2018). Empirical evidence also suggests that digitally mature organisations financially outperform their peers, demonstrating higher profitability and market valuations (Valentine, 2016; Valentine & Stewart, 2015). Notably, firms with digitally savvy boards tend to achieve better financial outcomes – including higher return on assets, revenue growth, and profit margins, as investors and stakeholders place a premium on the strategic insight that digital expertise brings to decision-making (Filatotchev et al., 2025; Weill et al., 2019).

However, technology alone does not guarantee success in transformation. Organisations must integrate social and technical change elements, develop new skills and culture, adapt organisational structures, and continuously innovate business models to fully realise the benefits of DT (Filatotchev et al., 2025; Viscusi & Tucci, 2018). This underscores the critical role of the board: beyond passive oversight, directors must understand the scope and pace of digital disruption and provide active strategic guidance. Yet many boards lack confidence in their ability to make informed digital decisions (Bandodkar & Grover, 2022; Institute of Directors in New Zealand, 2024). By linking DT outcomes to board responsibilities, current research emphasizes the governance dimension of transformation. Board-level digital competence is increasingly seen as pivotal for steering digital initiatives, aligning them with long-term strategy, and mitigating the risks associated with digital disruption.

### Digital transformation in the financial sector

The financial services industry exemplifies both the high stakes and opportunities of digital transformation. This sector faces pronounced DT challenges due to its combination of stringent risk management requirements and pressure to innovate. For instance, advanced analytics and AI have been deployed by banks to enhance fraud detection and cybersecurity: ANZ Group's use of AI/machine-learning tools helped prevent an estimated $20 million in fraud losses. Conversely, the risks of digitalisation were highlighted by the 2019 Capital One data breach, which exposed sensitive data of over 100 million customers (Khan et al., 2022). Thus, while technologies such as artificial intelligence, blockchain, and big data analytics are reshaping financial products and services, they are also introducing new vulnerabilities (Onyeje et al., 2024). According to the Financial Services Information Sharing and Analysis Center (FS-ISAC), cyberattacks against financial institutions worldwide increased by 80% in 2022 amid the shift to remote work during the COVID-19 pandemic. Key threats include phishing, malware, identity theft, and breaches of intellectual property (Lacombe & Jarboui, 2023). These trends underscore the urgency of effective data protection and cyber-risk governance in finance.

Governments and regulators have recognised the strategic importance of digital transformation in finance. In New Zealand, for example, the government established a Digital Executive Board (DEB) in 2022 to coordinate national digital strategy and capability-building efforts across sectors (Department of Internal Affairs, 2023). Similarly, financial regulators such as the Reserve Bank of New Zealand (RBNZ) and the Financial Markets Authority (FMA) have emphasized the need for strong board oversight and digital competence to manage technological risks while enabling innovation (The Reserve Bank of New Zealand & The Financial Markets Authority, 2023). Internationally, studies consistently find that banks and financial firms with digitally experienced board members exhibit better performance, greater strategic agility, and enhanced risk management (Filatotchev et al., 2025; Valentine & Stewart, 2015; Weill et al., 2019).

In summary, effective digital transformation in finance requires not only substantial technology investment but also competent governance and strategic oversight. Boards with digital expertise are central to this effort: they help ensure that digital initiatives align with the firm's objectives, that cyber and operational risks are proactively mitigated, and that innovation is pursued responsibly (Bandodkar & Grover, 2022; Institute of Directors in New Zealand, 2024). These observations provide a foundation for examining New Zealand financial firms' readiness to navigate the DT wave. In particular, they highlight the importance of assessing whether boards have the necessary digital competencies to govern transformation initiatives effectively.

