DIGITAL TRANSFORMATION KNOW HOW

Connecting digital transformation, agility and leadership

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PREFACE

Over the period 2017 to 2019, I wrote several pieces on digital transformation for The European Business Review and Ivey Business Journal. I was on a mission to make "digital transformation", i.e. a form of end-to-end, integrated business transformation where digital technologies play a dominant role, understandable to a broad business audience.

In the first article, I synthesised my views on digital transformation from several years of working with digital transformation practitioners and their organisations. I wanted to describe the leadership challenges involved in digital transformation, and I did so by bringing the notion of "organisational agility" into the mix – i.e. an organisation's capacity to routinely explore and exploit opportunities faster than its rivals. The article was featured on The European Business Review's cover in May 2017.

After that first article, I wrote several more. Each addressed digital transformation in more depth. Each started from a particular question, such as "How to rethink strategy for the digital age?" and "How to make sense of customer experience as the new normal for value creation?" After the final article about scaling agility was published, I felt that it would be worthwhile to release the contents of the articles as a bundle, which eventually gave rise to this book about digital transformation.

The idea of writing a book about digital transformation had been in my mind for a while. But I had convinced myself that I was not "a book author" … I was more of "an article man". After all, writing articles is how I earned my spurs as an academic. Until this bundle of articles made sense. During the Summer of 2019, I felt the closure I was looking for. Drawing on several years of research and in-depth case studies, I had found a way to create a book that would get the job done:

- Allow readers to speak about digital transformation with more understanding.
- Help them frame digital transformation as a leadership challenge to create organisational agility.
- Give them the confidence to get involved in digital transformation as actors, rather than as bystanders or victims.

What started out as a bundle of articles became so much more. I have significantly upgraded the original article content. I added even more examples and mini-cases, including experiences from banking, media, energy, bio-pharmaceuticals, construction, government and more. Most importantly, by rearranging the articles, I created a storyline that culminates in linking digital transformation, organisational agility and leadership, in a practical way. I added an introduction to address the "Digital transformation, so what?" question, before tackling the "Now what?" in the chapters that follow. Having a good grasp of the context that gives rise to the need for digital transformation helps to align the troops and overcome important barriers to change.

In 2014, Vlerick Business School (Belgium), where I have been a professor for more than 16 years, was one of the first European business schools to launch an open executive programme on digital transformation. We called it the Digital Leadership Summer School,

an immersive five-day experience featuring lectures, cases, guests, games and discussions. When my colleagues and I conceived the Summer School, there were some competing programmes at other business schools, but very few dealt with transformation. Instead, most of them largely ignored the existing enterprise and concentrated on creating something completely new. However, for the organisations I was working with, taking this path usually seemed neither very practical nor very wise.

The position I took then and now still, is that organisations that haven't grown up digitally aren't automatically lost. In other words, rather than starting from scratch, there is a path to success that takes the existing enterprise as the starting point. Evolving your current business to win in the digital age puts you in the scenario of digital transformation – and that's where most of my work on digital transformation has been ever since.

Alan Kay, American computer scientist and winner of the 2003 A.M. Turing Award, once noted: "Point of view is worth 80 IQ points."[1] I couldn't agree more. A lack of perspective and a common language are primary reasons why so many people and organisations continue to struggle with digital transformation. This book offers a frame of reference to anyone who is looking for a grounded, practical perspective on making digital transformations work.

I wish you an interesting read.

Stijn Viaene

DIGITAL TRANSFORMATION, SO WHAT?

In their book, *The Second Machine Age*,[1] Erik Brynjolfsson and Andrew McAfee, argue that we are at an inflexion point in time, entering the second machine age. Digital technologies, i.e. those that work to turn information into the ones and zeroes that are the native language of computers and their kin, are transforming society and the economy. This new era is not just different. It is better, due to increased variety and volume of consumption, more choice and freedom, where abundance is the norm. Digital technologies have caused a paradigm shift.

The Industrial Revolution, a series of major developments in science, technology and mechanical engineering in the late 18th and early 19th centuries, was spurred by the invention and subsequent improvement of James Watt's steam engine and ushered in the first machine age. Just as the steam engine enabled us to overcome the limitations of human and animal muscle power, in the second machine age, digital technology will help us to transcend the limitations of human brainpower.

It took several generations to perfect the steam engine to power the Industrial Revolution. It has taken time, though significantly less, to perfect digital technologies. For example, over the past years, 3D digital printing has taken off, ready to revolutionise the manufacturing process in a variety of industries, from healthcare to construction and transportation. In 2011, IBM's computer system

Watson illustrated that artificial intelligence (AI) can beat humans at their game.[2] Today, AI – encompassing a set of disciplines including optimisation, speech and image recognition, natural language understanding, and more – provides machines with the capacity to imitate intelligent human behaviour. Humanoid robots and self-driving cars are now a reality.

