



Think Ahead

GENERATION CFO



CHARTERED ACCOUNTANTS™
AUSTRALIA • NEW ZEALAND

DIFFERENCE
MAKERS™



**TRANSFORMATIONAL JOURNEYS:
FINANCE AND THE AGILE ORGANISATION**

About ACCA

ACCA (the Association of Chartered Certified Accountants) is the global professional body for professional accountants. We are a thriving community of 233,000 members and 536,000 future members based in 178 countries and regions, who work across a wide range of sectors and industries. We uphold the highest professional and ethical values.

We offer everyone everywhere the opportunity to experience a rewarding career in accountancy, finance and management. Our qualifications and learning opportunities develop strategic business leaders, forward-thinking professionals, with the financial, business and digital expertise essential for the creation of sustainable organisations and flourishing societies.

Since 1904 being a force for public good has been embedded in our purpose. We believe that accountancy is a cornerstone profession of society and is vital in helping economies, organisations and individuals grow and prosper. It does this by creating robust trusted financial and business management, combatting corruption, ensuring organisations are managed ethically, driving sustainability, and providing rewarding career opportunities.

And through cutting edge research, we lead the profession by answering today's questions and preparing for the future. We are not for profit organisation.

Find out more about us at www.accaglobal.com

About Chartered Accountants Australia and New Zealand

Chartered Accountants Australia and New Zealand (Chartered Accountants ANZ) represents more than 131,000 financial professionals, supporting them to build value and make a difference to the businesses, organisations and communities in which they work and live. Around the world, Chartered Accountants are known as Difference Makers for their integrity, financial skills, adaptability and the rigour of their professional education and training.

Chartered Accountants ANZ promotes the Chartered Accountant (CA) designation and high ethical standards, delivers world-class services and life-long education to members and advocates for the public good. We protect the reputation of the designation by ensuring members continue to comply with a code of ethics, backed by a robust discipline process. We also monitor Chartered Accountants who offer services directly to the public.

Our flagship CA Program, the pathway to becoming a chartered accountant, combines rigorous education with practical experience. Ongoing professional development helps members shape business decisions and remain relevant in a changing world. We actively engage with governments, regulators and standard setters on behalf of members and the profession to advocate in the public interest. Our thought leadership promotes prosperity in Australia and New Zealand.

Our support of the profession extends to affiliations with international accounting organisations. We are a member of the International Federation of Accountants and are connected globally through Chartered Accountants Worldwide and the Global Accounting Alliance.

Chartered Accountants Worldwide brings together members of 13 chartered accounting institutes to create a community of more than 1.8 million Chartered Accountants and students in more than 190 countries. Chartered Accountants ANZ is a founding member of the Global Accounting Alliance, which is made up of 10 leading accounting bodies that together promote quality services, share information and collaborate on important international issues.

About Generation CFO

Generation CFO is developing community-led educational media to help industry chief financial officers (CFOs), finance directors (FDs) and their teams learn, build and execute digital transformation, within their teams and businesses, with our accounting and finance-specific content produced by finance for finance.

Founder Christopher Argent walks the transformation talk, starting out as an entrepreneurial UK FD before leading finance transformation at Vodafone, Amazon, BAT and John Lewis Partnership. Predicting the digital opportunity for the CFO, Chris set up a LinkedIn group for like-minded digital CFOs, which grow quickly to 70,000 members.

Today, Generation CFO runs a highly engaged CFO community producing regular educational events, training and its annual summit Generation CFO Live and the Digital Finance Function awards. We also partner with finance teams in industry to advise on automation, visualisation and analytics capability and the reskilling, upskilling and change management of the CFO organisation.



TRANSFORMATIONAL JOURNEYS: FINANCE AND THE AGILE ORGANISATION

Organisations, no matter how large or small, and whatever sector they operate in, are facing disruption and change. The tide of transformation is being experienced everywhere. What is the emerging role of the finance function professional? Transformation is a broad and complex subject. In this report we have sought to provide an analysis of the trends and supported it with in-depth analysis. The role of the finance function and its skill sets are intricately linked to organisational transformation. This report considers the totality of transformation and the role that finance teams need to play and the skills that they need. The report itself is complemented by a series of podcasts where practitioners provide their personal experiences.

This research, which has been undertaken by the strategic partners ACCA and Chartered Accountants Australia and New Zealand in collaboration with Generation CFO, has been developed from the insights of finance and accountancy professionals across the globe.

Foreword

Organisations continue to evolve and change. The pandemic has impacted many areas, most notably being an intensified focus on the need to respond to changing customer experiences and demands. Those organisations that have proven themselves to be flexible and adaptable manage more successfully in these circumstances.

The word 'transformation' has been in use for several years. Before that, we spoke about 'improvement' or 're-engineering'. The role of finance teams is changing to become broader in scope, handling operational, climate and non-financial data, delivering insights based upon robust data analytics collected by efficient and effective processes: data that has integrity and represents a coherent narrative.

Certainty about the purpose of the finance and accountancy professional in an organisation and how this aligns to the organisational goal is paramount in ensuring that the finance teams can contribute effectively to the transformation of their organisations. A failure to have this clarity may well result in the marginalisation of the team role in the strategy of the organisation that they serve.

Being able to play an effective role in transformation requires the finance and accountancy professional to appreciate the evolution of technology and data, communicating this within the organisation while adapting the mindset to evolving flexible organisational models.

Finance professionals, therefore, need to take advantage of the continuing education offerings and research available to them. They need to explore how they can play a substantive role in the future direction and development of their organisations. Appreciating not only the technology enhancements that are on-going but also the cultural shifts in the ways of working that the pandemic has brought into focus are also essential.

Utilising the networks offered by their professional bodies and other forums is an important way of appreciating the impact of transformation on the fabric of organisations and drawing parallels through sharing experiences. There is no doubt that the speed of change will continue to accelerate. Being prepared for that acceleration will enable finance and accountancy professionals to play their full role in the transformation process and help secure long-term organisational success.



Helen Brand
chief executive, ACCA



Ainslie van Onselen
Chief Executive,
Chartered Accountants
Australia and New Zealand



Chris Argent
Founder and CEO,
Generation CFO

Contents

Executive summary	7
Key thoughts from the roundtable participants	9
1. The opportunity for transformational journeys	13
1.1 Transformation realities	13
1.2 What do we mean by 'digitalisation'?	15
1.3 Evolution of organisations and of finance	16
1.4 Purpose, people and profit	19
1.5 As a service organisation	20
2. What do we mean by 'transformation', anyway?	23
2.1 How might we define transformation?	23
2.2 A transformation roadmap	27
2.3 The size of the prize	29
2.4 An agile world	29
2.5 Being customer centric	30
2.6 Projects, programmes and portfolios	30
2.7 Not all transformations are successful	31
3. Business cases or value cases?	33
3.1 Why a business case?	33
3.2 The traditional perspective	33
3.3 Changing rationales for transformation	34
3.4 Business cases in an agile world	34
3.5 Programme perspective	35
3.6 Value over return on investment	36
3.7 Realising the benefits?	39
3.8 Tracking the benefits	39
3.9 Project assurance – the missing lens?	41
4. Undertaking a transformation	43
4.1 Organisational objective	43
4.2 Project/programme and change management	44
4.3 Operating model	44
4.4 People, skills and organisational structure	46
4.5 Process	47
4.6 Technology	48
4.7 Data	49
4.8 Governance and risk	50
4.9 Transformation culture	50



Contents

5. Is transformation transforming itself?	52
5.1 Influencing factors	52
5.2 Goodbye to industrial-age thinking	53
5.3 Changing views of performance	53
5.4 Role of Agile, Design Thinking and DevOps	54
5.5 The imperative for finance	54
<hr/>	
6. What can I do?	55
<hr/>	
Conclusion	58
<hr/>	
Appendix – Transformation Approaches	60
Agile software development	60
Cloud Native	61
Design thinking	62
DevOps	63
Low-Code / No-Code	63
Microservices	64
Scrum	64
System development life cycle (Waterfall)	66
<hr/>	
Acknowledgements	68
<hr/>	
References	70
<hr/>	

Executive summary

In responding to the pandemic, many organisations forcibly made changes to processes and applications. This acceleration of the existing transformation agenda brings into even sharper focus the imperative of having the right data and technology facilitating efficient processes overseen by appropriate personnel with skills and knowledge.

In this joint report ACCA, Chartered Accountants ANZ, and Generation CFO consider the impact of trends emerging from the pandemic and how the finance teams are adapting and responding to the changing journeys of their customers, own organisations, and the individuals within teams.

Our study finds that companies of all sizes and all finance professionals are at a crossroads. Namely, harness data and related technologies or face seeing existing core businesses move to a 'death by a thousand cuts' from disruptive new players and start-ups. Organisations talk about transformation as a new term. Yet, as the exploration in Chapter 1 discusses, the opportunity for transformational journeys shows, organisations have been undertaking transformative activities for many years. The nature of transformation itself is changing, with an increasing focus on shorter-term initiatives and 'agile projects'. The thinking of organisations requires changing from the traditional hierarchical perspective to customer-focused approaches supporting rapid responses (as seen in Chapter 5 is transformation transforming itself). A place still exists for larger initiatives while maintaining a balance between such undertakings and responsiveness to the uncertain environment is key to future success. Chapter 2, what do we mean by 'transformation', considers the factors leading to transformation and the differing perspectives.

Initiating a transformation requires a business case. The traditional view of the business case is increasingly under fire. With the increasing relevance of the environmental, social and corporate governance (ESG) agenda in driving organisational change, decision-making on solely financial returns is no longer sufficient. A more value-based approach is sought (as discussed in Chapter 3 which questions the approach to business cases or value cases).

At the core of the shift is the target operating model: how the organisation operates. Yet this model can only be sustained by an innovative and collaborative culture.

For many, a transformational culture is essential in delivering transformation (as considered in Chapter 4).

Covid-19 creates a sense of urgency for ensuring the safety of employees and customers. Our commonplace vocabulary now includes digital first, quick response (QR) codes, remote working from home, Zoom, and MS Teams. But are businesses transforming, or are they just adopting new communication channels?

Finance professionals have a clear role to play in transformation. The nature of that role is dependent upon the extent to which they have a vision of how finance itself can contribute to the organisation of the future. Finance teams need to be more forward thinking. Not just reliant on the story of the past, but to envision and communicate the narrative of the potential of the future. This imperative is summarised in Chapter 1 and a series of actions are recommended in Chapter 6 to ensure that finance is an integral part of the transformation process.

As discussed in the body of this report, the global roundtable sessions and comments from participants finds finance professionals excited by the transformative power of data and digital technology to bring change to international businesses. But many professionals are left wanting to understand how best to deal with non-financial benefits while remaining mindful of the speed to put in place measures coping with the pandemic. While exciting, this stage of employing new technologies, especially for communications, means embracing digitalisation resulting in a change of business processes.

Finance teams need to be at the heart of transformation as key players in the organisational performance and control agendas. To allow these opportunities to pass them by is to negate the role that finance needs to play in the organisation. To ignore them will reduce the role that finance plays in the organisation. Finance teams need to understand the total cost and value of operation across organisations, and this requires investment in people,

processes, technology and data. Finance teams need to become more strategic and more future centric in its conversations. This is closely aligned to the purpose of the organisation and how organisations are attractive to generations entering the workplace.

Many roundtable participants comment that only when finance has a clear view of its purpose can it contribute effectively to the organisation’s transformation. For this reason, this is the first of our twelve key observations (Figure ES1) that we make in this report. Each observation

is referenced to the section in the report in which the topic is discussed and a key action that an accountancy and finance professional may wish to take. The observations are grouped into those that are strategic, those that require the development of knowledge, and those that are operational.

For a discussion on the key observations and actions in the report listen to the podcast.

FIGURE ES1: Key observations and personal actions from the report for finance professionals to consider

OBSERVATION	ACTION	SECTION	
Finance has to transform its role before it can play an effective role in organisational transformation	→ Transform finance to become a predictive finance team being certain of role in organisation	STRATEGIC	1.3
Focus on purpose and customer value when driving transformation	→ Drive stakeholder management, customer experiences and sustainability		1.4
Transformation is a continuous process	→ Commit to experimentation and demonstrate necessary mindset		2.1
Strong leadership and culture are vital in a successful transformation	→ Develop organisational culture that supports constant evolution		4.9
Programmes are becoming more important than projects	→ Execute strategic alignment and execution of programmes		2.6
Business cases are now value driven not just cost driven, incorporating ESG goals	→ Apply the concept of value across transformation	KNOWLEDGE	3.6
Transformation is a business-led not a technology-led activity	→ Develop new agile business models		2.1
Pace of technology change will not slow nor will organisational change	→ Learn lessons and be adaptable		2.1
Skills in technology and data are essential as are innovation and creativity	→ Undertake relevant skill building programmes		4.1
Effective use of data by people and processes is the key to organisational transformation	→ Appreciate the fundamentals of data strategy and how they relate to transformation		2.1
Not all projects are agile; projects form portfolios	→ Ensure programme level governance and risk management of transformation	OPERATIONAL	2.4
Cloud is an enabler to transform, not an end goal	→ Embrace new business models and technologies but remain in control		4.6



A view of key trends in transformation from NTT DATA



What is transformation?

There is no one, widely understood, definition of transformation. That is a danger as people have different perspectives and interpret their own meanings in the context of any conversation. Transformation, in my view, is a reimagining of the way in which an organisation operates, what services it provides and how it provides them. Transformation looks at where the organisation wishes to head against the background of the overall market, or markets, in which it operates. In undertaking this it needs to identify the potential areas of opportunity for the organisation, rather than be in a semi-reactive position. Transformation is about reimagining the organisation and the opportunities that it has in the market. Organisations need to undertake a deep-rooted rethinking of their position in the market and how they can influence the marketplace and how the organisation can evolve from where they are now to a target model.

A misconception is that transformation is the same as digitisation. Digitisation can be a catalyst for transformation. It can be an important aspect, but it is only one component. If an organisation digitises a process on its own it can simply be changing an inefficient process. There may be a short-term gain from this, but it does not, of itself, represent transformation as there is no strategic advantage gained from the activity.

Digitisation may well be a core enabler, but it needs to be accompanied by investment in the culture of the organisation and the ways of working. The delivery of effective transformation is a combination of technical change; process change and cultural change. Organisations need to understand how they communicate and present their initiatives to the market.

Transformation does not necessarily mean the complete reengineering of the business model, because that is a significant task. It is a series of strategic, incremental, changes that improve the business model.

Transformation as a business risk

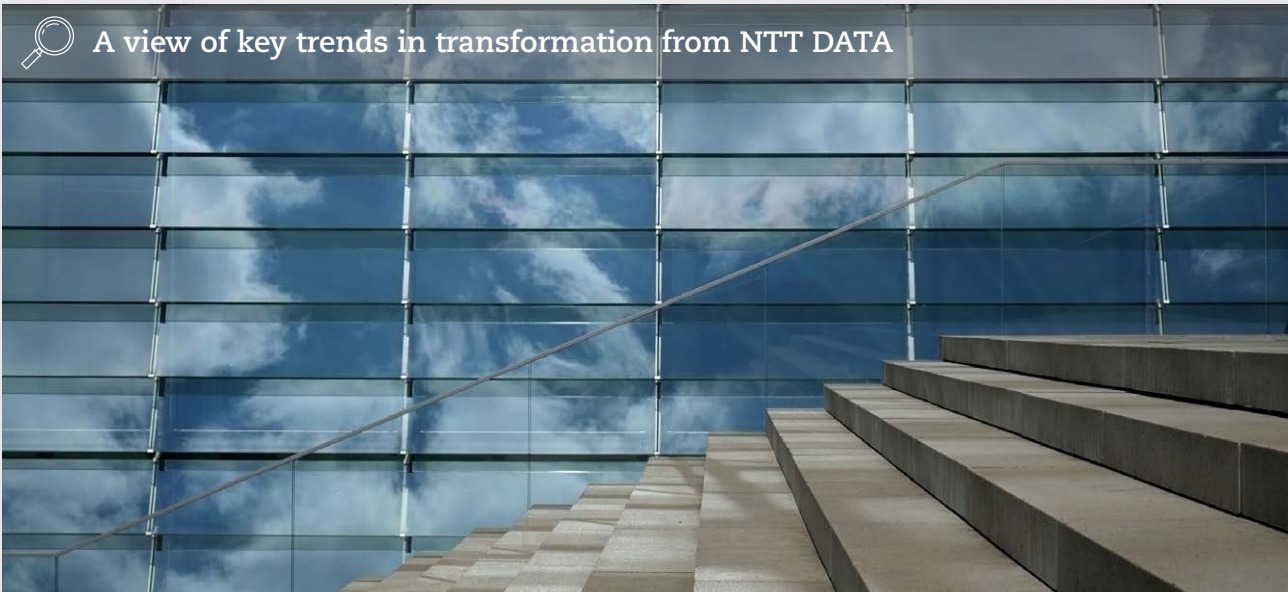
Organisations balance risk and potential reward all the time. In terms of transformation, there is generally an awareness amongst organisational leaders that the risk of doing nothing is dangerous. There are several business risks associated with transformation, two of which are highlighted.

Firstly, the past few years have seen significant disruptions to traditionally conservative industries. The organisations may well have been anticipating such interventions, but many failed to see how their markets would be opened up. What these organisations have learned is that there is a value in being agile and responsive but may well not have adapted their business models to accommodate this. There is a need for them to appreciate the nature of the opportunity that transformation presents to them and hence to address the business risk.

Secondly, when organisations undertake transformation exercises, they expect to be able to determine the exact costs and benefits. This is a challenge as by the nature of the activity the parameters will change during the life of the project. This is a risk that organisations need to be willing to accommodate. This creates a driver to put procedures in place to control the costs, which is often counterproductive in enabling the organisation to respond to the strategic challenges that it faces.

Organisations should not see transformation as a risk. Transformation is an activity that is focused on removing strategic risks.

To address this dichotomy, organisations should set some ground rules, a direction, and then allow an amount of freedom to fail on that journey. As organisations are increasingly adopting agile practices there needs to be a degree of flexibility. Not all transformation activities will be successful, but that is not a reason to do nothing. If the agile initiative fails it will be short and quick and



relative to the endpoint not hugely costly it will have learned from it. If it is successful there is still much to be learned from the activities undertaken. The organisation will then have nudged the course by a few degrees as a result.

The means by which we undertake transformations is evolving, and in part this addresses some of these perceived significant risks. As projects utilise more Cloud-based technologies so the risk profile changes.

The rise of Cloud Native

Organisations are increasingly investing in Cloud Native¹ solutions. This is where technology components and elements are created as small units, termed microservices. To illustrate this with an example let us consider the stock checking module on a retail website. If the retailer has run a campaign on TV across a particular product line, a new line of boots, and the response is that a million people query the site to see whether the new boots are available the website can become overloaded. Customer satisfaction will be impacted, and the brand reputation may well suffer. Using a microservice for this part of the website that service can be replicated instantly, automatically, with no human intervention, and scaled across many servers support the incoming demand. As soon as the demand goes away, the module is deleted. The organisation is only being charged for processing resource it is are using.

In some senses this approach de-risks projects and delivery. It means that that the organisation can test and learn. If the organisation's test was whether the TV campaign is going to be successful and in the traditional model the organisation had invested in physical equipment and in a non-scalable deployment of software, then when it all fell over, the test and learn would be incredibly expensive. The brand would be damaged. By utilising a Cloud Native solution, the test outcome

could have been a more positive one. The organisation's development team was able to support that demand because they deployed small self-scaling units using the Cloud technology.

The learning point in this instance might not be about the software development process, it might be about the TV campaign. The use of Cloud Native solutions gives flexibility and certainty that allows those principles to be better supported. It is not in itself a solution to solve all of the organisation's problems, rather it gives an organisation flexibility, scalability and reliability.

Changing development lifecycle

It is important to recognise that the software development lifecycle has changed. Organisations are utilising increasingly more agile approaches to the development of solutions. This means that there needs to be more rigor in software development.

To release small rapid changes constantly the organisation needs to be certain of the quality of what is going being released. In the traditional approach (the waterfall or systems development lifecycle) as project was completed there was time to push it through the change management process with full scale user testing. In a more agile, for example DevOps, way of working, an organisation may be releasing changes to its software every day. As an example, Google release 50,000 times a day. giffgaff, the telco in the UK, releases 2,000 times a day. A user may not recognise that they have updated their app. As a user you download the updated app, and you may not have made a conscious decision to do so since it has been done automatically. The provider updates microbial elements of it in many releases. In order not to destabilise the overall product or service it is organisations need to have rigorous development processes.



¹ Explanations of Cloud Native, DevOps and Microservices are given in the Appendix.



A view of key trends in transformation from NTT DATA

Performance tracking

As an organisation that has adopted this agile way of responding to customer needs it is important to know whether the investment it is making in these continual changes is worth it. To achieve this the organisation needs to have strong metrics and performance tracking. This is where the loop is closed.

To use another example of a service-related organisation whose primary mode of interaction with its customers is via an app. The organisation can assess the usage change in someone using their self-care app and work out whether more calls are going to the call centre or less, or whether people are happier because they have got the app with its new features. This can be correlated back to the investment that the organisation made. That might have been a small-scale investment such as the cost of one team for one week. To monitor the performance effectively, the feedback loop needs to be providing instant feedback of impact on real-time financial impact.

Business cases and financial governance

The business case has changed in respect of this agile environment. As a project or programme lead, the concern is not that the team is costing £20,000 a week to run because there is a strong pipeline of releases that can be justified by the tracking of the performance. Customers are happier with the app, the call centre calls are going down the in-product sales are going up.

The development lead needs to be able to robustly have that conversation, which is a product and financial performance conversation with the finance function to ensure that it correlates the spend that is being made on technology in the context of business performance.

For a development lead it is important to have that really close feedback.

The feedback measures need to be thought through carefully. For example, are there indicators that an organisation can build? Is there intelligence that can be gathered from behaviours today, given that as a society we are communicating so extensively through digital touchpoints, whether these are websites, apps, an official WhatsApp channel, or an Instagram account for the organisation? There are lots of digital touch points and it is not just app and web page based. Can organisations identify behaviours that can be turned into metrics about what is going to happen in the future? This is a reality of today that is of relevance to finance as it enables organisations to be able to predict revenue, profitability, sales with a degree of accuracy that has not been possible previously. Obviously, past performance is helpful. But it's only to a point.

Conclusion

Transformation is a very broad topic. The changes in the way that organisations need to respond to the demands of their customers mean that we need to reappraise how we assess the effectiveness of transformation and thus requires a partnership between those charged with the development and delivery of services and the finance function to understand the realities of the investment case and the measurement of performance.



Jason Ford,
Vice President, NTT DATA

1. The opportunity for transformational journeys

'CFOS NEED TO UNDERSTAND CORE TECHNOLOGY. THEY NEED TO BETTER UNDERSTAND HOW TECHNOLOGY IS USED AND ASSISTS IN PROVIDING GREATER VALUE TO THE ORGANISATION'.

INTERVIEWEE FROM GLOBAL TECHNOLOGY COMPANY

1.1 Transformation realities

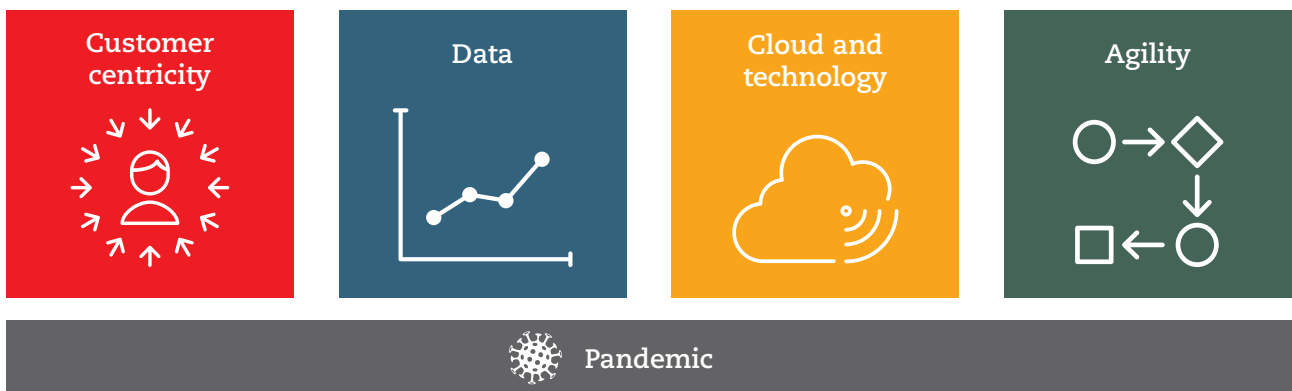
Nothing in life stands still. The pandemic makes this statement a reality for organisations in a way not previously seen. At the same time, the need for rapid reaction to changing circumstances gives rise to many tactical initiatives² in organisations.

Figure 1.1 suggests key drivers of transformation that are being witnessed drawing from the insight generated from our roundtables. In many senses, these drivers accelerate trends already in place before the pandemic and will likely remain relevant after the pandemic. The key change is the need to react in near real-time.

Organisations face significant uncertainty while customer behaviours are changing. The impact of uncertainty and customers has been far from homogeneous across

industries or locations. What matters is understanding the behaviours of the customers. What do we, as customers, expect? What products will be required, and what are the delivery channel preferences? The attempt to create some form of certainty from uncertainty is a challenge. Addressing this uncertainty requires a deeper understanding of data. Those organisations that have embarked upon their transformation manage the pandemic better than others paralysed in decision-making (ACCA / PwC 2021). In turn, the ability to develop analyses built upon sound data requires a Cloud-enabled technology architecture. But transformation is not just about data and digital technology and, as will be discussed in this report, should not be driven by these factors alone. At the core is an agile culture, the combination of people and processes creating agility to respond to the uncertainty of events.

FIGURE 1.1: Key drivers of transformation



² In this report the term 'initiative' is used to refer to something that may be a project, programme or portfolio, depending upon the circumstances of the activity and the organisation, except where direct reference is made specifically to the attributes of one of these activities. The respective definitions of projects, programmes and portfolios are covered in Chapter 2, section 2.6.

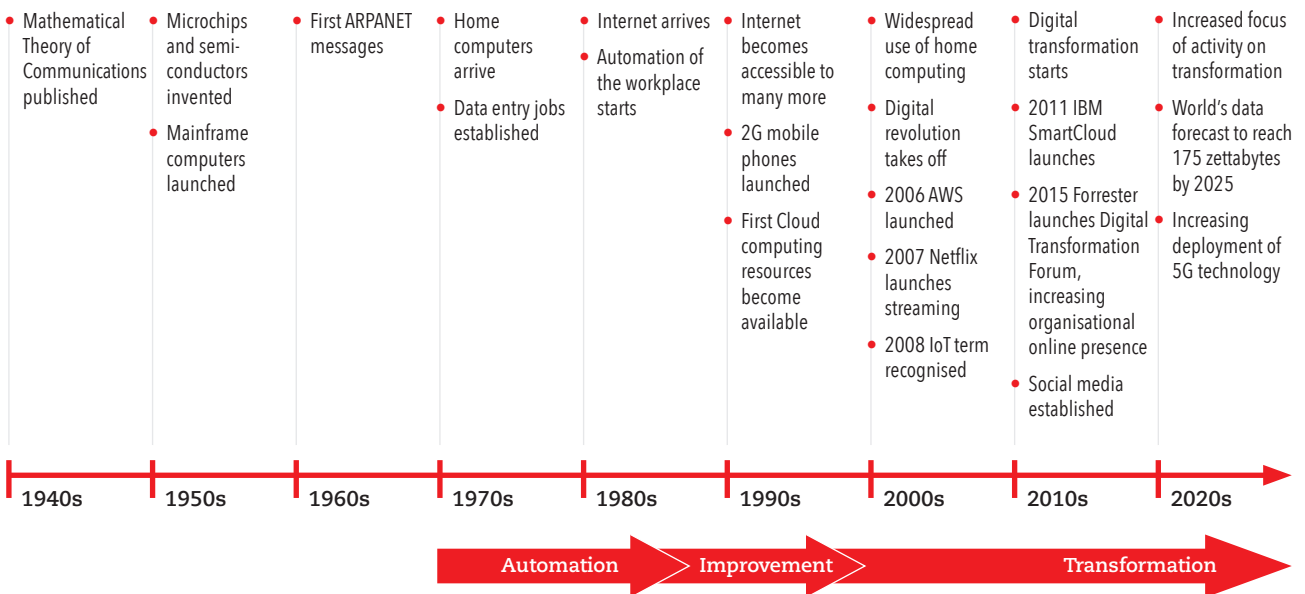
The idea of organisational transformation itself is not new. The roots can be traced back to the 1940s (Figure 1.2) although, from conception, organisations always sought improvements.

Since the late 1990s (Farris, 2020) organisations started talking about ‘transformation’. Before this timeframe, however, terms such as ‘improvement’ or ‘continuous improvement’ were common. Indeed, Womack and Jones (1996) coined the term ‘lean’ to discuss the approach adopted by Motorola and Toyota. Motorola registered ‘Six Sigma’ as a service mark in 1991 and as a trademark in 1993.

What makes this sense of transformation more relevant to organisations is the accessibility of data and digital technology. The term *digital transformation* is frequently

used. As will be discussed, this in itself may be a misnomer as most transformation involves a technology and data component, so it may well be ‘digital’ in nature. Indeed, Melissa Swift, who leads Korn Ferry’s Digital Advisory for North America and Global Accounts, notes that the word ‘digital’ is problematic because it means various things to different people. ‘Say “digital” to one person, and they think of going paperless; another might think of data analytics and artificial intelligence; another might picture agile³ teams, and yet another might think of open-plan offices. “Digital” is a hot mess of a word. And this causes tremendous grief in organisations. Imagine ordering a hamburger over and over and getting everything from a hot dog to a chicken sandwich to a Caesar salad...’ she says (Swift 2019).

