# INNOVATING IN THE EXPONENTIAL ECONOMY

## Digital Disruption and Bridging the New Innovation-Execution Gap

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# INTRODUCTION

Digitisation continues to drive radical economic and behavioural changes and transform strategies and business models across industries. Freed from traditional constraints, digital natives are competing simultaneously in multiple sectors and geographies, disrupting a host of industries via rapidly expanding ecosystems. Incumbents are using new digital capabilities to transform their strategies and business models to address their existential threats and pursue new opportunities.

However, despite the seeming ubiquity and profound impact of digitisation today, industries are on average less than 40% digitised.[1] As digitisation continues to gather pace, more pervasive and radical disruptions are inevitable. There will be big winners and, potentially, many losers.

Within this context, innovation is on every organisation's agenda.

The unpredictability and pace of change in today's competitive environment means businesses won't have all the answers, and can't afford to wait for certainty before committing to new ideas.

Traditional linear approaches to innovation and execution, rooted in a level of certainty and pre-defined outcomes, are no longer fit for purpose.

More iterative approaches are needed to bridge the persistent innovation-execution gap.

The report will explore the significant leadership challenges this poses around culture, technology, risk and impact; challenges that are closely intertwined and must be addressed both independently and systematically.

In doing so, it will draw on my findings from leading a series of multi-million pound research projects funded by public and private sources over the past 10 years on strategic innovation and organisational transformation in the digital economy, supplemented by new insights by business leaders and other scholars from around the world. It is intended to help business leaders understand emerging innovation opportunities and challenges and make effective strategic responses in the digital age.

# CONTEXT:
## IS DIGITAL DISRUPTION OVERHYPED?

For years, business leaders have been urged to adapt to and embrace digital disruption. It is no surprise that fatigue sets in and many people are bewildered. Are these calls like *The Boy Who Cried Wolf* in the *Fable of Aesop*, or has the wolf really come? Is digital disruption overhyped?

Digitisation is unevenly distributed across sectors, and not everything can be digitised. Heavy industries will continue to extract materials and process them into products; and many services will go on to be consumed in person. However, even for products that cannot be digitised, the impact of digitisation on distribution, operations, marketing and the way we work is profound. By reducing transactional costs and reshaping customer expectations, digitisation allows virtually every sector to have its borders redrawn. New developments in cloud, AI, big data, IoTs and other emerging technologies are leading to ever more radical changes. Businesses have to compete with not only traditional industry peers but also new competitors in emerging ecosystems. The rules of the game are changing, and every business has to adapt for the new game - or face disruption.

A key feature of the digital economy is the network effect based on exponential growth, which is deceptive. During the early period, the base number is small and the doubling of small numbers does not distinguish visually from traditional, linear growth. Once it reaches the tipping point, however, growth will accelerate extremely rapidly. When facing exponential growth, experts nearly always project linearly, which seriously underestimates the speed of change and the urgency required to respond.

As a result, many business leaders underestimate the scale and speed of digital disruption that is bearing down on them.

One consequence of the exponential economy is a '*winner takes all*' environment. Major industry disruptions are not new, and history shows that, during big industry shakeouts, the number of businesses typically peaked and then fell by as many as 70% to 97%![2] With digital disruptions happening more rapidly across sectors, wait and see is not a viable option.

# IDENTIFYING STRATEGIC RESPONSES: THE TRANSFORMATION PRISM

So how can organisations respond? In the natural environment, the survival of a species depends critically on its ability to adapt to external changes. Understanding changes in the business environment and the strategic options available can increase the odds of survival too. Business leaders should continually challenge themselves; how to adapt, where to innovate, when to execute, what to aim for? Just like a prism splits up invisible light into a spectrum of colours, theoretical guidance can serve as a *transformation prism* to help business leaders systematically identify strategic opportunities and challenges.