Where we find ourselves, at this inflexion point, of a changing age may be too difficult for many people to comprehend. "When people look at the implications of ongoing exponential growth, it gets harder and harder [for them] to accept. So, you get people who really accept, yes, things are progressing exponentially, but they fall off the horse at some point because the implications are too fantastic",[3] according to famous futurist and inventor Ray Kurzweil. Kurzweil's bestseller, *The Singularity is Near*,[4] prompted Microsoft's Bill Gates in 2005 to call him "the best person I know at predicting the future of AI".[5]

This singularity refers to a hypothetical moment where technological progress is so rapid that it completely outstrips humans' ability to comprehend it. It represents a future during which technological advance will be so fast, and its impact so deep, that human life will be irreversibly transformed and beyond which events may become unpredictable. That future is nearer than we think, says Kurzweil:[6]

> *"By the time we get to the 2040s, we'll be able to multiply human intelligence a billionfold. That will be a profound change that's singular in nature. Computers are going to keep getting smaller and smaller. Ultimately, they will go inside our bodies and brains and make us healthier, make us smarter."*

Kurzweil's advocacy of an optimistic and transhumanist future continues to inspire innovators around the globe. Some are more cautious and point out the risks that we are facing. Pessimists like

to paint a Terminatoresque picture of the apocalyptic moment when machines take over from humans. Generally, both optimists and pessimists make valid points. In essence, it is up to us to create a positive and voluntarist synthesis in a time of unprecedented opportunity and turbulence.

More digital turbulence ahead

It is widely acknowledged that the most critical challenge for companies today is dealing with their turbulent environments. This turbulence refers to the rapid and unpredictable changes in the business environment that affect a company's ability to create value. Two factors affect turbulence: complexity (i.e. the number, strength and dissimilarity of external forces or pressures) and volatility (i.e. the predictability and rate of change of the external forces or pressures). The more turbulent the environment, the more difficult it becomes for decision-makers to make winning choices.

Turbulence is common to all eras. Think of, for example, how wars, depressions, or oil shocks have affected the lives of firms. Think of industrialisation and globalisation forces, or climate change.

Over the last decades, however, we've experienced entirely new forms of turbulence, catalysed by emergent digital technologies. Think, for example, of the innovation[7] coming out of Silicon Valley, or of today's exciting fintech[8] competition. Think of effects on our economic and social systems of companies like Google, Facebook, Alibaba or Tencent. Think of privacy concerns, of fake news, of the war for talent, job creation and job loss in digital times. The effects of readily available digital technologies on complexity and volatility in social and business environments are very tangible.

Not all of this digital turbulence is bad. Some of its effects are amazing. Digital turbulence creates the context for inspirational developments, like decoding the human genome, self-driving cars, drones, augmented reality, etc. And yet, what we are experiencing today in terms of opportunities and threats is just the beginning. We shall see many more examples of digital turbulence over the coming decades; some good, some bad, and hopefully not too many ugly ones.

As this digital turbulence is the new normal, "old organisations" will need to get to grips with it. Or die. But how? Should they be afraid? Or should they be looking to the future with excitement?

Big bang disruptors don't waste time

Disruption, i.e. new entrants overthrowing the power structure in established industries by introducing far superior business models,[9] has been a recurring phenomenon since the dawn of the industrial age. Innovation and strategy expert Clayton Christensen from the Harvard Business School has devoted most of his career to answering the question why incumbents, established and respected companies, frequently miss out on new waves of innovation and are toppled by disruptors with superior designs for creating and capturing value.[10] Why is that? Do these former winners, innovators of the past, not see it coming?

Researchers have put forward several hypotheses; some referring to stupidity, complacency or management arrogance, others to barriers to responding efficiently such as legacy culture, organisation or technology. Christensen, however, suggested competence, rather than incompetence, as a root cause of incumbents getting toppled. These companies do have access to the best and brightest professionals, to the newest technologies. They have ample resources. It is the nature

of their resource allocation, however, not scarcity that holds them back. Incumbents are not focused on creating radically new growth. Their best customers are happy, their short-term profitability targets guaranteed. The safer option of continuing down the travelled path, getting even better at what they already do best, is more appealing to investors and management. Scenario's for deeper, future-proof change and self-disruption are put in the fridge. They don't see a burning platform. They think they have time.

