

CHAPTER SAMPLER

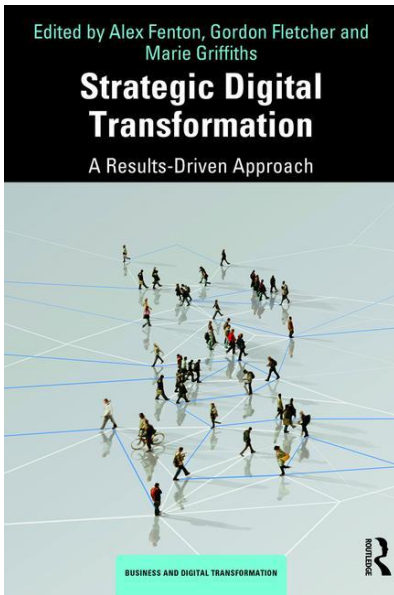
Strategic Digital Transformation



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1 Why do strategic digital transformation?

Gordon Fletcher, Alex Fenton and Marie Griffiths

Preface

Many organisations and their leaders are currently struggling to understand the threats and opportunities for digital transformation. As individual consumers we have all developed high expectations of digital technology that heavily influences our perceptions of technology within the organisation. This creates a very real risk for organisations, including public and third-sector institutions. Ignoring the pace of overall technological change brings the prospect of negative – or even fatal – impact on an organisation’s very existence. This chapter highlights how all organisations can benefit from digital transformation. However, in order to realise these benefits, they need to adopt a strategic approach to digital transformation that embeds dynamic, innovative and even entrepreneurial ways of leading, managing and thinking. Throughout this book, we draw upon digital transformation examples of micro, small, medium and large organisations to demonstrate the value of improved organisational efficiency as well as internal cultural and behavioural change that fully engages customers and consumers. The ultimate goal of digital transformation is to create innovative working environments and business models that support a data-driven and people-focused organisation.

1.1 Businesses are struggling to adapt

A former Cisco CEO made the claim in 2015 that “at least 40% of all businesses will die in the next 10 years . . . if they don’t figure out how to change their entire company to accommodate new technologies” (Ross 2015). As frightening as this prospect of imminent doom sounds, there are many tangible benefits to be discovered by those organisations ready to commit to strategic digital transformation.

As a starting point we draw upon changes in the retail consumer experience as familiar examples to both students and business owners. Consumer digital technologies are also heavily used as examples in the first section of this book, as these represent some of the most visible and heavily referenced examples of digital transformation.

Recent high-profile failures of household brand names in the UK High Street (Main Street in the US) hallmark the degree to which organisations are struggling to adapt to the challenge of digital transformation. The cause for these failures vary in their details, but two key interrelated themes are particularly visible. In each case the retailer blamed wholly, or in part, competition from online retailers who are not burdened with large and expensive high-profile real estate or complex supply chains. Reading between the lines, these statements are a diplomatic placing of blame on the power of e-commerce including Amazon and Alibaba.

A cause of failure less commonly acknowledged by retailers has been an inability to overcome their own legacy. Physical retailers have large and complex organisational structures that often employ thousands of staff who interact with multiple suppliers and intermediaries across many locations. Managing this complexity has resulted in a range of disparate locations, processes, practices and communications that – in their totality – prove very difficult to change or even understand. Attempts at creating organisational leanness and agility quickly stall when confronted by such scale of legacy.

Reports in the UK of 200 shopping centres under risk of failure in a twelve-month period (Harby 2018) combined with 5,855 shops closing in one year alone all document the scale of change. The reduction in the physical retail offering coupled with a 3% overall loss of footfall in the High Street year-on-year (BIDS 2018) hints at an unstoppable spiral of decline. The reassuring enclosed environments of shopping centres were once an attractive safe space in contrast to the more chaotic traditional High Street (Staeheli & Mitchell 2006). However, the challenge of online retail has now stripped away even this advantage to leave a heavy financial burden that has proven to be an insurmountable legacy for many retailers. The fate of High Street retail shows how difficult it is to overcome organisational legacy in the pursuit of a digital transformation.

Although the UK High Street is a visible indicator of the rapidly changing organisational environment, the challenge of overcoming legacy is found in all sectors. Those sectors traditionally tied to physical infrastructure, such as construction, still tend to dismiss the organisational benefits of digital technologies as something primarily confined to the office environment or “IT” functions.

With the largest technology companies moving into the real estate sector (Garfield 2018) as investors and developers, it will only be a matter of time until “technology” companies also begin to disrupt the construction sector. When construction is reconsidered as primarily a data problem, the most consciously data-driven organisations will become real competitors that are capable of building to specifications, timeframes and budgets in ways not previously experienced. The barriers to entry for a data-driven organisation that is challenging traditional business models in the physical domain have been reduced even further as robotics, artificial intelligence and machine learning all become suitable for mainstream use. In the construction industry, the bricklaying robot is already available (*Construction Index* 2018) and capable of output equivalent to five humans. As data is given the arms and legs to interact, physical work will no longer be the exclusive domain of people’s direct labour.

In other sectors, data-driven change will similarly disrupt existing legacy processes and whole sectors. The development of autonomous goods vehicles threatens the transport and haulage sector. It is not only the threat to 3.5 million truck-driving jobs in the US alone (US Special Delivery 2017), but with an estimated 9% of these drivers reported as owner-operators this is also a direct threat to over 300,000 small businesses in the sector. Extending the risk still further, autonomous vehicles will also bring about the demise of traditional ancillary services such as service stations and independent garages. Eventually, this transport technology also reduces the need for sole direct ownership of vehicles by consumers. The ripple effect of these changes will have major consequence across all developed economies.

The lessons from all these examples, admittedly a cliché, is that change is inevitable. Extending this observation further, continuous change should now be the expectation in all organisational planning and operations. To complicate this situation even further,



Figure 1.1 Current business environment challenges

political and economic volatility, uncertainty, complexity and ambiguity have become increasingly commonplace, making traditional forms of business analysis of the external environment difficult. Change in the external environment now a) is facilitated by consumer and organisational digital technologies, b) is unexpected and c) regularly comes from outside any of a sector's current competitors. Organisations will struggle to respond to change when burdened by a legacy of processes, systems and their people's current skills.

The broader external changes that now bear down on all organisations offer a third reason why so many organisations struggle to adapt (Figure 1.1). Vision and mission statements can no longer be vague or variable marketing straplines but must be an inherent part of how the organisations collectively think and functions. The value of persisting and remaining focused on a genuine vision also explains the rediscovery of iconic retail heritage brands such as Doctor Martens and Burberry in the UK. Genuinely shared organisational beliefs and vision provide certainty against the backdrop of changeable markets, can be adapted for application within new sectors and assists in strengthening the loyalty of brand advocates.