## Understanding New Strategic Directions

There have been repeated calls for strategic re-orientations in the last 20 years, including from *Product* to *Service* (also known as servitisation); from *Service* to *Solution* that solves the customer's problems; from *Solution* to personalised *Experience* co-created with the customer; and from *Experience* to *Coherence*, which is greater in scope, more responsive to real time information, and delivered by different companies in ecosystems.[3]

These are not abstract concepts: with each re-orientation, there is an increase in economic value by orders of magnitude. Take the evolution of the birthday cake, as an illustrative example. Baking one using basic ingredients will cost less than €1 (*Product*), but using premixed packaged ingredients will cost $2-3 (*Service*). Buying a cake would cost €20-€30 (*Solution*), but hiring an event organiser to stage a memorable birthday party could cost €200 or €5000 (*Experience*) – and the cake is usually thrown in as part of the package. In the *Coherence* economy, the birthday celebration could be a weekend away for family and friends in an exotic location, costing hundreds or even thousands for each participant. The transport, hotel, dining and entertainment could all be personalised, each service provided by an independent company but seamlessly coordinated between services and amongst participants.

Strategic re-orientations require businesses to commit to new approaches of innovation and execution, particularly by exploring the soft attributes of their products, services and solutions, and adopting new business models to deliver and capture value from exceptional experience and coherence.

# Business Model Innovation

Over the last 20 years, significant effort has been dedicated to finding new business models to support strategic change and innovation. However, a new business model does not have to be new in the unprecedented sense.

Our research has found that business model innovation is rarely about creating entirely new business models that didn't exist before.[4] It is often about borrowing a business model from one domain and adapting it for another; and in some sectors, digital technologies enable the scaling up of a traditional business model by removing old barriers, resulting in unprecedented growth and impact. Most of all, digitisation allows a firm to deploy a wider range of business models than previously available to them, which is reflected in the growing popularity of the portfolio business model.

The portfolio model can significantly enhance a firm's financial sustainability and resilience against a context of continual change and disruption.

Our research found that there are at least four variants of the portfolio model:[5]

- First, the **market portfolio model** is when a firm simultaneously deploys two or more business models to tackle different market segments, often based on different levels of personalisation. Each of the business models might not be new, and the returns in some segments are often financially modest, but by sharing cost, the combined revenues make the 'portfolio' financially lucrative, thereby making each of the market segments financially viable.

- Second, the **product portfolio model** is based on the fact that many digitally enabled products can be consumed at different levels of value-added, or re-combined as new products. This creates opportunities to develop a wide range of new niche products by monetising different stages of work-in-progress. Direct contacts can be digitally established between consumers and various stages of production. Consumer choice is increased because work-in-progress can be consumed both independently and as supplement to the final product.

- Third, the **multi-sided business model** is when value is created through interactions with multiple stakeholders upstream, downstream and horizontally in a complex ecosystem. The firm uses different business models to engage with suppliers, customers and other stakeholders. The digital platform enables the efficient management of multi-sided relations efficiently.

- Finally, some firms deploy a portfolio of business models **sequentially over time** to maximise returns. For example, a digital artist I interviewed would first charge a live audience an entrance fee to experience the process of art creation in his digital studio with 360 degree screens. The completed digital art is then licenced to clients for a fee. Eventually, the artworks and bespoke products deriving from the creation are sold to collectors.

# Incumbent Advantages and the 'Hybrid Trap'

Digital disruptions are often associated with digital natives, but it is worth noting that incumbents are equally capable of innovating and profoundly disrupting the status quo.

Disruptions from digital natives often focus only on one stage of the value chain, but Incumbents can disrupt multiple stages of the value chain, pushing an industry over the tipping point and prompting radical changes.[6]

As Paul Willmott, Director at McKinsey argued, *'In some ways, incumbents have a lot of benefits over new players, over start-ups. They have customers, they have great data, they often have a brand. They have financial resources, which a start-up may not have.'*

Despite such advantages, however, one strategic risk for incumbents is the so-called 'hybrid trap'.[7] Incumbents often lack the resolve to fully commit to emerging technologies. Instead they develop hybrid products combining the old and new which leaves them exposed to disruptions by start-ups focusing exclusively on new technologies.  My research has shown that the problem is far more widespread than incumbents in mature industries.  By adapting technological platforms and business models developed in one market for another, even digital behemoths are exposed to native start-ups armed with new platforms and business models specially designed for the new market.[8] This can have fatal consequences in the winner-takes-all digital market.