Time, however, is a precious commodity in the digital age. That is the point Larry Downes and Paul Nunes make when describing the emergence of "big bang disruptors".[11] They refer to digital ventures like Coursera and Khan Academy in education, WeChat and WhatsApp in mobile communication, Uber and Didi Chuxing in transportation. These entrepreneurial ventures come with radically new solutions to customer problems by fully embracing the innovative power of digital technologies. They could pop up from nowhere and wipe out entire established businesses in no time, the authors argue. Disruption could come from anywhere, from far beyond the borders of what you consider to be your industry or business model.

In Downes and Nunes' big bang world, incumbents no longer have the time, nor the capabilities, to rethink themselves. Established recipes for disciplined strategising, careful product marketing and innovation are utterly useless. An overstatement not entirely supported with the evidence produced by the authors, but Downes and Nunes' big bang disruption hypothesis and vivid examples have the merit of making their readers acutely aware of the broader management challenge of dealing with digital turbulence. Digital disruption is coming your way too, and it's probably going to be there faster than you expect.

Digital innovation is combinatorial

Big bang disruptors truly understand the pattern of innovation in the digital world. This pattern is rooted in the ubiquity of computing power and connectivity, and in information being able to flow freely. For sure, these ubiquities and free flows are not absolutes, but close enough to be workable hypotheses for digital innovation in many contexts.

The pattern of digital innovation roughly goes as follows:

- Over time, sensors and computers become exponentially cheaper, and smaller, making it affordable to include them everywhere. Thanks to this ubiquity in computing, every knowledge domain gets expressed in the language native to computers.
- Ubiquitous connectivity democratises access to knowledge domains; information is shared and reused at will.
- Entrepreneur-developers combine information freely, generating innovative business models that are both cheaper and better than anything that exists. Smart combination, rather than invention, fuels innovation.
- Industry boundaries do not matter. The status quo in existing industries is disrupted.

For example, digital disrupters Airbnb and Uber were born out of this pattern. They constitute powerful illustrations of significant new-value creation opportunities in a world where it has become economical to decouple information about physical resources from their physical carriers. Neither Airbnb nor Uber have a track record as brilliant technology inventors. Instead, they are masters at *combining* a diversity of readily available technology and information resources from a variety of sources to create new digital business models. Playing this combinatorial innovation game allows them to disrupt existing industries.[12]

Worldwide, the role of digital innovation hubs like Silicon Valley – i.e. vibrant and diverse actor communities or ecosystems that foster technological trends, collaborative innovation, and domain-specific insights – cannot be overstated in regard to the coming of age of this pattern of combinatorial digital innovation. The culture of generating winning combinations is what makes Silicon Valley so successful, according to leadership expert Rosabeth Moss Kanter of the Harvard Business School:[13]

> *"[The term] 'ecosystem' conveys the idea that all the pieces of an economy [including technology companies, financiers, talent, universities, government and more] come together in particular places, and that their strength and interactions determine prosperity and economic growth. In Silicon Valley there is a sense that you prosper only because you're surrounded by lots of resources that make it possible to succeed, beyond what your own entity controls. Think of it as your garden, where you need fertile soil, seeds, and other ingredients to make things grow."*

Considering digital transformation

Here's a timely question: If you are not a digital startup, a potential big bang disruptor, are you automatically lost?

You are not. Established companies are not lost by default. Evolving your current business to win in the digital age puts you in the scenario of digital transformation.

Big bang disruptors are inspirational as well as confrontational. They are crucial competitive benchmarks at the edge of the possible. Still, there is an alternative route to reinvent existing organisations that does not require you to throw the baby out with the bathwater.

It's the path that takes the existing enterprise as the starting point; strengthening existing capabilities and leveraging (possibly dormant) digital resources, rather than starting from scratch.

To succeed, however, you will have to accept that your established enterprise was not built to compete in a world that requires blending the physical and the digital seamlessly. You'll need to open yourself to the digital space to rediscover the nature of value creation, the critical capabilities that need to be grown, and the new skills that need to be developed. You'll have to integrate and internalise the new essential external complexity into your organisation as new patterns of working, and get rid of all the accidental complexity of the past; that was once essential but is now holding you back.

Finding new patterns of working which help you adapt to the digital environment and internalise its dynamics will be a learning process. There is no standard cookbook. What works for one organisation may not work for you, and vice versa. Starting from scratch implies a different trajectory than aiming to leverage your current enterprise. Transformation is path-dependent. You'll have to figure out the new patterns for yourself from learning by doing.