In effect, overcoming the challenges of the current organisational environment requires strategic digital transformation to

- Emphasise the vision of the organisation
- Address the legacy of systems, processes and people's skills
- Create and evolve an innovating organisational environment
- Constantly internalise external stimulus (from competitors and other sectors)
- Dynamically shift and introduce business models in response to new opportunities
- Proactively define the expectations for goods or services in the organisation's chosen market.

Any one of these above points represent a significant challenge to an organisation and in total offers an explanation as to why organisations are struggling to adapt.

1.2 The risks of failing to adapt and potential responses

The origins of digital transformation can be traced back at least thirty years when roles in typing pools and typesetting were forever consigned to being backdrops in historical television dramas. These early victims to transformation were rapidly followed by the demise of printed encyclopaedias, photographic film companies and video rental stores. Now traditional banking outlets and post offices are also changing in response to the transforming business environment. Society and organisations have changed to such an extent in developed economies that people undertake their everyday lives oblivious to the necessary presence of digital technologies.

The most dramatic failures brought about by the transformational effects of digital technology are easy to identify with the benefit of hindsight. However, none of the directors at, for example, Kodak or Blockbuster would have been able to identify the beginning of the end for their own businesses. The collapse of these organisations occurred slowly through incremental changes in the external environment that were out of sync with the internal dynamics of the organisation. In defence of the directors of these specific examples, when the extent of their situation became clear, corrective actions were taken in an attempt to turn around what had become, as it ultimately transpired, an irrevocable decline.

Organisational failure resulting from transformational change in the external environment must be read instructively as a warning against inaction while also emphasising the need to avoid attempting to predict an inevitably indefinite future. Kodak could not, as a single organisation, have envisaged the full extent of the uptake of digital photography, that its primary device for delivery would be the mobile phone, or the pivotal importance of photography within social media. Rather than creating a complete plan for a particular future, organisations can only face what is coming by continuously evolving their structure and business models in ways that amplify their vision and mission.

The current state of the external environment can be described with the terms VUCA and the 4Vs. VUCA – Volatility, Uncertainty, Complexity and Ambiguity – describes the current state of developed economies (Bennett & Lemoine 2014) in which we find ourselves individually, collectively and organisationally. The state of VUCA is continuously accelerating and has largely been brought about by increasing adoption of consumer digital technology. However, it is equally important to recognise that accelerating VUCA has been occurring since the first Industrial Revolution (Bennis & Nanus 1985).

The 4Vs – Velocity, Volume, Variety and Veracity – describe the aspects of data that continue to increase in an accelerating VUCA world. Data is the primary focus for the 4Vs, and increasingly this is the way in which the world is understood and defined – as data points and data problems. This data-oriented view can be usefully applied in the widest possible sense. For example, lack of consideration to some or all of the 4Vs explains the recent failure of a number of High Street retailers. Toys R Us persisted with a business model based on the traditional supermarket long after the online retailers could respond more rapidly to changing demands for toys from consumers. This situation was a case of failing to adapt to an increased velocity in toy trends brought about by increasing consumer use of social media. Maplin Electronics lost sight of its origins in providing specialist electronics components to make way for toys and gift lines on the sales floor. Losing sight of mission and vision can be regarded as a veracity issue. However, in combination with the retailing of electronic components being better served through e-commerce the reality of the situation struck at the very heart of the business creating an unpalatable reality that the board was not prepared to address.

The 4Vs can be used to understand an organisation’s relationship with the external environment where the connections could be read as, for example, the “volume of goods available”, the “velocity of interaction”, the “variety of transactions”, the “veracity of communications” and other possible combinations. It is not always the case that the aim of understanding the 4Vs should be to increase each “V”. The value of the 4Vs are to systematically identify the relationships between the organisation and the changeable external environment. Any measurement of success is made through the fifth “V” – the value being created by the organisation.

Together, VUCA and the 4Vs frame our description and understanding of the organisational environment (Figure 1.2). While VUCA highlights many of the negative aspects that come from the increasing use of consumer digital technology, the 4Vs can identify what the organisation is responding to in shaping a strategy for transformation. Recognising the impact of the VUCA world as specific challenges to the organisation and the use of the 4Vs to frame and focus an organisational response is a crucial consideration in becoming a data-driven, people-focused organisation.

Issues brought into the organisation from the external environment are described here as VUCA challenges. Almost inevitably, these VUCA challenges can be framed in terms of one or more of the 4Vs. As a general example, the increasing variety, velocity and volume of consumer complaints requires an organisational response and is a direct result of the increasing consumer expectation that all goods and services are fit for purpose around a very narrow range of tolerance.

Managing an organisation’s response to the VUCA world can also be aided by identifying systems quality – or what are sometimes described as non-functional requirements (Figure 1.3). The primary purpose of systems quality are to define and prioritise the individual capabilities in a system – or in an organisation. In identifying the capabilities of an organisation there is also an acknowledgment that it cannot be “best” at everything.

Some existing and current qualities in the organisation will also be challenged through digital transformation including predictability and durability. Although the most desirable organisational qualities for strategic digital transformation will vary by sector and size, some common themes can be described. With the rise of consumer power, there is a need to enable greater transparency and, in a broader sense, permeability in the organisation.



Figure 1.2 VUCA and the 4Vs in relation to the organisation



Figure 1.3 VUCA, 4Vs and systems qualities

Table 1.1 A sample of system qualities relevant to organisational strategic digital transformation and responding to the VUCA world

<i>Accessibility</i>	<i>Agility</i>	<i>Efficiency</i>	<i>Integrity</i>
Learnability	Portability	Precision	Resilience
Responsiveness	Simplicity	Transparency	Usability

The need for permeability also captures the increased pressure that consumer power has placed on organisations to collaborate with their customers. There is also a need to collaborate with other organisations to develop new products and services that better fit existing or envisaged needs. There are many other qualities that can support an organisation’s response to the 4Vs and the VUCA world (Table 1.1).

1.3 Who benefits from digital transformation

Digital transformation has many facets that impact on all parts of an organisation in some way. Every organisation, particularly in the most developed economies, uses digital technology either directly or indirectly. Rainie and Wellman (2012) emphasise the arrival of a “triple revolution” of consumer technologies. That is, the combination of social media platforms, fast Internet and smartphones has created a social change in the way we communicate, network and conduct business. On the simplest level, this revolution is hallmarked by the use of smartphones to accelerate all forms of personal and organisational communications. Ryan (2017) presents an example of a non-digital business with a sole

trader who sells milk in the Lake District of England on a fixed delivery round. They deliver milk each day to a pre-defined group of people who pay cash left at each delivery point. As a result there is no need for a website or social media to further promote or grow the organisation. They have used a paper-based system for the last thirty years and continue to do so.

In this fictional example it is difficult to imagine how even this micro business will resist the use of digital technology as time progresses. Milk delivery micro-businesses increasingly accept payment through Internet-based bank transfer. This form of transaction removes the need to physically handle cash or visit a bank while also automating the organisation's bookkeeping. Digital channels of communication enable customers to order based on their day-to-day needs. This type of ordering can then determine the exact load for the truck at the beginning of the day. With dynamic route-planning, vehicle fuel consumption can be optimised by avoiding current road blockages, delivering the biggest (and heaviest) orders first and travelling in the opposite direction to the busiest high-traffic routes. All of these actions bring greater labour efficiency, cost savings and environmental improvements to the organisation without it necessarily aspiring for growth. Increasingly technology-conscious consumer also expect digital channels to be their first option to be able to communicate, interact and pay.