FIGURE 1.2: A timeline of transformation



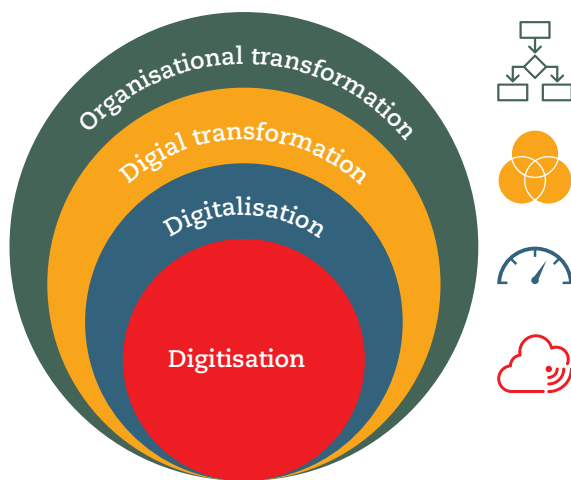
WHAT MAKES THIS SENSE OF TRANSFORMATION MORE RELEVANT TO ORGANISATIONS IS THE ACCESSIBILITY OF DATA AND DIGITAL TECHNOLOGY.

3 For clarity in this report ‘agile’ is deemed to mean the overall approach or philosophy whilst ‘Agile’ refers to the specific method as summarised in the Appendix.

1.2 What do we mean by ‘digitalisation’?

Digitisation, digitalisation, digital transformation and organisational transformation

These four terms are often used together, and sometimes interchangeably. Yet there is a significant difference between them.



DIGITISATION is the conversion of something that is non-digital, such as paper-based records, to digital formats, for example, scanning a document to create a PDF or entering notes into a document or collaboration tool.

DIGITALISATION is the process of taking the digital information that has been created and improving the business process and then using the information in an electronic format. For example, a ticket for the theatre or museum can be made available in a digital format but the process allows the price of ticketing to change automatically in line with demand, customer bidding or time of day. Equally, an invoice can be received electronically and entered into an accounting system using automation.

DIGITAL TRANSFORMATION is the transformation of the business processes to use the digital technologies fully. The aim is to improve efficiency and seek other opportunities, such as monetising the digital media or using entirely new processes. Transformation represents the integration of people, process and technology in using the data.

ORGANISATIONAL TRANSFORMATION reflects the change across the organisation, which is not only driven by technology, but in which the digital imperative is a component.

A clear distinction exists between the similar-sounding terms ‘digitalisation’ and ‘digitisation’. ‘Digitalisation’ ‘is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business’ (Gartner 2021a). This definition contrasts with digitisation ‘...the process of changing from analogue to digital form, also known as digital enablement. Stated another way digitisation takes an analogue process and changes it to a digital form without any different-in-kind changes to the process itself’ (Gartner 2021b). Many of the accountancy and finance professionals participating in this research understand the role of digitalisation as an important enabler of transformation. Digitalisation has significant implications and benefits for all businesses. But nowhere is the impact of digitalisation greater than the EU prediction ‘Digital hyperconnectivity and technological transformations: Technological acceleration and digitalisation will increasingly transform whole areas of society, the economy, labour markets, industry and the public sector, and could herald a new chapter of hyperconnectivity, and globalisation in services (from finance to tourism), the data economy, circular economy, primary production and advanced manufacturing’ (European Commission, 2021).

One roundtable participant commented that in their organisation they had been recognising different stages of digitalisation or organisational transformation, over three years. The finance department has experimented with both digitisation and digitalisation to determine the most effective approaches. This helped the finance team to understand at first hand that digitisation means just converting data and documents into a digital format using office scanners. On the other hand, digitalisation helps generate data from such documents while altering the business processes to use analytics with the documents enabling tracking and making predictions. One success factor is a top-down push from the board and key executives to promote understanding of digitalisation.

Nonetheless, confusion between digitalisation and digital transformation exists among those trying to digitise processes completely. The application of digitalisation is not sufficient to be thought of as digital transformation. While digital transformation embraces digitalisation and the adoption of digital technology, business services transform the business replacing older non-digital or manual processes with entirely new digital processes, serving new types of customers in new ways. Inevitably, the past processes supporting paper and spreadsheets no longer form part of a digital finance function. However, a risk emerges from digitalisation, given the opportunity for cyberattacks. A cautious systematic approach to handling the digitalisation of processes is appropriate.

By 2030, the clear European Commission (EC) expectation for digitalisation flagged by roundtable participants working with the EC includes online services for citizens, e-voting and public services online for persons with disabilities

through to small and medium-sized enterprises (SMEs) (European Commission 2021a). Digitalisation plays a key role in the development of ‘smart villages’, representing communities in rural areas (European Commission 2021a).

Digitalisation is a key enabler of a sustainable circular economy (Antikainen et al. 2018) through maintaining information on the availability, location and condition of products or assets. Hence, the circular economy reinforces a sharing model of resources versus ownership, promulgating an ‘as-a-service’ model (see section 1.5) with business models offering rental, lease or sharing instead of selling (Antikainen et al. 2018).

An interviewee from a leading technology company commented digitalisation is more revolutionary than digitisation and adds value to the enterprise. For example, in an accountancy and finance context contrasting a PDF of a paper invoice comparing with the whole process of e-invoicing. This includes the use of technologies such as smart devices to capture data and allow users to be more proactive and forward looking, given the insights available. It can represent revolutionary change for the business. Digitalisation is not just about using emerging technologies but creating substantial business change.

1.3 Evolution of organisations and finance

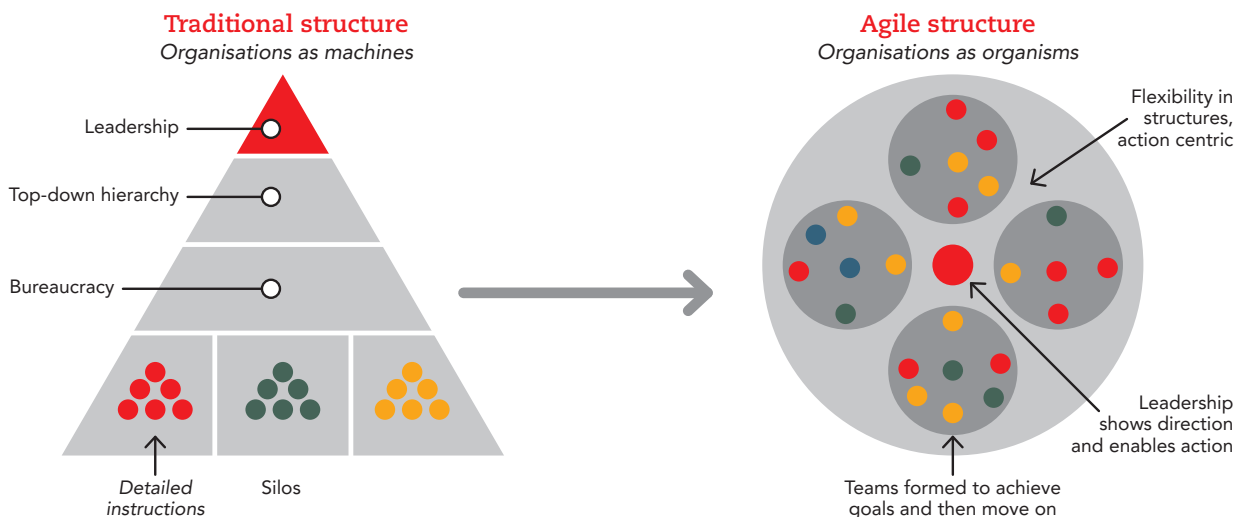
Even before the pandemic, organisations with work-from-home policies effectively operated a hub-and-spoke model (Robinson 2021). But the pandemic forces remote working and use of collaboration software for companies of all sizes and geographic coverage. Unable to make use of headquarter offices for employee working forces a majority of companies to rethink their operating model.

As one example, the hub-and-spoke model enables a centralised ‘hub’ for people to come together and engage

in activities while providing opportunities to work from ‘spokes’. A spoke is no longer a conventional office but any place where a person can access the internet and be productive. The spoke supports 1 to 50 people as a general rule and includes a home office, neighbourhood coffee shop or a smaller office. The hub-and-spoke model allows companies greater flexibility over the traditional model, with access to a wider talent pool, given the ability to access candidates not previously considered owing to geography. Over time, platforms support the implementation of the hub and spoke systems. This model allows a visitor from a hub to book into a spoke conference room. Most importantly, the technologies of virtual reality underpinning the metaverse (CBS 2021) are developing to reinforce the ability to work and live anywhere while maintaining human interaction experiences in virtual reality meetings.

That is but one example of the structural and social changes that organisations face. The changes in ways of working facilitate flatter, and more project-centric, organisational structures. Ones in which organisations are no longer machines but living organisms that thrive on flexibility and creativity (Figure 1.3). In any debate about the future of work, we need to distinguish the future of work itself from the work environment. This means recognising the how from the where. Many discussions merge the two aspects, yet they have different implications from an organisational design perspective, as discussed in section 4.4 (people, skills and organisational structure). While many in finance may be comfortable with the work environment (that is location), this applies only to a relatively small proportion of organisations. But the changing organisational structure as well as consideration of organisations as living structures requires different practices in organisational development supporting the behaviours of people (as discussed in The Organisational Development Models: Servant Leadership Model and Intrinsic Motivation panel below).

FIGURE 1.3: From machine to organism – changing organisational structures



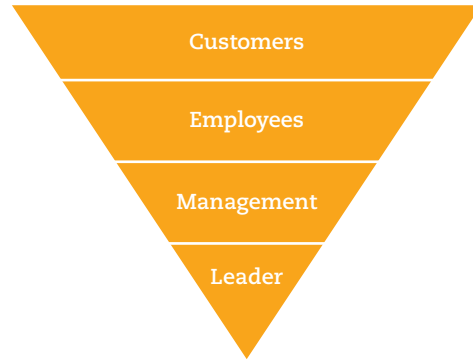
Organisational Development Models: The Servant Leadership Model and Intrinsic Motivation

As early as 570 BCE – 490 BCE, the ancient Chinese philosopher Lao Tzu wrote of an inspirational leadership style engaging and encouraging subordinates to achieve higher performance.

Servant-Leaders (SL) behaviours and practices turn the traditional ‘power leadership’ model upside down. Rather than seeing leadership as a path to promotion and wealth, SL sees leadership as an opportunity to serve others. In traditional leadership power and control drives performance while SL share power and control. For SL success comes from the growth, development and satisfaction of employees who can in turn go onto serve others. Hence, the SL practice builds on collaboration, empathy, ethical use of power and trust to produce better results.



Traditional model



Servant Leader model

In the 1970s SL gained inspiration from Robert Greenleaf a former executive attributed with the term. Greenleaf published Servant Leadership in 1977 heralding SL as practice and a management model of leadership. The perspective of Greenleaf is an alternative to the leadership models of promoting managers to the top. In his mind organisations can accomplish seemingly great results if the leaders see the organisations as living entities care for and serve the employees (Greenleaf 1977 p.27). He sees the main purpose of leaders to inspire focusing on the growth and wellbeing of people and their communities.

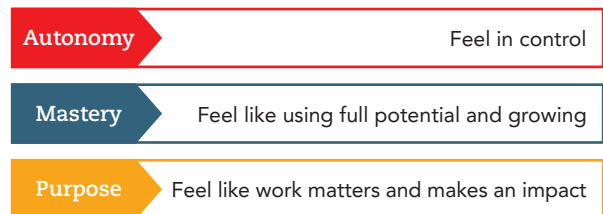
The SL model contrasts with the traditional carrot and stick model of motivating employees. But instead takes care to understand what really helps people grow. The qualities Greenleaf (1977 p.27) seeks indicating growth and service are:

1. Do those served grow as persons?
2. Do they, while being served become healthier wiser, freer, more autonomous, more likely themselves to become servants?
3. What is the effect on the least privileged in society?
4. Will they benefit or at least not be further deprived?

While supportive of the key tenets of SL, the work of Daniel Pink (2010) helps unpack a vision for workplace motivation including remote working from home. In Pink’s view, the carrot and stick approach to motivation is pretty much dead and workplaces need to consider ‘intrinsic’ motivation. That is people are driven or self-motivated because they enjoy the work. Three key factors drive intrinsic motivation – Autonomy, Mastery and Purpose (Pink 2010).

- **Autonomy** trusts people and encourages ownership of own work and skill development. Through autonomy people are motivated to think creatively. Many software organisations allow employees time to work on own development projects which in turn delivers benefits back to the organisation.

- **Mastery** is an ongoing desire to improve with people seeing their potential without limits. Providing the tools to continue to improve their skills helps reinforce the intrinsic motivation.
- **Purpose** means people are encouraged to achieve a ‘greater’ purpose using their skills. This might be involvement in a passionate not for profit.



Pink provides strategies to help workplace teams become more intrinsically motivated. Some similarities and overlap exist with the work of SL (Greenleaf 1977).

- Give up control to provide more autonomy. This is achievable through having people set own goals. It goes without saying people are more apt to work in an engaged manner when they have set own goals. 10 per cent time (this is 20 per cent time in the case of Google) allows people the freedom to spend time on own projects.
- Another strategy is Goldilocks Tasks. Otherwise referred to as stretch goals encourages collaborative work towards a clear end goal while assisting the further development of mastery.
- A fourth strategy is the promotion of collaboration and cross or up skilling. Encouragement can be provided to have team members move between different functions as well as share skills and collaborate.

Developing autonomy, mastery and purpose are major cultural shifts for an organisation so significant thought needs to go behind introducing the Pink model of working.

In turn, the changing organisational structures impact the future shape and form of the finance function. The ACCA / PwC report *Finance Insights – Reimagined* (ACCA / PwC 2020) discusses the importance of finance business partnering roles as providers of insights. If the finance function is to add value to the organisation, then it needs to focus on three core areas of business insight, compliance and control and transactional efficiency, as shown in Figure 1.4 (ACCA / PwC 2021).

Transactional efficiency ensures the efficient and accurate capture of data, often by using automation, to provide information for the core areas of compliance and control and business insight activities. Increasingly, these data feeds are not just financial in nature. As requirements of reporting and decision making extend beyond the financial capital into non-financial areas, the role of finance is broadening. A finance function that focuses on only the lower two parts of the triangle cannot play a full role in the project-centric agile structures of Figure 1.3.⁴

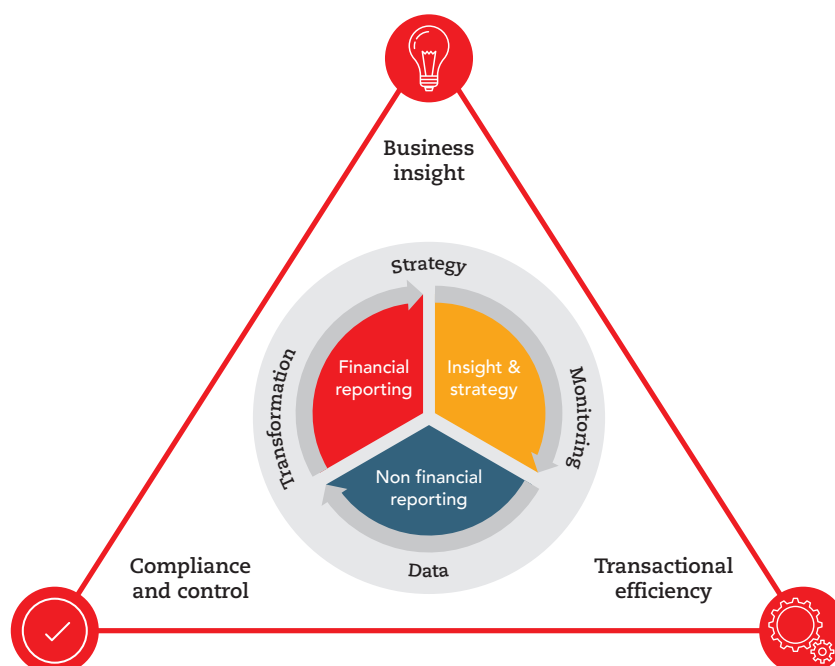
An interviewee aptly expressed the future shape of finance: ‘What is the challenge today – and the pandemic was a perfect example from my point of view – we had a problem that we needed to go and fix. We got an agile team together, a crisis team together, and then we managed it for six months to a year. That is a proxy to what the future could be for finance trying to help the business co-create value and make a change’.

A UK roundtable participant explicitly argued that we have to embrace new ways of doing things enabled by technology. ‘For finance teams to adopt the technology, you have to go through a digital transformation so that you can add value to your customers even in difficult circumstances as abrupt and unexpected as the pandemic. The finance transformation provides credibility to participate in a wider transformation of the business’.

Finance teams that understand how they can use data to derive insight can also play an effective role in transformation. Only by participating can the future role of the finance function be assured. In their joint report ACCA and PwC considers the areas of technology investment for finance to achieve this in the light of the pandemic with a focus on Cloud-based technologies to achieve the model in Figure 1.4 (ACCA / PwC 2021). This is a core part of the transformation process.

FINANCE HAS TO TRANSFORM ITS ROLE BEFORE IT CAN PLAY AN EFFECTIVE PART IN ORGANISATIONAL TRANSFORMATION.

FIGURE 1.4: Three roles of the finance function



⁴ The roles of finance professionals in sustainable organisations are explored in ACCA 2021a.

1.4 Purpose, people and profit

Organisations are increasingly changing the way in which they consider performance. The pandemic focuses attention on more than just financial performance.⁵ The mantra of ‘purpose, people and profit’ is causing business leaders and stakeholders to consider a broader picture. As finance teams know, this manifests itself, in part, in increasing non-financial reporting requirements. These requirements cannot be addressed solely by ad hoc systems and processes. They need to form a core part of the business model. This translates into the concept of value.

As Carruthers and Jackson comment in their book *Data Driven Business Transformation*, ‘everything starts with a purpose, otherwise why would you bother doing it?’ (Carruthers and Jackson 2019).

What drives a good, if delicate, balance between short- and long-term thinking? Suppose you are thinking about value rather than just about stakeholders. This allows more consideration in decision-making of long-term value as opposed to using only short-term financial metrics.

The environmental, social and corporate governance (ESG) framework for evaluating the organisational collective consciousness of environmental and social factors is becoming ever more important in impact on purpose. According to a roundtable participant, a lot of companies are employing the digital transformation initiative in alignment with their ESG goals. The impact of this agenda on individual organisations will vary but the inclusion of these objectives in transformation initiatives is increasingly essential. This will be considered further in Chapter 3 business cases or value cases.

In her book *The 360° Corporation: From Stakeholder Trade-offs to Transformation*, Sarah Kaplan (2019) argues that organisations are progressing through a four-stage process in developing their response to this agenda (Table 1.1). Kaplan argues that for organisations to transform themselves to accommodate the ESG agenda, it is necessary to think more broadly than the traditional financial perspective and to recognise the levels of accommodation necessary across the various stakeholder groups. As Kaplan comments, ‘every business model has trade-offs embedded in it. Few companies recognise that each business choice involves a choice to favour some stakeholder needs and values over others. These trade-offs are often implicit. The starting point is that you need to make them explicit: learn to uncover and understand your own trade-offs.’

Finance professionals are perfectly placed, with the skills to measure and report across the broader agenda. Nonetheless, that does not mean that financial aspects are all that matter. Indeed, a UK roundtable participant remarked: ‘the ESG agenda and sustainability is going to drive integrated reporting. Whether you’re assessing customer satisfaction, employee satisfaction, employee engagement, brand awareness, carbon emissions, despite every reason you can think of not to make it a metric, you can make a metric. Everything can be turned into numbers.’

But the digital transformation may have both a financial and non-financial aspect. Assessing the non-financial benefits is a critical aspect of evaluation and results in a different approach.

TABLE 1.1: Four modes of action for the 360° corporation

MODE 1	Know your trade-offs	Most organisations have not analysed their business model to understand the trade-offs implicit in their choices for doing business. The starting point is to evaluate who is winning and losing in the status quo.
MODE 2	Rethink the trade-offs	It may be possible to construct a business case for a particular intervention that resolves the trade-offs in a win-win manner. This is the essence of shared value. The challenge is that most companies never move beyond Mode 2 getting stuck in developing the business case.
MODE 3	Innovate around trade-offs	Companies can get out of the business case trap through innovation. Rather than accepting the trade-offs, companies can innovate new ways of creating value and work around the trade-offs.
MODE 4	Thrive within trade-offs	In some cases, trade-offs are intractable. But that doesn’t mean that companies shouldn’t try to address them. Organisations may wish to hold the trade-offs in tension – thinking about what experiments in future solutions are possible and how long-term goals can be pursued without compromising short-term returns. Companies can engage in productive and pluralistic dialogue with stakeholders.

⁵ It can be argued that many organisations that were formed in the 19th- century had a broader focus than the profit motive that may be associated with later 20th-century behaviours.

Triple bottom line

One African roundtable participant commented, '[the] one measure that we use, more importantly now, is the concept of the triple bottom line. We need to look at people, profit and planet'.

The drivers of social value, for example, can be measured in many different ways. The International Regulatory Strategy Group in association with KPMG, commented in 2021 that 'social issues are among the most pressing for companies globally with the impact of the pandemic only serving to highlight their importance. However, the "S" of ESG (environmental, social and governance factors) can be more difficult for investors to define and quantify than the "E" and "G" factors. A lack of consistency and comparability in approaches risks impeding the drive towards more sustainable investments' (IRSG 2021).

At the country level, GDP represents the measure of the financial bottom line. In addition, as a roundtable participant pointed out, the New Zealand government releases an annual well-being budget (New Zealand Government 2021), demonstrating a different approach to government decision-making. Here, the focus is on the long-term impact of policies on the lives of citizens rather than short-term output measures. In 2021, the budget includes investments in tackling climate change and child poverty.

A Caribbean roundtable participant commented: 'there is a greater prominence of ESG initiatives, the right environmental, social and governance [approaches]. You see that companies right now are taking the initiative regarding climate change and environment, pursuing projects that, in the long run, may not be all about dollars and cents, but about making sure that the future generation inherit to a cleaner, better, planet'.

It is important to avoid a narrow approach to transformation as organisations need to undertake these initiatives in order to survive and achieve a sustainable business. Initiatives need to measure the intangible benefits demonstrating value to society and value to the organisation, rather than measuring only the tangible, in simple financial terms, which you might call the 'Anglo American view of the world' (as outlined in the Hampden-Turner and Trompenaars' *Nine Visions of Capitalism* 2015).

FOCUS ON PURPOSE AND CUSTOMER VALUE IN DRIVING TRANSFORMATION.



1.5 As a service organisation

The shift to 'as-a-service' goods is also a key part of the professional's mindset for transformation: 'Service-Dominant (S-D) Logic⁶ is a mindset for a unified understanding of the purpose and nature of organisations, markets and society. The foundational proposition of S-D Logic is that organisations, markets, and society are fundamentally concerned with exchange of service – the applications of competences (knowledge and skills) for the benefit of a party' (Vargo and Lusch 2018).

As pointed out by CFOs participating in the virtual roundtables, the availability of Cloud applications no longer requires every organisation to incur significant software development costs as an expense. 'Software as a service' (SaaS) is the norm and underpins intended operating environments (the 'target' environments: see Chapter 4, section 4.3) for organisations. Finance teams find fewer of these project costs eligible for capitalisation, with the majority of project costs being classed as operating expenditure. A discussion on the classification of project outlays as capital expenditure (CAPEX) or operating expenditure (OPEX) is now needed in projects' early stages, ensuring contracts are sustainable and represent a true level of cost. Many of the Cloud applications in use constitute CAPEX converting into OPEX as part of the fundamental shift to transform businesses. The shift requires finance to work closely with the business areas, running multiple scenarios using different technologies and pricing for end-to-end applications with the option of packaging them 'as a service'. Furthermore, the revenue-generating applications require consideration of the financial treatment and investment regarding the timing and profile of revenue.

In the world in 2021, the question should be asked 'when will your own organisation itself transform to become a service organisation providing flexible consumption models as the foundation for new business models?' This move to a new business model is a potentially game-changing opportunity for the CFO and finance team to show leadership for the rest of the organisation. As one African roundtable participant commented, 'having stakeholder engagement from the beginning [is important] to get their buy-in'.

How does finance help with the transition to operating with a new business model? In fact, recurring revenues associating with an "as a service" company takes on new meaning when future revenue is considered "an asset to institutional financiers who buy that "risk" and provide the forward capital at competitive prices' (Woodford 2021).

⁶ **Service-Dominant Logic** is a perspective that introduces a new way for synthesizing and articulating an alternative view of exchange and value creation in markets. It is centred on the idea service – the application of competences for the benefit of another – is the basis of all social and economic exchange. (ISI Global n.d.)

The importance of ‘as a service businesses’ and understanding SaaS metrics is of growing importance beyond software organisations in transforming companies with ‘many industries are aiming for a dramatic shift to digital software and services by 2023.’ (Aboagye et al 2021). Embracing software as a core part of business can unlock significant value ‘but there are few successful cases of non-software companies building software businesses and many notable failures’ (Aboagye et al

2021). More so, a faster operating rhythm accompanies organisations making the change and ‘becoming more software focused requires a holistic transformation of the business and its operating model. For nontechnology companies, that includes elevating product leadership, creating more rapidly adaptive processes for budgeting and planning, establishing an empowered and distinctive culture, and shifting organizational structure’ (Aboagye et al 2021).

‘As a service’ organisations

In October 2019, the IMF reported that ‘trade volume [in the manufacturing sector] growth in the first half of 2019 is at 1 percent, the weakest level since 2012’ (IMF 2019).

This downturn in manufacturing is challenging organisations in this sector to seek additional sources of revenue. The trend is towards ‘as a service’ (or flexible consumption) models that allow customers to purchase products as a service and schedule payments in a similar manner. The consumption model may also include maintenance (which may of itself be preventative). Much of this is associated with the transformation of the organisation’s business models.

Shankar and Tripathy identify three directions for organisations that are looking to develop in this manner (Shankar and Tripathy 2020):

- incremental innovation – where organisations make small changes to products and services
- niche innovation – where organisations focus on niche opportunities to create differentiated offerings to address customer needs
- disruptive innovation – where organisations create a new offering that can disrupt an existing market and enable them, potentially, to replace existing players.

This focus on service offerings rather than manufactured products requires a transformation in organisational cultures as well as their business models. These models are often supported by adopting applications that facilitate a greater analysis of data.

There are challenges in this type of transformation. Firstly, that the as-a-service model focuses on the customer as opposed to the product. This requires a shift in mindset and operational model. Secondly, the product itself needs to be amenable to this business model.

Real Life SaaS Company Data and Metrics – Xero

Understanding key SaaS metrics is highly useful for many businesses as they transition away from expecting large upfront revenues from customers towards smaller regular revenues from subscription-based businesses in a variety of industries, to an XaaS model where X is anything offered.

One of the longest standing SaaS companies is Xero, which produces the popular Xero accounting software.

The 2021 Xero Annual report emphasises key SaaS metrics (Xero 2021: 50–51) including use of non-financial information to measure and benchmark performance.

The following definitions are adapted from the Xero 2021 annual report.

- ‘Average revenue per user’ (ARPU) is calculated as average monthly rental rate (AMRR) as at 31 March, divided by subscribers at that time (and divided by 12 to get a monthly view).
- ‘Churn’ is the value of monthly recurring revenue (MRR) from subscribers who leave Xero in a month as a percentage of the total MRR at the start of that month. The percentage provided is the average of the monthly churn for the previous 12 months.
- ‘Lifetime value’ (LTV) is the gross margin expected from a subscriber over the lifetime of that subscriber. This is calculated by taking the average subscriber lifetime (one divided by churn), multiplied by ARPU, multiplied by the gross margin percentage.
- LTV/CAC is the LTV of the subscriber divided by the cost of acquisition per subscriber. The metric gives the gross margin of a subscriber’s lifetime as a multiple of the cost of acquisition. An LTV/CAC ratio of 1.0 would mean margins over the lifetime just cover the cost of acquiring the subscriber.

DIGITAL TRANSFORMATION MAY HAVE BOTH A FINANCIAL AND NON-FINANCIAL ASPECT. ASSESSING THE NON-FINANCIAL BENEFITS IS A CRITICAL ASPECT OF EVALUATION AND RESULTS IN A DIFFERENT APPROACH.

2. What do we mean by 'transformation', anyway?

TRANSFORMATION IS NOT AN END POINT. IT IS A CONSTANTLY EVOLVING AND MOVING TARGET.
 CARIBBEAN ROUNDTABLE PARTICIPANT

2.1 How might we define transformation?

The UK government defines transformational change as 'a radical permanent qualitative change in the subject being transformed, so that the subject when transformed has very different properties and behaves or operates in a different way. In this definition permanence refers to a "practically irreversible change in a system" that causes self-sustaining internal feedback effects that result in continuing change, or a new stable state, but not reversion to the original state' (HM Treasury, 2020a:127).

But transformation means very different things to different people. Building on the roundtable participants' range of professional experience, both positive and negative, helps establish wide-ranging boundaries for this area and explore how finance can play a role in the transformation of organisations.