Don't be fooled by the label: Digital transformations are first and foremost business transformations. Where in the past information technology (IT) and process re-engineering programmes were often framed as cost, efficiency or productivity efforts, successful digital transformations are framed as business investments that target future-proof growth.

A digital transformation is a form of end-to-end, integrated business transformation where digital technologies play a dominant role. It is wise to discuss this definition up front. Make sure that all the stakeholders are on the same page about the nature of the change and the required decision making. Aside from reaching agreement

on framing the business transformation for growth, also agree on its enterprise-wide nature. The forces of digital disruption will challenge the very fabric of your organisation. They will require synchronised interventions across the silos and impact all organisational design dimensions. Successful digital transformations are enterprise-wide by design.

Also agree on the dominant role of technology in digital transformation. You'll need to be on the offence, rather than the defence with your technology choices if you want to keep up with big bang disruptors. Stop saying that "technology is not the issue". This statement is in vogue and mostly accompanied by "people are". It emphasises the enormous reskilling, talent and cultural challenges ahead. Unfortunately, the slogan also misrepresents the real puzzle involved in digital transformation, that is discovering a fundamentally new relationship between people *and* technology. If you want to be a digital leader, you will need digital literacy as well as the ability to grow this transformative vision.

Four realities of digital competition

Before you start planning your digital transformation, you should make one simple commitment: Build digital into every initiative. Basically, every opportunity to capture the creative power of digital technologies should stand up to the following four realities of competing in a digital world:[14]

Reality 1: Customer experience is value
Products and services are no longer enough for gaining and retaining customers. Customer experience is vital. Customers need control over a seamless link of the physical and digital worlds. Empathy, deep contextual appreciation, and co-creation are essential factors in achieving that link.

Reality 2: Customers are moving targets

Customer attention is short-lived. As a result, brand loyalty is fragile. New mobile and social experiences are introduced at fleeting Internet speed. Customers switching between competing value propositions is the rule, rather than the exception. Data and analytics allow companies to successfully staple themselves to their customers' digital selves to stay relevant and appealing.

Reality 3: Business ecosystems co-create value

No one company possesses all the data, digital skills and capabilities to win over today's demanding and dynamic customers. Thinking in ecosystems is a powerful way to strategise about new combinatorial ways to create and capture value. It creates a fertile ground for digital partnerships, where different ecosystem actors bring their respective digital strengths together to grow the economic pie, not just split it.

Reality 4: Digital platforms boost value co-creation

Your digital innovation strength is limited by your ability to combine your digital resources with those of others. Today's most valuable and successful business ecosystems are enabled by digital platforms that boost combinatorial digital innovation. These carefully managed architectures of reusable digital resources empower you to capture opportunities faster than your competitors.

All four of these realities are addressed by big bang disruptors when they deploy digital technologies. For a solid competitive edge in the digital world, you need to do the same.

Use the four realities as your yardstick the next time you appraise an innovative idea, assess a project proposal, review a portfolio or roadmap. Challenge your teams to achieve all four. Consistent and

systematic digital transformation is the key to compete significantly in the digital world. To succeed, you need to learn and build digital capabilities progressively, project by project.

What's next

With the context specified, it's time to get to work on *your* digital transformation. The following chapters provide a practical perspective on critical elements of successful digital transformation design: strategy for the digital age, customer experience design, data and analytics, digital partnership strategies, digital transformation leadership, and scaling agility. The book is built up in the following way:

Chapter 1 – Rethinking strategy for the digital age

What is the essence of creating a vigilant strategic routine for digital transformation? And how do you go about defining your digital operating model?

Chapter 2 – Digital reality no.1: Customer experience is value

Customer experience is a non-trivial value concept. Design thinking offers a useful framework for creating this value and is especially popular with digital entrepreneurs. What is it, and what does it entail?

Chapter 3 – How to catch a moving target

Data and analytics capabilities enable you to offer a continuation of valuable customer experiences, which is essential to deal with the

moving targets your customers are. How do you go about building these analytics capabilities?

Chapter 4 – Digital partnership strategies revealed

If combinatorial digital innovation is the new standard, partnering is a logical thing to do. Which mindset and lens should you adopt? And how do you make partnering worth your while?

Chapter 5 – What digital leadership does

Leading digital transformation is a matter of action, rather than position. It is about creating the requisite organisational agility to thrive digitally. What combination of leadership types do you need to make this possible?

Chapter 6 – Creating agility at scale

Agility needs to find its way into the entire organisation. What are the challenges in scaling organisational agility? What are the dos and don'ts?