## DIGITAL COMPETENCE IN CORPORATE GOVERNANCE AND DIGITAL STRATEGY IMPLEMENTATION

### Definitions and pathways to digital expertise

Board-level digital expertise plays a pivotal role in shaping the outcomes of digital transformation. Directors with relevant technological knowledge and experience are better equipped to oversee technology-driven change and to ensure that digital initiatives are aligned with organisational strategy (Bendig et al., 2023; Ceipek et al., 2021; Kahveci, 2025). While the roles of top management (such as CIOs and CDOs) in driving digital projects have been widely examined, far less attention has been given to the role of the board in providing strategic oversight for DT (Bandodkar & Grover, 2022; Turel et al., 2019). This gap in the literature is now starting to be addressed as researchers acknowledge that boards, not just executive teams, must cultivate digital savvy.

Directors may acquire digital expertise through several avenues. Common pathways include formal education or certification in information technology fields, prior executive experience in technology-centric roles (e.g. serving as a Chief Technology Officer), or leadership experience within highly digitised industries (Bandodkar & Grover, 2022; Filatotchev et al., 2025). Such expertise enables board members to move beyond a narrow, compliance-oriented view of digital risk. Instead, digitally savvy directors can critically evaluate technology investments, anticipate emerging technological threats, and guide organisation-wide change processes. In this way, digital competence at the board level strengthens overall governance effectiveness by ensuring that digital initiatives are integrated into long-term strategic decision-making rather than treated as peripheral IT projects.

### Theoretical frameworks influencing board effectiveness

To understand how digital expertise contributes to board effectiveness, scholars have applied several theoretical lenses. Agency theory positions the board of directors primarily as a monitoring mechanism to mitigate conflicts of interest between shareholders (principals) and management (agents), particularly in contexts of information asymmetry (Fama & Jensen, 1983; Gwala & Mashau, 2023). In the context of digital transformation, asymmetry between

board and management can be pronounced, as managers often hold deeper technical knowledge of the firm's digital initiatives (Benaroch & Fink, 2021). Directors with digital expertise can help narrow this knowledge gap, asking the right questions and challenging management assumptions, thereby strengthening oversight and reducing agency risks (Benaroch & Fink, 2021; Caluwe et al., 2024).

While agency theory emphasizes control and monitoring, stewardship theory offers a complementary perspective by highlighting the board's advisory and collaborative role. Under stewardship theory, directors and executives are viewed as partners working toward shared organisational goals (Davis et al., 1997; Obermann et al., 2020). From this perspective, digitally competent directors provide value by aligning DT initiatives with the firm's strategy, offering informed guidance to management, and fostering trust and open dialogue around technology adoption (Vincent et al., 2018). Their expertise enables them to act as stewards of digital innovation, helping management teams navigate complex decisions and avoid pitfalls.

Complementing both these views, upper echelons theory suggests that organisational outcomes are partly a reflection of its top leaders' characteristics and experiences (Hambrick & Mason, 1984). Applying this lens, directors with significant digital backgrounds bring distinctive cognitive frames and perspectives to the boardroom. They are more likely to recognise technological opportunities and threats, champion innovative investments, and advocate for the organisational changes needed to leverage new technologies (Firk et al., 2022). In essence, a board's collective expertise can shape the firm's strategic direction and adaptability.

Taken together, these theoretical perspectives provide a multidimensional understanding of why board-level digital competence matters. Agency theory underscores the oversight benefits of having tech-savvy directors (better monitoring and risk mitigation), stewardship theory highlights the collaborative strategic guidance they offer, and upper echelons theory points to the vision and innovation orientation they instill. Integrating these insights, this study situates digitally competent boards as central to both effective governance and the successful implementation of digital transformation initiatives.

### Challenges in board-level governance for digital strategy

Even when a board includes some technology-savvy members, translating that expertise into effective boardroom practice can be challenging. Boards with limited overall digital literacy often struggle to anticipate technological shifts, which in turn hinders organisational responsiveness and innovation (Filatotchev et al., 2025). Moreover, evidence suggests that having a single "digital expert" on the board is rarely sufficient. Truly embedding digital thinking into governance may require three or more digitally competent directors to ensure that technology considerations consistently inform board discussions and decisions (Drechsler et al., 2020). In other words, digital expertise should ideally be widespread among board members, not isolated to one individual, to influence the board's culture and agenda.