The level of interest in the enablers of transformation, as seen from the roundtable conversations (Figure 2.1), reflects participants' strong interest in the opportunities

and challenges stemming from people and represents by far the most prominent area of conversational interest. Taken together with organisational culture, the importance of people in transforming organisations is an essential agenda item for any transformation. While technology is an important enabler, conversations about data create a higher level of interest, reinforcing the importance of finance professionals' use of data to create business value. Process also plays an important role in these conversations, coming second only to people aspects.

The big picture' of transformation

We often hear of the need to change fundamentally how a company operates and delivers value to customers. Transformation represents the change and involves the adoption of digital technologies or their integration into the way we work and our changing business processes. According to an Australasian professional who participated in the research:

'A cultural mindset shift accompanies a transformation. The way we work, and the perception that people have of their role within organisations, is an important starting point for transformation. Digital [technology] becomes the enabler. The desire for accountancy professionals is to step into that role of transformation and to adopt new, agile ways of working. However, while the desire exists, this journey is at an early stage. In light of this, how do we help evolve the mindset of an accountancy or finance professional to be able to adopt technology and drive transformation? Much of transformation is about a cultural mindset'.

FIGURE 2.1: Overall interest levels by transformation enablers



Technology companies fare well as technology transformation is driven first hand by the technology vendors. These vendor organisations have immediate experiences of transforming themselves. The pace of transformation among them is much quicker than in other industries, enabling them to serve customers speedily.

Here, the challenge according to a participant from a technology company is not a failure to use technology in commencing transformation. Instead, 'what takes time and effort over a much longer time frame is changing mindsets'. Since 2018, the participant organisation provides education on the 'Future of Finance' to employees and supply partners on the theme of robotics and automation.

Repeatedly, roundtable participants and commentators speak of the importance of dropping the word 'digital' in 'digital transformation', and instead concentrated on the essential mindset shift needed for finance professionals to transform and create value. Among some practitioners, transformation means revisiting an organisational structure while attempting to understand what finance is trying to achieve. People, process and systems are still important: 'focusing on the fundamentals and looking for opportunities to remove duplicate controls or redundant processes. This is the real transformation', claimed one Australasian roundtable participant.

An Indian roundtable participant commented, 'anything which tries to improve the customer experience – that is transformation for me'. At a UK roundtable the view is 'the softer benefits of a transformation should align with customer experience'.

A Caribbean roundtable participant commented: 'when we look at transformation we are looking at employing the latest technology to improve services that are being delivered to the end-user, the customer, improving internal business processes for your employees and the business at large'.

A UK interviewee wanted to maintain the distinction between transformation and a system transformation. One needs to think in terms of an 'experiential transformation'. It will be experienced differently by the people affected: the teams, the users, the customers, and involves making better use of talent. All these come together to create a transformation. The changes are experienced as a genuine transformation and not just a system implementation.

If you look at transformation from the strategy perspective, you can drive transformation because everything really starts from the purpose of your strategy. You start with the business, strategy, and the business needs and ask, is there a way to solve this with digitalisation?

Transformation is not a one-size-fits-all process as seen from the participant definitions and will be different from one company to another. At the most basic level, transformation means integrating technology into areas

of business and enabling us to change operations and deliver value to customers. So, this brings about models allowing an organisation to increase revenue streams. In practice, transformation is triggered by identifying some problem while recognising the ideal solution is digital in nature.

A Hong Kong SAR of China roundtable participant summarised the view of transformation by commenting that, 'transformation [is] a change of habits, a change of ways of doing things. This analogy is drawn. People formerly used horses to commute between places. And then when the car came along people were more comfortable with the new way of doing things and therefore they transformed themselves. Not because they really wanted to but because the environment had changed. Something has changed so they will be transformed'.

But perhaps the Hong Kong SAR of China participant analogy with transportation serves as a strong reminder of the transformation of physical transportation during the last century that as individuals we readily adapt to, and embrace, transformation when we can see the benefit.

TRANSFORMATION IS A CONTINUOUS PROCESS.

The disruption from Covid-19 indeed proved to be a catalyst for digital change

The role that accountancy and finance professionals should play during the pandemic, with their new skills of predictive analytics, is as business strategists and business advisers. As a CFO from Africa commented, 'with the extended roles that accountancy and finance professionals [have, they] are now business advisers. They are now more than capable of using data in a predictive analysis to create value'⁷.

There is little doubt that the pandemic has caused organisations to think about how they flex and change their business models to be more adaptable. The classic phrase of 'five years in five months' referring to the necessary speed of adaption caused by the events of 2020 and 2021 was one that clearly resonated with the roundtable participants across all the geographies. Whilst for some organisations this may have been an acceleration of their current plans, for others it was a tactical deployment of new processes and technologies to address the changing circumstances. An agile mindset was fundamental to success as organisations strived to survive.

⁷ The impact of the pandemic on finance functions is discussed in ACCA / PwC 2021.

Yet much of this activity reflects what was already happening and will continue to do so. Transformation is about finding a better way of doing things or leveraging technology to make business processes more efficient, removing inefficiencies within them while seeking improvements, and then leveraging technology to make this better for the employees. It is important that whatever transformation strategies are developed are aligned with the business strategy. The 'people factor' is key, whatever the other results of transformation. If we do not have the buy-in of both our employees and customers.

The speed of technological change is not going to slow in the coming years. Some key statistics drawn from Datareportal's Digital 2021 July *Global Statshot Report* (Kemp 2021):

- Global mobile users have reached 5.27 billion, equating to just under 67% of the world's total population.
- The number of mobile users has grown by 2.3% over 2020, increasing by 117 million in 12 months – that's almost 10 million new users per month.
- Internet users have increased by more than a quarter of a billion over 12 months to July 2020 registering year-on-year growth of close to 6%.
- There are 4.8 billion internet users around the world today, equating to almost 61% of the world's total population.
- Social media user numbers in 2020 have jumped by more than 13% showing an increase of more than half a billion users in just 12 months.
- In 2021 there are 4.48 billion social media users around the world representing almost 57% of the world's total population.

Contrast these statistics with the following predictions.

- The value of Web hosting services is estimated to reach US\$267.1bn in 2028 at a compound annual growth rate (CAGR) of 18.0% in the 2021–28 period (Fortune Business Insights 2021).
- IoT Analytics estimates that there will be 30.9 billion Internet of Things (IoT) devices by 2025 (Leuth 2020).
- It is estimated that 95% of all purchases will be through e-commerce by 2040 (Copper 2021).
- The CAGR for AI will be 42.2% by 2027 (Grand View Research 2021).

An interviewee commented 'when it comes to digital, technology is moving at such a pace that nobody can keep up. And if you do not really align the business model to the technology change then you really do not get the business benefits'.

Clearly, the pace of technological change will not slow down. Organisations are going to continue to need to invest in technology and data to remain competitive. Accountancy and finance professionals cannot afford to ignore these trends; rather they need to embrace them and ensure that they learn continuously and apply these skills in transformation implementation.⁸

THE PACE OF TECHNOLOGICAL CHANGE WILL NOT SLOW SO NOR WILL ORGANISATIONAL CHANGE; THE PANDEMIC HAS HEIGHTENED THE SPEED BUT NOT THE OUTCOME IN IMPROVING PRODUCTIVITY.

Technology is the enabler. But data is the foundation

There is an inherent confusion that all transformation is digital but in this discussion the data element can be forgotten.

From a Middle Eastern roundtable participant:

'Transformation is not a destination. It's a journey – you cannot have a destination for digital transformation. But the Covid pandemic has transformed and quickly required adoption of digital tools. Transformation is far broader in scope, particularly around culture: [it's] about people and process. While finance needs a transformation, suppliers, customers, internal finance, and internal departments need digitalisation. Only then can finance be fully transformed'.

For an Indian roundtable participant, 'when talking about the finance transformation, it covers everything: anything which tries to improve the revenue and the contribution margin for the company, anything which tries to improve the customer experience. That's transformation'.

Transformation involves people, process and technology: only together can these help organisations to be more competitive, more effective and efficient at a strategic level. If one talks about digital transformation in finance, it is not only about a *finance* transformation: it should be a part of an overall *enterprise-wide* transformation.

⁸ ACCA considered the development of data and technology skills in ACCA 2020a and the impact on work in ACCA 2020b.

A Luxembourg roundtable participant recognises the importance of protecting information assets: 'we see from digitalisation that it is also [a] risk [as] we have all these cyberattacks. We have to manage the change and recognise and address the risks arising'. An Indian roundtable member came to a similar conclusion in a broader context for finance to consider: 'Cybersecurity is not something that would be within our immediate field. But we do need to understand that because of the impact it can have on us'.

An Indo-Pacific participant reminded us of the importance of leadership in transformation. 'The business transforms into a new shape, a transformed organisation that can deal with the new normal. This is the right moment... But the leader, a CEO, and the chairman have to determine what direction they'd like to take and then give instructions [for] all the people beneath them to execute...So, the leader is definitely, critically important'.

For an African roundtable participant, transformation directly affects the business model: 'it's how you use technology, to drive your business model...or bring in new business models. It can change the existing one...but it's just how you capture, drive and deliver value.'

A Caribbean participant went back to the fundamental opportunity: 'digital transformation largely...is about people'.

It is important to see that transformation is an embracing activity across multiple dimensions in an organisation. It is not a technology-led activity, rather it is driven by business objectives and requirements. Many of these can, and are, enabled or facilitated by the use of technology and data. To allow the latter to drive the transformation often results in a lack of buy-in and a technology solution looking for a business issue to solve.

TRANSFORMATION IS A BUSINESS-LED ACTIVITY NOT A TECHNOLOGY-LED ACTIVITY.

Understanding the difference between transformation, organisational change and digitalisation requires focusing on data, technology and the customer. Transformation is created through being able to use data to improve the delivery of your products and services to your end-users or customers, improving the interaction of employees with the products and services, and optimising your business processes. Transformation inevitably involves improvements in processes, which lead to improved relationships with suppliers, and digital innovation gives rise to unique products. It is not just a matter of implementing new technology.

A key aspect of transformation is making it possible for employees to work from anywhere and anytime from any device, enabled by an internet connection is available (referred to in section 1.3 as the environment of work). It is a concept of a way of working in an almost social style.

However, data drives insights and insights inform organisations about the behaviour of their customers and suppliers. In this increasingly rapid response business environment, those who have learnt to manage the data flows and capitalise upon them will succeed. Finance is a data centred function. Being able to capitalise upon that data knowledge is one key reason why the function has a significant role to play in transformation. To forget this marginalises the role of finance and its key skill set. Those who benefit most from transformation will be those organisations that have mastered the combination of data and operational model to drive effective decision making.

Improving processes, improving relationships with suppliers, and digital innovation are what makes products unique, not just implementing new technology. As Carruthers and Jackson comment, 'whichever level of transformation is attempted, or delivered, the common denominator is "data", that is, the insights in data and the use of data. The commonality of data ensures that the "business", "business outcomes" and "business value" are in focus rather than the "technology" and that the transformation is initiated and driven by the business using their data' (Carruthers and Jackson 2019).

EFFECTIVE USE OF DATA BY PEOPLE AND PROCESSES IS THE KEY TO ORGANISATIONAL TRANSFORMATION.

Resistance to change


For the Boston Consulting Group (Rehse et al. 2019), this is about a radical change, a technology-enabled change. But a roundtable participant from the Republic of Ireland inferred a negative connotation when hearing the word 'transformation' and predicts job losses or other negative changes for people. Hence, the preference is for businesses to make positive change incrementally, rather than for 'big bang' transformation. The methodology used should empower managers to be more effective by making changes continuously and incrementally.

Inevitably, many people resist change. This resistance can take many forms, but it can undermine the effectiveness of the initiative.

A participant in the Hong Kong SAR of China roundtable commented that 'in some instances, in some organisations, you end up coming to a gulf in the middle

of the organisation. The gulf is because directors and senior management want to drive change. The younger, newer, staff members [are] coming in and starting to grow through it; it reflects the way that they operate as everything for them is online. The challenge, and where the real transformation happens, is...in that middle sphere where you have more experienced people with a lot more longevity in the organisation. You hear the comment "we do not do it like that round here". In the middle is where you find the most resistance'.

Effective change management programmes are essential for addressing these challenges. Being clear about the purpose of the transformation while explaining and involving different teams are essential aspects of any initiative from day one.

 **For a discussion on the relevance of transformation from a finance leaders' perspective listen to the podcast.**

2.2 A transformation roadmap

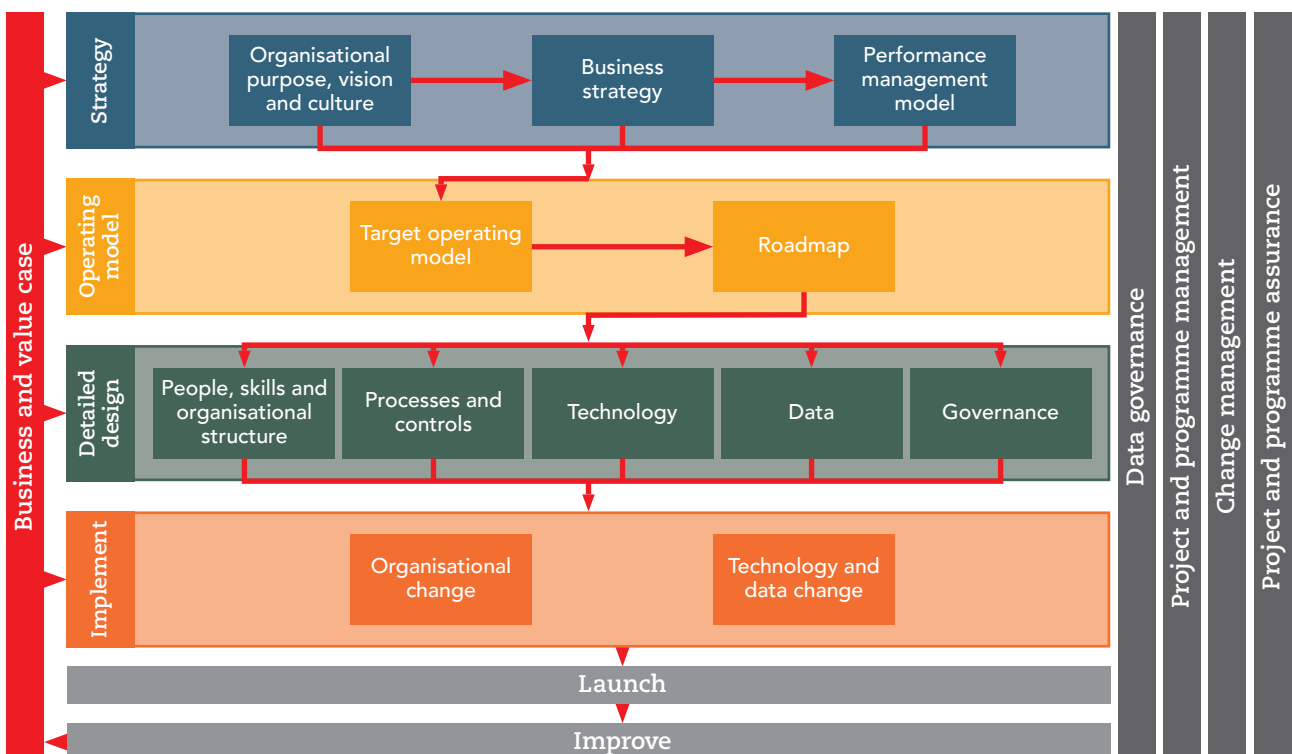
There is no one roadmap for a transformation initiative. Any search will be more likely to reveal various project and programme management approaches, rather than a single transformational workflow.

Nonetheless, some features frequently appear. The following model (Figure 2.2) summarises a typical transformation flow. Each transformation will follow its own adaptation of this pathway, depending upon the business issue and value being addressed.

Like many others across the virtual roundtables globally, a North American participant reminded us that, 'all these transformations should be also in line with your business strategy or business goal' or as stated by another participant, 'whatever transformation strategies we come up with, they have to be aligned with our business strategy'. In a similar vein, a participant from the Indian roundtable reiterated 'when we talk about transformation... [ultimately] all transformation should and must be in service of delivering against your strategy'. In spite of the strong technology component of transformations, a UK participant said, 'digital is the servant to business strategy. It's not the other way around. So often...people will say, "Oh, we must start with blockchain or AI and find a use for it". But actually, you start with the business and the strategy and the needs and say, "Well, is there a way to solve this with digital?"'

Any transformation process should start with a *business and value case*. To distinguish a traditional business case focusing on financial metrics alone we introduce the business and value case. The business and value case (as discussed in Chapter 3) is in close alignment to the overall *organisational purpose and vision*. Without such

FIGURE 2.2: A transformation roadmap



alignment, whether the transformation should be pursued at all is questionable. The business and value case links to the *business strategy* which in turn reflects the *performance management model*. These last two are strong domains of the finance leadership and indicate the key role that finance teams should be playing in transformation processes. With both financial and non-financial performance measures increasingly relevant to finance teams in organisations, having a clear line of sight of these measures and how the initiatives support them is important and requires clear articulation in the business and value case.

From these steps and from the approval of the business and value case, several activities should be launched throughout the transformation initiative. Firstly, *data governance* is important as many initiatives rely upon, or seek to improve, the data available to the organisation. No initiative, no matter how large or small, should occur without appropriate *project and programme management*. This should be established along with the *change management* activities that will prepare and involve those affected by the changes. Lastly, as a significant number of initiatives fail to achieve their intended outcomes, so a *project and programme assurance* system should be considered to ensure that objectives are being met and timelines adhered to.

From the initial business and value case and strategy, a 'to-be' future set of ways of working can be established. These are documented in the *target operating model* as discussed in section 4.3 of this report. The agreed 'to-be' state then determines how the transition from the 'as-is' state is to be achieved, through creation of a *roadmap*.

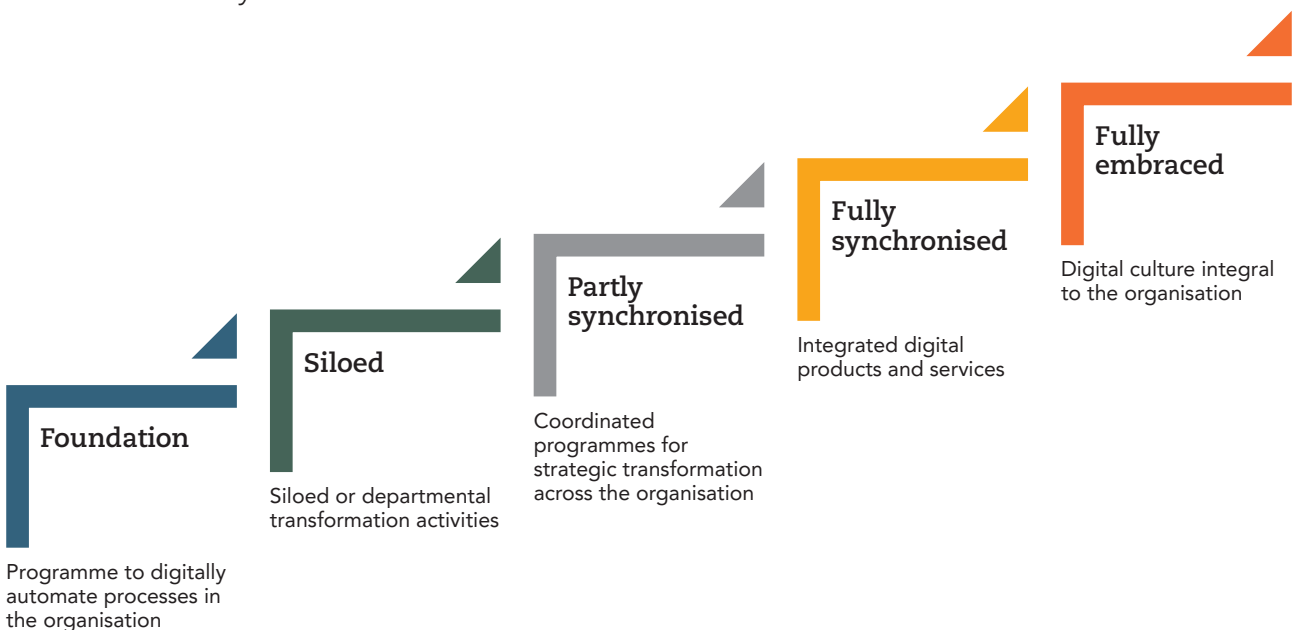
This high-level design is then developed into a series of more detailed plans that consider aspects of *people, process, technology, data* and *governance*. The execution of these plans may be through a waterfall approach (where activities are pursued sequentially through to the end of the project; see Appendix), in the case of a traditional initiative, or via a series of small steps known as Sprints (as also discussed in the Appendix), which are re-assessed as they go along, in the case of an 'Agile' initiative. Irrespective of which approach is being taken, each of these aspects needs to be considered.

Once these plans have been agreed, change plans for the *organisation, the data* and *technology* can be enacted. These in turn leads to *launching an improvement cycle* with data and technology changes leading back to a further business value case and a next iteration of improvement.

At each stage in the flow there will be a *gate review*, in which the initiative's progress against the objectives, as identified in the business value case, are assessed. These gates are important tools not only in governance but in enabling you to stop initiatives that look likely to fail or fall short of the desired outcomes. In the 'fail fast' culture of the agile initiative, as described by many roundtable participants, these gate reviews become even more fundamental. The project and programme assurance track has a significant input into these reviews.

Figure 2.3 shows how organisations mature their transformation activities and the importance of embedding transformation into the culture if the organisation is to be fully effective.

FIGURE 2.3: Maturity of transformation



2.3 The size of the prize

IDC research (Fitzgerald et al. 2020) on digital transformation suggests that company expenditures on enabling digital transformation exceeds US\$6.8 trillion of direct investment for the period 2020–23. This represents a spending on services and technologies in 2020 of US\$1.4 trillion (IDC 2020). Furthermore, IDC predicts that over half of the global GDP in 2023 will be driven by companies that have undertaken digital transformation (Miller 2020). But the opportunity spurred on by the pandemic is bigger. Why is this so?

The pandemic has caused organisations to rethink and reprioritise their digital strategies. 'Achieving in five months what would have been planned for five years' is now a commonplace. Yet finance functions are struggling to embrace the case for change. They often apply traditional planning and business case techniques to a volatile and uncertain world, failing to embrace rapid change management.

From a retailer perspective, what's interesting about the five-year term is that retailers probably sold five years' worth of toilet paper in five months! Post Covid the retail landscape expectation is the new normal embraces digital fully (Cooper 2021). One Nigerian energy supplier found that what it had planned to achieve as an organisation in 5 to 10 years has been fast-forwarded by Covid-19.

Organisations have shifted their management orientation from processes to outcomes, establishing more agile, innovative, and empathetic operating models. This leads to a focus on journeys for customers, finance teams and transforming companies. Table 2.1 shows the change from a traditional organisation to a transformed one. A number of these components are explored in Chapter 4.

2.4 An agile world

The Oxford English Dictionary defines the term 'agile' as follows (Lexico 2021).

1. Able to move quickly and easily.
 - 1.1. Able to think and understand quickly.
2. Relating to or denoting a method of project management, used especially for software development, that is characterised by the division of tasks into short phases of work and frequent reassessment and adaptation of plans.

As with 'transformation', the term 'agile' has many meanings. The intention of creating flexibility that enables organisations and individuals to move quickly and be responsive has been a facet of the response to the pandemic, and indeed before that. As is explained in the Appendix, as a business term, 'agile' originates from a project management technique that was developed to address some of the complexities of the traditional approach to system development (now often referred to as the 'waterfall approach') for instances where the latter may well have proved to be too cumbersome and time consuming.

Increasingly, the term now refers to a management or organisational style in which collaborative teams address issues and problems and then move on. The reality of the pandemic is that organisations have learnt to collaborate more. The finance teams can contribute using popular collaboration software such as Microsoft Teams, Zoom video conferencing, CISCO Webex. Asana and Slack, and many others. This collaboration software readily allows

TABLE 2.1: Changing traditional organisations into transformed organisations

KEY FEATURE	TRADITIONAL ORGANISATION	DIGITAL TRANSFORMATION
Characteristic	Stability	Flexibility
Resources and processes	Revenue centric	Customer experiences (CXs)
Business model	Traditional revenue profile	Monthly recurring income
Control variables	Cost/product	Customer centric basis
Procedure models	Waterfall	Agile and creative
Responsibility	Top-down planning and approvals	Bottom-up through continuous learning and improvement
Sourcing and supply chain	Few suppliers (main), long-term partnerships	Networks, partnerships, spontaneous short-term cooperation
IT Infrastructure	Enterprise resource planning (ERP) system	Digital platform
Timescales	Long term: months and years	Short term: days and weeks

Source: Adapted from Rödl & Partner (2021)

working remotely and enables teams to provide assistance on demand anywhere and anytime to customers and employees. This software and the accompanying mindset of individuals accelerate adoption of the new organisational forms of 'hub and spoke' (Robinson 2021) and variants as seen in Klarna (2021), the global payment shopping service, and the Spotify music subscription service (Kniberg and Ivarsson 2012).

As one UK roundtable participant comments, 'agility is about being agile, it's being human, and leaving the organisation more resilient and better placed to contribute to the strategic aims. Digital transformation is technology, plus leadership, plus culture, or mindset. You cannot achieve any transformation without having the right culture and the right mindset and leadership. During the pandemic, one observes an acceleration in change. This plays to the culture because we have to change and must get through things very quickly. People now are more flexible, more accommodating to change and support the agile way of working as well. This means having some flexibility and experimenting as you go with learning'.

This is not to say that every business is agile and nor does everyone follow the earliest systems development life-cycle approach of waterfall. Some combine Agile and waterfall approaches, creating a so-called 'WAGILE' approach (Jurgens Kowal 2021). There will be instances where one approach is more appropriate than another. What counts is choosing the right approach and remaining in control.

**NOT ALL PROJECTS ARE AGILE;
PROJECTS FORM PORTFOLIOS.**

2.5 Being customer centric

One of the key terms is 'customer-centricity'. But being customer-centric also requires internal management and staff commitment.

A rather interesting transformation example comes from Kenya. Here, people have adopted 'mobile money', switching from physical money to the Kenyan mobile money system M-Pesa. Without physical interaction between people or using cash, anybody can make any transaction at any time: sending money, paying their bills and conducting all the monetary transactions required in everyday life. This is an ideal example of how every activity can be transformed from physical to digital. This mobile money system adds significant value to the people of Kenya, especially during the pandemic, as previously the handling of physical cash had been common. Also, from the perspective of the CFO of a bank, digital transformation will be essential after the pandemic as people continue working from home.

What makes the digital aspect a bit different is the centrality of the user interface, the user or customer experience.

According to an Australasian roundtable participant, 'the heart of transformation is about the relationship with the customer and understanding the customer and the customer's need'.

Retailers are changing rapidly in response to the customer focus on online shopping. The customer is at the heart of everything. When thinking of transformation and digital transformation, the customer is still central. According to an Australasian roundtable participant, 'at the moment, all transformation happens to be through some sort of digital tool. In the case of Covid and keeping customers and staff safe, this hinges on the technology of the QR code'.

But as one East European professional found, the need for automating information flows and interactions with customers using varying levels of technology and computer literacy can be simplified by acquiring a suitable software licence as part of the overall service, to handle all the interactions. The licensing cost can be incorporated within the overall service charge. To this end, the digital transformation incorporates transforming the customer experience while satisfying the customer's needs for accountancy as a service (Vargo and Lusch 2018).

An enterprise's transformation involves transforming the customer experience and meeting the customer's redefined expectations. These can be about the way the customer consumes the product and then repurchases and consumes it, or alternatively how they can return the product. It is a completely customer-centric process. Of course, in the finance organisation we primarily focus on the numbers, but customer-centricity is the most important aspect.

While maintaining a customer-centric focus, it is important to remember that the organisation's staff are central to giving customers the best possible experience, as they will provide the service. This cannot work if they are not part of the change strategy or the transformational journey.

2.6 Projects, programmes and portfolios

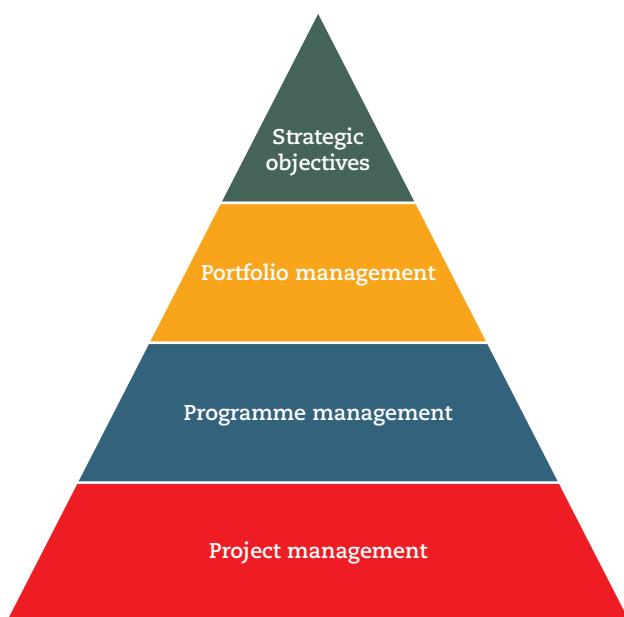
The UK government describes how public sector projects are assessed in The Green Book (HM Treasury 2020a). According to the Green Book Review 2020 (HM Treasury 2020b) 'the likelihood of successfully achieving transformational change is greatest when delivered through a coherent strategy, which in turn is underpinned by strategic portfolios, programmes and projects. Individual projects and programmes will not typically lead to transformational change on their own' (HM Treasury 2020b).