DIGITAL TRANSFORMATION INVESTS IN STRENGTHENING THE CORE AND GROWING THE MORE

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RETHINKING STRATEGY FOR THE DIGITAL AGE

Every year introduces new flavours of digital technology.[1] There is a constant temptation to jump onto the bandwagon out of hope or out of fear of being left behind. Hope and fear are strong drivers but make for bad advisors. If your digital transformation only focuses on the exciting, new digital technologies, and not on winning business logic, you will quickly find you have spent yourself to death. Launching a bunch of digital initiatives that go in all sorts of directions does not constitute transformation.

If you want to be successful, you need to rethink your business strategy for the new digital realities. Strategy, not technology *per se*, drives digital transformations. Without high intention at the outset, even the most sincere efforts won't make your transformation work. The ability to make bold though wise strategic choices of many alternatives, against the backdrop of a turbulent digital business environment, separates the winners from the losers.

Building your case for radical action

Recognising the set of new realities driving competition is the starting point for digital transformation, i.e.

- Customer experience is value.
- Customers are moving targets.
- Business ecosystems co-create value.
- Digital platforms boost value co-creation.

Take your time to understand the nature of value creation in the digital space, the capabilities that need to be built, both technological and business, and the skills that need to be developed because of those new realities. As management thinker Peter Drucker once emphasised:[2] "A time of turbulence is a dangerous time, but its greatest danger is a temptation to deny reality."

Navel-gazing organisations may miss new opportunities, be oblivious to competitors and misunderstand the needs of customers. What is needed instead is an exploratory outward-facing focus, with open-minded scouts and champions.

Force yourself to go out on discovery missions, let others inspire you with their scouting assignments, listen to the markets, experience the new normal. Invite external challengers, consultants, entrepreneurs and experts to act as drivers and disrupt traditional thinking. Celebrate when you find confrontational data that challenge constraints and the status quo.

Don't just accept what others oracle or preach. Those that succeed do their own critical environment analysis, get involved, are scouts, and then make their own research synthesis, addressing the following questions to build their case for radical action:

- What are the costs of doing nothing?
- Why are incremental improvements not enough?
- What benefits can we capture with radical transformation?

Successful organisations use this case for action to push for high ambitions, clear goals and ramp up the heat for business transformation.

Responding to multiple possible futures

It is one thing to understand that the world around your organisation is changing. It is an entirely different thing to cope with it effectively.

While there are many frameworks for business strategy, essentially the idea is always the same: Envision an ambitious, winning point of view on the future of the organisation, and then pull it back to the present and make choices about where and how to play to win. Also, define where not to play, and what not to do or stop doing. The next steps involve identifying core organisational capabilities[3] and determining what management systems are needed. The book *Playing to Win: How Strategy Really Works* by Alan Lafley, former chief executive officer of Procter & Gamble, and strategic advisor Roger Martin, for example, holds an insightful, practical guide to such a strategic approach.[4]

Formulating a business strategy essentially revolves around what you think will be winning resource allocation choices. However, in turbulent times, the future business environment is hard to predict. Once you have accepted this, you don't want to commit yourself to just one future, but look at multiple possible future scenarios for the business environment and be ready to win when one or the other materialises. Sustained competitive advantage will no longer be about positioning yourself for one future, but about making and keeping yourself ready to act in multiple possible ones.

Working with future scenarios, i.e. alternative world views, is a powerful way of allowing organisations to steer a course between the false confidence of a single strategy and the ambiguous hesitation

of turbulent times. Scenario analysis is a useful strategic tool that helps you dream up possible alternative futures. Scenarios are typically generated as combinations of extreme outcomes for two or more most important but also most uncertain external forces.[5] For example, four scenarios can be generated from combining "government intervention" as high vs. low and "consumer collectivism" as high vs. low.

By developing alternative views of the future, you will evolve broader perspectives, challenge conventional strategic choices and realise that you may be completely wrong. As a digital leader, you will learn to accept that you don't have a crystal ball and that the future is uncertain. That is why you shouldn't commit to a possible future too easily.

Instead, you will design possible courses of strategic action, i.e. possible options to create and capture value (i.e. business models), for each of the identified future scenarios. Some of them you will choose to activate, some will be put in the waiting room, others will be dismissed. You will also build into your business strategy routine a constant awareness of next the strategic options, even if you have only just launched your latest strategy. This, of course, requires that you become vigilant for signals, even weak ones, revealing themselves to help you steer in one direction or another.

In sum: In turbulent times, business strategy will be less about positioning, and more about adaptively responding to signals which will be picked up along the way. Course correction needs to become routine, built into the strategy process rather than done only once or on an ad hoc basis.