It is possible to take this transformation of a milk delivery micro-business still further. With further integration, the milk being produced by individual cows on individual farms can be linked to the choices consumers make when ordering. Tracking on the delivery vehicle can also enable consumers to keep an eye on their delivery as it progresses towards them.

Now the milk delivery can not only be customised by a required daily volume but by additional factors such as offering a narrower timeframe for delivery as well as the farm origin and the breed of cow producing the milk. Being able to describe the very specific details of the product and allowing consumers to order against their personal requirements transforms this milk delivery business into a transparent and data-driven organisation. These changes in the organisation also address the earlier VUCA challenge of meeting consumer expectations for goods and services against very tightly defined specifications.

Any organisation can benefit from this type of holistic digital transformation in its underlying structure and in its business model. The roadmap to transformation can vary widely between organisations from the small, incremental and low budget to far more dramatic interventions and investments with shorter timelines. However, ad hoc digital transformation is not an automatic panacea. Replacing processes that already work for the sake of digital transformation is itself a poor rationale. Even replacing an existing sub-standard organisational function through digital transformation requires careful and strong leadership (Westerman et al. 2014). Without a strategic approach that considers the impact of change on the organisation and all of its people, any transformation can be worse than what has been replaced.

It is people, both external and internal to the organisation, who are pivotal to digital transformation and who are the ultimate beneficiaries – or victims. The negative effects of transformation on an individual are well documented and can range from a poor user experience to complete job loss (Collinson 2019). Transformation may streamline an organisation and make it more profitable, but the impact on people is a necessary criteria for measuring the success of strategic digital transformation (Harari 2017).

The authors asked professionals attending executive education programmes over a period of twelve months who they saw as the key beneficiaries of digital transformation.

	Partners	Internal	External
Who	Partners Suppliers Industry Distributors	Staff Employees Environment	Consumers Clients Customers Agencies Public Authorities
How		Change Easier Efficiencies	Improve Experience

Figure 1.4 Who benefits from digital transformation?

Although the professionals came from a range of large and small organisations representing a wide variety of sectors, their responses were consistent (Figure 1.4). The three groups of beneficiaries can be grouped as partners and the internal and external environments. However, the ways in which partners would benefit was left entirely undefined by the respondents.

1.4 What are the benefits

The potential list of benefits brought from transformation is as long as the ever growing list of consumer digital technologies. Digital transformation can facilitate internal cultural and behavioural changes and can provide deep, real-time insights that engage and encourage new consumers, customers and influencers. Westerman et al. (2014) interviewed 157 executives and identified several thematic benefits of digital transformation. In all of the themes discovered, the most significant were data related. Better data – improved veracity – lets an organisation better understand the continuously changing external environment including their market position, consumer behaviour and customer experience. Internally, better data improves the sharing of knowledge, contributes to business continuity, creates transparency and builds a better, more transparent organisational culture.

The increasing use of consumer technologies such as mobile and wearable devices within the organisation can further streamline processes and improve internal and external communications. The impact of these devices on the concept of the workplace are evidenced by the European Court of Justice’s decision (BBC 2015) to regard commuting time as work time for employees with no fixed office. Further research argues for an extension of this decision to include all workers (Faragher 2018). The conclusions offered by this research is only possible now as a direct result of the widespread prevalence of mobile technology. Employees can now access greater volumes and variety of organisational data with greater veracity and at greater velocity than was previously possible sitting at a desk inside their own organisation.

The wide use and acceptance of social media channels adds variety to the sources of data available to an organisation, extending the value of these channels beyond marketing activities. Social media offers insight into the dynamic external environment, including the actions of competitors and the threats of new developments, as well as offering a means to continuously horizon scan for new organisational opportunities.

Process digitisation and automation can bring improvement at all levels and scales of the organisation’s operations. Small incremental improvements can be introduced as “grassroots” transformation, such as using a web-based data entry to capture organisational data rather than a multitude of unlinked spreadsheets or, going further, using automation to scan incoming email and avoid the need for the double entry of data received through document attachments. Any one action completed automatically is trivial in terms of the time saved, but in organisations that are large or where the time of skilled employees is at a premium this can represent significant efficiency improvements over time.

The improvement described by the web data entry and automated email scanning examples above are labour saving at the point of input, but with the resultant increased data veracity this efficiency is also recognisable at many points of output. Larger process improvements that deploy large-scale organisational technologies – most likely introduced as “top-down” transformation – for example in the manufacturing sector, can optimise entire supply chains, speed up the manufacturing process itself or optimise delivery to customers. Reconciling the operational pressures for “grassroots” change that uses consumer technology to tackle existing legacy with the desire to introduce “top-down” improvements that respond to external pressures is a key challenge for a successful digital transformation. A strategic approach to transformation once again brings a need to align all these forms of change around a shared organisational vision (Figure 1.5).

To initiate digital transformation, an organisational review of existing business models can recognise the new application of existing technologies to improve internal processes. At the very least, a review will indicate where gaps in capacity and capability may lie. Beyond bringing efficiency, this can also lead to new products and services. Collaborative models can take advantage of the combined computing resources in the hands of existing

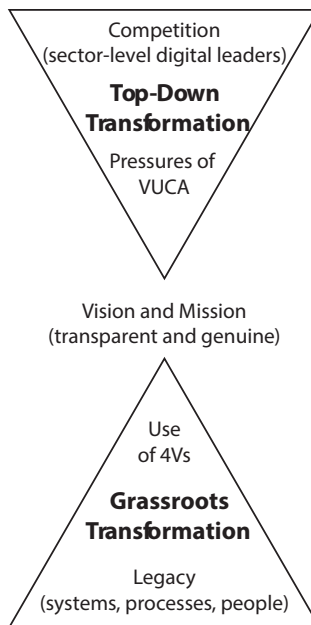


Figure 1.5 The challenge for strategic digital transformation

customers and consumers. New businesses are already taking advantage of gaps in the market that could not have existed without the widespread availability use of consumer digital technology.

1.5 Changing cultures in digital workplaces

The key message from this chapter is that it is not technology itself that creates or drives strategic digital transformation. It is the application and exploitation of these technologies to address the VUCA challenges felt by the people in an organisation that creates successful transformation. The dominant view of digital transformation is one of driving organisational efficiency, but the reality is that successful transformation must benefit people both inside and outside the organisation. Where people have been recognised as the beneficiaries of digital transformation, the focus tends solely to be turned towards the external stakeholders, often couched in terms of improvements to the customer journey. However, with increased transparency – effectively a lowering of the barriers between the inside and outside of the organisation – the need for commitment to organisational vision necessitates that digital transformation should also bring benefits to those people inside the organisation.