# BRIDGING THE NEW INNOVATION-EXECUTION GAP

Against this context of disruption and heightened stakes, innovation is on every organisation's agenda. To keep pace, businesses must build for change and aim to create a culture of continuous innovation where opportunities are not just identified but seized – and seized quickly.

Most organisations do not have problems developing new strategies or generating innovative new ideas - they are also able to access new ideas generated by others.[9] Where companies often fail is to successfully execute those ideas, either when implementing a new strategy or business model, or turning an innovative idea into business outcomes. This is known as the innovation-execution gap, and it is holding many organisations back from transforming as quickly as they need to.

## 'Ready, Fire, Aim'! Execution First and Strategy Second

I often hear business leaders promoting a *'Ready, Fire, Aim'* culture. Advocates cite how it promotes a bias for action, rather than getting too bogged down by detailed planning. Since we can never have all of the information we need, it is better to act quickly, learn from those actions, and implement course corrections as problems arise, particularly when the future path and the final destination are uncertain. However, taking actions without careful planning carries significant risks.

Many business leaders focus on crafting a great strategy, but pay less attention to implementing it.

Professor Rosabeth Moss Kanter argued that smart leaders should focus on execution first and strategy second. *'A strategy is never excellent in and of itself; it is shaped, enhanced, or limited by implementation.'*[10] When a strategy looks brilliant, it's often because of the quality of execution. Strategy is about making choices based on a series of trade-offs that maximise value for the company. Strategy execution depends on the ability to seize opportunities while coordinating with other parts of the organization.[11] To develop strategies for execution, a company must foster coordination across business units, build agility and avoid complexity.[12]

# Turning Ideas into Outcomes

Many companies, by their own admission, are not good at turning innovative ideas into business outcomes. People often conflate creativity with innovation, but it is a long journey to create value from an idea. It requires a strategy supported by adequate policies and processes to capture and refine the idea, identify where and how the idea can help the organisation, invest resources to implement it, measure progress and impact, and reward staff. BCG studied over 100 of the world's most innovative companies, and identified six distinctive innovation models.[13] These models range from creating grand new visions for the future and making focused big bets to disrupt market (Apple, Tesla), developing superior solutions based on deep market insights (Nike, GoPro), leveraging business model innovations to drive on-going advantages (Zara, Costco), using core capability to dominate adjacent markets (Amazon, Alibaba), defending core market through incremental innovations (AIG, Pfizer), to reacting rapidly to competitive innovations as a fast follower (JP Morgan, Tencent). Choosing the right innovation model depends on the context of the industry and the core competence of the company. Making the wrong choice can be very costly.

Innovations can happen at all levels of the organisation, from products and services, structures and processes, to strategies and business models and inter-firm relations. In the digital age, doing what you do better through incremental innovations is increasingly insufficient. More radical innovations are often needed for long term survival.

# Bridging the Innovation-Execution Gap: From Linear to Iterative Approaches

The innovation-execution gap is not new, but bridging the gap has just become more challenging in the digital age.

My research found that the notion of a linear relationship between innovation and execution, rooted in a level of certainty and pre-defined outcomes, is increasingly out-dated. In the digital economy characterised by industry disruptions, exponential growth, blurring boundaries and expanding ecosystems, the future path is often uncertain and the final destination unpredictable and constantly shifting. Regularly revisiting and updating strategic plans based on emerging intelligence is essential. Failing to do so can be costly.

One classic example was a company called Iridium launched by Motorola to place 66 satellites around the Earth in order to provide mobile telephony coverage anywhere on the planet. However, as the mobile market evolved very rapidly, many original assumptions for Iridium became invalid, yet '*[t]he Iridium business plan was locked in place 12 years before it became operational*', according to Dan Colussy who rescued Iridium from going bankrupt. *'Let's stick to the plan*' is where many things go wrong when it comes to executing a strategy or turning an idea into outcomes.