The relationship between project, programme and portfolio management can best be described as follows.

- A project is a temporary endeavour undertaken by a company or organisation (such as the creation of a new product, service, or result). They are unique, time bound, have specific costs and a clear scope and acceptance criteria.
- A programme is a group of projects that are similar or related to one another, and that are often managed and coordinated as a group instead of independently. They have a higher complexity, a longer timescale, and a higher budget. A programme is principally concerned with stakeholder value. The best practice and international standard for a programme management framework is MSP (Managing Successful Programmes) (Axelos 2021).
- A portfolio is a group of different programmes and/or projects within the same organisation, which may be related or unrelated to one another. They are often a strategic grouping and may be a mix of projects and programmes. Portfolio management can assist in alignment, risk management and interdependencies. It focuses on business value.

This may not be as simplistic as the hierarchy shown in Figure 2.4 below because a portfolio can consist of a combination of projects and programmes, but the linkage of all three elements through a hierarchy to the strategic objectives of the organisation is important. As projects become increasingly customer centric and fast moving so the management of these at the programme level, as well as the definition of the business case and the measurement of realised value, becomes important.

FIGURE 2.4: Projects, programmes, portfolios and objectives



For the UK government, the four tiers of Figure 2.4 constitute an intervention hierarchy. An example of interventions that build on the tiers with the objective of achieving net zero carbon emissions by 2050 is highlighted in Table 2.2.

TABLE 2.2: Intervention hierarchy for net-zero carbon emissions by 2050

ELEMENT IN HIERARCHY	EXAMPLE
Strategic objective	Net zero greenhouse gas emissions in 2050
Portfolio	Reducing the emissions intensity of the UK power sector
Programme	Increasing offshore wind capacity
Project	A new offshore wind farm to deliver X GW of capacity by 2030

Source: Adapted from: HM Treasury (2020b)

As Agile approaches are increasingly adopted and the time span of activities shorten, so the emphasis in governance, and hence funding, moves up the pyramid. Increasingly programmes are a core focus of these activities. Developing a business case and establishing a governance structure over each Agile project can be counterproductive, especially when the iterative process is aimed at delivering a series of common outcomes. Rather, it is better to establish effective governance at a higher level.

PROGRAMMES ARE BECOMING MORE IMPORTANT THAN PROJECTS.

2.7 Not all transformations are successful

As a word of caution, many of the roundtable participants commented that transformations were not always successful. Success in terms of transformation may be measured at several levels. In the traditional, waterfall, approach success may have been measured by the achievement of the longer-term project and often had outcomes that could be measured against the benefits statements of the business case.

In an agile world, where failure may be a step in an iteration, the sense of success may be different.

What underpins both of these lenses of success is that an organisation has to have a willingness to transform and an ability to change. One interviewee commented that, for them, this reinforced the notion that transformation is about culture and leadership. Without these the initiative

will struggle to succeed. Culture plays a vital role in the successful delivery of transformation. Adoption of new ways of working or processes will often depend upon the inherent ability of the organisation to adapt, create and sustain value.

Carruthers and Jackson highlight what they see as eight blockers to transformation (Carruthers and Jackson 2019). These are:

- fear of failure of adoption
- not having a clear vision of the end state
- involving the wrong people – those who are not aligned to the project's intended outcomes

- the wrong skills
- absence of a culture of transformation or of a data culture
- transformation is too hard for the organisation
- disruption elsewhere, whether internal or external.

What is important, is to drive success from a leadership perspective and finance leaders have an important role to play in this by engaging in the appropriate cultural drive.

There is an important role for assurance in helping to provide warning flags to guard against these factors that may undermine a successful transformation as discussed in Chapter 3, section 3.9.



ADOPTION OF NEW WAYS OF WORKING OR PROCESSES WILL OFTEN DEPEND UPON THE INHERENT ABILITY OF THE ORGANISATION TO ADAPT, CREATE AND SUSTAIN VALUE.

3. Business cases or value cases?

[THE] BUSINESS CASE IS ACTUALLY STORYTELLING.

HONG KONG SAR OF CHINA ROUNDTABLE PARTICIPANT

3.1 Why a business case?

According to roundtable participants across the globe the methods of developing the business case require revisiting in each of their organisations. No longer are the needs just financial, they include sustainability, climate, natural and human capital. An important distinction between a business case and a value case according to one interviewee, is that ‘the value case takes into account the value not only originally speculated at the beginning of our programme, but [also] how you are actually doing across the entire life cycle of the programme. So, the value case includes the reporting on progress, and the measures and the benefits envisioned back in stage one. A business case does not look at the progress but represents a point-in-time document. However, the value case is different and contains a theory of change. Over time, the transformation governance solidifies and tests the theory of change in real time’.

The long-perceived wisdom is that we need to create a process for approving an initiative. This has been framed in a business case and it is often seen as both a management and project management tool of action that gives permission to start the activities – giving the green light, so to speak.

The reality is that the business case does not change. The business case contrasts with a business value case, a living document that is at the heart of the governance of the initiative and evolves as more is learnt over time and a transformation progresses. This chapter explores the apparent misunderstanding of the business case and its role that many roundtable participants voiced.

Canadian roundtable participants found challenges with focusing only on return on investment (ROI) for multiyear projects.

A Hong Kong SAR of China roundtable participant commented that ‘the business case for us is actually telling the story to the market and to the investor to ensure that there is time for buy-in. Through the journey each quarter, [it means] telling the market how well we are

doing and how much saving we are achieving and how quickly we can achieve our goal’.

A Canadian interviewee commented, ‘the traditional view of the business case is not working’. What is the traditional view?

3.2 The traditional perspective

The traditional perspective was that the business case was made against the return on investment and if the return, often measured in years, could be achieved then the project could be approved. Therefore, the business case focus is on revenue, cash flow and costs.

The company TIBCO Software defines six key components of the traditional business case, together with some of the issues arising (Hardy 2012).

- **Problem statement.** Does your problem statement follow naturally from the analysis of the situation?
- **Analysis of the situation.** Are the events that led to the initiative clearly defined? Did you perform a thorough analysis of the situation? Is that analysis presented in a clear and concise manner?
- **Solution options.** Is your list of potential solutions to the problem adequate? Does it omit any solutions that should be included?
- **Project description.** Is your project description detailed enough?
- **Cost–benefit analysis.** Do you have enough supporting data in your cost–benefit analysis? Are the data and calculations in the budget section correct?
- **Number of recommendations.** Have you approached at least one major stakeholder for preliminary support?

An interviewee expressed the view that the ‘absolute fundamental of the business case is the narrative. It is a story of why you want to do something’. This interviewee also cautioned that ‘fundamentally, investment is about long-term return, rather than shorter. You need to be sure that you are headed in the right direction’.

One challenge, even for the traditional view of the business case, was represented by a UK roundtable participant who commented: ‘for large technology or transformation projects that run over several years, you can’t possibly see where the market will be. Your benefit plan is a guess at best. Often, you can’t know the technology cost because of the fallacy that if one does all of the design upfront, one can know everything, and therefore predict costs with accuracy. That does not work. You cannot know everything...[about] the technology upfront. You need a process where you are continually learning, feeding back, constantly refining what you know, and then tailoring costs’.

The business case itself has become challenged by the shift from capital to operational expenditure with the use of Cloud-based computing. A Canadian interviewee commented that ‘until 2012 [my organisation] had a very clear distinction between OPEX and CAPEX. Now we have a third bucket in the middle, which is some kind of CAPEX and OPEX, which has attributes of the two and this is what is right. You have a set of defined objectives, but these objectives are not defined P&L objectives but may be a softer objective’.

Business cases can often be barriers in organisations. Sarah Kaplan, writing about the business case for organisational transformation involving elements of the ESG agenda, comments that, ‘what all of this says about the business case is that it is often more complex to address trade-offs and grow the pie for shared value than leaders of organisations would like to believe. Or, even if they believe it, it may be hard to muster the commitment, resources and willingness to change to make the pie bigger’ (Kaplan 2019).

3.3 Changing rationales for transformation

The concept of transformation, as will be discussed in Chapter 5, is itself changing. The drivers are more complex and frequently the decisions involved are not as clear cut in financial terms. According to an interviewee:

‘It is especially difficult in [the] early stages of a transformation programme to see a financial return on investment, because you tend to be establishing some pretty foundational capabilities that then help you to do something different in the business. So that’s why the transformation programme really comes to fruition in years two and three: that’s when the benefits actually should start to be seen. But that’s actually when attention flags and a little tiredness sets in. People don’t pay as much attention at that time... people turn over, they move on to new things, they’ve done most of the work, they’ve done two-thirds. Now they move on to their next big programme’.

This explains why CFOs in the roundtables have struggled with the issues inherent in return on investment alone. As one UK-based roundtable participant commented, ‘in some cases the business case went out the window or had a slightly looser definition than pre-pandemic of what was considered successful’.

A business case itself is not just a financial document. As can be seen in Figure 3.1, it is a combination of three components:

- how the initiative relates to the organisational strategy and how it will help the organisation achieve its goals
- whether it is viable, which includes both financial and non-financial assessments of viability and whether it makes economic sense for the organisation by improving revenues
- whether it is feasible, whether the organisation has the resources (both technical and human) to be able to conduct the initiative.

FIGURE 3.1: A model for the business case



An Australian roundtable participant developed the first point by commenting that, ‘linking transformation to strategy and then identifying the right measures – financial and non- financial measures – is an important step in the business case’.

3.4 Business cases in an agile world

Agile organisations adapt and react instantaneously to uncertain environments and surprise events. There is no one product, no one finite step. An initiative may have a series of deliverables, each of which represents a potential to continue or to cease. To evaluate each

step of an initiative as an individual business case is meaningless. Initiatives need to be funded to succeed and, while delivery may be iterative, the emphasis is on funding the programme not the component project. The vital assessment of whether to continue or cease should be undertaken against the Strategy-Viability-Feasibility criteria shown in Figure 3.1.

One roundtable UK participant commented, ‘what is “Agile”? ...are you going to fund people ... just to go and play with data or explore data or...try and find correlations within your data that might seem to be wasteful in some organisations?’

3.5 Programme perspective

With this Agile view of initiatives, the balance of approving these changes moves rapidly from the project-level activity, where the focus is on achievement of outputs, to the overall programme-level outcomes.

In MSP (*Managing Successful Programmes*), Axelos (2021) defines a programme as ‘a temporary, flexible organisation created to coordinate, direct and oversee the implementation of a set of related projects and activities in order to deliver outcomes and benefits related to the organisation’s strategic objectives’. While key differences between programmes and projects have been discussed (see section 2.6), the major difference is that ‘programmes focus on the delivery of outcomes, and projects on the delivery of outputs’ (HM Treasury 2018). This is consistent with one interviewee’s perspective on the programme business case wherein the numbers are questionable in its first iteration owing to a high level of uncertainty:

‘But two things are of importance. The first is, does the logic make sense? If we do this, will the following occur? Does the logic hold? The second point is, how do we know we’re winning? So, what are the outcomes in this logic model that we want to focus on in order to be able to manage the transformation from an outcomes perspective, not just a cost or timing perspective?’

Different types of programmes delivering different types of change vary in the content of the business case. HM Treasury (2018) consider three types of programmes and objects of focus.

i. Making and delivering – Construction, engineering, systems and IT

In some cases, such programmes probably begin as a project to install a new software system that loosely connects with a number of other projects, all aligning together as a programme. This type

of programme is specification-led, precise, and output-driven with a low level of ambiguity. Scope is well defined and adjusted depending on the circumstance at hand.

ii. Change management – organisational change

The change centres on the organisation’s existing way of working and is led by a vision driving the outcomes and benefits. While some ambiguity exists, ‘clear levers’ move the execution of the vision.

iii. Policy and strategy – external societal change

The change focuses on interventions and societal improvements. The programme is outcomes-driven, exhibiting a high degree of ambiguity and complexity. Over time the ambiguity is reduced and scope is refined as clarifications arise.

All these programmes are subject to a programme business value case. Importantly, a programme aligns directly with strategic objectives and may need to respond to changing strategy. In the case of transformation as considered here, the type of programme may fall in either a type ii or, more likely where there are ESG considerations, impinge on type iii.

Often, difficulties arise when considering hypothetical programmes and generation of a template model of a business value case without focus on a specific methodology. Even so, such an approach tends to dumb down the business value case development. Instead, the approach taken here uses the example of High Speed 2 (HS2) line planned to connect London to Birmingham and cited during roundtables and by one interviewee as a ‘gargantuan spend’. Also, the £40 billion (Department for Transport 2020) HS2 is well in advance of spending on other infrastructure programmes, such as the EU Green deal (European Commission 2021b) and the US Bipartisan Infrastructure Framework (White House 2021) and provides early lessons.

HS2 is not necessarily an example of good practice. Instead, it illustrates challenges arising from human optimism, complexity and difficulty of measuring or predicting future costs and benefits (financial and non-financial) well into the long term. But the very public nature of HS2 allows one to follow the project on an ongoing basis in the press and determine the success or not as the case maybe, especially considering the non-financial strategic goals and the nature of the project considered as transformational by the UK government.

HS2 builds on the UK government’s five-case business case model (HM Treasury 2018). The model provides a framework for ‘structured thinking and assurance’ (HM Treasury 2018). A business value case prepared using this framework comprises the following five dimensions:

- strategic case – a business planning focus ensuring strategic fit
- economic case – options appraisal to maximise social value
- financial case – whole-of-life costs for affordability and fundability
- commercial case – commercial viability and procurement
- management case – implementation aspects.

A review of the content of previous business cases (HM Treasury 2020b) finds a common failure of proposals to engage at a strategic level, for example, their contribution to meeting the government strategic goal of net zero. This leaves the strategic case lacking well-defined objectives linked to strategic policy priorities. Further, the inherent lack of strategic direction reduces the case to a benefit to cost ratio (BCR). Inevitably, the BCR focus is on monetary value and probably not aligned to the objectives of the decision maker and development of social value. Artificially propping up the BCR brings additional benefits into play with a degree of certainty but these are unlikely to manifest over the lifetime of the programme. The lack of strategic consideration reduces the ability to communicate transformational change ‘as transformational effects are rare and only seen when projects and programmes are part of a coherent strategic portfolio designed to deliver such changes’ (HM Treasury 2020b).

Turning attention to the HS2 strategic case (HM Treasury 2018):

‘it will form the spine of the UK’s future transport network and will:

- ‘Generate a vital increase in capacity, with thousands of extra seats
- ‘Act as catalyst for wider growth and help level-up the economies of the Midlands and North

‘HS2 will support these objectives while also playing a vital role in delivering the Government’s net zero carbon objectives’.

3.6 Value over return on investment

Overall, the roundtable discussions show a distinct shift away from an emphasis on only financial performance measures of the business case. The explanation of the shift includes not only the influence of different groups of stakeholders but also that the focus on value creation now includes consideration of softer benefits. While difficult to assess, these are no longer less important than the financials in the minds of accountancy and finance professionals. Hence, the natural progression of the business case is the value case incorporating the non-financial benefits of a transformation activity.

While ‘value’ has different meanings across the global roundtable participants, the overall professional perspective recognises that value creation results from a focus on systems, processes, data, mindset and customer experience.

The HS2 Programme

HS2 is the first major north-south railway line built in Britain in over 120 years.

It symbolises a transformational investment in Great Britain’s rail network and will form the backbone of an integrated transport system. HS2 will change how people travel by improving connectivity between eight of Britain’s 10 largest cities, as well as providing much-needed additional capacity to the network.

Phase One will connect Birmingham and London along 140 miles (225km) of new track and will pave the way for the development of the full HS2 network connecting stations from Crewe, Manchester, Leeds, Glasgow and Edinburgh. It is also intended to serve as the foundation for the future Northern Powerhouse Rail network and Midlands Rail Hub.

HS2 is not a standalone rail project, it will be a catalyst for economic growth supporting the Government’s ambitions to level-up the economy. It will contribute towards creating the critical mass of skills, talent and expertise necessary to help raise productivity in the Midlands and the North of

England. Stations on the HS2 route will contribute to local regeneration in the Midlands and the North.

In this context, the strategic goals of HS2 are to:

- be a catalyst for sustained and balanced economic growth across the UK
- add capacity and connectivity as part of a 21st-century integrated transport system
- deliver value to the UK taxpayer and rail passenger
- set new standards in customer experience
- create opportunities for skills and employment
- design, build and operate a railway which improves industry standards for health, safety and security
- create an environmentally sustainable solution and be a good neighbour to local communities.

Extract from Department for Transport (2020).

An Australian roundtable participant commented, ‘The first step is being very clear what drives value in the organisation, how that contributes to strategy and identifying the associated measures tracking your value levers’. The passionate view expressed by an Indian participant was, ‘what always goes to my heart is the ESG part and we are already seeing happen, with organisations like ours, a huge impact of any kind of transformation, a business case that people want to review, and approve’.⁹

The weight of support is growing for reporting on ESG goals, which requires the inclusion of non-financial data in corporate reporting and measurement. Here, shareholders are driving requirements for transparency and authenticity. What is good for the company is also good for the planet and vice versa.

An interviewee from a global technology company supports the view that enterprises need to distinguish

themselves in relation to value creation. They need to focus on value creation and efficiency.

Developing a value focused case will differ from a traditional business case by focusing on:

- a robust definition of the alignment to the strategic goals of the organisation, which may be demonstrated through a technique such as a logic model
- a greater emphasis on the identification and measurement of business outcomes, which are in turn, reinforced through the value management process (see section 3.8); and
- having a clear and demonstrable understanding of the contribution of the proposed initiative within the larger context of the strategic objectives and the portfolio of developments that are either underway or planned.

Logic Models, Transformation and Theory of Change (TOC)

As many organisations plan transformational change no part of an organisation will remain untouched. If the design or thinking behind the logic of transformation is inconsistent with the execution the entire program will fail.

A logic model is a visual tool to systematically investigate and understand the interrelationships of key components of the change (resources, activities, outputs, outcomes, and impact) and overall vision of transformation. The intention of the logic model is not as an operational plan.

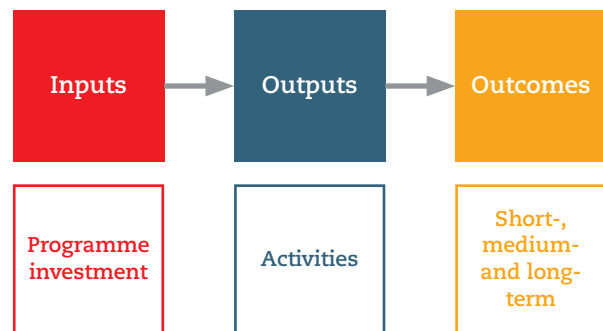
Increasingly, logic mapping is used as part of a ‘theory of change’ methodology (TOC). A TOC defines all building blocks required to bring about a given long-term goal and the change process is depicted in a graphic representation as a pathway of change. The TOC focus is on helping develop outcomes-based organisations, capacity building, goal clarification, evaluation and organisational change.

Like any other map such as the London Underground map the logic map is an abstract representation helping design an evaluation or communicating with stakeholders. Hence, the precise terminology of key components such as inputs, outputs, outcomes, impacts and issues is not critical. The key aspect of a logic model is the visual representation of the steps from a left to right time sequence. But the development of the logic models is from right to left as backwards mapping commencing with the issue and the objectives of the intervention before working backwards through the steps to the early changes responsible for creating the desired change.

Simplest type of logic model representing key issues, impacts and intent:



Expand the model as follows:



In TOC the connected outcomes are known as a ‘pathway of change’. An indicator stage adds further details focusing on the measuring the implementation and effectiveness of the change. An important next step in TOC is documenting the identified assumptions. With a nearly complete framework identifying interventions and long terms goals are all that remain.

⁹ The consideration of all the capitals in business cases and organisational decision making is reviewed in ACCA/PwC 2020.

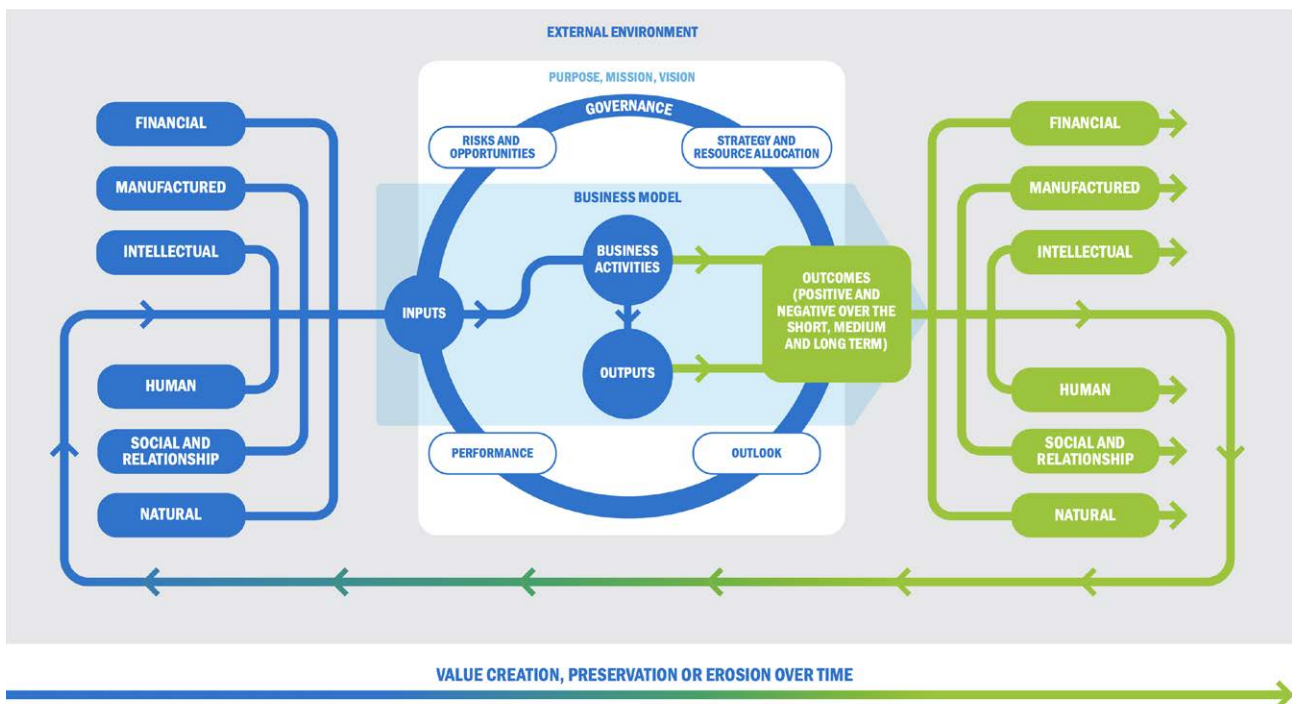
The International <IR> Framework developed by the International Integrated Reporting Council (IIRC 2021) helps explain how value is created or reduced in organisations over time (see Figure 3.3). Here, value creation takes place ‘through a wide range of activities, interactions and relationships [included in the integrated report] in addition to those, such as sales to customers, that are directly associated with changes in financial capital. These include, for example, the effects of the organization’s business activities and outputs on customer satisfaction, suppliers’ willingness to trade with the organization and the terms and conditions’ (IIRC 2021). Furthermore, the providers of financial capital are interested in not only the value the organisation creates for itself but also the value it creates for others, such as through a social purpose (IIRC 2021). Thus, the funders require information about externalities in external reporting.

The implication is that the traditional ‘business case’ is actually better thought of as the ‘business value case’ integrating non-financial environmental, social and governance (ESG) measures. The primary reason for the labelling ‘business value’ is that the case extends beyond the life cycle of the investment and the actual flowing of funds to the point when actual change starts to take place and benefits arise. A secondary reason is that ‘value’ is not just about money but involves a broader definition of the benefits derivable from the investment.

An emerging view notes ‘embedding environmental, social, and governance (ESG) concerns into business strategies is not only good for making money, but also essential to customer allegiance and protecting against the rising number of major threats to social stability, vibrancy, and inclusiveness that makes a healthy business possible in the first place’ (Whelan 2020). This thinking follows from businesses’ desire to focus on the long term, using the United Nations Value Driver Model (PRI-UN Global Compact 2013) and the Embankment Project for Inclusive Capitalism (EPIC 2018). The Framework for Inclusive Capitalism focuses on the social responsibility of companies to the workforce (the ‘S’ in ESG), building on three key pillars: creating more opportunities, expanding the workforce and the providing incentives (‘gainsharing’) (Coalition for Inclusive Capitalism 2021). These models, past and present help organisations to explore sustainability as a source of business value. Here, sustainability and ESG are similar but not interchangeable, with ESG providing the quantifiable measurement for reporting of sustainability.

This way of thinking is particularly attractive for the CFO and finance team, who need to measure financial return on ESG-related activities (Whelan and Douglas 2021) especially when there is growing evidence that sustainability/ESG action is correlated with financial performance (Atz et al. 2020). For example, reducing

FIGURE 3.3: Processes through which value is created, preserved and eroded



Source: IIRC (2021)

carbon emissions (a non-financial metric) results directly in significant savings of amounts dependent upon company size (Whelan and Douglas 2021; Atz et al. 2019). The NYU Stern Center for Sustainable Business (CSB) has developed the Return on Sustainability Investment (ROSI™) Framework for valuing the return on sustainability investment through embedding sustainability into core business strategy, decision-making, and accounting and quantifying the full range of costs and benefits, including intangibles. A five-step methodology helps answer the question ‘Do sustainable practices lead to a positive financial return for the business?’. The approach includes Excel tools for the application of the method; mediating factors driving financial performance are available and proven for selected industries and applications, such as apparel, automotive commodity supply chains and talent recruitment (NYU STERN 2020).

But ROSI™ is not the only methodology or framework available for consideration of non-financial measures. Accounting for Sustainability (A4S), a network of finance leaders with support from the Prince of Wales Charitable Fund, aims to transform finance to achieve a sustainable future. Through examples from companies embedding sustainability into capital investment (CAPEX) A4S demonstrates how sustainability-focused, cost-effective and resilient investment decisions (A4S 2019) make a clear business case for embedding sustainability.

The ability of the CFO and finance team to compute returns from sustainability investments and use integrated reporting for ESG while maintaining an understanding of climate regulation, indicates that the finance function is taking ownership of sustainability for the organisation and responsibility for any accompanying business value case. One interviewee commented, ‘there’s a long way to go before there is that level of understanding and linking ESG strategy into really what should be happening as businesses evolve or transform. But it is coming, it will come because the capital markets have paid attention to it and how one invests and how one diversifies the sovereign wealth of [for example, the oil rich] nations. ESG is a massive flattener.’

This thinking is consistent with the feedback from the roundtables, which confirms the ability of finance and accountancy professionals to take action. A UK roundtable participant commented: ‘the accounting professional understands that...climate change and sustainability are important things to be focused on and we know that the skill sets of accountants around reporting are a tool that we can use...to drive action and outcomes in...sustainability and environmental impact’. The idea that sustainability projects can provide a return was noticeably absent from roundtable discussions and, as one Caribbean participant put it: ‘some companies now

are taking the initiative regarding climate change and environment, pursuing projects that in the long run... may not be all about dollars and cents, but about... making sure the future generation to come has a cleaner, better planet’. A similar view came from an Australian roundtable participant: ‘So sustainability is critical in this era. The key is, how does that drive value for the organisation? It shouldn’t just be ticking the box, which you find a number of organisations just doing, but it should be how sustainability helps the organisation deliver on its values. That’s what’s going to be critical, because there will be trade-offs. But if we understand why we’re doing sustainability, why we embed sustainability in the organisation, in our strategy, it’s easy to get all stakeholders on board’.

Here, the point about trade-offs is interesting and needs to move from being implicit to explicit (See Table 1.1).

BUSINESS CASES ARE NOW VALUE DRIVEN NOT JUST COST DRIVEN, INCORPORATING THE ESG GOALS.

3.7 Realising the benefits?

All initiatives clearly exist to generate benefits. Several of the roundtable participants questioned the value of measuring the benefits, especially as this was often attempted after project teams had disbanded and moved on to other initiatives or left the organisation. There is a sense that the business case is concerned with investment rather than tracking the benefits, which may well occur over a period of time.

Among other factors, ESG means that we now need to value and track the progress of value-generating activities, which may not always be financially optimal. This has direct ramifications for finance and accountancy. As an Indian participant explained: ‘as an organisation, we are already committing to reduce our carbon footprint by 30%. In three years, that would mean that we have to transform the way we manufacture [and] transform sourcing the material and the way that we are using the material. We need to transform the way we are accounting for all these big transformation initiatives’.

3.8 Tracking the benefits

It is important to track the benefits of a transformation. This is about setting up a capability for reporting on transformational performance, not just operational performance. Many of the roundtable participants commented that the benefits were simply not tracked. Often project teams were disbanded and whether the initial estimation of the return was achieved was forgotten: abandoned in the rush to move on to the next activity.

Here, the measure of success appears to be merely completing a project.

But tracking the non-financial benefits of the transformation is essential to the value case. This is what distinguishes the value case over the business case. It actually creates part of the closure loop for future initiatives, as shown in Figure 3.4. The value case updates throughout the delivery of the transformation in line with key performance indicators reflecting progress against outcomes.


An interviewee argued that: ‘for programmes and projects where you are making investments you need to track the benefit[s] all the way through and how they track back to the business case, how they have changed and why they have changed. You will then write the next business case quite differently because you have a body of knowledge that sits underneath it. The second part of this is the capture phase, which is basically, “how do you set pricing you have defined your business case and in there articulated your return in investment?”’.