In New Zealand, this challenge is particularly evident. A recent director survey found that fewer than one-third of NZ directors believe their board possesses adequate digital capability, reflecting a persistent "IT confidence gap" in boardrooms (Institute of Directors in New Zealand, 2024). Regulatory bodies such as the FMA and RBNZ have stressed the importance of board awareness of digital risks and oversight of DT initiatives, though there is currently no explicit mandate in New Zealand requiring boards to have directors with technology expertise (FMA, 2025; The Reserve Bank of New Zealand & The Financial Markets Authority, 2023). Boards that lack sufficient digital literacy risk not only making poor strategic choices but also attracting heightened scrutiny from regulators and stakeholders concerned about governance of technology and cyber risks.

Comparatively, New Zealand boards appear less prepared to integrate digital expertise systematically than those in some other economies. In Australia, for example, the Australian Prudential Regulation Authority's standard CPS 510 has raised expectations for boards to demonstrate robust governance in the face of digital disruption and cyber risk (Australian Prudential Regulation Authority, 2019). Singapore offers another benchmark: leadership commitment to digital transformation there is notably strong, with a majority of corporate leaders actively role-modeling digital behaviors that encourage organisational commitment to digital initiatives. In one study, 67% of Singaporean leaders were rated as actively encouraging commitment to a digital future, 68% were motivating employees to achieve DT objectives, and 60% were creating positive employee experiences with digital tools (Chandrasekar & Mallis, 2025). Such statistics indicate a high level of engagement from the top in driving digital change.

Earlier studies of IT governance in New Zealand (e.g. (Valentine, 2016; Valentine & Stewart, 2015) provided valuable foundations for understanding board-level digital leadership, but they largely predate contemporary challenges such as artificial intelligence, cloud computing, and sophisticated cybersecurity threats. Recent evidence suggests that although boards are increasingly aware of the strategic importance of technology, many still do not prioritise building their own digital capability or systematically integrating digital considerations into decision-making (Institute of Directors in New Zealand, 2024; Jose et al., 2025). This misalignment between recognising the importance of digital issues and taking concrete governance action remains a concern.

## CONCLUSIONS

In summary, the strategic integration of digital expertise into New Zealand's boardrooms remains in its early stages. While national digital strategies and overall awareness of technology's importance are growing, significant gaps persist between the perceived importance of digital transformation and actual governance capacity at the board level. This literature review has highlighted that boards with higher digital competence tend to better navigate digital disruption, leading to stronger organisational performance and innovation. However, many boards in New Zealand's financial sector may not yet have the requisite skills and confidence to effectively oversee and guide digital transformation initiatives.

The question posed: Are the boards of financial firms in New Zealand ready to navigate the digital transformation wave? can be answered only partially at this stage. The evidence suggests that some progress has been made in acknowledging digital transformation as a board-level priority, but readiness levels are uneven. Boards that proactively build digital literacy and invite technology-experienced directors are likely to be more prepared to leverage new technologies and guard against associated risks. By contrast, boards that remain digitally complacent risk impairing their firm's strategic agility and resilience in a rapidly changing environment.

Strengthening board-level digital competence emerges as a clear imperative. This includes targeted director training, recruiting or co-opting directors with technology backgrounds, and fostering a board culture that values continuous learning about digital trends. Such steps would help ensure that New Zealand's financial firms are governed by leaders capable of steering digital transformation effectively. Future research could further examine the impact of specific governance interventions (such as board technology committees or advisory roles) on digital transformation success. Ultimately, preparing boards to ride the digital transformation wave will not only improve individual firm outcomes but also contribute to the stability and competitiveness of New Zealand's financial industry in the digital age.

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