In sectors where digital disruption has been most visible, such as retailing, travel, media and high tech industries, my research found that new strategies increasingly emerge through a discovery or learning process. Strategy making and execution are intertwined in an iterative relationship, based on continuous monitoring of the environment, regular redefinition of path and destination, and frequent course corrections. Similarly, turning new ideas into business outcomes increasingly rely on innovating by experimenting and improvising, rather than fully developing and refining an idea and then implementing it at large scale and hoping for the best. Many products are co-created with consumers from the beginning. Moreover, rather than relying solely on the successful transformation of the core business in one big bet, many businesses are also hedging their future through investments in a portfolio of internal and external ventures.[14] The rationale is that when – not if – the core business is disrupted or cannibalised, at least some new ventures will have started growing rapidly, thereby achieving sustainability through a portfolio of new ventures when the sustainability of the current core business can no longer be maintained.

Setting strategy is not a static exercise. When circumstances change, so must the strategy. An iterative approach can recalibrate the fit between strategy and environment, and it has been argued that complex and dynamic environments demand a self-tuning approach that recalibrates strategy constantly, illustrated by how Alibaba uses algorithmic thinking to constantly reinvent itself.[15] The non-linear relationship between innovation and execution, however, does not mean reckless actions without planning. Two caveats should be emphasised: timing is critical as too early or too late in pursuing emerging opportunities can be equally damaging; and maintaining strategic focus remains essential. As Marion Mesnage, Head of Amadeus Research, Innovation and Ventures, says: "Our approach to innovation is not just about the 'big idea'. It is about how we can execute ideas that help our customers create more value for their business by doing things more effectively, more creatively and more easily."

# ADDRESSING LEADERSHIP CHALLENGES

- Bridging the new innovation-execution gap poses significant leadership challenges around culture, technology, risk, and impact. These challenges are closely intertwined and must be addressed both independently and systematically.

## Culture: Understanding Unwritten Rules

- Culture is the personality of an organisation. It is about the basic assumptions that a group of people share concerning how the world is, which determines their values and behaviours. Changing culture is easier said than done. Well intentioned efforts often lead to unintended consequences. I recently interviewed the CEO of a large conglomerate going through a major strategic transformation. As part of the programme, a new reward system was introduced to incentivise a culture of innovation and risking taking. However, the operational leaders actually became more risk averse, focusing only on low risk, simple, short term projects with guaranteed success in order to secure personal rewards.  Projects that are more complex and risky, taking longer to succeed but strategically more important for the business, often get overlooked. Culture translates formal rules in an organisation into unwritten rules, and it is these unwritten rules that determine behaviours and guide employees when confronted by unexpected challenges. Changing behaviours require organisations to transform their strategies and goals in ways that are aligned with the underlying values and assumptions, which exist largely at an unconscious level.

Any attempt to change culture without a deep, honest understanding of the underlying assumptions is bound to fail. Yet, unwritten rules are poorly understood in many organisations particularly by their senior leaders.

# Technology: Developing a Secure and Flexible Digital Infrastructure

Successfully executing on innovation depends critically on the support of a reliable, secure, flexible and scalable digital infrastructure. A large public organisation we studied was amongst the first in the world to implement a complex ERP system to automate all core processes, which delivered significant efficiency gains when first implemented. As the political and economic conditions changed, the expectations of its clients and employees also evolved. However, any innovations in services and business processes are constrained by the ERP system. The frustrated Deputy CEO explained, *'In hindsight, it was a big mistake to adopt ERP. It automated all of our processes, and we are concreted in the old way of doing things. Any change to our services or processes is not only painful, but also very costly!'* After two new CIOs and significant new investments, it still struggles to transition to a flexible, scalable and up-to-date IT infrastructure, without which, the organisation will continue to be *'concreted'* in the past.[16]