But full realisation of the benefits of the transformation, particularly with respect to ESG, is inhibited by the need to track the activities and make continuous relatively small changes to investment decisions, for example, pricing carbon on an internal basis or relaxing a payback period. A common classification system for sustainable activities can greatly enhance the ability to plan the ESG agenda and roadmap as well as continuous tracking while making comparisons between organisations. The EU sustainable finance taxonomy EU 2020/852 (Taxonomy Regulation) helps facilitate sustainable investment and transparency and is available as taxonomy tools (MS Excel spreadsheet; European Commission, 2020) with workbooks for each type of environmental objective, covering climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystems. Most importantly, the taxonomy is a key aspect of the European Green Deal (European

Commission 2021b), helping scale investments in green projects. The taxonomy assists any company undergoing a transformation by providing a reference for decision making, planning and tracking.

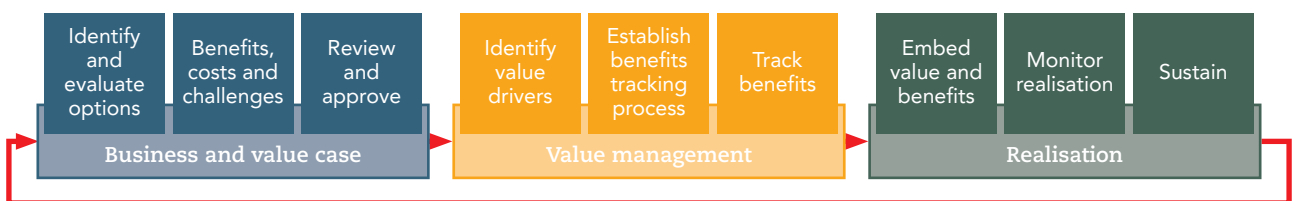
That not enough is done on the scorecard of transformations may be attributable to executives’ greater familiarity with operational activities rather than with using benefits reporting to monitor transformational performance of people. There is significant cultural resistance to keeping people accountable for activities agreed upon 12, 24 or 36 months previously. A new class of system not previously used by finance, strategic execution management systems, holds the key to reporting on the transformational agenda and supporting the role of leadership in determining where the organisation needs to be five years from now. While a CEO can think and communicate about moving into new markets, partnerships, technologies or customer experiences, there is gap in understanding how these affect operations and how strategy translates into actual change in the business. More often than not, accurate measurement of the transformation is not possible without dedicated systems and processes akin to project and portfolio management software.

Further, the interviewee reminds of a potential barrier to adoption of realised benefits (or outcomes) for a transformation programme: ‘accountants, in particular, need or rather perceive the need for precision around the allocation and measurement of benefits. You don’t need to actually balance the benefits side. They need to be indicative and good enough to inform the decision making. Are we doing enough? Are we getting the results expected? This means taking a long time to achieve precise figures can be counterproductive’.



For a discussion on the business cases and the relevance of value in defining transformation activities listen to the podcast.

FIGURE 3.4: Business and value management



3.9 Project assurance – the missing lens?

There is a story of a German professional basketball team who were relegated to a lower division, having started a game 17 minutes late because their PC was performing an update; another concerns a large pharmaceutical company whose ERP solution failed owing to poor planning and implementation; and one about an air traffic control system that failed because there was insufficient computer memory (Hamrouni 2017). These are just some examples of the long list of transformational failures. McKinsey estimated in 2018 that ‘less than 30 percent’ succeed (de la Boutetière et al. 2018), while Couchbase estimated in 2020 that failed transformations cost on average US\$5.5m to the customers of the businesses concerned (Couchbase 2020).

Kirstin Moyer of Gartner cites three broad areas of transformation failures.

- ‘Regression is where businesses are “transformation-washing”. They are saying they are transforming, but they’re actually embarking on initiatives that should have been implemented a while ago, like e-commerce for example.
- ‘Underperformance happens when businesses fail to place bigger bets on their transformation efforts and don’t put enough focus on these projects that can create new value for their business. They still end up reaping digital transformation benefits, but at a much smaller scale.
- ‘The final flavour of failure is where companies fail at new digital initiatives. They are trying to launch a new digital product or service, for example, but it fails and businesses are forced to discontinue it’ (quoted in Roy 2021).

Stepping back in the planning cycle of an initiative, Daniel Kahneman and Amos Tversky have proposed a concept of planning fallacy (Kahneman and Tversky 1977). They explain this as our tendency to be optimistic in planning by focusing on the positives when we consider our own performance. They assert that this arises from our tendency to ignore distributional (outside) data. As individuals, we tend to focus on remembering positive experiences.

In a more Agile project-centric approach, the impact of this fallacy can be equally marked. One interviewee with considerable experience in the project assurance field commented that it was an area in which few executives appreciated the risks and did not understand the level of complexity in some of the projects. One way of addressing this bias is to use external assurance.

Finance professionals have long had a role in providing project assurance, either as part of an internal audit

capability, or as an external service. Given the failure rate of transformational initiatives, this role remains an important one. While in an Agile system the steps in the development cycle are relatively short, the importance of the gate points (points of ‘go’ or ‘no-go’ decisions) is perhaps greater. Having an independent view that appraises the initiative against the planned outcome and value generated is vital. It is important that those who are conducting such work have an appropriate level of knowledge and skill. No matter how they are approached, transformational initiatives are complex and their assurance requires both technical and operational knowledge as well as the ability to communicate risks effectively.

The typical activities that an assurance role might undertake in a transformation initiative by phase are as follows.

Strategy

- Review the objectives.
- Validate the supporting assumptions.
- Evaluate the high-level project plan.

Operating model

- Review the operating model, architecture and assurance plan.
- Assess the transformation roadmap and approach to benefits realisation.
- Assess information security risks and their management.

Detailed design

- Conduct detailed reviews of key delivery risks, such as portfolio management, benefits realisation, supply-chain effectiveness or financial management.
- Review your portfolio, programme and project-management approaches at key decision points.
- Assess feasibility of detailed plans for each dimension, including impact on internal control framework.

Implement

- Assess the key criterion for any go-live or prototyping decisions.

Project and programme management

- Review the design of the programme office (PO) relative to any centres of excellence, portfolio offices, project offices and corporate management functions.
- Assess the impact and maturity of the services offered by your PO.
- Assess the approach to Agile, or other methodologies of, project delivery and how well it is integrated into your organisation’s culture.
- Review the maturity of the Agile, or other approaches, methodologies, practices, and procedures.

**AGILE ORGANISATIONS ADAPT
AND REACT INSTANTANEOUSLY TO
UNCERTAIN ENVIRONMENTS AND
SURPRISE EVENTS. THERE IS NO ONE
PRODUCT, NO ONE FINITE STEP.**

4. Undertaking a transformation

TRANSFORMATION MEANS DOING THINGS DIFFERENTLY, TO DRIVE EFFICIENCY AND COST SAVINGS.

HONG KONG SAR OF CHINA ROUNDTABLE PARTICIPANT

4.1 Organisational objective

Any transformation must start with a clear view of the purpose of the organisation. Change for change's sake is never effective. Organisations are increasingly considering the importance of purpose as well as profit. The return is now measured in the impact made on a broad range of stakeholders. The debate about human-induced climate change and headline statements from the sixth assessment report of the Intergovernmental Panel on Climate Change (IPCC 2021), the broader sustainability challenge and ESG agendas, shows how organisations are increasingly needing to respond to a broader set of challenges that are now uppermost in the minds of many stakeholders.

Clarity of vision and purpose are essential. If an initiative does not support these then it adds no value to the organisation and whether to proceed with it should rightly be questioned. In many organisations, finance teams have a significant role to play in the definition and evaluation of organisational purpose. They need to translate this into a clarity of the input into the transformation process. They will not support the organisation by being bystanders but need to play an effective role in monitoring performance.

Transformation is about being creative. The pandemic has demonstrated that those organisations that are able to collaborate and innovate have been the ones able to cope better. Before the pandemic, many organisations invested heavily in innovation skills programmes. As an example, the organisation Idea to Value cites that there are 15 important innovation theories that an organisation should be using (Skillicorn 2017). This is not to decry the use of innovation theories as facilitation tools, but at the core of effective innovation is an organisational culture that focuses on creating value and tackling problems. This comes from the tone set by leadership, and if finance teams, and finance leaders, operate with an overly cautious mindset then there may be two consequences. The first will be that finance teams are seen as blockers to the necessary evolution of the organisation and the second is that they are not even invited to the table.

Finance teams therefore need to have skills in innovation and creativity to combine with their awareness of the organisational strategy and of the technology and data that will drive business change.

SKILLS IN TECHNOLOGY AND DATA ARE ESSENTIAL, AS ARE INNOVATION AND CREATIVITY.

The changes that the transformation process creates are linked to the organisation's performance. As has been discussed in Chapter 3, the definition of performance itself is changing. Increasingly, broader disclosure requirements include aspects of the ESG agenda, such as those required by governments that legislate along the Task Force on Climate-Related Financial Disclosures (TCFD) guidelines. Several jurisdictions are already moving to mandatory regimes, including New Zealand (from 2023), Hong Kong SAR of China (from 2025) and the UK (from 2025). Finance teams need to work with other areas of their organisations to consider how the information that they need to fulfil these requirements is being embedded into their to-be business models. In fact, it is not only external reporting that should encompass such issues. As ACCA and PwC note in their report, *Finance Insights – Reimagined* (ACCA / PwC 2020), these considerations also need to be cascaded into the internal decision-making processes. As guardians of the performance model, finance teams need to play an integral role in the initiation of the transformation initiatives.

An Indian roundtable participant comments 'digital finance transformation can change the role of finance from scorekeeper to a business partner'.



For a discussion on transformation from the perspective of the finance and accountancy profession listen to the podcast.

4.2 Project/programme and change management

'Transformation' has a myriad different terms and approaches. The approach that is most appropriate will be determined by the timescales, resources available, end objective and, often, the priorities of the sponsor and the initiative leader. The Appendix to this report gives an overview of some of the key approaches that can be adopted.

Behavioural change management is a key subject and one that is often ignored or categorised as 'too difficult'. Yet failure to engage is cited as one of the key reasons why transformational initiatives fail (Anderson, 2018). In reality, the change management activity needs to start

before day one of the initiative and carry on until past the launch date. Leadership in this area is key and as finance professionals are often central connectors across organisations, they have a pivotal role to play in ensuring the success of the initiative and help ensure Agile projects achieve success (Cross et al. 2021).

4.3 Operating model

Once the business value case has been developed and approved, activity can move forwards into the operating model phase. The transformation team need to establish a robust 'to-be' model for the organisation. This is known as the target operating model. This has great relevance to the finance team as it sets out how the organisation will operate and the data that will be collected.

Organisational change management in an agile culture

Any discussion that focuses on transformation will include the subject of change management directly relating to the organisation, behaviours, and culture.

Such debates frequently attribute project failures due to 'poor change management'. This has been the case since the advent of computerisation in the 1960s.

The Association for Project Management defines change management as, 'the overarching approach taken in an organisation to move from the current to a future desirable state using a coordinated and structured approach in collaboration with stakeholders' (Murray-Webster and Dalcher 2019).

There has been a significant amount of research in this area and perhaps one of the most recognised models of change management was developed by John Kotter in his book *Leading Change* (Kotter 1995), in which he identified an eight-step model for managing change:

1. create a sense of urgency
2. build a guiding coalition
3. form a strategic vision and initiatives
4. enlist a volunteer army
5. enable action by removing barriers
6. generate short-term wins
7. sustain acceleration
8. institute change.

Much of this work has focused on achieving change in large-scale, waterfall (see section 2.6 and Appendix), projects. As Sarah Jensen Clayton, a senior partner at Korn-Ferry, comments in an article in *Harvard Business Review*, 'traditional change management – often characterized by heavy process, lengthy timelines, and clunky rollouts – won't cut it right now. As organisations fundamentally rethink their product and service portfolios, reinvent their supply chains, pursue large-scale organizational restructuring, determine on the fly

how to operate in a virtual world and rebuild to correct systemic racism from the ground up, the type of change management required in this moment is quick, agile, and (in many cases) virtual' (Clayton 2021).

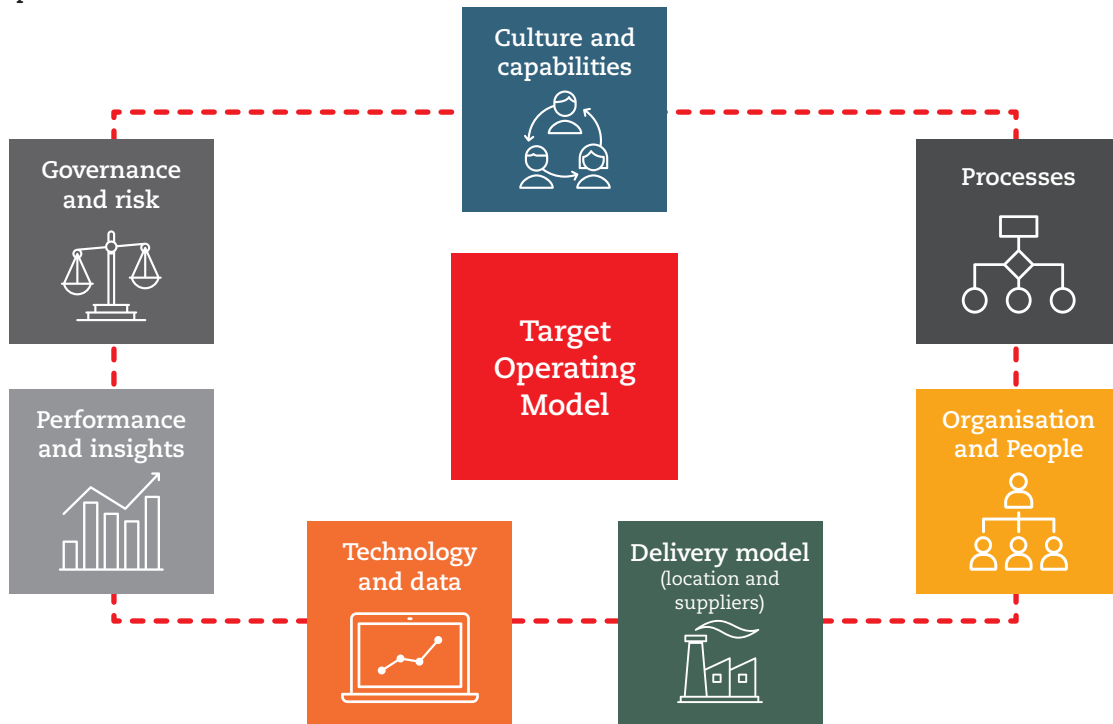
The importance of a strong vision and the need for change must be recognised in the new normal. The change needs to be led by a visible project sponsor who can clearly articulate the 'what is in it for me' statement across the organisation.

In an Agile approach, teams are self-organising. It is important to harness this aspect during change management as these teams are your advocates for change within the organisation. They can support the sponsor in delivering effective messaging and obtaining commitment.

'Test and learn' is another important aspect of the Agile approach. The ability to fail fast and learn from it is something that is recognised as valuable. This needs to be harnessed as a change-management activity by recognising that the minimum viable product is often a launch pad for inputs and improvements that can involve others in the process and engender commitment. The need to drive change across the series of interactions is articulated by Melanie Franklin in her paper *Introduction to Agile Change Management* (Franklin 2018). The engagement and feedback processes are typically shortened with this focus on the Sprints. Increasingly, the rewards that people seek as a result of change activities are non-financial and this is especially true in Agile systems. As Clayton comments, 'According to Korn Ferry research, the world's most admired companies are more likely than their peers to anticipate change, to consistently capture the next opportunity, to quickly fill people capability gaps and to quickly deploy teams to solve the challenge at hand' (Clayton 2021).

Target operating model

One key component of a transformation is the *target operating model* of the organisation. This model can be expressed as having several components. The definition of the model is not uniform, but it can be expressed as shown below.



At the start of the model are the *culture and capabilities* of the organisation. These derive from the purpose and vision and articulate what the organisation is capable of and what it is intended to achieve. In certain instances, the desired transformation may be so fundamental that culture and capabilities need to change for it to be successful.

The model reflects the activities that the organisation undertakes to deliver value to its customers and stakeholders. Increasingly, these two elements – activities and value – are at the core of the model, as they should reflect the organisation’s purpose. Part of this purpose may well be a strong alignment to environmental protection and other related goals. The focus may be on the location of the organisation’s natural capital.

The *processes* should be optimised to deliver value through the product life cycle. The organisational model requires the right people and skills needed to achieve the purpose and to drive the processes. The organisational structure defined within the model includes how teams collaborate and add value. As organisations are becoming flatter the need for the structure to be based on skills and capabilities rather than hierarchies is becoming more apparent. This highlights the importance of the human as well as the social and environmental capitals.

The *delivery model* determines how the organisation provides value to customers and stakeholders. It may include aspects of organisational structure and accountability and hence is closely linked to these components. This may involve tangible assets, including the interaction with suppliers and raw materials, as well as location strategies

recognising the need to be close to either raw materials or markets, thereby relating to the manufactured capital.

The delivery model for more service-focused organisations may be more concerned with the intangible assets needed to provide the service, so the location strategies may be determined by different drivers, such as access to specialist knowledge or skills. One impact of the pandemic is to cause organisations to think differently about these strategies and concentrate more on the necessary skills balance rather than on physical presence in a particular location.

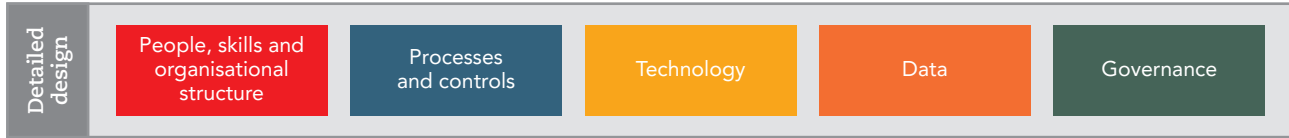
Each of these components must be taken into account by a *technology and data* strategy that drives how information is captured and processed in the organisation. This strategy must encompass the architecture of applications and data needed by the above components.

In all these activities it is important to measure *performance and insight*. This may be called the ‘management information’ component of the target operating model. This involves an approach to monitoring performance that uses the data captured from the previous activities.

Governance and risk management must balance the operating needs of the organisation with the needs for the security, privacy and ethical behaviour that are required of organisations.

The *target nature* of the model is that it constitutes the ‘to-be’ state that should exist after the completion of the transformational activity. Before beginning to define this ‘to-be’ state it is important to understand the ‘as-is’ (the current state) and hence the necessary level of transformation needed. This latter activity is reflected in the *roadmap*.

FIGURE 4.1: Detailed design steps in a transformation



From the operating model and roadmap, several detailed designs are developed (as shown in Figure 4.1). The following sections discuss the role of the finance team in each of these. It should be appreciated that none of these detailed designs exists in isolation; they are all interdependent. Accountancy and finance professionals must understand these interrelationships and ensure that a full role is played by each component.

4.4 People, skills and organisational structure

In a transformation, the people, their skills and the structural aspects are fundamental. People make organisations and there is always a fear that change equates to a reduced number of roles and a consequent impact on livelihoods. This was highlighted in the Republic of Ireland roundtable, where the term ‘transformation’ had many negative connotations.

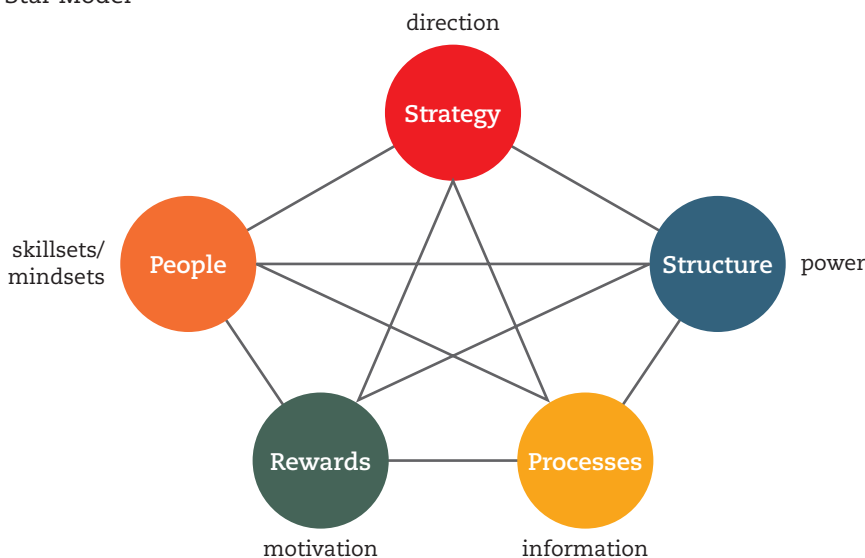
One area of consensus amongst professionals is the impact of transformation is organisation wide beyond the finance function. Organisational design (OD) helps make possible the design and testing of potential new structures aligning with a transformation. A plethora of organisational frameworks or models some customisable using organisational surveys builds on the heritage of organisational development academics and

practitioners (Lewin, 1951; Leavitt, 1965; Likert, 1967; Weisbord, 1976; Nadler and Tushman, 1977; Waterman et al., 1980; Tichy, 1983; Nelson and Burn, 1984; Harrison, 1987; Burke-Litwin, 1992; Falletta, 2008) helps provide an understanding of how best to administer individual organisational interventions.

OD is a complex process and can often be forgotten when technology is considered. In the 1960s, Jay Galbraith, who was a leading consultant in this area, constructed his Star Model™ (Galbraith, 2016), which expresses the overall approach. The model represents the bases upon which organisations should make their design considerations (Figure 4.2).

Galbraith describes the model thus: ‘design policies fall into five categories. The first is *strategy*, which determines direction. The second is *structure*, which determines the location of decision-making power. The third is *processes*, which have to do with the flow of information; they are the means of responding to information technologies. The fourth is *rewards* and reward systems, which influence the motivation of people to perform and address organizational goals. The fifth category of the model is made up of policies relating to *people* (human resource policies), which influence and frequently define the employees’ mind-sets and skills’ (Galbraith, 2016).

FIGURE 4.2: The Star Model™



The key to any transformation is that one must focus on a design that is grounded in the organisational strategy and the target operating model, while also embracing the culture of the organisation, as doing this is a fundamental part of a successful initiative.

Finance and accountancy professionals need to recognise that the development of the 'to-be' state, that is the target operating model, starts at a detailed level with the organisation's people and culture. The employees and other stakeholders cannot be bystanders in this process. The need to participate in decisions that support the organisational structure and in turn influence the governance and control structures. At a minimum, they must be aware of what is intended. Increasingly, internal control and data collection are taking place outside the finance function. The Star Model™ emphasises the importance of personal influence, the distribution of power and the flow of information.

As has been discussed in section 1.3, changes in the future of work (as opposed to the environment of work) mean that organisations are thinking differently about not only their operational structures, but also the skills and talent necessary to resource their activities. For all organisations, there is a strong link between the well-being of the workforce and the ambition for the brand. As organisational structures evolve, so too do mechanisms of management, authorisation and control. There is a potential that future transformations, post-pandemic, will look different from those that might have been envisioned before it. It should also be noted that there are generational shifts forming undercurrents to these organisational changes.

4.5 Process

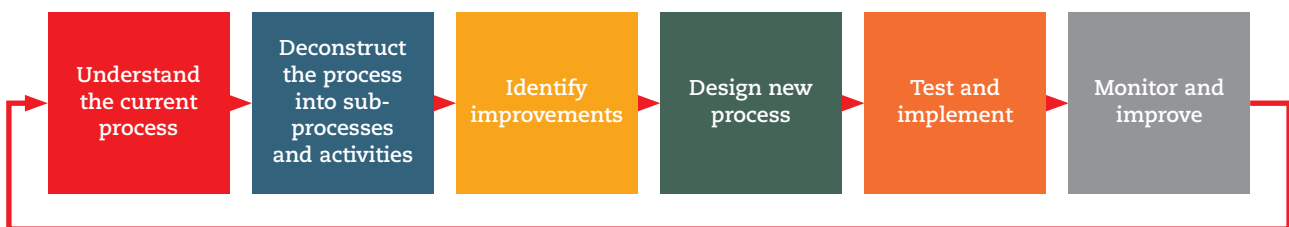
Process design is closely linked to organisational design. In overview, the steps in Figure 4.3 are a simplified model of process design.

The basis of such an activity chain can be seen in techniques such as Lean and Six Sigma, which were developed in the 1960s and 1970s as responses to the need to improve processes and reduce waste. Continuous improvement is created by embedding constant change.

As the capture of finance-relevant data increasingly occurs outside the traditional boundaries of the finance function, the importance of understanding the organisation's processes is ever greater. Finance teams cannot afford to stand back and be concerned purely with the integrity of data in their own function. Rather, they need to understand whether the completeness, existence and accuracy objectives are satisfied at points outside the function, and increasingly even outside the organisation itself.

The processes themselves are increasingly being automated. As ACCA discussed in its report *The Race for Relevance* (ACCA 2017), the importance of investing in technology to support automated and robust processes is essential. Those organisations that either fail to do so, or are unable to do so, fall victim to a deficit that it is hard to recover from. As one African roundtable participant commented, 'any company that has been left behind in transformation will lose out at the end of the day'.

FIGURE 4.3: A process design framework



THE IMPORTANCE OF INVESTING IN TECHNOLOGY TO SUPPORT AUTOMATED AND ROBUST PROCESSES IS ESSENTIAL. THOSE ORGANISATIONS THAT EITHER FAIL TO DO SO, OR ARE UNABLE TO DO SO, FALL VICTIM TO A DEFICIT THAT IT IS HARD TO RECOVER FROM.

4.6 Technology

As said earlier, advances in technology are often cited as one of the key drivers for organisational change. This may itself be a fallacy as transformations that are driven solely by the desire to implement some form of technology do not achieve sustained outcomes. Technology projects searching for a business issue are notoriously bad for organisations' performance and in their overall impact. As one Australian roundtable participant commented, 'digital technology is the enabler for transformation. It's not the transformation itself'.

A UK roundtable CFO participant commented that, '[I] need to learn how to judge [a technology] without having the knowledge. It is another kind of decision making: ...taking decision[s] under uncertainty, taking decisions in a crisis and taking a decision about what the next technology would be without being an IT specialist'.

A Luxembourg roundtable participant cautioned, 'digital is not only about technology, it is also about a change of mindset, [a] change of processes and creating an experience for the customer'.

The use of emergent technologies has clear benefits. Much of the trend of 'digital transformation' is driven by their use. When they are applied in combination there can be substantial benefits for organisations. The adoption of Cloud-based computing and storage has facilitated major shifts in the models of organisations. The organisation's technology landscape is shifting to one where these Cloud-based applications dominate – hence we have the concept of a 'digital core'.

CLOUD IS AN ENABLER OF TRANSFORMATION, NOT AN END-GOAL.

Digital core

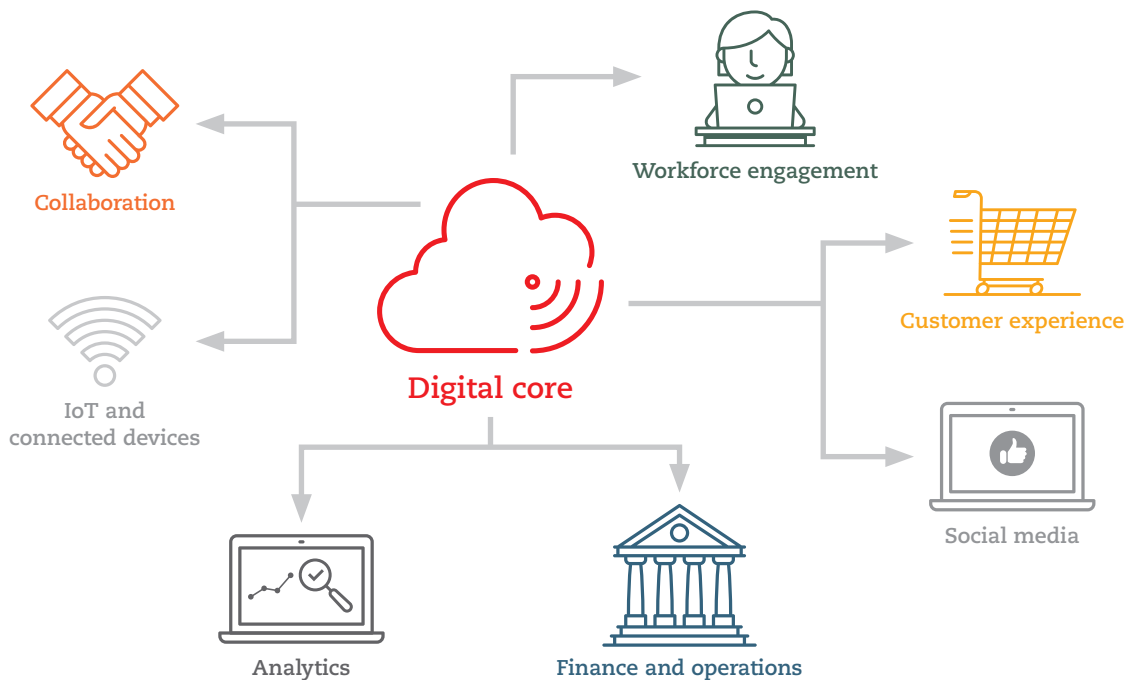
Organisations are changing their application strategies away from one single application that addresses most, if not all, of the business model to one that is based upon a range of best-of-breed software applications that are hosted in the Cloud.

