

Introduction

Digital transformation is the incorporation of computer-based technologies into an organization's products, processes and strategies. Organizations undertake digital transformation to better engage and serve their workforce and customers, and thus improve their ability to compete (Pratt, M. & Sparapani, J., 2021, February, para. 1).

The above-stated perspective resonates with many “IT strategy objectives” statements of the past two decades, but the current literature suggests digital transformation presents IT and other senior management with new challenges. Chief Information Officers (CIOs), IT Directors and IT managers have typically gained approval of a hard-won IT strategy over the past decade – often based on integrated business software packages and increased use of e-business – but are now faced with the challenge of formulating and implementing a company-wide strategy to incorporate appropriate deployment of the new digital technologies.

The terms “digitisation” and “digitalisation” have been much discussed in recent literature. Digitisation is seen by Brennen and Kreiss (2016) as the conversion of analogue data and information into digital formats, whereas digitalisation is a wider concept that involves organizations being restructured around the use of digital communication and media infrastructures. “Digital transformation” can be seen as the result of digitalisation, involving the application of digital technologies to enterprise processes, products and assets (Kane, 2019). This is likely to lead to significant change in those processes and may result in new business and value creation models (Bharadwaj et al., 2013). Kiran et al. (2020) note “digital transformation is perhaps the most widely used buzzword in today’s business vocabulary, and with good reason. It has the power to make or break organizations. In recent years, organizations of all sizes and in every sector have embarked upon some form of digital transformation initiative” (p.1). Singh and Hess (2017), amongst others, have emphasised the need for some form of digital transformation strategy to guide an organisation through this change process.

Some of the recent literature suggests that digital transformation, with or without an overarching strategy, is anything but straightforward. Tyagi (2021, July 21), for example, concludes “what we have seen through the digital transformation is that nobody, not one person, really knows the right thing to do next” (para. 5), and Turchi (2018, February 1) notes “truth be told, the crucial elements of digital transformation are still to be clearly outlined, and the areas of intervention in the corporate environment are therefore yet to be defined” (para.1). Further, Tabrizi et al. (2019, March 13) reported that 70% of all digital transformation initiatives do not reach their goals. “Fundamentally, it’s because most digital

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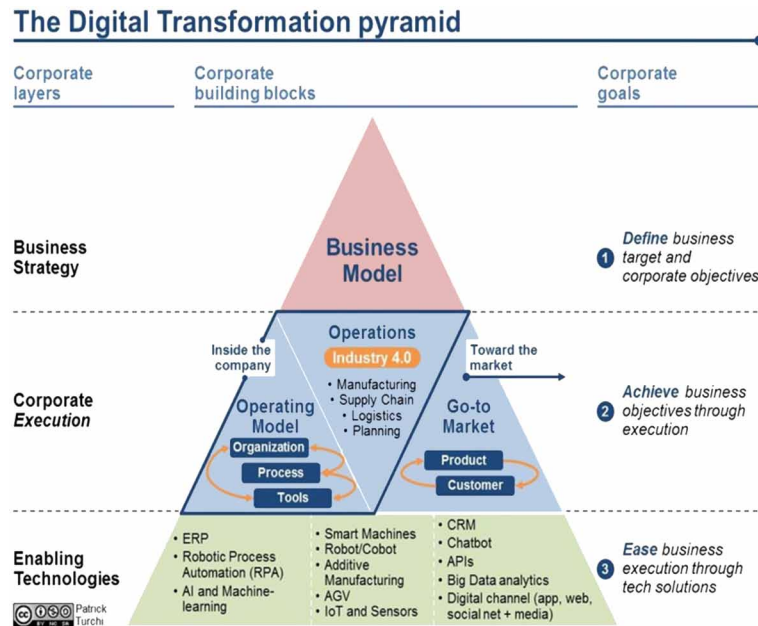
technologies provide possibilities for efficiency gains and customer intimacy. But if people lack the right mindset to change, and the current organizational practices are flawed, DT [digital transformation] will simply magnify those flaws” (para. 2). On a more positive note, Smith (2021, April) concludes that for many organisations the “effective deployment of digital infrastructure” will mean that “many organizations will seek to redefine how they leverage IT infrastructure solutions to serve internal and external constituents” (para. 2), and adds that “IDC also predicts that by 2024, 80% of enterprises will overhaul relationships with infrastructure providers to better execute their digital strategy, seeking ubiquitous deployment of resources and more autonomous IT operations” (para. 4).