Many organisations are trapped in out-dated IT infrastructures that are no longer fit for purpose. In banking, for example, despite the growing number of new digital products and services at the front end, some core systems at the back end were initially designed in the 1960s to automate branch accounting. Today, the legacy IT systems are little understood, expensive to maintain and difficult to change, significantly limiting the ability of incumbent banks to innovate and compete with new entrants.
How to transition to a reliable, secure yet flexible and scalable IT infrastructure – and keep it up-to-date at reasonable cost – is strategically important for the future of the banking industry.[17]

The future survival of many organisations will depend on their ability to develop and maintain a secure and flexible digital infrastructure that allows them to scale resources across the required range of devices, applications, and clouds at speed. This is one of the pre-conditions for bridging the innovation-execution gap, either when adopting new strategies and business models or turning new ideas into business outcomes. It calls on senior business leaders – not just IT leaders – to take strategic responsibility for the development, using both internal and external capabilities and resources and partnerships with technology leaders.

# Risk: Managing New Risks in the Digital Age

For innovation to succeed, risk taking – and sometimes failure – is unavoidable. As Andy Jassy, CEO of AWS explained, *"We accept if you're trying to innovate, sometimes you're going to fail. It has to be a culture that takes risks even if the output doesn't end up being a big success, accepts you may fail sometimes — and tries to learn from it and move on."*

However, this does not mean turning a blind eye to underlying risks. It calls on business leaders to introduce new risk management systems while encouraging people to experiment with new ideas. Some traditional risk management systems are no longer fit for purpose.[18] Despite all the rhetoric and investment, risk management is too often treated as a compliance issue that can be solved by drawing up formal rules and making sure that all employees follow them. Many such rules are sensible and do reduce some risks that could severely damage a company, but rules-based risk management will not diminish either the likelihood or the impact of a disaster. For example, our research has highlighted the *dark side of big data*, from unintended biases built into data analytics, external developments beyond the assumptions of data analytic models, to the tendency to neglect data and insights that cannot be easily digitised.[19] Any mishandling of data breaches or consumer privacy issues can result in serious reputational and business damages. Some risks are preventable, but many are unknown, strategically critical and externally originated, all of them can have potentially catastrophic consequences. New risk management frameworks and techniques are needed to help business leaders anticipate, understand and manage the growing range of risks in the digital age. It has become strategically critical for organisations particularly when introducing new business models and bridging the innovation-execution gap through iterative approaches.

# Measuring Impacts: Avoiding Unintended Consequences

- Innovation also requires organisations to accurately measure impact on a continuous basis using a growing range of metrics. However, goal setting and performance measurement can have huge influences on priorities and behaviours. One tendency in many organisations is to measure what can be measured, rather than develop measures that are fully aligned with strategic priorities and intended outcomes. This can have unintended consequences. For example, measuring what has been invested in innovations (such as money and time); the outcomes as a result of innovations (such as number of new products); the number and type of innovations generated and implemented; or the process of how well an organisation is managing innovation - can encourage very different behaviours. Moreover, when demand, technology, business models and competitors are shifting, measuring impacts becomes ever more challenging as the path and destination are moving targets. Traditional approaches to goal setting and measuring impact may drive a business in the wrong direction, discouraging new thinking, experimentation and learning in situations that have not been encountered before.

Deciding what to measure and how the measurement is used can be an important strategic tool for business leaders to facilitate cultural changes, make course adjustments in strategy making and execution, and turn new ideas into business outcomes.

# THE URGENCY IMPERATIVE

The pace and magnitude of digital disruption will continue to accelerate due to the exponential development and proliferation of cloud, mobile, AI and machine learning, big data, IoTs and other emerging technologies. Business leaders need to make strategic responses with a growing sense of urgency by re-orientating their strategic focuses and adopting new business models; and bridging the new innovation-execution gap through an iterative approach. These changes pose significant leadership challenges around culture, technology, risk and impact.

Jeff Bezos has long advocated for making '*high-quality, high-velocity decisions*'. He argued that speed matters in business. Many decisions are reversible, so a light-weight decision making process is sufficient. In any case, Bezos believed that most decisions should be made with around 70% of the information, and waiting for 90% is too slow. The key is the ability to quickly recognize and correct bad decisions. He went on to argue that *'If you're good at course correcting, being wrong may be less costly than you think, whereas being slow is going to be expensive for sure.'* To speed up decision making, he often uses the phrase *'disagree and commit'*.