Software vendors supply application programming interfaces (APIs) to facilitate communication between these applications without the need for bespoke programming or the rekeying of information.

The adoption of this model requires a clear view of the data model that supports the organisation and of the governance of data within the model.

The figure below shows how the various business-related applications are connected via the core data repository, which may be the accounting application in part.

The development of the model reflects a change in perception among software vendors to promoting integration rather than exclusivity.



Cloud Native and Microservices

It is in the design of the technological applications that one of the most fundamental changes in the transformation process has taken place. As David Armano comments in Forbes, 'in the first wave of the web, led by Amazon and e-commerce, most companies implemented what was referred to as a 'waterfall' process to build websites. Modelled after industrial era type manufacturing such as an assembly line – these processes prioritized steps, phases, internal testing and then a final launch in linear and sequential fashion. Today, most tech companies (and business enterprise alike) follow some form of an agile process to build and maintain their digital ecosystems. The Agile process looks less like a series of concrete cascading steps and more like multiple cycles that test and iterate changes to code based on real time feedback. Facebook, for example, is famous for 'beta testing' platform features with test groups before rolling out significant new features to mass audiences'¹⁰ (Armano 2018). It is in this change, facilitated by the Cloud, that has created the opportunities for organisations to be more responsive and flexible.

Organisations, especially those that are more customer focused, are increasingly focusing on Cloud Native (the assumption that all applications are based in a Cloud architecture) and microservices¹¹ focused solutions to deliver agility in responding to changing market conditions. Assuming a Cloud-first strategy and using small component applications that are rapidly deployable helps organisations to respond to short term requirements, such as a peak caused by a promotional campaign. By their nature they are more operational in nature and would fall outside of the traditional business case approval mechanisms, rather are funded as business as usual developments by small project teams. As finance professionals it is important to appreciate these how these technologies enable organisations to be responsive and meet peaks in demand.

Low-Code and No-Code

Similarly, for many internally focus solutions, no-code or low-code applications are allowing more substantive end-user developments than hither to. Finance professionals need to embrace these technologies as part of their own transformation and automation activities, as well as understanding how they can be applied elsewhere. One interviewee commented that, in their view, 'the only way forward is low-code and Cloud. Organizations that succeed are going to be those that can tip towards this. The inflection point probably came between April and December last year [2020] when organisations suddenly

realised everything had to be digitised and if they did not have a Cloud strategy, then Covid-19, became the Cloud or digital strategy.'

Finance functions technology

A CFO from Canada commented that, in finance functions, 'we want systems that allow us to adapt and get more information and more live information. [We need] dashboards that allow everybody to have more of the pulse of the organisation. So that is what agile means to me in the context of digital transformation, because it feels like it is more rapid. It feels like you are you are creating the structure to be faster and more agile'.

Increasingly there is an integration of operation and financial systems. The concept of the digital core means that data is captured through systems that are outside the traditional finance domain. The integration of the applications means that finance teams need a greater appreciation of how the process aggregates data during transformation. These operational systems may involve connectivity of devices, through either mobile phone connectivity (such as 5G) or microsatellites. One roundtable participant commented on the risks of this, however, 'once you start doing that you have a cyber and risk overlay'.

Finance teams need to understand the technology stack and how it is applied. If the technology being implemented does not address the needs of the user, then it serves no purpose. The technology architecture needs to support the ability of finance to derive insight and to add value using data.

4.7 Data

There is no denying that the world is generating ever more data.

- A 2019 estimate of the volume of data created was that 2.5 quintillion¹² bytes of data were then being created every day, and that 90% of the world's data had been created in the previous two years alone. Already a staggering figure, it was expected that the volume of data would double every two years (Johnson 2019).
- The size of the business intelligence and analytics software application market is forecast to reach around US\$16.5bn in 2022 (Miltz 2021).
- A 2019 forecast predicts that the entire digital universe would reach 44 zettabytes¹³ by 2020. This means at least 40 times more bytes than there are stars in the observable universe (Desjardins 2019).

¹⁰ Explanations of the terms 'waterfall' and 'Agile' are given in the Appendix.

¹¹ Descriptions of Cloud Native, microservices and low-code / no-code can be found in the Appendix.

¹² A quintillion is a thousand raised to the power of six (10¹⁸).

¹³ A zettabyte is a unit of information equal to one sextillion (10²¹) bytes.

- On one estimate, 7.5 septillion (7,700,000,000,000,000,000,000,000) gigabytes of data are generated every single day in 2021 (Hedberg et al. 2021).

This explosion of data tells us many things about the society in which we live: how we behave as consumers, for example, and how we interact with others. Being able to analyse and interpret this data gives us the ability to understand what is happening in near real-time. Many transformations have components that focus on data.

From a finance perspective, the importance of using data to generate information to support insight is fundamental. Any transformation needs a data strategy, and finance teams, who are increasingly active players in organisations in data management and governance, have a role to play. ACCA and PwC stressed the role of finance in data governance and strategy in their report *Finance Functions: Seizing the Opportunity* (ACCA / PwC 2021).

4.8 Governance and risk

In any transformational initiative there should always be a governance and risk track. This is often forgotten, but as data and processes become increasingly automated it is important to remember the internal control objectives when defining the 'to-be' state. Finance professionals clearly have a vital role to play in this, as many other team members may not understand, or appreciate, these objectives.

At a broader level, governance is also evolving. In ACCA's report *Rethinking Risk for the Future* (ACCA 2021b) the broader nature of governance and risk management are explored. Collecting information to sustain this agenda and enable the effective assessment and management of risks is a further consideration that needs to be included in any transformational initiative.

4.9 Transformation culture

As we so often hear from the virtual roundtables across the globe, transformation at the individual level is about a 'transformational mindset'. Individuals with a fixed mindset are less likely to flourish than those with a growth mindset (Dweck 2007). To achieve objectives in unpredictable environments, being agile is essential. Agile methods beyond software development accelerate process improvements and product development. Identification of highly connected individuals is a core principle of getting Agile projects right (Cross et al. 2021).

Having an organisational culture that supports transformation; one that fosters innovation, is essential. Transformations are only successful if those involved in them believe in the benefits and understand the value. As finance and accountancy professionals who often play roles across the organisation, it is important to

be agents of this culture. Therefore, it is important to understand what the benefit the organisation derives from these activities and how to activity support innovation and creativity.

The pandemic accelerates transformation at an individual level, with working from home, onboarding people remotely, working through teams on a continuous basis and the evolution of business models with the creation of a new work culture. Culture is a complex issue and has many facets.

Technology not only makes possible the new ways of working but emergent technologies, including blockchain, are positioned for robust reporting and provision of management information for the finance professional. Knowledge of financial accounting software and finance accountancy is essential, but obtaining skills in data analysis and use of analytics provides an advantage for the individual, who can then help enable transformation rather than resisting change.

Beyond matters of technology, the individual professional can impact climate change and sustainability directly through natural capital strategies (ACCA 2020c). Building on core skills of reporting and compliance, the professional helps drive actions and outcomes for environmental impact. At this stage, while teams may not focus closely on such areas, the individual can stimulate the team to come on the journey. Connecting to the decision making that links the organisational and societal objectives together puts the finance and accountancy professional at the centre of transformational change in customer-centric businesses (ACCA / PwC 2020).

The professional is well positioned to understand business operations. As key performance indicators (KPIs) become more qualitative, embracing, for instance, the need to enhance digital marketing in the organisation, this further reinforces the need for upskilling in areas outside the traditional sphere of finance accountancy knowledge and for proactive participation in new areas requiring business development.

At the individual level, the skills of analytics, business operations and learning play a critical part in the role of the professional in delivering transformation. How can transformation become a part of daily work life? Small ('atomic') changes of a 1% improvement to daily routines have a big impact (Clear 2018.)

This shift in mindset involves a cultural change in the individual's view of the role of technology in business. For most companies, from fast-moving consumer goods such as pharmaceuticals even to those dealing in real estate, all areas have undergone a degree of digital transformation. Consumers wish to have the product

delivered to the home. During Covid and beyond everybody expects contactless delivery.

A mindset change is an essential foundation for the adoption of new approaches and a new skill set. A lot of effort is put into data visualisations, storytelling and predictive analytics. While previously such skills underwent a fragmentation in the workplace, by 2021 the new skills had become available across entire CFO organisations. Regular training programmes on 'digital awareness' or 'digital adoption' have accelerated the mindset change, helping to ensure that the embedded skills are up to date.

STRONG LEADERSHIP AND CULTURE ARE VITAL TO A SUCCESSFUL TRANSFORMATION.



For a discussion on the importance of culture in transformation, listen to the podcast.

TRANSFORMATION IS ABOUT BEING CREATIVE. THE PANDEMIC HAS DEMONSTRATED THAT THOSE ORGANISATIONS THAT ARE ABLE TO COLLABORATE AND INNOVATE HAVE BEEN THE ONES ABLE TO COPE BETTER.



5. Is transformation transforming itself?

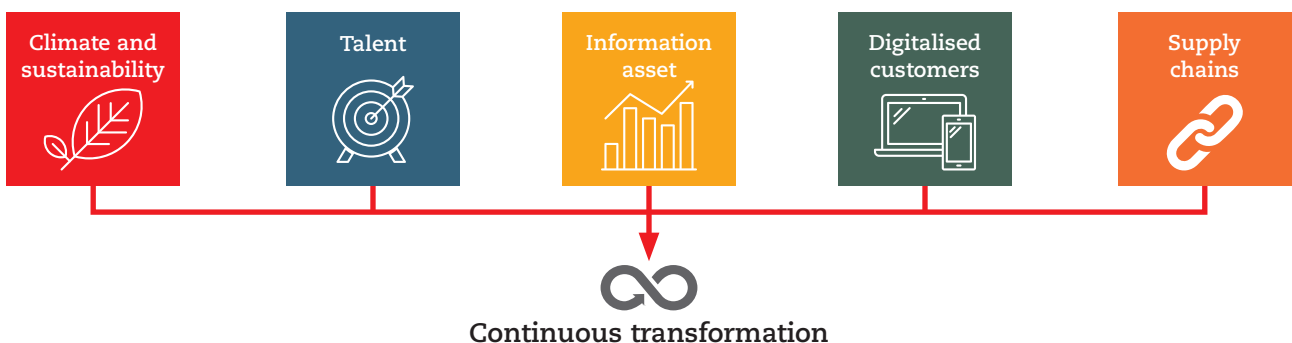
5.1 Influencing factors

Chapter 4 presents a view of transformation outlining an approach where there is a sense of having time to undertake and complete an initiative. The world has accelerated and increasingly organisations need to undertake transformation activities at a greater speed in order to respond to the needs of customers and stakeholders. The pandemic has reinforced that trend, in which transformation itself has transformed into a continuous process – continuous transformation. The reality, as one interviewee expressed it, was that ‘if you go from A to B, by the time you get to B it is probably obsolete and out of date. You need to embrace continual change and evolution: to build capabilities to be able to constantly evolve and’ adapt’.

Figure 5.1 illustrates the factors that have given rise to this change.

- **Climate and sustainability** – these are significant drivers for organisations, both large and small. As governments recognise the need to address the climate emergency, so organisations are needing to respond with their own plans to address carbon neutrality, net-zero, or similar defined targets. As the extent of the emergency becomes ever more apparent so the imperative to address the issues increases.
 - **Talent** – in many sectors there is a scarcity of talent: talent that is able to address tasks such as analytics and managing data as well as undertaking other activities. In many mature economies the workforce itself is ageing, meaning that talent pools are shrinking. One way of addressing this is through the increased use of automation.
 - **Information asset** – data is at the core of any organisation. That data has a commercial value: it is information that is valuable to others. Protecting that asset through categorisation and the application of cybersecurity is essential. Yet the cyber threat actors are also using the same technological advances to their advantage, meaning that the luxury of being protected by a physical barrier no longer exists as value chains become increasingly connected through their digital systems.
 - **Digitalised customers** – the way that customers interact with organisations changed during 2020 and the pattern established then shows no signs of fading. Customers want to conduct business electronically, expect accurate fulfilment of orders and an understanding of stock in real time. They also have access to a wider range of vendors and loyalty is increasingly questioned. Service, not price, is the basis of competition.
 - **Supply chains** – are changing from just-in-time to just-enough. The fragility of the global supply networks has been exposed by the pandemic. In combination with the climate and sustainability considerations, ethical considerations such as modern slavery in global supply chains are becoming increasingly relevant. The latter requires reporting based on the UK model (Section 54 of the Modern Slavery Act 2015).
- The combination of all these factors and the necessary speed of reaction means that organisations cannot afford to stand still. Yet at the same time, we may well have to make the trade-offs explicit (Kaplan 2020) when dealing with the factors influencing our transformation (Figure 5.1).

FIGURE 5.1: Factors influencing the transformation of transformation



5.2 Goodbye to industrial-age thinking

Many of the traditional processes, such as the waterfall approach, can be considered to come from industrial-age thinking. Procedures used to be performed step by step in assembly lines, and organisations delivered products in that manner. Business transformations were typically built around new structural elements, including policies, processes, facilities and technology. Some organisations also focused on behaviours — defining new practices, training new skills, or asking employees for new deliverables. This was very systematic.

To be able to react appropriately in the present, organisations need to be flexible and adaptable. Initiatives can be spun in an instant and forgotten in a moment if they are deemed unpractical. This needs to be reflected in the organisational culture.

Yet that culture is hard to establish. As individuals, we are conditioned to think in an industrial-age way. In most instances, our education follows a step-by-step rote pattern. Behaviours are inculcated at an early age and result in the behavioural bias of ‘conformity bias’ as individuals look to the established pattern to make a decision rather than making an independent judgment. But this does not apply to cultural transmission within music communities (Youngblood, 2019).

In changing people’s mindset to a more agile one, the role of the leader is key. Tony Schwartz comments in *Harvard Business Review*:

‘The most effective transformation begins with what’s going on inside people – and especially the most senior leaders, given their disproportionate authority and influence. Their challenge is to deliberately turn attention inward in order to begin noticing the fixed patterns in their thinking, how they’re feeling in any given moment, and how quickly the instinct for self-preservation can overwhelm rationality and a longer-term perspective, especially when the stakes are high’ (Schwartz 2018).

It is therefore important to question whether ‘business as usual’ and a new initiative focus are the way work needs to be organised, managed, controlled and executed now. The organisation needs to be organised first and foremost around the delivery of customer ‘value’. Hierarchy, functional design, and ‘work and process first’ thinking come from an industrial model of management that we need to flex to adapt to the world as it is now.

In turn, we must appreciate that this flexibility means the end of command-and-control hierarchies in organisations. As shown in Figure 1.3 in section 1.3, a more flexible, organic model works better and allows the organisation to be more responsive. This represents an organisational system which is integrated end-to-end and interconnected with the flow of work and data across the organisation to deliver value to the customer. Organisations need to focus on this to achieve their transformational goals.

Once the organisation has addressed its culture and its approach to continuous transformation, it can then look at how this will be achieved through the use of technology and data, while people remain in control.

The risk is that the combination of legacy-based leadership thinking combined with a collaborative approach to continuous transformation will cause paralysis.

5.3 Changing views of performance

The reports *Finance Insights – Reimagined* (ACCA / PwC 2020) and *Analytics in Finance and Accountancy* (ACCA / Chartered Accountants ANZ 2020) highlight the need for finance functions to look forward not back. The traditional view of performance is predicated on industrial-age thinking: recording and providing information on what has happened. To highlight the car analogy used in these two reports, this is looking through the rear-view mirror.

As the pandemic has reinforced, there is a need to be forward looking. To continue the car analogy, we need to look through the windscreen at the roundabout ahead, to evaluate the various exit routes and look out for any hazards as we approach and leave.

The ability to measure performance in the context of the strategic objectives of an organisation is essential, yet it is the informed view of how one can fine-tune the performance to accelerate the journey that matters more now.

For this reason, finance teams need to rethink their approach to performance and what this means for the transformational objectives. With more projects responding to real time situations, finance teams need to have developed a performance framework that is forward- as well as rearward-looking but is also adaptable. This typically requires the use of technologies, but again it is the people and processes that drive this, starting from the culture. In Chapter 3 the concept of value as it applies to projects was discussed. This needs to be applied to the entire performance management (or perhaps enabling performance) system.

5.4 Role of Agile, Design Thinking and DevOps

The traditional approach to transformation may well have served its purpose and potentially there will be significantly fewer transformations of that nature. The ability to respond to the need for continuous transformation is important. This can only be done using techniques such as Agile, Design Thinking and DevOps. One interviewee commented, 'to me these are far more than just techniques. They are a fundamentally different way of thinking and behaving which has [or] uses various techniques, practices and tools'.

For organisations to be successful in future there is a need to think differently. It is important for accountancy and finance professionals to embrace this thinking and to be prepared to fully engage in the project teams that these approaches create. The participation is not purely to keep the score but to bring the range of finance talents into play. To drive insights and decision making that support the organisation's strategic objectives. This approach is the future. As a roundtable participant from Africa commented, 'if Agile approaches are not used, digital transformation will eventually stagnate and fail'.

A Hong Kong SAR of China roundtable participant commented, 'agile is a word that is overused these days, but it is fundamental to everything. For me, agile is about how you go about the transformation. Once the transformation is in play, agile is the way that you need to react to the outcomes of the transformation and the information that comes to you. Because being agile does not mean that you walk down the same road in the same way every day in the same clothes. May be that street is not the best route and once you understand that the use of Google Maps can be part of your digital transformation you can work out a quicker and more efficient way to get to your destination. So, you are accepting the nature of the change'.

5.5 The imperative for finance

Some of the roundtable participants commented that their finance teams struggled with the concepts of the traditional transformation approaches. The reality is that if they failed to adapt to those then the challenges of this continuously changing and collaborative world will be even greater. Finance teams need to embrace this approach and consider how they deliver value to their stakeholders by being active players.



6. What can I do?

The virtual roundtable conversations have given voice in this report emphasise the need for professionals to:

- focus away from solely the short term and consider the long term
- engage with the environment as a matter of urgency
- look to the purpose of our businesses and our moral responsibility
- rethink business case and broaden the focus from financial to include ESG factors
- experiment during a time of ambiguity and be open to failing fast
- directly improve customer experiences.

As a finance and accountancy professional, you can play a critical and proactive role in transformation. We are at a pivotal moment, with the pandemic giving rise to opportunities not previously contemplated. Consider each of the areas discussed below and the potential actions that can be taken through a Design Thinking lens (see Appendix). For example, the roundtable conversations considered customer experience and sustainability as distinctly separate areas meriting attention. In fact, we can combine these areas to reinforce the notion of 'customer sustainability' or a 'sustainable customer'. By following the customer journey, we can impose a carbon price at each touch point or department activity as an internal mechanism to finance the ideal customer experience while mindful of sustainability.

Stakeholder management, customer experiences and sustainability

- Create different forums to get the right people round the table, ensuring inclusiveness.
- Ensure internal stakeholder management of customer journeys to get buy-in at the earliest stage.
- Embed sustainability/ESG and customer experience metrics/KPIs into finance systems and reporting at all levels from top down.
- Integrate customer experience and sustainability activities.

- Establish whole-of-organisation sustainability and customer experience reporting.
- Get ahead of regulation on reporting as an early 'dress rehearsal' for when legislation is enacted. The Task Force on Climate-Related Financial Disclosures (TCFD) guidelines is nearly five years old.
- Commence audit review of sustainability/ESG and customer experience metrics/KPIs, inclusive of metrics, risks and targets.
- Operate as a central information source, inspiring employees and customers to combine customer experience with sustainability, that is, creating the 'sustainable customer'.

Strategic alignment and execution of programmes

- Think holistically, see the big picture and include the right people from the beginning.
- Update the business case to a business value case, taking the focus away from individual projects and just the financial aspects.
- Create an 'off the shelf' gold-standard strategic case for transformation, programmes, strategic portfolio and projects embracing sustainability.
- Take ownership and accountability of the planning stage of a transformation, establishing both long-term measurement of outcomes and short-term execution.
- Ensure transformation is in total alignment with the strategy and the board vision.
- Alignment at the top level is critical to ensuring a successful transformation. The CFO must drive any mandates and determine the budget with the rest of the finance team.
- A transformation is not about projects, but depends on programmes and portfolios, and that distinction is ever more important. So having an overarching programme approach in line with the size and complexity of the task is essential even for existing projects.

People and upskilling

- Adapt, learn and communicate in a world of human and bot ('humbot') teams.
- Assist non-IT finance talent to move up the value chain from transaction and reporting and to gain skills for little to no code development, analytics and automating decision making. This helps employees overcome the fear of transformation.
- Throughout the entire organisation, champion, empower and help people to spend time on understanding what the growth mindset means and acquiring digital literacy.
- Evolve roles in finance to embrace sustainability.

Ethics of transformation

- As digitalisation progresses, balance transformation and ethics with prepared frequently asked questions, for example. the acceptability of monitoring of company-provided mobile phones?

Experimentation and mindset

- As part of experimentation, sponsor and support the evaluation of new tools and systems for use in transformation by your team members.
- Establish an agenda for experimentation, such as exploring different models for circular business, slashing carbon use in buildings, adopting innovative approaches to waste disposal, increasing use of renewable energy, or structuring the future workplace towards 2030.
- Encourage the development of minimum viable products (MVPs) consistent with your agenda within the finance team. Learn what works and what does change the mindset by providing feedback.
- Adopt a start-up approach, try things, use small amounts of budget to adopt an R&D approach. Create cross-functional teams through bridging the customer journey touchpoint stakeholders to engage in R&D.
- Encourage a mindset that advocates growth, strategic questioning and investment.

Transform finance to become the predictive finance team

- Articulate the clear purpose of the future of finance, overall strategy of transformation (digital and sustainability) and financial impacts with intended KPIs.
- Act with a future-thinking mindset for transformations, as data is readily available for review, audit, analysis and rapid decision making. Move from historical review of financials to forward thinking and future predictions of transformation activities.
- Finance team members establish themselves as enablers of transformation rather than blocking initiatives.
- Ensure the basics of the predictive finance team are underpinned by data literacy and a technology review.
- Increasingly use non-financial data such as big data and future-focused metrics to predict revenue and sales.
- Take ownership of the sustainability agenda, reporting, and the business value case.
- Take time with people to articulate the importance of the transformation and impacts on their roles, benefits and any downside.
- According to Peter Drucker, culture 'eats' strategy. Understand who can go on the journey and participate in the predictive finance team.

Technology and new tools of transformation

- Understand the use of Cloud and Cloud Native strategies in delivering transformation in organisations.
- Be aware of further developments in technology that will impact the target operating model and the data model.
- Consider new strategy deployment tools¹⁵ not previously used by finance and accountancy professionals for transformation.
- Move to embrace strategic execution software¹⁶ with a focus on reporting for transformation activities.
- Explore the everyday use of 'green' financial tools, including carbon pricing calculators and a formal taxonomy for classifying sustainable activities for investment. Incorporate into supporting materials for your business value case process.

¹⁵ Such as Hoshin Kanri lean technique for strategic planning using the X-matrix visualisation tool, Darwin matrix innovation process and visualisation tool, customer journey mapping tools and templates, low code tools such as Microsoft Power Automate or Wix Website builder and organisational network analysis tools including polinode and NodeXL.

¹⁶ Examples of such software include the applications Achieveit, Amplify-now, BetterTrack, Conductor, Changepoint, DecideAct and Wovex.

- Participate directly in the introduction of new technologies such as 3D printing for everything from making samples of shoes to the creation of concrete structures on site. Look to the transformation of physical supply chains with immediate implications for the data supply chain and accountancy.
- Review AI, RPA, machine learning and blockchain for their ability to produce insights and reporting and management information.

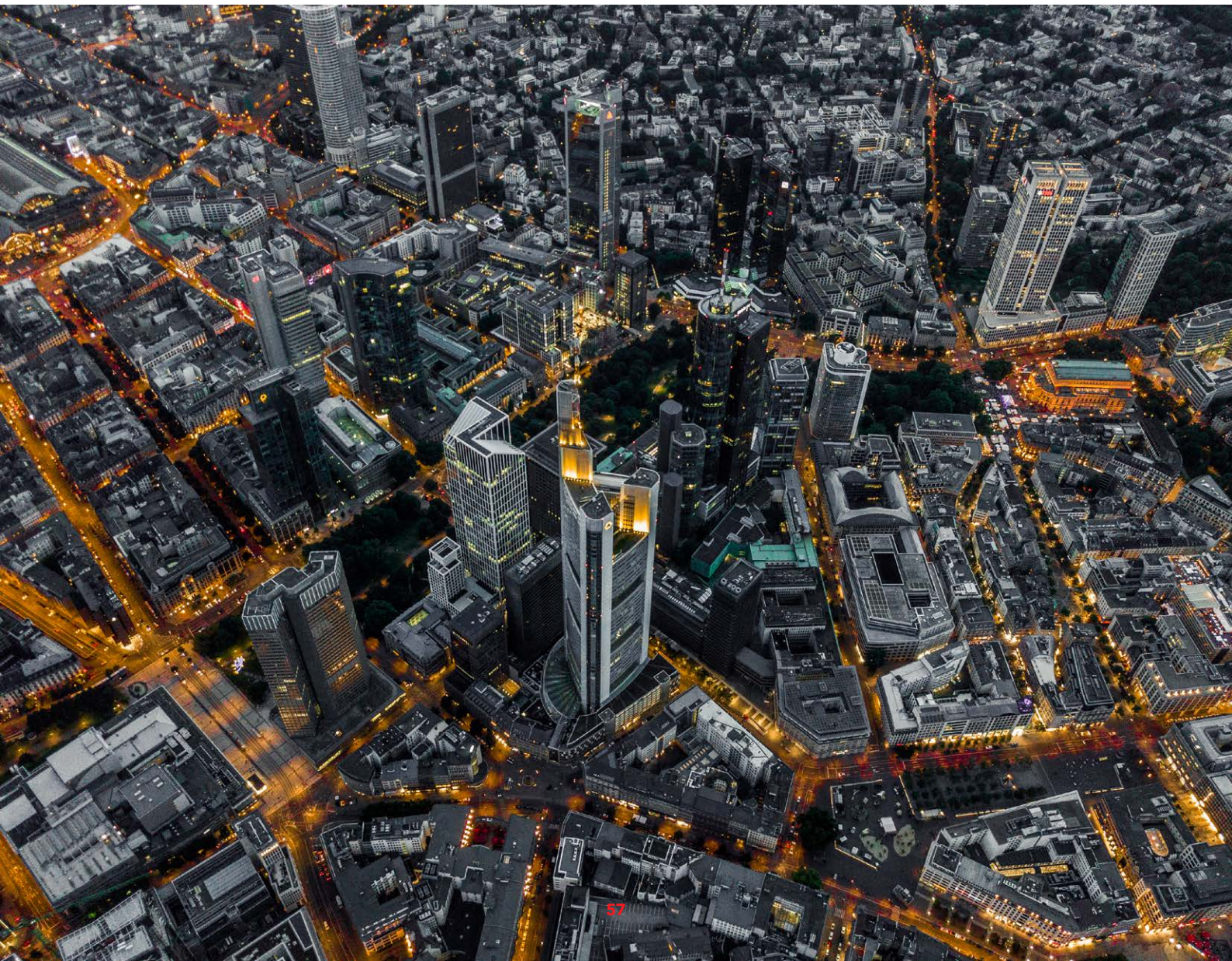
Times of crisis and lessons learnt from Covid-19

- Consider having two strategies 'on the shelf' to run in parallel: a survivability strategy and best sustainability strategy.
- Learn decision making during uncertainty by taking decisions.
- Decide on technology without being an IT specialist.

- Acquire a deep understanding of tools and technology.
- Inculcate a culture of accepting and embracing change.
- See the pandemic as a time machine to the future, speeding up things.

New business models for business agility

- Embrace opportunities to invent new business models and new propositions for the right market or segments of society to meet a customer or societal need.
- Consider 'as a service' models for transformation and sustainability initiatives.
- Transformation is key to understanding the desires of stakeholders. What do our customers need? Can we provide a better service to them? How can we sustain the confidence level of everybody interacting with transformation?



Conclusion

Finance teams have struggled with transformations in the traditional sense. They have needed to establish a clear reason to exist and a clear vision of what a digitally enabled finance function might look like. How should such a function integrate into the overall model of the organisation, given that the extent of interconnectivity of technology and data in the transformed organisation means that no one function is an island?

Previously, finance teams needed the necessary skills and capabilities to participate in transforming activities.

That was then. This is now.

The speed of transformation has changed. The need to have agility in business models and to ensure that the organisation is customer-centric means that we are entering a phase of continual transformation. Smaller-scale projects are needed that each make a difference to the customer and address a specific need yet form an integral part of the finance function.

There is a clear call for finance teams to help drive the transformation plan as well as participation in all business value cases. They need to demonstrate how value creation takes place and transform the traditional industrial-age thinking. They need to be ready to step forwards and

collaborate and innovate to transform, or rather re-invent, the traditional business case to a business value case embracing the imperatives of the 21st century facing executives and undertaking transformations that go beyond digital to embrace climate and sustainability, talent, protecting information assets, digitalised customers and reconfiguring supply chains. This is not about doing away with financial measures of performance but finding the balance between the long and short term and between the soft and hard metrics, while remaining mindful of moral judgement. In the last century, much effort went towards presenting the business case; now is the time for finance to help progress the journey of the business value case alongside the transforming journeys of customers and organisations. The journey of the business case to a business value case reflects the transformation of finance.