There have been a number of studies on the drivers of digital transformation, most of which are not dissimilar to those that have been put forward in the context of automation or major systems implementations in the recent past. Castagna (2019, January 3), for example, in reporting on an IT Priorities Survey of 624 IT professionals from a wide range of industries based in North America, listed the top three drivers of digital transformation as: streamline operations, internal efficiency and process management; improve employee performance and productivity; enhance customer experience and brand loyalty (paras. 4 and 5). In terms of assessing the impact of digital technology deployment, there are a number of models and frameworks of relevance, some of which are well-established. For example, the Technology Organization Environment (TOE) framework developed by DePietro et al. (1990), and the Unified Theory of Acceptance and Use of Technology (UTAUT) model put forward by Venkatesh et al. (2003) can still be usefully applied in the digital era, and feature in a number of the chapters in this book. Similarly, research into dimensions of change (transition or transformation) can also contribute to an understanding of digital transformation. This usually includes business process improvement or re-engineering, people skills and competencies development, as well as technology deployment; and sometimes structural or organisational change is included as a fourth dimension.

The concept of dimensions of change dates back to the 1990s, and builds upon the work of Hammer and Champny (1993) on business process re-engineering, and on Heeks’ (2002) research into information systems deployment in different cultural environments. The three change dimensions of process-people-technology have been used in a number of technology research studies, including enterprise resource planning (ERP) systems projects in Iran (Rezaeian & Wynn, 2016), technology transfer in the UK (Wynn, 2018) and e-business strategy development and implementation in Nigeria (Wynn & Olayinka, 2021). The relevance of this approach to digital transformation research has been highlighted by Braga (cited in Turchi, 2018, February 1, para. 2), who identified six “axes” of digital transformation: three inside the company (people, process and technology) and three on the outside (customer, relationships, and product/services). In similar vein, Kirvan (2021, March 8) suggests “think of digital transformation as the integration of digital technology -- e.g., systems, applications and specialized technologies, such as AI -- into all areas of a business. Many, if not all, of the business processes will need to change and adapt to the new technologies. Corporate culture also will likely need to change. This can result in modifying -- or even eliminating -- established procedures, experimenting with, and adopting new ones” (para. 2).

The need to consider both internal and external factors is also highlighted by Weill and Woerner (2017, December 4) in their survey of several hundred companies, in which they examined both the capabilities needed for transformation, and the impacts on business performance. They concluded that to become “future-ready” for digital transformation required “changing the enterprise on two dimensions — customer experience and operational efficiency” (para. 4). This again suggests that digital transformation is more about business change than technology implementation. Turchi (2018, February 1) summarises this as follows: “overall, there is a clear consensus that digital transformation is not about technology,

Figure 1. The digital transformation pyramid (Turchi, 2018, February 1)



but is actually about a new way of doing business, and a new way of approaching corporate models” (para.4). The author puts forward a framework - the “digital transformation pyramid” – to “facilitate the definition of digital transformation initiatives and help understanding the impact of digital technology for corporate businesses” (Turchi, 2018, February 1, para.5). In Turchi’s model (Figure 1), there are three levels on which digital transformation needs to be approached within corporates: strategy, execution, and technology. Turchi observes that “each of the 3 levels of the pyramid has a strong influence on (and actually defines) the other elements of the framework” (para.9), and concludes that “a successful digital transformation program, in fact, requires a system approach to embrace a truly transformational

Figure 2. The new elements of digital transformation (Bonnet & Westerman, 2020, November 19).

BUSINESS MODEL		
Digital enhancements		
Information-based service extensions		
Multisided platform businesses		
CUSTOMER EXPERIENCE	OPERATIONS	EMPLOYEE EXPERIENCE
Experience design	Core process automation	Augmentation
Customer intelligence	Connected and dynamic operations	Future-readying
Emotional engagement	Data-driven decision-making	Flexforcing
DIGITAL PLATFORM		
Core		
Externally facing		
Data		

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initiative. Strategy, execution or technology alone cannot transform a company: only an integrated review of (at least) two of the elements enables corporate transformation” (para.10).

There are some parallels between Turchi’s model and the “new elements of digital transformation” framework developed by Bonnet and Westerman (2020, November 19), which is an updated version of an earlier model (Westerman et al., 2014, January 7). The authors note “the updated framework places more emphasis on employee experience and business model innovation, as well as on the digital platform, which powers the other elements and, when structured and managed well, enables further innovation” (para.8). The authors discuss and explain all fifteen elements depicted in Figure 2 and reflect on the role of the IT function. They note “along with these technology and architecture elements, we’ve seen the dawning of a hard-won recognition of the importance of the IT function in making digital transformation work. Many first-wave digital transformations did not include IT as a partner and failed as a result. Now, IT leaders are driving digital transformation in some companies. In other companies, IT and digital and business leaders are working more closely together to make the digital transformation faster, more innovative, more comprehensive, and more effective than before” (para.43).

This brief introductory discussion highlights the range of perspectives on what digital transformation is, and how best to incorporate and manage it in an organizational or business environment. There is no clear, commonly shared, view on this at present; rather, there are many issues and strands of thinking drawn for different disciplines and functions, and the recent experience of practitioners. In this context, this Handbook of Research assesses the use of digital technologies in a variety of contexts and examines a range of related themes. In so doing, it attempts to provide some clarity on how digital transformation can best be approached in terms of strategy development and implementation. This will be the main focus of the concluding chapter.

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