Seventy percent of change management projects fail to meet their goals because of internal resistance to change and/or a lack of management commitment (Beer & Nohria 2000). This figure has not significantly changed since 1995 (Hammer & Champney 1995) and has remained consistent for decades (Ashkenas 2013). There are many large and small organisations that overlooked the internal people aspects of the change process. If it is acknowledged that change in the context of digital transformation is a continuous one, then there are real risks in not addressing the concerns of internal stakeholders. Not ensuring adequate preliminary consultation, overlooking the need for appropriate training at all levels of skill or lacking sound internal communications tactics are all portents for project failure. Similarly, transforming too quickly can build up people’s resistance to change. The 4Vs (and organisation qualities) are once again useful in recognising the people-oriented challenge of the transformation process (Table 1.2), with the goal of change being to generate greater value (the fifth “V”) for the organisation.

Table 1.2 Considering people in the process – the 4Vs applied to the transformation project with SMART objectives and organisational qualities

Volume	The number of planned changes should be measurable against individual and organisational KPIs and achievable for the people in the organisation. Where internal capacity does not exist, training should be part of the change programme to change existing skill sets (measurability, deployability, learnability).
Variety	The changes should make sense to the people in the organisation and be sufficiently familiar and specific to them while avoiding becoming generic or overly ambitious (credibility, simplicity).
Velocity	The pace of change cannot over-extend the current organisational culture and must come with specific time-bound outcomes (even if these are intermediate steps). Cultural change must keep pace with other forms of change (responsiveness, robustness).
Veracity	Transparency and openness ensures that the project remains relevant and motivating for internal stakeholders and can be delivered in a timely fashion (integrity, relevance, timeliness).

Previous research (Ewenstein et al. 2015) shows that organisations which have focused on transforming their internal culture are more likely to succeed in the transformation project. The McKinsey research identified three cultural changes that need to be nurtured and embedded for a change programme to succeed. These changes can be summarised as organisation-wide openness to taking and accepting risk, organisation-wide commitment to breaking down silos and organisation-wide focus on the customer. None of these changes should represent a surprise, but what is important is the focus on understanding that change management is now a continuous process requiring the support and participation of all within the organisation.

1.6 New models and goals

Strategic digital transformation changes the structure of an organisation, and it also has a significant impact on the business models used. The business model sits on top of the organisation’s structure as the dynamic combination of its resources and vision to offer a value proposition to a specifically defined set of consumers and customers. All organisations have at least one business model regardless of how it is actually documented or articulated. However, it is a common experience for many organisations to not understand or recognise their own business model. Without the explicit recognition or articulation of a model, there is also reduced likelihood that any organisational vision or mission is shared and understood. There is an increased risk to the digital transformation project without an understanding of the vision or business model across the organisation.

There are many definitions of a business model that can be cited, but acknowledgement of the benefits of business models is more instructive: “A better business model often will beat a better idea or technology” (Chesbrough 2007). This is illustrated by considering how many of the household brand names offer the “best” option. Consider, for example, Walmart or Tesco within the retailing sector, Dell for consumer PCs, Samsung for mobile phones, Uber in ride hailing or Ryan Air in budget airlines. A rare counterexample to this claim is worth acknowledging with Dyson, which has a significant research and development commitment, and its business model is built on leading its sector through continuous innovation.

To build better business models, the starting point is to understand the organisation and what is being sought through strategic digital transformation. When we asked professionals, a common range of thematic phrases emerged (Table 1.3).

The outcomes of digital transformation (Table 1.3) can be read as the various ways that each organisation expects to respond to the core question for all businesses. That question is the one provoked by all business models. “How can we realise what is described by this model?” More recently this question is more regularly qualified to ask, “How can we realise what is described by this model through digital technologies?”

Table 1.3 Expected outcomes from digital transformation

<i>Digital Ability</i>	<i>Greater Value</i>	<i>Improved Data</i>
Process Alignment	Profit Growth	Quicker Engagement
Reducing Costs	Right Information	Right Skills
Wider Access		

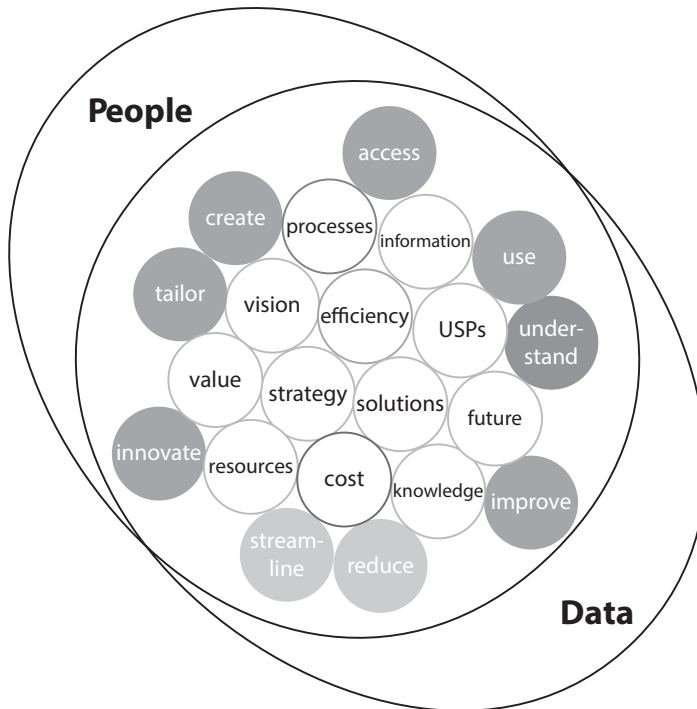


Figure 1.6 Why do digital transformation?

This observation regarding the expected outcomes of transformation brings the chapter full circle in asking the question “Why do digital transformation?” The professionals we asked presented a consistently clear view on the reasons for digital transformation (Figure 1.6). Invariably, their desire to see improvements in the people and data of the organisation was the rationale for undertaking digital transformation. Some aspects were presented negatively or in a neutral way. However the views of the professionals were primarily positive, with many different combinations. Figure 1.6 can be read with any combination of three words. Three examples are sufficiently instructive to enable readers to further construct their own combinations: “People create vision”, “Data reduce[s] cost” or “People innovate resources”.

Key takeaways

- The external environment is volatile, uncertain, complex and ambiguous – the VUCA world
- The VUCA world cannot be managed
- The VUCA world continuously challenges the organisation
- Digital transformation is the strategic response to VUCA and its challenges
- The goal of strategic digital transformation is to produce a data-driven, people-focused organisation

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2 How to critically understand the digital landscape

Gordon Fletcher, Alex Fenton and Marie Griffiths

Preface

This chapter advocates the use of systems-based thinking in order to understand and respond to the external organisational environment. Starting with a discussion of the difference between traditional and digitally enabled organisations, we focus on using the 4Vs as an aid to understand. A systems perspective emphasises the use of the 4Vs to frame how an organisation responds to the challenges of the VUCA world. The response shapes all aspects of the organisation's structure incorporating people, communications, data and procedures/processes alongside hardware and software. The chapter extends the traditional use of systems to advocate the inclusion of elements regarded as external to the organisation itself. The systems-based approach provides a way to critically examine an organisation and how it will respond to the external business environment.