THE NEED TO HAVE AGILITY IN BUSINESS MODELS AND TO ENSURE THAT THE ORGANISATION IS CUSTOMER-CENTRIC MEANS THAT WE ARE ENTERING A PHASE OF CONTINUAL TRANSFORMATION.



Appendix – Transformation Approaches

Agile software development

Background

In 2001, 17 software developers met to discuss lightweight software development methods. There was nothing new in this approach, indeed IBM was experimenting with such an approach in 1957 (Larman and Basili 2003). Through their work the 17 developers came to value the following statements, which are articulated concisely as the *Manifesto for Agile Development* (Beck et al. 2001):

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

The developers stressed that ‘while there is value in the items on the right, we value the items on the left more’.

The developers of the Agile Manifesto stressed that they were not anti-methodology but rather wished to see the expediting of the software development process. The summit also produced The Twelve Principles of Agile

Software, which can be found on the Manifesto for Agile Software Development’s website.

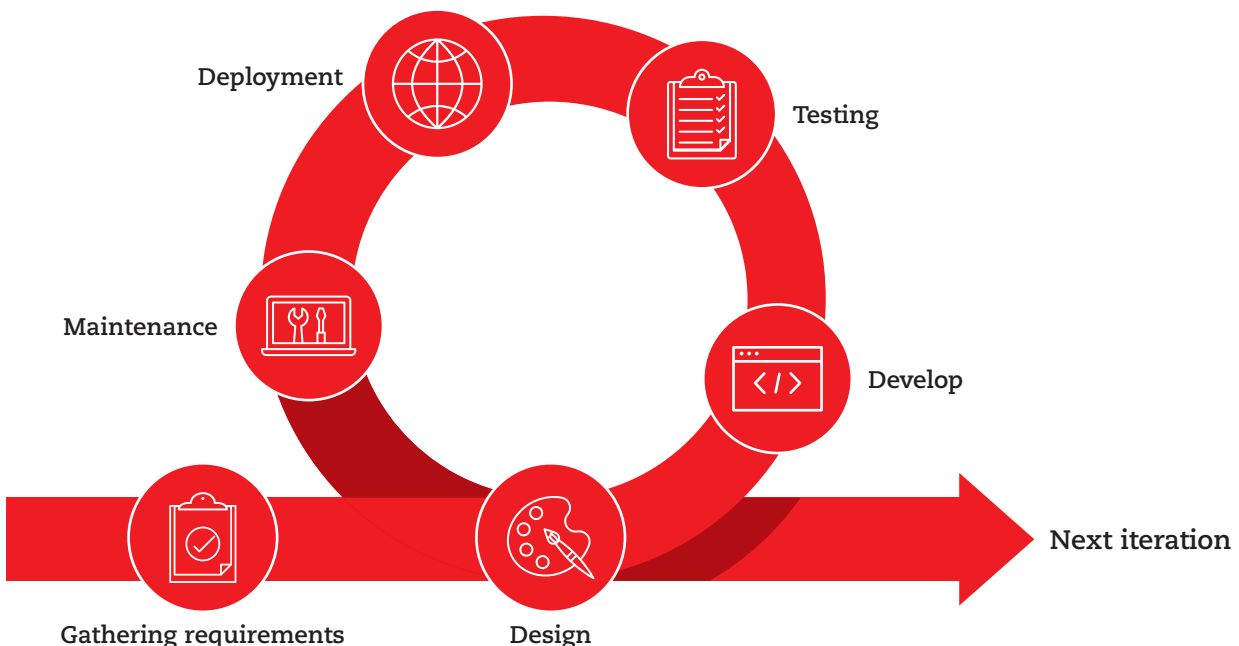
The authors of the Agile Manifesto chose ‘Agile’ as the label for this idea because that word represented the adaptiveness and responsiveness to change that was central to their approach. As a term, ‘Agile’ has come to refer to the concept of ‘ability to create and respond to change’. It is a way of dealing with, and ultimately succeeding in, an uncertain and turbulent environment.

How Agile software development works

Agile developments break the product development into small steps that minimise the up-front planning and design. The iterations, or Sprints, typically last between one and four weeks and are aimed at developing an available product, service or software release at the end of the process. The incremental nature of this process allows interactions with stakeholders and for projects to be terminated where they are thought to be likely to fail to produce the required outcome before too much effort is expended.

Figure A1 shows the nature of the Agile development cycle.

FIGURE A1: Agile development cycle



The Agile development life cycle has itself spawned several further development methods. These include:

- Agile modelling – an approach to modelling and document software developments
- Agile project management – an iterative approach to managing software development projects that focuses on continuous releases and incorporating customer feedback with every iteration
- Kanban – a method of managing and improving work across human systems; and
- Scrum – a framework using an Agile mindset for developing, delivering, and sustaining projects in a complex environment.

The Agile Alliance publishes a useful subway map (Agile Alliance 2021) which shows the relationships between the various techniques in the Agile family.

Several disadvantages of the Agile approach have been identified.

- As the end-goal of the project is relatively unpredictable, teams often fear the unknown, creating uncertainty in the delivery.
- It may require more time commitment from testers and users as they are more involved throughout the development process than in the waterfall approach.
- Documentation can be less detailed as there is less certainty about the outcome.
- Projects can easily go off track as the goals are less certain than in the waterfall approach.

Cloud Native

Cloud Native computing is an approach in software development that utilises Cloud computing to build and run scalable applications in modern, dynamic environments such as public, private, and hybrid Clouds.

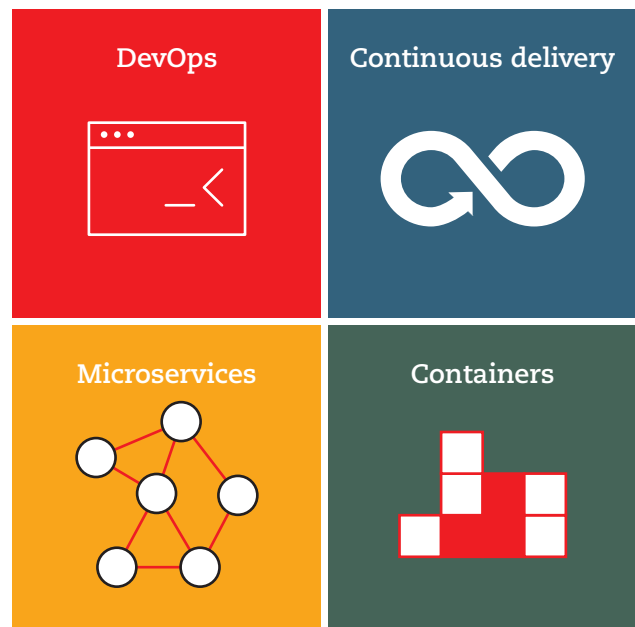
The Cloud Native Computing Foundation provides an official definition of the concept (The Linux Foundation 2021):

‘Cloud-native technologies empower organizations to build and run scalable applications in modern, dynamic environments such as public, private, and hybrid Clouds. Containers, service meshes, microservices, immutable infrastructure, and declarative APIs exemplify this approach.

‘These techniques enable loosely coupled systems that are resilient, manageable, and observable. Combined with robust automation, they allow engineers to make high-impact changes frequently and predictably with minimal toil’.

As users come to require rapid responsiveness and zero downtime so performance problems that lead to errors are no longer acceptable. Cloud Native is about speed and agility. It enables organisations to get products and services to market far quicker than traditional approaches.

FIGURE A2: Cloud Native



Cloud Native is a combination of techniques that focus on the ability to deliver services rapidly, as shown in Figure A2. They start from the premise that all applications are Cloud-based and take advantage of the platform as a service structure to deliver the applications.

The approach utilises a DevOps concept where each service is provided on a virtual machine, known as a container. Each container may be identical and is able to be replicated to scale the service. If one server fails or requires updating in this architecture it is simply destroyed and, automatically, a new virtual machine¹⁷ is stood up in its stead. This is known as the ‘cattle’ model.

17 A virtual machine is a computer system created using software on one physical computer in order to emulate the functionality of a separate physical computer.

Design thinking

Design Thinking is an iterative process in which we seek to understand the user, challenge assumptions and redefine problems to identify alternative strategies and solutions that might not be instantly apparent with our initial level of understanding. At the same time, Design Thinking provides problem solving strategies. It is a way of thinking and working as well as a collection of hands-on methods. It is especially relevant for:

- resolving ill-defined or ‘wicked’ problems that are not susceptible to traditional approaches
- adopting solution-focused strategies through redefining the problem
- using abductive and productive reasoning
- employing non-verbal, graphic/spatial modelling media, for example, sketching and prototyping.

Design Thinking centres on a deep interest in developing an understanding of the people for whom we are designing the products or services. It helps the project team to observe and develop empathy with the target user. Design Thinking helps in the process of questioning: questioning the problem, questioning the assumptions, and questioning the implications.

Design Thinking is useful in tackling problems that are ill-defined or unknown, by re-framing the problem in human-centric ways, creating many ideas in brainstorming sessions, and adopting a hands-on approach to prototyping and testing. Design Thinking also involves

continuous experimentation: sketching, prototyping, testing, and trying out concepts and ideas.

There are several variants of the stages in the Design Thinking approach, including the number of steps. The model in Figure A3 shows one view.

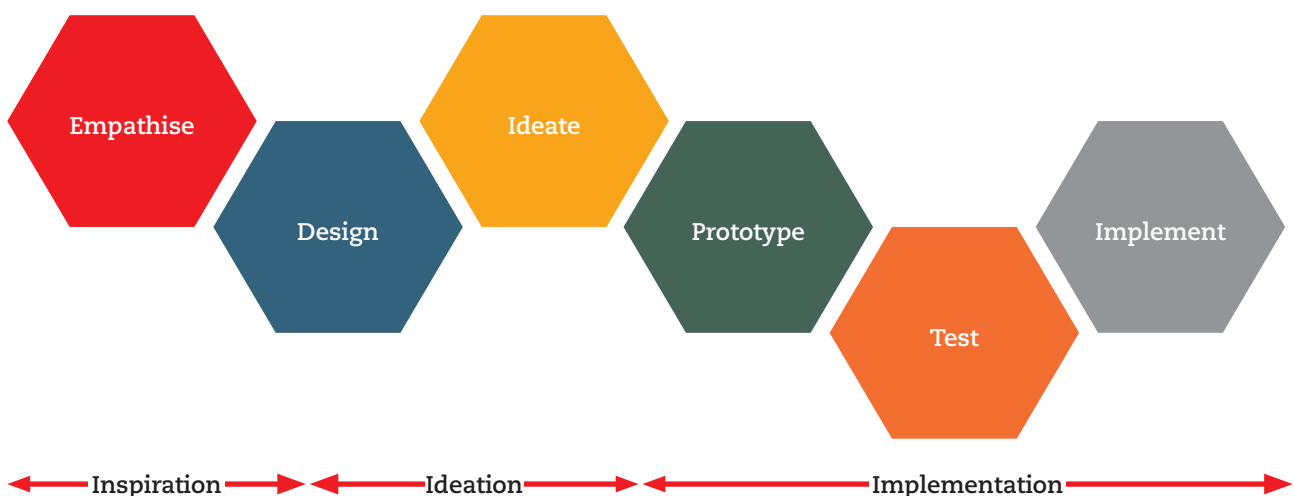
Projects may loop back through the phases as the team refines its ideas and considers potential solutions.

There are various debates about whether Design Thinking works in a business context. Writing in *Harvard Business Review*, Jeanne Liedtka (2018) argues that it ‘creates a natural flow from research to rollout. Immersion in the customer experience produces data, which is transformed into insights, which help teams agree on design criteria they use to brainstorm solutions’. Nonetheless, Design Thinking, especially as applied to business scenarios, has its critics. Jon Kolko (2018) argues that:

- it takes a thoughtful, complex, iterative, and often messy process and dramatically oversimplifies it to make it easily understandable
- it trivialises the role of craft and making things, which is fundamental to the process of design, and
- it promotes ‘empathy lite’ – as if an empathetic and meaningful connection with people could be forged in hours or even days.

Further, Kolko argues that Design Thinking has become a tool of consultancies to sell work, not something that drives real impact.

FIGURE A3: Design Thinking



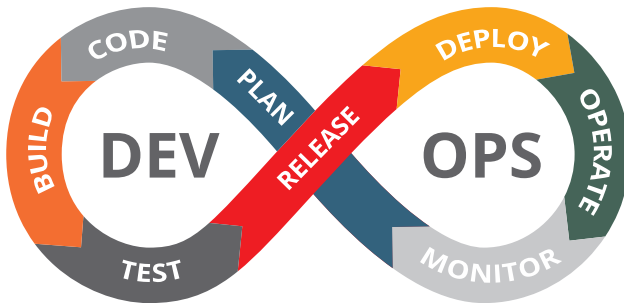
DevOps

The term DevOps was first coined in 2009 by Patrick Debois, when working to find a solution to the conflict between developers and systems administrators. He founded the DevOpsDays, reconciling the development and operations teams. DevOps is seeing a take up among organisations, with the *State of DevOps 2019* report (Forsgren et al. 2019) stating that the number of DevOps team members across organisations has kept growing over the previous three years to amount to an increase in 26% of participants.

DevOps is a set of practices that combines software development (Dev) and IT Operations (Ops). It aims to reduce the length of the traditional software development life cycle and to provide continuous delivery of high-quality software. DevOps is complementary to the Agile development methodology.

DevOps seeks to break down the barriers between traditionally siloed teams such as development, IT operations, quality, software engineering and IT security so that they collaborate to develop software (Figure A4).

FIGURE A4: DevOps



The DevOps approach has several advantages and challenges. The advantages include:

- fast and frequent delivery as well as shorter development cycles when compared with the traditional systems development life cycle
- dedicated teams with complementary skills help to focus on the delivery of the product while improving communication and collaboration

- DevOps practices are particularly well suited to minimising the impact of bottlenecks, rollbacks and deployment failures on the overall efficiency, allowing faster recovery times from problems.
- the focus on reliability and scalability reduces the risks inherent in these developments
- there are cost savings through a focus on actions.

Among the challenges, Costello predicts that 75% of DevOps initiatives will fail to meet expectations owing to organisational and cultural challenges (Costello 2019). She comments that ‘Organisations often launch DevOps efforts with insufficient consideration of business outcomes’.

Low-Code/No-Code

The Low-Code approach to software development uses a graphic user interface, with drag and drop and simple logic, rather than the traditional programming languages. A low-code platform can produce an operational application, or it can require some limited intervention from programmers to finalise the application. Its benefit is that the contributors to the software development do not need to be able to code directly. The software applications frequently include core modules that can be reused to develop several different applications. Whilst the development to applications in this manner can be advantageous, it is important not to forget the need for cyber security within the applications.

The approach itself has its origins in fourth generation programming languages but the term was first used by Forester in 2014 (Richardson and Rymer 2014). Statista predicts that the value of this software market will be USD65 million by 2027 (Mlitz 2021a).

The advantages of adopting a low-code approach are seen as its ability to help accelerate digital innovation and transformation by enabling developers and users to interact more effectively, reduce the dependency on technical skills that can often be in short supply, and enabling citizen developers.

Examples of low-code development tools include Appian, GeneXus, Salesforce Lightning and Microsoft PowerApps. Certain Robotic Process Automation tools follow low-code principles in their development processes.

No-Code is a variation of low-code that involves no coding at all.

Microservices

Microservices are very much linked to the Cloud Native architecture. There is no single definition of the concept however by consensus it is considered to include the following:

- Processes that operate over a network using technology agnostic protocols such as HTTP
- Services that are organised around business capabilities
- Services that are implemented using the most appropriate programming language, database or hardware environment; and
- Service that are small in size and focused on messaging and are decentralised. They are often built and released by automated processes.

Microservice stand outside the traditional monolithic application architecture and are self-contained pieces of functionality with clear interfaces (as shown in Figure A5).

Microsoft articulate the benefits of microservices as follows (Microsoft 2021):

- ‘Each microservice has an autonomous lifecycle and can evolve independently and deploy frequently. You don’t have to wait for a quarterly release to deploy a new features or update. You can update a small area of a complex application with less risk of disrupting the entire system.
- ‘Each microservice can scale independently. Instead of scaling the entire application as a single unit, you scale out only those services that require more processing power or network bandwidth. This fine-grained

approach to scaling provides for greater control of your system and helps to reduce overall costs as you scale portions of your system, not everything.’

Scrum

‘Scrum’ is a framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value. The philosophy of the Scrum is that it provides a means for teams to establish a hypothesis of how they think something works, try it out, reflect on the experience, and make the appropriate adjustments.

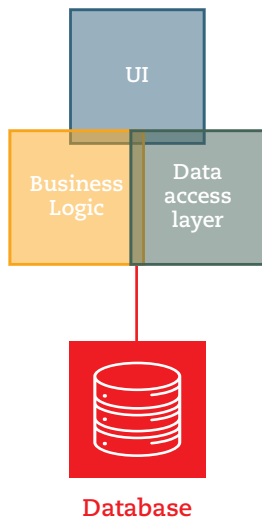
Ken Schwaber and Jeff Sutherland, who participated in the 2001 conversations that defined the Agile Development Framework, have written The Scrum Guide (Schwaber and Sutherland 2020). This document outlines the Scrum’s accountabilities, events, artefacts, and the rules that bind them together. Scrum is not a methodology; rather, it is an approach to solving complex problems where the team members self-organise and respect each other’s contributions. In the guide, Schwaber and Sutherland outline the values of the Scrum, which include Courage, Focus, Commitment, Respect, and Openness.

The Scrum (Figure A6) is led by the Scrum Master, who is responsible for fostering an environment where:

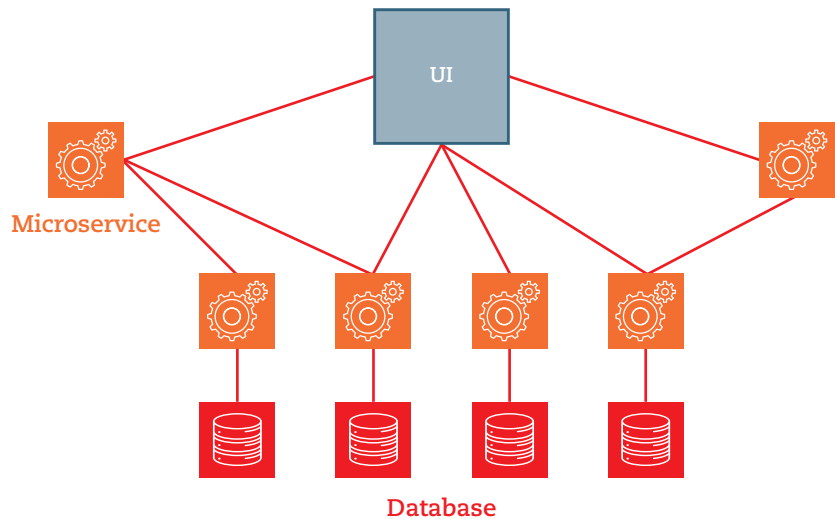
- a Product Owner organises and prioritises the work for a complex problem into a Product Backlog
- the Scrum Team turns a selection of the work into an increment of value during a Sprint
- the Scrum Team and its stakeholders inspect the results and adjust for the next Sprint.

FIGURE A5: Monolithic vs. microservice architectures

Monolithic architecture



Microservice architecture



The Scrum Master is supported by one product owner and team (the developers).

The Scrum process focuses on the minimisation of meetings and the fostering of collaboration and effort.

The process starts with the identification of a Product Backlog, which is an ordered list of what is needed to improve the product. This is the worklist for the team and should be achieved in one Sprint. The Product Backlog takes the hypothesis and breaks it down into a series of component tasks.

The Sprint Planning Meeting sets out the work to be done. The planning should take no more than eight hours. It considers the following points.

- Why is the Sprint valuable? The Product Owner outlines the value of the work effort to the organisation.
- What can be done in the Sprint? The team decides what can be achieved.
- How will it be done? The team decides a series of identifiable and achievable steps.

The Sprint Backlog is a plan by and for the team members. It is a highly visible, scheduled picture of the work that the team plan to accomplish during the Sprint to achieve the Sprint Goal. It is a living document that is updated as the Scrum progresses.

Sprints are the phase where the ideas are turned into value. They are iterative and a new Sprint commences after the previous Sprint is completed. The series of Sprints completes when the objective has been achieved.

Daily Scrums inspect progress toward the Sprint Goal and adapt the Sprint Backlog as necessary, adjusting the upcoming planned work. The Daily Scrum is a 15-minute event for the members of the Scrum Team. To reduce complexity, it is held at the same time and place every working day of the Sprint. If the Product Owner or Scrum Master is actively working on items in the Sprint Backlog, they participate as a team member.

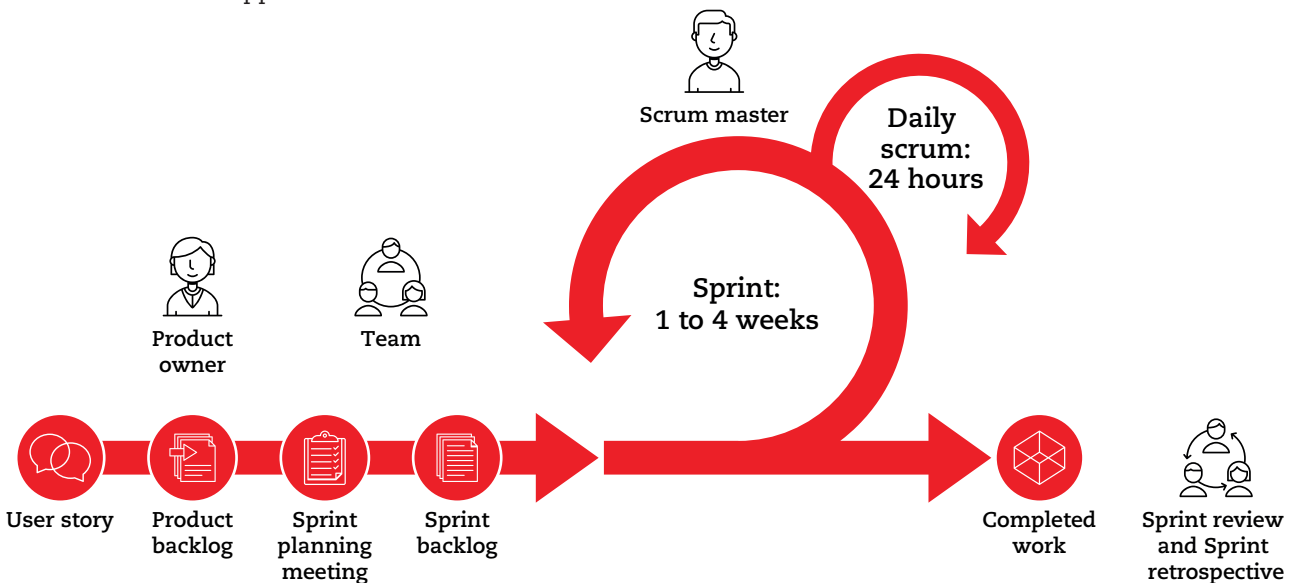
A Sprint Review is held at the end of the process. The purpose is to inspect the outcome of the Sprint and determine future adaptations. The Scrum Team presents the results of their work to key stakeholders, and progress toward the Product Goal is discussed.

At the conclusion of the process, the Sprint Retrospective reviews the activities and identifies ways of increasing quality and effectiveness.

Some disadvantages of Scrums have been identified.

- Scrum often leads to scope creep, owing to the lack of a definite end date.
- The chance of project failure is high if individuals are not very committed or cooperative.
- Adopting the Scrum framework in large teams is challenging.
- The framework can be successful only with experienced team members.
- Daily meetings sometimes frustrate team members.
- If any team member leaves in the middle of a project, it can have a huge negative impact on the project.
- Quality is hard to implement until the team goes through an aggressive testing process.

FIGURE A6: Scrum approach



System development life cycle (Waterfall)

The system development life cycle (SDLC) has formed the backbone of the approach to software development since the 1960s. The traditional framework has evolved into other approaches, such as the structured systems design and development methodology (SSADM) that was developed by the UK Office of Government Commerce in the 1980s.

The SDLC framework has several phases, all of which are normally completed sequentially, giving rise to the alternative name of the ‘waterfall approach’, which represents the phases as a circular series of activities (Figure A7).

In the *planning* phase a preliminary analysis is undertaken, alternative solutions proposed, and cost-benefit analysis undertaken.

In the *analysis* phase the problem is understood, and the requirements identified.

Once this is completed, in the *design* phase the business operations are defined and screens developed.

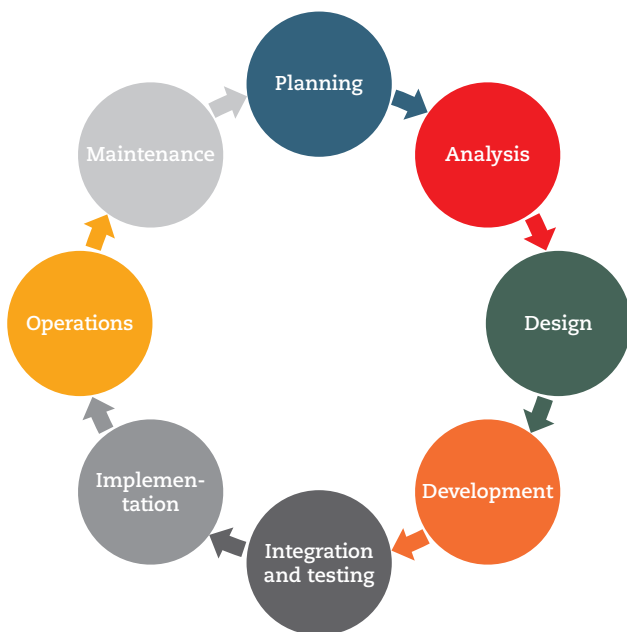
In the *development* phase the code is written. This is followed by *integration and testing*, where the solution is tested both at a technical level and by end-users. The development and testing phases may be iterative if refinement is required.

During the *implementation* phase the software is placed into the live environment and becomes used in *operations*.

Any software will always require *maintenance* and any changes required will be noted and opportunities identified to ensure that the software does not become obsolete. This may lead to a fresh planning analysis or a decision to decommission the software and replace it.

The SDLC focuses on large-scale software developments and originated at a time when software was often bespoke and run in on-premises data centres.

FIGURE A7: Systems Development Life cycle





Acknowledgements

The contributions of the following individuals in the development of this research are noted with thanks.