Similarly, Zappos CEO Tony Hsieh asks whether an initiative is *'safe enough to try'* when making rapid decisions. Consensus building in decision making is only appropriate when a company is small, but it does not scale. Self-organisation, based on the *'safe enough to try'* principle, does scale, which is essential for large organisations to remain agile in a high velocity environment.[20]

The exponential economy gives rise to an urgency imperative, but it does not mean panic or knee-jerking responses.

The profound leadership challenges around culture, technology, risk and impact call for new theoretical guidance. While there is no set formula for success, the following suggestions are intended to help business leaders take forward some of the ideas discussed in this report.

# KEY MESSAGES

## Innovation by experimentation

Traditional linear approaches to innovation and execution, rooted in a level of certainty and pre-defined outcomes, are no long fit for purpose. The business environment is changing so rapidly that the future is difficult to predict and the destination is often uncertain. New iterative approaches of discovery and learning, where strategy making and execution are intertwined, are needed – based on continuous monitoring of the environment, regular redefinition of path and destination, and frequent course corrections.

## Innovation is not always about creating something new

Few 'new' business models are based on unprecedented ideas. Rather, digital technologies allow companies to deploy a broader range of business models than previously available. It enables them to adapt business models from one domain for another; or adopt a portfolio of business models. In fact, innovation is not always about new things, it is about creating new value along some dimensions.

## Strategic change should not be considered in isolation

Theoretical guidance, such as understanding the full range of potential strategic opportunities, from product, service, solution to experience and coherence, can serve as a *transformation prism* to help business leaders systematically identify new opportunities and make informed decisions.

## Changing culture is easier said than done

Well intentioned efforts to change culture can lead to unintended consequences. Certain management measures introduced to reward innovation and risk-taking have resulted in *'quick win'* initiatives being prioritised over more strategic ones that come with greater potential benefit and genuine risk. Any attempt to change culture without an understanding of the associated, underlying assumptions and repercussions is bound to fail.

## For innovation to succeed, risk - and sometimes failure - is unavoidable

The digital economy brings a wide range of new risks. Risk management is too often treated as a compliance issue that can be solved by drawing up formal rules and making sure that all employees follow them. Business leaders must develop new risk management systems and techniques while encouraging people to experiment with new ideas

## Cultural changes need support from the right technology infrastructure

Businesses need to make architectural decisions they are not going to regret in the future. Senior business leaders – not just IT leaders – must take strategic responsibility to ensure their digital infrastructure is able to scale resource at speed across the required range of devices, applications, and clouds, with confidence that everything is secure.

## Measuring Impact is an effective tool for business leaders to facilitate continuous innovation

Target setting and performance measurement are strategic decisions. Setting the wrong targets often leads people to game the system, with undesirable consequences. Simply measuring what is most tangible – such as that invested in innovations (money and time) or the outcomes of innovations (number of new products) – can restrict innovation. Measurement should be fully aligned with strategic priorities and intended outcomes and able to change and evolve with the strategy, to ensure new ideas are not disregarded before they can deliver for the business.

# Professor Feng Li (PhD, FBAM)

Professor Feng Li (PhD, FBAM) is Chair of Information Management and Head of Technology and Innovation Management at Cass Business School, City, University of London. For three decades, he has been investigating how digital technologies can be used to facilitate strategic innovation and organisational transformation in the digital economy. He advises senior business leaders and policy makers both in the UK and internationally on how to manage the transition to new technologies, new business models and new organisational forms. His research has attracted the support of over £40 million of external research funding, from the UK Research Councils, Innovate UK, the EU, and the private sectors. Feng is the author of *What is e-Business? How the Internet Transforms Organisations* (Oxford: Blackwell). He is the founding chair of the e-Business & e-Government Special Interest Group and an elected Fellow of the British Academy of Management.

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