2.1 The digital difference

“Digital” organisations are regularly presented in the popular media as counterpoints to their “physical” equivalents. In this chapter we start with consumer digital technologies and their connected business models. From this understanding we then drill down into organisation itself to understand the many ways in which technology has impact upon all the elements of all organisation.

Presenting digital organisations as being opposite to their “bricks-and-mortar” competitors relies heavily on examples from familiar consumer e-commerce such as Amazon and Alibaba. This presentation of digital is problematic and unhelpful for many reasons. Most importantly, these established e-commerce organisations are the earliest forms of a business model that relies upon an internal digital infrastructure coupled with the need for consumers having access to digital technology to buy the business' goods. The digital difference, in this case, was to take an existing retail business model and directly translate it into an online marketplace. Shifting the locus of business-to-consumer (B2C) interaction in a well-established business model is the sole innovation of early e-commerce and the one that has become the most visible example of digital organisation to consumers. At the same time this innovation should not be regarded as surprising or unexpected. Prior to the mid-1990s, there were already many available predecessors to e-commerce with, for example, the Sears catalogue in the US and the Littlewoods catalogue in the UK. Web pages “simply” enabled these catalogues to be more accessible without the need for printing or distribution.

As time and technology progressed, the goods being advertised through online catalogues could then be directly purchased through the same web pages. E-commerce had become a reality. While e-commerce is a significant change to earlier retail experiences through this single innovation, consumer e-commerce still faces many of the challenges that are similar to other retailers that sell physical goods. Inevitably, the need to manage and transport physical items tie them to the complexities of warehousing and the logistics of completing deliveries to individual customers. At this point, the digital difference between e-commerce and bricks-and-mortar retailing disappears.

Better evidence of innovation and the digital difference can be found in e-commerce models that evolved from these initial experiments to deliver purely digital goods and services. It can be seen in these examples that each substitution of a previous practice with the application of digital technology introduces the potential for innovation and transformation in the business model.

The highly visible and now aging example of e-commerce, however, neglects to recognise digital transformation that can occur deep within the organisation and its structure hidden from the direct view of consumers or competitors. Discussion of consumer-oriented organisation and technologies tend to focus on those most visible aspects of an organisation; however, this only documents a fraction of the range of changes and opportunities that transformation can realise.

The most successful exploitation of digital difference are so significant that they can define entirely new business models or even entire new sectors. In the mid-1990s this was also true of e-commerce. Changes of this scale are now popularly described as an “Uber moment” – when an organisation shakes up an entire sector with a business model that uses the latest technology (Flinders 2017). Increasingly, the most obvious gaps (at least in hindsight) and the simplest of opportunities have become harder to find, need wider technological change throughout the organisation and require equivalent transformational shifts in people, processes and communications as well as in the use of data.

Another example of the disruption made possible by exploiting the digital difference – other than that of Uber itself – can be found with Netflix. Netflix and its business model has significantly influenced how broadcast media is now consumed. While Netflix is now a vast organisation, there are still innovations that continue to be created by competitors who extend and experiment with this established business model. For example, the San Francisco-based Kanopy has shifted away from the direct consumer revenue streams used by Netflix to instead use an intermediary approach that is directed at institutional subscribers such as public libraries and universities. These institutional subscribers then determine the criteria that allow their own members to access films. Over time, still more new consumer media business models will develop as organisations recognise themselves as more data-driven and people-focused.

Understanding the digital difference – and explaining the success of Netflix – can be done with the concepts of VUCA and the 4Vs that were introduced in Chapter 1. VUCA describes the continuously changing state of the external environment. For consumers this acceleration is evident in many different ways, but in the most positive sense the phenomena is represented by ever-increasing choice. At an organisational level, VUCA represents the challenge to become more responsive to those same ever-changing consumer needs and desires and to have an internal structure that is resilient to the dynamic external environment. Even the definition of where the external environment begins and ends has become increasingly problematic. Through increasing consumer demand for transparency

and genuinely collaborative organisation practices, the VUCA world continually works to blur the boundaries between what is inside or outside the organisation.

The organisational response to the VUCA world is dynamically (re)formulated business models that exploit digital difference not by attempting to control the external environment but by offering ways to respond to, interact with or order it. Extending the earlier example slightly, Netflix’s on-demand delivery and AI-driven recommendations are part of a business model that let consumers manage the specific VUCA of broadcast media. A side effect of the popularity of this model has been to make binge-watching a common consumer experience (Bulkley 2018). Many producers and streaming providers now acknowledge this behaviour pattern by releasing television series at one time rather than through the more traditional sequential weekly play out of episodes.

The ways of managing VUCA within the structure of an organisation and as the basis for new business models can be defined through the 4Vs. With data at the heart of the digital difference, the 4Vs frame the VUCA challenges that must be strategically managed by an organisation. The 4Vs provide a consistent and systematic way of describing the digital difference in a business model and in an organisation’s own underlying structure. Acknowledging the ever presence of VUCA and by managing each of its challenges framed as a response to one or more of the “Vs” shifts understanding of digital difference from being a simple binary decision between a digital or physical option.

VUCA labels the environment that organisations must respond to by making their own internal environment less volatile and more certain, simple and unambiguous. In other words the organisation needs the internal qualities of predictability, accuracy, stability and simplicity (the “PASS” organisation). The most likely responses to the VUCA world will include digital technologies in their descriptions. The digital difference defines the new opportunities that can be introduced through technologies to every aspect of the business model and structure of the organisation.

2.2 The organisation as a system

To understand the impact of the digital difference on the structure of the organisation itself we present the organisation as a system (Figure 2.1). This perspective provides a consistent way of describing an organisation’s structure without becoming locked into

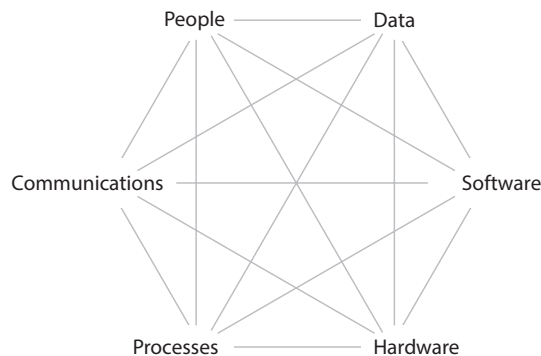


Figure 2.1 Simplified view of the organisation as a system

thinking about specific organisation functions or departments. The organisation as a system is an holistic view that avoids, for example, identifying communications as something that “marketing does” while data becomes something that “IT does”. Being locked into functional thinking steers an organisation towards insular perspectives that encourage individuals to push away problems and challenges (or opportunities) to other parts of the organisation.