Hesham Abdelhay, Mayfair CIB, Kenya

Ibrahim Abduba, Oracle, Kenya

Isnaeni Achdiat, EY, Indonesia

Warda Hassan Ahmed, BBL, Kenya

Wang Aiyang, Yili Group, mainland China

Khurram Alavi, Accenture, Saudi Arabia

Teresa Anyango, Torrent East Africa Limited, Kenya

Chris Argyle, ANZ, New Zealand

Ian Atacan, Blueberries Medical Corp., Canada

Oshanosen Balogun, PwC, Nigeria

Tim Barber, University of Hull, UK

Alastair Barlow, flinder, UK

Paul Barnicoat, Integrity Life, Australia

Avinash Bendke, Ernst & Young LLP, India

Alistair Bennett, UK

James Best, Precision Finance Consulting, UK

Rob Binns, The Access Group, UK

Peter Bourke, CK Hutchison Holdings Limited, Hong Kong SAR of China

Don Browne, AIB, Republic of Ireland

Craig Buchanan, ACCA, UK

Dr Gladys Bunyasi, KCA Technical College – KCA University, Kenya

Jerome Burke, PGIM, Republic of Ireland

Chris Carter, orgshift solutions inc., Canada

Andrew Chan, Vice Chairman, Chartered Accountants Australia and New Zealand, Hong Kong Overseas Regional Council, Hong Kong SAR of China

Bonnie KY Chan, The Green Organic Dutchman, US

Leanne Clarke, IBM Canada Limited, Canada

Tara Clements, RBC, Republic of Ireland

Oliver Colling, Morley-Colling Associates, UK

Mark Denham, WatServ, Canada

Stephen Dowling, etm-unlearn, Australia

Stephen Doyle, EY, Republic of Ireland

Sam Ellis, Interworks, UK and chair ACCA Technology Global Forum

Nico Esterhuizen, JAM AFRICA, South Africa

Rashika Fernando, MDG Computers, Canada

Malcolm Finn, Johnson Matthey, UK

Jason Ford, NTT DATA, UK

Arshad Gadit, Gadlang Consultants, Bahrain

Carol Greaves, Barbados

Igor Hawryszkiewicz, University of Technology, Sydney, Australia

Jim Hickey, Sikich (Prime Global), US

Slawek Horodyski, Clyde Industries, US

Liu Hui, COFCO Coca-Cola Beverages Ltd., mainland China

Babajide Ibrinke, Viathan Group, Nigeria

Dermot Igoe, Microsoft, Republic of Ireland

Barbara Imlach, TVNZ, New Zealand

Nigel Irish, Massy Gas Products Portfolio, Trinidad and Tobago

Allison James, KPMG, Barbados

Rekiat Jimoh-Salami, Schlumberger, US

Siddharth Jolapara, Woolworths Group, Australia

Kevin Jones, SA Power Networks, Australia

Neeraj Juneja, NTT Data, India

Paula Kensington, PK Advisory, Australia

Robert van der Klauw, MunichRe, United Arab Emirates

Shakira Mohamed Khandwalla, Sai Pharmaceuticals Ltd, Kenya

W. Jamie Lashley, EY, Barbados

Patrick Laurent, Deloitte, Luxemburg

Kristian Lawson, Pitcher Partners, Australia

Edmond Lee, Tarion Warranty Corporation, Canada

Malik Lekehal, PwC, Luxemburg

Ricardo Lewis, National Gas Company of Trinidad and Tobago Limited, Trinidad and Tobago

Elena Lokchina, Architects Alliance, Canada

Horace Ma, S. Culture Holdings (BVI) Limited, Hong Kong SAR of China

Philip Maher, Mazars, Republic of Ireland

Manenzhe Manenzhe, City of Johannesburg, South Africa

Mazvita Maradzika, Selective Empowerment Investments 1 Limited, South Africa

Patricia Mashifane, First National Bank, South Africa

Scott McHone, American Board of Forensic Accounting, USA

Mary Meffe, MPAC, Canada

Maria Micu, Zurich, Switzerland

Gigi Mikabadze, AG International Consulting LLC (Prime Global), Georgia

Paresh Mistry, Rolabotic, UK

Ivan Mitranga, Dell EMC, Australia

Biodun Muritala, Lagos State Government, Nigeria

Anthony James Murphy, European Court of Auditors Etabl. Public, Luxemburg

Brian Mwai, Safaricom PLC, Kenya

Nambirajan N, The Hindu Group, India

Krishna Nacha, Wipro, India

Andrea Naylor, Namos Solutions, UK

Lucia Okafor, Strategy&, South Africa

Innocent Osagiede, Nigeria Inter-Bank Settlement System Plc, Nigeria

Joseph Owolabi, Ribcola, Australia

Anil Padmanabhan, Conduent, India

Walter Palk, KPMG Lower Gulf, United Arab Emirates

Jayesh Patel, Deloitte New Zealand, New Zealand

Philippe Paul, Vistra, Luxemburg

Peter Platt, BAT, UK

Janet Plummer, Tax Administration Jamaica, Jamaica

Jo Pohl, iOCO, South Africa

Jayesh Rama, Deloitte, Australia

Ajay Rao, Conros Corporation, Canada

Dev Ramnarine, Thrudheim Advisory Services, US

Jamie Renehan, Bol, Republic of Ireland

Luis Reyes, Save the Children Canada, Canada

Olga Russo, Finance in Ernst & Young LLP, US

Ioan Sabau, Goodyear, Luxemburg

Lida Sadrazodi, KUBRA, Canada

Richard Sargent, BP, Australia

Wilco Schellevis, Visser and Visser (Prime Global), Netherlands

Jaywardhan Semwal, Hewlett Packard Enterprise, India

Salman Shariff, XOR Sales, United Arab Emirates

Brendan Sheehan, White Squires, Australia

Ashish Shetty, Target, India

Ashish Singla, Wipro, India

Heather Smith, ANISE Consulting, Australia

Stephen Sutcliffe, NHS Shared Business Services, UK

Lisa Taylor, Waterfront Toronto, Canada

Amit Tenglikar, BDO UAE, United Arab Emirates

Paris Triantafyllidis, GU Group Mobile Digital Services LLC, UK

Donald Tsang, Intertrust Group, Hong Kong SAR of China

Tracey Walker, Cartan Group, Cayman Islands

Wang Wei, Peking University Hospital of Stomatology, mainland China

Kate White, Accenture, UK

Pete Williams, Penguin Random House, UK

Darren Wong, Fusionex International, Singapore

Russell Wong, ADP, Canada

Bu Yi, Alibaba Group, mainland China

Lin Ying, Sinopec Shared Service Center Co., Ltd, mainland China

He Yinqi, Beijing National Accounting Institute, mainland China

Authors

Charlotte Evett, New Zealand Government and Pacific Relations Leader, Chartered Accountants Australia and New Zealand

Chris Argent, Founder and CEO, Generation CFO

Clive Webb, Head of Business Management, ACCA

Suresh Sood, Data Scientist, Chartered Accountants Australia and New Zealand

References

- A4S (2019), *The A4S Practical Guide to Embedding Sustainability into Capital Investment Appraisal* <<https://www.accountingforsustainability.org/content/dam/a4s/corporate/home/KnowledgeHub/Guide-pdf/The%20A4S%20Essential%20Guide%20to%20Capex.pdf.downloadasset.pdf>>, accessed 29 August 2021.
- Aboagye, A., Mukkavilli and Schneider, J. (2021). *Four myths about building a software business*. *McKinsey Quarterly*. <<https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/four-myths-about-building-a-software-business>> accessed 14 September 2021.
- ACCA (2017), *The Race for Relevance – Technology Opportunities for the Finance Function*, <<https://www.accaglobal.com/gb/en/professional-insights/technology/The-race-for-relevance.html>>, accessed 23 August 2021.
- ACCA (2020a), *The Digital Accountant: Digital Skills in a Transformed World*, <https://www.accaglobal.com/gb/en/professional-insights/technology/The_Digital_Accountant.html>, accessed 22 August 2021.
- ACCA (2020b), *Meaningful Work for the Digital Professional: Roadmap Beyond the Pandemic*, <https://www.accaglobal.com/gb/en/professional-insights/technology/Meaningful_Work_Digital_Professional.html>, accessed 22 August 2021.
- ACCA (2020c), *Professional accountants changing business for the planet: a guide to natural capital management*, <https://www.accaglobal.com/hk/en/professional-insights/global-profession/Professional_accountants_changing_business_planet.html>, accessed 27 September 2021.
- ACCA (2021a), *Professional accountants at the heart of sustainable organisations*, <<https://www.accaglobal.com/gb/en/professional-insights/pro-accountants-the-future/pro-accountants-heart-sustainable-orgs.html>>, accessed 29 September 2021
- ACCA (2021b), *Rethinking Risk for the Future*, <<https://www.accaglobal.com/gb/en/professional-insights/risk/rethinking-risk.html>>, accessed 23 August 2021.
- ACCA / Chartered Accountants ANZ (2020), *Analytics in Finance and Accountancy*, <https://www.accaglobal.com/gb/en/professional-insights/technology/analytics_finance_accountancy.html>, accessed 23 August 2021.
- ACCA / PwC (2020), *Finance Insights – Reimagined*, <<https://www.accaglobal.com/gb/en/professional-insights/pro-accountants-the-future/FinanceInsights-reimagined.html>>, accessed 20 August 2021.
- ACCA / PwC (2021), *Finance Functions: Seizing the Opportunity*, <<https://www.accaglobal.com/gb/en/professional-insights/pro-accountants-the-future/finance-functions-seize-opportunity.html>> accessed 20 August 2021.
- Agile Alliance (2021), *Subway Map to Agile Practices*. Downloadable from <<https://www.agilealliance.org/agile101/subway-map-to-agile-practices/>>, accessed 3 August 2021.
- Anderson, L. (2018), *5 Reasons Why Organizational Change Fails*, <<https://blog.beingfirst.com/5-reasons-why-organizational-change-fails>>, accessed 12 September 2021.
- Antikainen, M., Uusitalo, T. and Kivikytö-Reponen, P. (2018), 'Digitalisation as an Enabler of Circular Economy', *Procedia*, 45–49. <<https://www.sciencedirect.com/science/article/pii/S2212827118305432/pdf?md5=5a54b56ac4c99442a7de4b98242540ee&pid=1-s2.0-S2212827118305432-main.pdf>>, accessed 20 August 2021.
- Armano, D. (2018), 'Process by Design: Digital Transformation's Intersection between Strategy and Operations' [website article], 28 February <<https://www.forbes.com/sites/onmarketing/2018/02/28/process-by-design-digital-transformations-intersection-between-strategy-and-operations/?sh=7f85725e1b1e>>, accessed 23 August 2021.
- Atz, U, and Van Holt, T., Liu, Z., and Bruno, C. (2020), 'Do Corporate Sustainability and Sustainable Finance Generate Better Financial Performance? A Review and Meta-analysis' [Online article], September 9. Available at <SSRN: <https://ssrn.com/abstract=3708495> or <http://dx.doi.org/10.2139/ssrn.3708495>>, accessed 28 August 2021.
- Atz, U. and Van Holt, T., Elyse, D. and Whelan, T. (2019). 'The Return on Sustainability Investment (ROSI): Monetizing Financial Benefits of Sustainability Actions in Companies', *Review of Business: Interdisciplinary Journal on Risk and Society* 39, no. 2, 1–31 <<https://ssrn.com/abstract=3465637>>, accessed 29 August 2021.
- Axelos (2021), *MSP (Managing Successful Programmes) 5th edition*, Programme Management <<https://www.axelos.com/best-practice-solutions/msp>>, accessed 28 August 2021.
- Beck K. et al. (2001), *Manifesto for Software Development*, <<http://agilemanifesto.org/iso/en/manifesto.html>>, accessed 3 August 2021
- Burke, W. W. & Litwin, G. H. (1992), *A causal model of organizational performance and change*. *Journal of Management*, 18 (3), 523–545, <https://gmdconsulting.eu/nykerk/wp-content/uploads/2019/06/Burke-Litwin_-_A-Causal-Model-of-Organizational-Performance-and-Change.pdf> accessed 27 September 2021
- Carruthers, C. and Jackson, P. (2019), *Data Driven Business Transformation: How to Disrupt, Innovate and Stay Ahead of the Competition*, Wiley, ISBN-13: 978-1119543152.
- CBS, (2021), 'Facebook Launches "Horizon Workrooms" for Virtual Offices – Here's how it Works' [website video report], 19 August <<https://www.cbsnews.com/news/facebook-launches-horizon-workrooms-virtual-reality-app/>>, accessed 20 August 2021
- Clayton, S. J. (2021). *An Agile Approach to Change Management*. *Harvard Business Review*. January. <<https://hbr.org/2021/01/an-agile-approach-to-change-management>>, accessed 12 September 2021.
- Clear, J. (2019), *Atomic Habits: An Easy & Proven Way to Build Good Habits and Break Bad Ones*, Penguin Random House US, ISBN-13: 978-0593189641.
- Coalition for Inclusive Capitalism (2021), *Framework for Inclusive Capitalism: A New Compact among Businesses, Government and American Workers*. <<https://www.coalitionforinclusivecapitalism.com/wp-content/uploads/2021/02/The-Framework-for-Inclusive-Capitalism-1.pdf>>, accessed 6 September 2021.

- Cooper, A. (2021) *The Outlook for the Post-Covid Retail Sector*, <<https://www.thedrum.com/opinion/2021/03/24/the-outlook-the-post-covid-retail-sector>>, accessed 22 August 2021.
- Costello, K. (2019), The Secret to DevOps Success [website article] <<https://www.gartner.com/smarterwithgartner/the-secret-to-devops-success/>>, accessed 5 August 2021.
- Couchbase (2020), *COVID-19 Causes Significant Upheaval to Digital Transformation Plans but Spurs Surge in Innovation and Improved End User Experience, Couchbase Research Finds*. <<https://www.couchbase.com/press-releases/covid-19-causes-significant-upheaval-to-digital-transformation-plans-but-spurs-surge-in-innovation-and-improved-end-user-experience-couchbase-research-finds>>, accessed 20 August 2021.
- Cross, R., Gardner, K. and Crocker, A. (2021), 'For an Agile Transformation, Choose the Right People' [online article], *Harvard Business Review*, March–April 2021 <<https://hbr.org/2021/03/for-an-agile-transformation-choose-the-right-people>>, accessed 23 August 2021.
- de la Boutetière, H., Montagner, A. and Reich, A. (2018), 'Unlocking Success in Digital Transformations' [website article] <<https://www.mckinsey.com/~media/McKinsey/Business%20Functions/Organization/Our%20Insights/Unlocking%20success%20in%20digital%20transformations/Unlocking-success-in-digital-transformations.ashx>>, accessed 17 August 2021.
- Department for Transport (2020), *Full Business Case High Speed 2 Phase One*, <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/939905/full-business-case-hs2-phase-one.pdf>, accessed 30 August 2021.
- Desjardins, J. (2019), 'How much Data is Generated each Day?' [website article], 17 April <<https://www.weforum.org/agenda/2019/04/how-much-data-is-generated-each-day-cf4bddf29f/>>, accessed 22 August 2021.
- Dweck, C. S. (2007), *Mindset: The New Psychology of Success*, Ballentine Books. ISBN-13: 978-0345472328.
- EPIC (2018), *Embankment Project for Inclusive Capitalism*. <<https://www.coalitionforinclusivecapitalism.com/wp-content/uploads/2021/01/coalition-epic-report.pdf>> accessed 28 August 2021.
- European Commission (2021a), 2021 Strategic Foresight Report – Questions and Answers, <https://ec.europa.eu/commission/presscorner/api/files/document/print/en/qanda_21_4534/QANDA_21_4534_EN.pdf>, accessed 14 September 2021.
- European Commission (2021b), *Delivering the European Green Deal*, <https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en> accessed 28 August 2021.
- European Commission (2020), *Technical expert group on sustainable finance (TEG) – Taxonomy tools*, <https://ec.europa.eu/info/files/sustainable-finance-teg-taxonomy-tools_en> accessed 28 August 2021.
- Falletta, S. (2008), HR intelligence: Advancing people research and analytics. *International HR Information Management Journal*, December, 21-31.
- Farris, C. (2020), *History of Digital Transformation*, <<https://capacity.com/digital-transformation/history-of-digital-transformation/>>, accessed 27 September 2021.
- Fitzgerald, S., Jimenez, D., Findling, S., Yorifuji, Y., Kumar, M., Wu, L., Carosella, G., Ng, S., Parker, R., Carter, P. and Whalen, M. (2020), *Worldwide Digital Transformation 2021 Predictions*. <<https://www.idc.com/getdoc.jsp?containerId=US46880818>>, accessed 20 August 2021.
- Forsgren, N., Smith, D., Humble, J. and Frazelle, J. (2019), *Accelerate: State of DevOps 2019*, <<https://services.google.com/fh/files/misc/state-of-devops-2019.pdf>>, accessed 5 August 2021.
- Fortune Business Insights (2021), *Web Hosting Services Market Size, Shared & COVID-19 Impact Analysis*. Downloadable from: <<https://www.fortunebusinessinsights.com/industry-reports/web-hosting-services-market-100863>>, accessed 22 August 2021.
- Franklin, M. (2018), *Introduction to Agile Change Management*, <<https://agilechangemanagement.co.uk/wp-content/uploads/2018/10/Introduction-to-Agile-Change-Management-v1.0-1.pdf>>, accessed 17 August 2021.
- Galbraith, J.R. (2016), *The Star Model™* <<https://www.jaygalbraith.com/images/pdfs/StarModel.pdf>>, accessed 23 August 2021.
- Gartner (2021a), 'Digitalization', Gartner Glossary [online resource] <<https://www.gartner.com/en/information-technology/glossary/digitalization>>, accessed 20 August 2021.
- Gartner (2021b), 'Digitization', Gartner Glossary [online resource] <<https://www.gartner.com/en/information-technology/glossary/digitization>>, accessed 20 August 2021.
- Grand View Research (2021), *Artificial Intelligence Market Size, Share & Trends Analysis Report By Solution, By Technology (Deep Learning, Machine Learning, Natural Language Processing, Machine Vision), By End Use, By Region, And Segment Forecasts, 2021 – 2028*. Downloadable from <<https://www.grandviewresearch.com/industry-analysis/artificial-intelligence-ai-market>>, accessed 22 August 2021.
- Greenleaf, R. K. (1977), *Servant leadership: A journey into nature of legitimate power and greatness*. New York : Paulist Press.
- Hampden-Turner, C., and Trompenaars, F. (2015), *Nine Visions of Capitalism: Unlocking the Meanings of Wealth Creation* (Infinite Ideas Limited, ISBN-13: 978-1908984401).
- Hamrouni, W. (2017), '5 of the Biggest Information Technology Failures and Scares' [website article] <<https://www.exoplatform.com/blog/2017/08/01/5-of-the-biggest-information-technology-failures-and-scares/>>, accessed 17 August 2021.
- Hardy, D.E. (2012), 'The 7 Most Important Sections of a BI Business Case' [Blog], 19 June <<https://www.tibco.com/blog/2012/06/19/the-7-most-important-sections-of-a-bi-business-case/>>, accessed 26 August 2021.
- Harrison, M. I. (1987), *Diagnosing organizations: Methods, models, and processes*. Newbury Park, CA: Sage.
- Hedberg, M., Jaluria, R., Erickson, B. and Swanson, M. (2021), 'Security, Data and Digital Transformation Post-Pandemic' [website article], 3 August <<https://www.rbccm.com/en/insights/tech-and-innovation/episode/security-data-and-digital-transformation-post-pandemic>>, accessed 26 August 2021.
- HM Treasury (2018), *Guide to Developing the Programme Business Case*, <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/749085/Programme_Business_Case_2018.pdf> accessed 28 August 2021.
- HM Treasury (2020a), *The Green Book 2020*, <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938046/The_Green_Book_2020.pdf>, accessed 28 August 2021.
- HM Treasury (2020b), *Green Book Review 2020: Findings and Response*, <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/937700/Green_Book_Review_final_report_241120v2.pdf>, accessed 28 August 2021.

- IDC (2020), 'New IDC Spending Guide Shows Continued Growth for Digital Transformation in 2020, Despite the Challenges Presented by the COVID-19 Pandemic' [website article], 20 May, <<https://www.idc.com/getdoc.jsp?containerId=prUS46377220>>, accessed 20 August 2021.
- IIRC (2021), *The International <IR> Framework*, <<https://integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf>> accessed 29 August 2021.
- IMF (2019), *World Economic Outlook: Global Manufacturing Downturn, Rising Trade Barriers*, <<https://www.imf.org/-/media/Files/Publications/WEO/2019/October/English/text.ashx>>, accessed 4 August 2021.
- IPCC (2021), 'IPCC, 2021: Summary for Policymakers' in *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press <https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf>, accessed 26 August 2021.
- IRSG (2021), *Accelerating the S in ESG – A Roadmap for Global Progress on Social Standards*, <https://www.irsg.co.uk/assets/Reports/AA_IRSG_S_ROADMAP_008.pdf> accessed 21 August 2021.
- ISI Global (n.d.), *What is Service-Dominant Logic (SDL)*, <<https://www.igi-global.com/dictionary/service-dominant-logic-sdl/39235>>, accessed 14 September 2021.
- Johnson, C. (2019), 'How much Data is Produced every Day 2021?' [website article] <<https://www.the-next-tech.com/blockchain-technology/how-much-data-is-produced-every-day-2019/>>, accessed 22 August 2021.
- Jurgens-Kowal, T. (2021), 'What is WAGILE?', [website article], 28 January <<https://www.linkedin.com/pulse/what-wagile-teresa-jurgens-kowal-pe-phd-pmp/>>, accessed 3 September 2021.
- Kahneman, D. and Tversky, A. (1977), *Intuitive Prediction: Biases and Corrective Procedures*, Decision Research Technical Report PTR-1042-77-6, <<https://apps.dtic.mil/sti/pdfs/ADA047747.pdf>>, accessed 5 September 2021.
- Kaplan, S. (2019), *The 360° Corporation: From Stakeholder Trade-offs to Transformation*, Stanford University Press, ISBN-13: 978-1503607972.
- Kaplan, S. (2020). *The upside of trade-offs*. Strategy, <<https://www.strategy-business.com/article/The-upside-of-trade-offs>>, accessed 26 August 2021
- Kemp, S. (2021), *Digital 2021 July Global Statshot Report* [online report] <<https://www.slideshare.net/DataReportal/digital-2021-july-global-statshot-report-v02>>, accessed 22 August 2021
- Klarna (2021), 'Competence' [website article] <<https://www.klarna.com/careers/our-competences/>> accessed 28 August 2021.
- Kniberg, H. and Ivarsson, A. (2012), *Scaling Agile @ Spotify with Tribes, Squads, Chapters and Guilds*, <<https://blog.crisp.se/wp-content/uploads/2012/11/SpotifyScaling.pdf>> accessed 28 August 2021.
- Kolko, J. (2018), 'The Divisiveness of Design Thinking' [website article] <<http://interactions.acm.org/archive/view/may-june-2018/the-divisiveness-of-design-thinking>>, accessed 4 August 2021
- Kotter, J. (1995), *Leading Change*, Harvard Business Review Press, ISBN-13: 978-1422186435.
- Larman, C. and Basili, V. R. (2003), 'Iterative and Incremental Developments. A Brief History', *Computer* (36 (6), June).
- Leavitt, H. J. (1965), *Applied organizational change in industry*. In J. G. March (Ed.), *Handbook of Organizations* (pp. 1144-1170). New York, NY: Rand McNally, ISBN-13: 978-0415820394
- Lewin, K. (1951), *Field theory in social science*. New York, NY: Harper, ISBN-13: 978-0837172361
- Leuth, K. L. (2020), 'State of the IoT 2020: 12 billion IoT Connections, Surpassing non-IoT for the First Time' [website article], 19 November, <<https://iot-analytics.com/state-of-the-iot-2020-12-billion-iot-connections-surpassing-non-iot-for-the-first-time/>> accessed 22 August 2021
- Lexico (2021), *English Dictionary powered by Oxford English Dictionary*, <<https://www.lexico.com/definition/agile>>, accessed 20 August 2021
- Liedtka, J. (2018), 'Why Design Thinking Works', *Harvard Business Review*, September to October 2018, <<https://hbr.org/2018/09/why-design-thinking-works>>, accessed 4 August 2021
- Likert, R. (1967). *The human organization: Its management and value*. New York, NY: McGraw-Hill.
- Microsoft, (2021), *Defining cloud native*, <<https://docs.microsoft.com/en-us/dotnet/architecture/cloud-native/definition>>, accessed 9 September 2021
- Miller, M. (2020), 'The "Digital-First Enterprise" Will Be Half of the Economy by 2023. Are You Ready?' [website article], PCMag Australia, 13 March <<https://au.pcmag.com/news/65959/idc-the-digital-first-enterprise-will-be-half-of-the-economy-by-2023-are-you-ready>>, accessed 20 August 2020
- Mlitz, K. (2021a), *Low-code development platform market revenue worldwide from 2018 to 2025*, <<https://www.statista.com/statistics/1226179/low-code-development-platform-market-revenue-global/>>, accessed 4 August 2021
- Murray-Webster, R. and Dalcher, D. (2019), *APM Body of Knowledge 7th edn*, Association for Project Management, ISBN-13: 978-1903494820.
- Nadler, D. A. and Tushman, M. L. (1980), *A model for diagnosing organizational behavior*. *Organizational Dynamics*, Autumn, 35-51.
- Nelson, L., and Burns, F. L. (1984), *High performance programming: A framework for transforming organizations*. In J. Adams (Ed.), *Transforming Work* (pp. 226-242). Alexandria, VA: Miles River Press.
- New Zealand Government (2021), *Wellbeing Budget 2021: Securing Our Recovery* [online report], 20 May <<https://www.beehive.govt.nz/feature/budget-2021-securing-our-recovery>>, accessed 23 August 2021
- NYU STERN (Center for Sustainable Business) (2020), 'ROSI™ Resources and Tools' [online resource], <<https://www.stern.nyu.edu/experience-stern/about/departments-centers-initiatives/centers-of-research/center-sustainable-business/research/return-sustainability-investment-rosi/rosi-resources-and-tools#Excel%20Tools%20for%20Testing%20ROSI>>, accessed 29 August 2021.
- NYU STERN (Center for Sustainable Business), (2021), 'Return on Sustainability Investment (ROSI™)' [online resource] <<https://www.stern.nyu.edu/experience-stern/about/departments-centers-initiatives/centers-of-research/center-sustainable-business/research/return-sustainability-investment-rosi>> accessed 28 August 2021.
- Pink, D. (2010). *Drive: The Surprising Truth About What Motivates Us*, Cunniff Books ISBN-13: 978-1847678881.

- PRI-UN Global Compact (2013), *The Value Driver Model: A Tool for Communicating the Business Value of Sustainability*, <http://www.unglobalcompact.org/docs/issues_doc/Financial_markets/Value_Driver_Model/VDM_Report.pdf> accessed 28 August 2021.
- Rehse, O., Agarwal, R., Rodt, M. and Twesten, M. (2019), 'A Radical Redesign for Support Functions in the Digital Age' [website article], 26 February <<https://www.bcg.com/publications/2019/radical-redesign-digital-age>>, accessed 22 August 2021.
- Richardson, C., and Rymer, J. (2014), New Development Platforms Emerge For Customer-Facing Applications, <<https://www.forrester.com/report/New+Development+Platforms+Emerge+For+CustomerFacing+Applications/RES113411>>, accessed 4 August 2021.
- Robinson, B. (2021), 'Hub-and-Spoke': The New Office Model of the Future, Expert Says' [website article], Forbes, 9 June <<https://www.forbes.com/sites/bryanrobinson/2021/06/09/hub-and-spoke-the-new-office-model-of-the-future-expert-says/?sh=5d642d6c2732>>, accessed 20 August 2021.
- Rödl & Partner (2017), 'Digitalisierung: Chancen und Herausforderungen für Unternehmer' (Digitization: opportunities and challenges for entrepreneurs. Themed specials) [website article in German only], 22 March <<https://www.roedl.de/themen/digitalisierung/chancen-herausforderungen-unternehmer>> accessed 21 August 2021.
- Roy, M. (2021), 'Why Digital Transformations Fail: Top 6 Reasons' [website article] <<https://searchcio.techtarget.com/tip/Top-6-reasons-why-digital-transformation-failures-happen>>, accessed 17 August 2021.
- Schwaber, K. and Sutherland, J. (2020), *The Scrum Guide*, <<https://scrumguides.org/docs/scrumguide/v2020/2020-Scrum-Guide-US.pdf#zoom=100>>, accessed 4 August 2021.
- Schwartz, T. (2018), 'Leaders Focus Too Much on Changing Policies, and Not Enough on Changing Minds' [online article], *Harvard Business Review*, 25 June <https://hbr.org/2018/06/leaders-focus-too-much-on-changing-policies-and-not-enough-on-changing-minds?utm_medium=social&utm_campaign=hbr&utm_source=LinkedIn&tpcc=orgsocial_edit>, accessed 23 August 2021.
- Shankar, M. and Tripathy D. K. (2020), 'Transforming to 'As-a-Service' Business Models' [website article] <<https://wiprodigital.com/2020/01/14/transforming-to-as-a-service-business-models/>> accessed 4 August 2021.
- Skillicorn, N. (2017), '15 Most important Innovation Theories Your Company Should Be Using' [website article] <<https://www.ideatovalue.com/inno/nickskillicorn/2017/07/15-most-important-innovation-theories-your-company-should-be-using/>>, accessed 23 August 2021.
- Swift, M. (2019), 'Shut up about Digital Transformation!' <<https://www.linkedin.com/pulse/shut-up-digital-transformation-melissa-swift/>> accessed 20 August 2021.
- Tichy, N. M. (1983), *Managing strategic Change: Technical, political, and cultural dynamics*. New York, NY: John Wiley & Sons, ISBN-13: 978-0471865599
- The Linux Foundation (2021), *Cloud Native Computing Foundation ("CNCF") Charter*, <<https://github.com/cncf/foundation/blob/master/charter.md>>, accessed 9 September 2021.
- Vargo, S, and Lusch, R.(2018), *The SAGE Handbook of Service-Dominant Logic*, SAGE Publications, <<https://uk.sagepub.com/en-gb/eur/the-sage-handbook-of-service-dominant-logic/book254774>>, accessed 11 September 2021.
- Waterman, R., Peters, T., and Phillips, J. (1980), Structure is not organization, *Business Horizons*, 14-26, June, <https://tompeters.com/docs/Structure_Is_Not_Organization.pdf> accessed 27 September 2021.
- Weisbord, M. (1976). *Organizational diagnosis: Six places to look for trouble with or without a theory*. Group & Organization Management. December, 1, 430-447. <<http://www.marvinweisbord.com/index.php/six-box-model/>>, accessed 27 September 2021.
- Whelan, T. (2021), 'Making a Better Business Case for ESG', *Stanford Social Innovation Review* [online article], 17 September <https://ssir.org/articles/entry/making_a_better_business_case_for_esg> accessed 28 August 2021.
- Whelan, T. and Douglas, E. (2021), 'How to Talk to Your CFO About Sustainability' [online article], *Harvard Business Review*, Jan-Feb 2021 <<https://hbr.org/2021/01/how-to-talk-to-your-cfo-about-sustainability>> accessed 28 August 2021.
- White House (2021), *FACT SHEET: President Biden Announces Support for the Bipartisan Infrastructure Framework*, <<https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/24/fact-sheet-president-biden-announces-support-for-the-bipartisan-infrastructure-framework/>> accessed 30 August 2021.
- Womack, J. P. and Jones, D. T. (1996), *Lean Thinking: Banish Waste And Create Wealth In Your Corporation*, Simon & Schuster / Free Press (2003 edition), ISBN-13: 978-0743231640.
- Woodford, I. (2021), 'Pipe is One of Today's Hottest Fintechs. Meet its European Lookalikes' [website article], Sifted, 28 May <<https://sifted.eu/articles/european-fintechs-follow-pipe/>> accessed 26 August 2021.
- Xero (2021), *Xero Limited Annual Report 2021*, <<https://www.xero.com/content/dam/xero/pdf/about-us/xero-limited-annual-report-fy21.pdf>>, accessed 23 August 2021.
- Youngblood, M. (2019), *Conformity bias in the cultural transmission of music sampling traditions*, Royal Society Open Science, vol 6 issue 9, <<https://royalsocietypublishing-org.ezproxy.lib.uts.edu.au/doi/10.1098/rsos.191149>> , accessed 27 September 2021.