An organisation can be understood as being formed around the six interacting elements of people, data, software, hardware, processes and communications. Each of these elements must work with the other parts of the organisation to be sustainable and successful. Any breakdown in the relationship between elements can have major repercussions across the organisation and represents key points of pain that require resolution. Data is intentionally represented in this way within the organisation, as it is can only be realised as information through its interaction and connection with the other elements of the system.

As an example, a mid-sized business may have a process that involves regularly emailing its employees with requests for information regarding their personal skill set. Instead, employees can be empowered to personally manage and update their own details in their personnel file in a way that then can be queried as required. This single change in the use of software and a revised process then also enables new communications to individual employees that are based on specific criteria within their personnel file. The ability to create finer granularity of actions inside and outside the organisation is a key benefit of strategic digital transformation. Granular actions produce targeted efficiency that avoids the need for every interaction to begin from low levels of shared understanding. In effect, the organisation uses data in combination with other elements of the system to recommence each of its interactions at the point where it ended.

People and data in the organisation are the elements that are most distinct from those found in other organisations. It is people and data that are also an organisation’s greatest assets. As a consequence, it is a realistic goal of digital transformation to make the organisation data-driven and people-focused. Reading downwards from the people and data in the organisation, the other elements become increasingly less distinctive and in larger organisations may be more readily “bought in”, outsourced or delivered as a distinct project managed by consultants (Figure 2.2).

At this point it is worth acknowledging the popular fears concerning job losses with digital-transformation programmes. Figure 2.2 graphically identifies the basis for these fears. At immediate threat are those jobs within the organisation that use the labour of people to solely deliver processes. These processes are unlikely to be unique to the organisation and are prime opportunities to be transformed through a different combinations of people, data and software. However, the organisation might use an intermediate solution and outsource the processes to external people. Examples of this approach include international call centres used by banks where operatives work from a pre-set script. An intermediate solution of this type is made possible by technology that minimises the cost of global phone communications while taking advantage of the lower wages in developing economies. Becoming people-focused and data-driven does not just seek to reduce costs or increase revenues but asks instead the much broader question as to how people, data and other elements of the system create value for the organisation.

The question of creating value is the people-focused aspect of transformation. People create greatest value in their response to the VUCA challenges that cannot be entirely managed or automated through the other elements of the organisational system. This regularly resolves to the human elements of interaction. The example of Zappos is noteworthy as

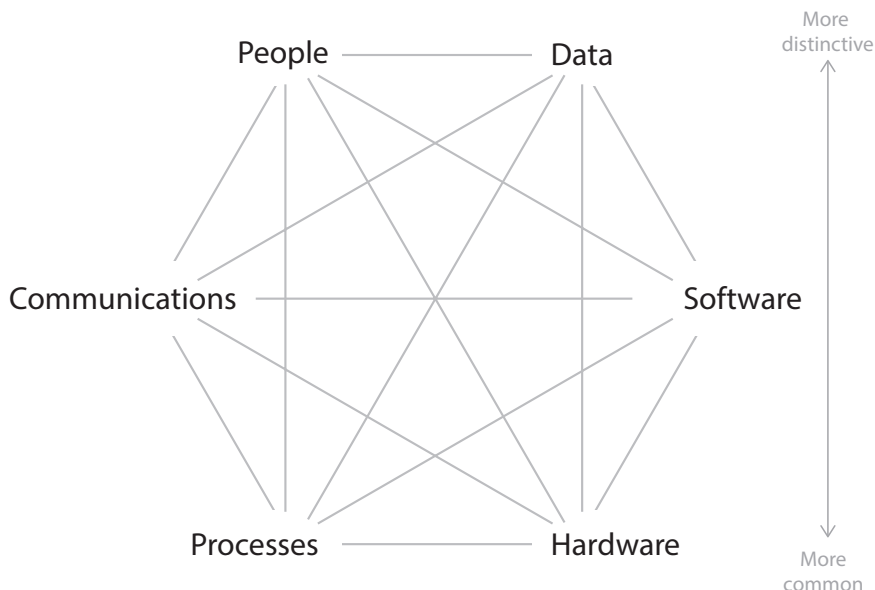


Figure 2.2 The organisation as a system highlighting the more distinctive elements

a people-focused organisation (Evans 2014). The e-commerce operation is owned by Amazon but retains its operating independence. And the difference is noticeable. There are no call-centre scripts, with a claim that one customer was once on the phone for ten hours (Feloni 2016). This radically shifts the familiar call-centre process into the elements of communications and people within the structure of Zappos. Zappos also has a primary emphasis on the happiness of employees. Ensuring that the people in the organisation have the right skills and knowledge becomes a concern of the people-focused organisation that is solved through ongoing training and development. This organisational culture is in contrast to reliance upon the continuous presence of an external surplus of labour resources who can be used to replace existing unsuitable people in the organisation at any time. Committing to people within the organisation also partially redresses the Marxian question of where the surplus value created by people's labour goes. For Zappos, at least some of this surplus value is returned in the form of support for skills development as well as supporting employee wellbeing and happiness.

Questions of labour and the creation of value raise questions about the economic inter-relationship of the elements within the organisational system. It is people that create value. The other aspects of the system enable, support, amplify and simplify this creation of value. The organisational system is structured to differentiate organisational elements that are more cultural (and people-oriented) from those elements that are more infrastructural (Figure 2.3). People, communications and processes of the organisation are more cultural elements and as a result are the points more likely to introduce VUCA-related challenges directly into the organisation, but they are essential to creating value. The organisation is supported and balanced by data, software and hardware that represent more infrastructural elements of the organisation. Although not exclusively the case, it is the tendency for organisational infrastructure to be the element best suited to mitigating the influences of

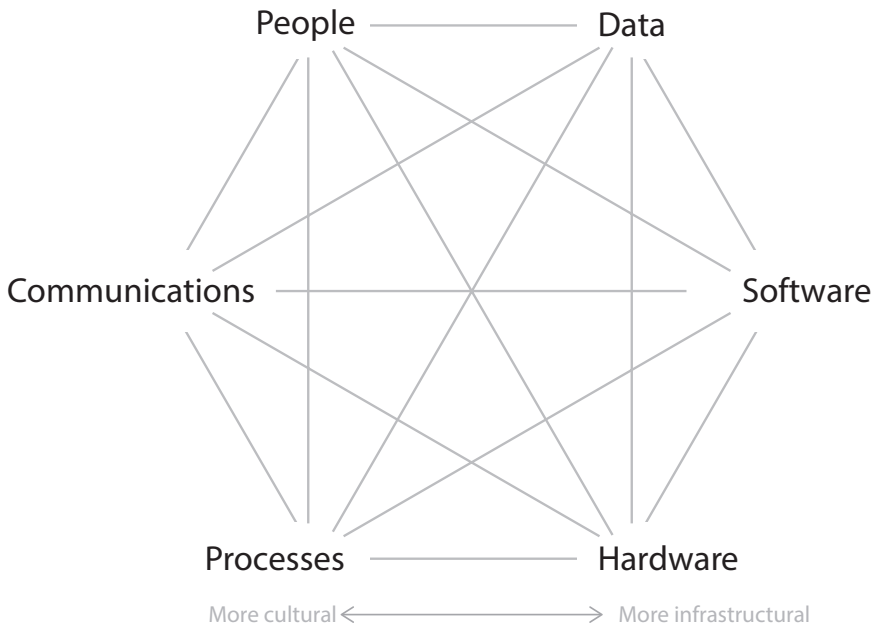


Figure 2.3 The infrastructural and cultural elements of the organisation as a system

the VUCA world. For example, it is primarily (although not exclusively) through software that the data available to an organisation (and not just the data “owned” by the organisation) can be managed into meaningful information for use by its people.

The distinction being made between infrastructure and culture is present as a continuum rather than a binary classification. It is important to acknowledge that the infrastructure of an organisation has cultural meaning and significance as the “solid” or “fixed” forms of cultural practice and preference. This distinction as “fixed” culture makes the organisation’s infrastructure more resistant to the VUCA world, but with this advantage, it also has a tendency towards being less dynamic in the forms of response that these elements of the organisation’s system can offer.

The relationship between infrastructure and culture explains the benefits of an organisation becoming data-driven. The data of an organisation is its most important infrastructure. As a permanent record of the organisation, including its relationships, its decisions and its performance, it is the data of the organisation that represents its solidified culture and by extension the degree to which it has lived up to its vision and mission. An organisation that is not able to call upon its data to do these things ultimately reflects a gap in its knowledge. This position also echoes the relevance of the DIKW (Data, Information Knowledge, Wisdom) triangle discussed by knowledge management scholars (iScoop n.d.) within the organisation.

Although the organisation as a system views draws upon traditional information-systems thinking, an important addition and distinction in this model is that the system’s boundary between what is internal and external do not mirror the boundaries of the

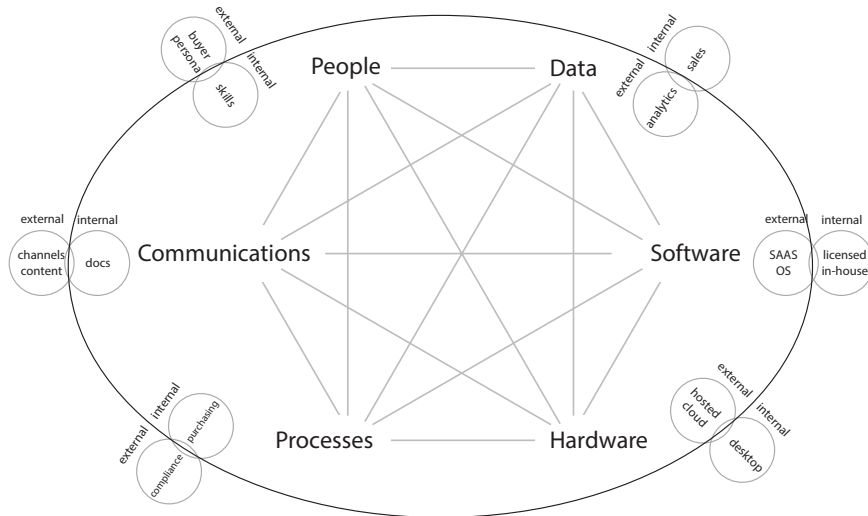


Figure 2.4 The different boundaries between the organisation as a system and the organisation itself. Elements outside the organisation remain part of the system.

organisation itself (Figure 2.4). This emphasises a key digital difference that enables – even encourages – organisations to reach beyond their own barriers to work with consumers, influencers and other organisations by using collaborative actions such as co-production and co-creation.

The organisation as a system takes collaboration beyond simple supply or sales arrangements to deeper, more robust relationships. Examples of this deeper collaboration include the success of the LadBible business model which is built on the use, availability and relative flexibility of Facebook effectively providing this startup with its key consumer-facing hardware, software and communications structures. Without Facebook, LadBible could not have the business model that it uses.

Cloud computing also exemplifies the different boundaries between the organisation and its system. Cloud facilities are generally external to the organisation but are an integral aspect of the system. As hardware, cloud computing is both infrastructural and among the most generic elements of the system but equally is an increasingly important element for many organisations. The positioning of cloud computing within the system but external to the organisation itself also helps to explain why so many third-party cloud-computing vendors currently exist.

A further extension to the system of the organisation over earlier thinking is the inclusion within the hardware element of all aspects of the physical infrastructure of the organisation. Even the most completely digital business models have hardware commitments. An entirely automated and collaborative business model could describe its hardware as being the devices that consumers and customers use to access digital content and the third-party data servers used to store its content. But inevitably this organisation also requires physical space for its developers and management to “touch down”.

Hardware can be considered more broadly to include the buildings, furniture and fixtures that provide a space for the people and data of the organisation. Shifting the

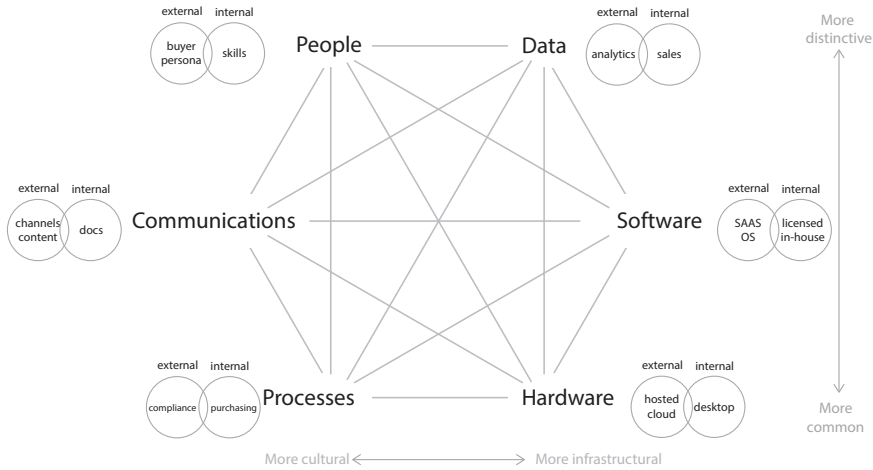


Figure 2.5 The complete organisation as a system – an organisational system

relative importance of the physical estate of an organisation is appropriate. For example, homeworking, virtual working and the rise of bring-your-own-devices and other digitally enabled practices all reduce the role of the fixed physical estate in ensuring business success.

The observation that the system’s boundary extends beyond that of the organisation is also relevant to its hardware element. The need for flexible and variable “touch down” spaces has become a popular business model for physical office space. For example, WeWork and its competitors let businesses satisfy their organisational needs for estate in new ways. By offering flexible physical locations and group meeting spaces without the same traditional commitment to leasing or fixed floor space, these business models represent their own transformational “Uber moment” in the commercial real estate sector.

While it is data and people that are the key focus for strategic digital transformation, this goal necessarily requires holistic attention to the interactions of the whole organisational system (Figure 2.5).

2.3 Understanding and applying the organisation as a system

With the structural view of the organisation recognised as a more expansive system, the relationship of the organisation to the VUCA world can also be understood in more detail (Figure 2.6). As the underlying structure of the organisation, the organisational system may be largely invisible to consumers, but it is the essential platform for the delivery of the business models to customers and consumers.

With the system extending beyond the boundaries of the organisation itself, each element of the system has parts exposed to – and are part of – the VUCA world. The degree of this exposure will vary between each element and from organisation to organisation. These complex relationships have been acknowledged in literature including, for example, the body of work developed around the concepts of clustering (Porter & Bond 1999)

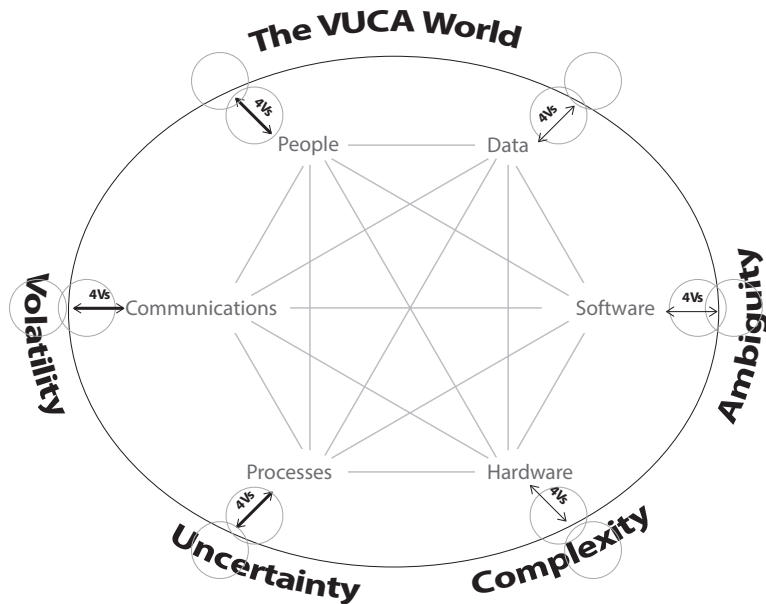


Figure 2.6 The organisation as a system within the VUCA world

just-in-time processes and open-source software (Raymond 1999). The presence of digital technology – like so many aspects of organisation – has only amplified the potential advantages of an organisation integrally working beyond its own boundaries. Digital technologies have also deepened the extent to which the internal and external activities can be successfully mixed together.

Defining organisational exposure to VUCA through each of the six elements brings a strategic advantage. With each element combining features that are external and internal to the organisation, the system can be finely balanced to be both dynamic to taking opportunities from changes in the VUCA world while also making use of the organisation’s best internal qualities to buffer the internal environment from the influence of extreme VUCA challenges. The relationship between the internal and external attributes of the organisational system will be variable and may vary over time from a strong tension to complete alignment. Such variability itself reflects the dynamic nature of the VUCA world. Table 2.1 offers some examples of how this balancing might be seen within each organisational element through a variety of VUCA challenges framed in terms of the 4Vs that can be considered in relation to each element of the organisation.

Granularity at the level of organisational system elements also opens up more detailed examination of the qualities that are most important for the organisation and those that the organisation is best at delivering. Table 2.1 suggests some of the qualities that should be emphasised by an organisation when facing the types of VUCA challenges being described.

More direct examples of the organisational response to VUCA challenges are also instructive at this point (Table 2.2). While the examples only highlight a single challenge

Table 2.1 Examples of managing VUCA through the organisational system and qualities

VUCA challenges	The volume of customised consumer requests	The variety of sizes consumers are requesting	The velocity of consumer queries requesting support	The volume of consumers wanting premium delivery	The veracity of consumer data received through social media channels	The variety of devices available to consumers
Element	Desirable internal attributes		Internal qualities (+/-)	Desirable external attributes		External qualities (+/-)
People	Engaging consumers as people		+Resilience	Prioritise and triage consumer requests based on urgency and priority		+Flexibility
Data	Focused data collection that supports increasing organisational knowledge		+Integrity	Capture all consumer feedback and correctly tag for AI-based response		+Correctness, +Credibility
Communications	Data-driven external personal communications		+Timeliness	Customised responses based on previous consumer behaviours		+Scalability
Software	Data-driven query interface that shows holistic consumer information (rather framed by individual departmental needs)		+Efficiency	Gather consumer feedback from multiple external sources/formats		+Compatibility
Processes	Processes informed by current challenges and issues		+Modifiability, +Adaptability	Consistent processes for dealing with the most common consumer feedback		+Transparency
Hardware	Mobile working regime that enables data to be queried anywhere		+Accessibility	Enable consumer devices		+Flexibility

and the response in a single element of the organisation’s structure, the principle can be extended to all six elements and prioritised in terms of the potential value of the response.

The structural view of the organisation

- highlights the importance interlinkage of elements in their response to individual VUCA challenges
- emphasises that transformation also occurs within the “hidden” aspects of the organisation away from the business model itself
- shows how emphasising and aligning the “best” organisational qualities within each of the six elements can guide the development of strategy

Table 2.2 Real VUCA challenges and the organisational responses

<i>VUCA challenge</i>	<i>Framed in terms of the 4Vs</i>	<i>Organisational element response</i>	<i>Organisational qualities (+/-)</i>
Lack of highly skilled employees	The volume of skilled employees has not kept pace with other developments	People: Develop internal skills and encourage a lifelong learning that motivates and engages existing employees	+learnability
Too many choices (in terms of goods and services)	The variety of consumer options distracts from your own organisation's offerings	Communications: Share the genuine vision of the organisation and encourage consumers who also share this vision to collaborate	+relevance
Climate extremes impacts on supply chains for primary produce	A consistent production velocity cannot be maintained	Software: Machine learning in combination with good external data sources can predict coming dips in supply with sufficient notice to locate alternate suppliers or build up a surplus from the current suppliers	+adaptability
Political turmoil makes consumers caution about international travel	The veracity of political decisions reduces interest in specific products	Processes (with new business model): Build value-added products that encourage consumers to reflect and share previous international experiences (to "bank" their desire to travel for when things are more certain).	+upgradability

Key takeaways

- The digital difference is not a binary relationship with the physical world
- The digital difference labels all the benefits that strategic digital transformation can bring to any organisation's structure and its business models
- An organisation's structure are the aspects largely hidden from consumers
- The business models used by an organisation describes its visible consumer aspects
- The 4Vs assist in defining VUCA challenges to the organisation and the ways that they can be managed
- Systems qualities – or non-functional requirements – define what the organisation does well in responding to the VUCA world

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