The Journey to Digital Leadership

how to innovate at scale

Roger Camrass & Alan Brown

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Is confusion an excuse for board-level inaction?

Much confusion abounds at Board level today as to what is meant by digital, and we suspect that there is little consensus amongst many Board members about what to do next, despite the barrage of press and consulting speak announcing and promoting 'Industry 4.0'. Looking back into recent corporate history, there have been many false starts such as business reengineering in the nineties, and the dot.com boom and bust in the noughties, so why is this time different from any other?

Most executives are aware of the headlines drivers – cloud, social, IoT, mobile, and AI, but few have any real understanding of where and when digital might affect their companies, or how they might deal with possible disruption e.g. competition from Digital natives such as Alibaba, Google, Tesla, or Amazon. Many in the business-to-consumer (b2c) space are well down the track with sophisticated front end applications such as retailers and banks, but most have difficulty integrating these into their back-end systems. Few in business-to-business (b2b) have yet mobilised for fundamental change except for GE.

Large companies should 'play to win' rather than 'play not to lose'

Our paper sets out a context for digital leadership – why senior executives should take this subject seriously now (rather than postpone any activity); what digital leadership might mean for them; and how to take the first steps on a digital leadership journey.

Clearing up some typical misconceptions around digital

There are management misconceptions surrounding digital. These may be responsible for the current confusion at senior executive levels. Here are just some of the most common ones:

- large companies cannot innovate at scale? Some of the world's largest companies such as GE, Ford, Microsoft and Goldman Sachs are proving that this is untrue.
- 'Plug and Play' beats vertical integration? Digital natives such as Google and Amazon are proving that vertical integration can be a strong competitive asset.
- Moon-shots are preferable to moon-walks? Incremental improvement can often deliver more immediate and reliable results than large, billion dollar programmes.
- Successful companies must choose between product-leadership; operational excellence or customer intimacy. Digital natives have managed to excel at all three simultaneously.

Our view is that large organisations can and must learn to innovate at scale. Modern techniques described in this report can contribute to organisational agility and responsiveness within Fortune 1000 companies. However, Boards must assess their own strengths and weaknesses, and adopt a strategy that fits their individual market context and management style.

Digital is part of a broader picture of global disruption and volatility

According to McKinsey, the half-life of a Fortune 1000 company is now down to 25 years

'Digital' is just a thin veneer associated with more profound changes prompted by external developments taking place in global politics (for example, publicist movements such as Brexit, and Trump), the social agenda (Millennials entering the workplace) and macro-economic (for example, secular stagnation). Digital technologies may be 'enablers' but they are frequently not the primary change factors.

Such macro-changes are causing the World to enter a period of volatility, uncertainty, complexity, and ambiguity (VUCA) that challenges traditional business models and practices, leaving the door open for insurgents (Digital natives) that can disrupt and displace incumbents. Large organisations need to become more agile and responsive to such conditions if they are to survive and flourish in the new digital era. This implies a fundamental shift in ways of operating amongst leading incumbents.

It is our view that now is the time for incumbents to be proactive, 'playing to win' rather than 'playing not to lose'. Preparing for a VUCA world requires a range of new capabilities that enable large organisations to respond to constant change, and to learn to 'innovate at scale'. However, senior executives must be of one mind about which direction they are taking, and why such change is necessary.

What are the characteristics of a digital world?

The macro forces of political, economic, social, and technical change are producing a tectonic shift from an 'analogue' to a 'digital' business environment, as illustrated in the figure below:

Figure 1 – Tectonic shifts across the business landscape

	Before Digital	**With Digital**
Competitive mega-trends	Hardware Products Transactions	Software Services Lifetime customer value
Performance optimisation	Operational excellence Consistency and reliability Low cost	Adaptability at scale Continuous experimentation Speed and agility
Organisational structures	Monolithic, Hierarchical Management intuition	Matrixed service teams Data driven decision making
Innovation	Projects Stage Gates	Continuous improvement Automated testing

Source – Brad Power, Principal, MAXOS Group

In this context, Digital opens new possibilities at several levels – enhanced customer experience; improved optimisation and control of production assets; faster decision making based on data rather than opinion; and new mechanisms to establish and sustain core differentiation. Some of the most relevant points include:

- Digital technologies enable increasingly intimate, two-way interactions with customers, both consumer and commercial. This is especially true when serving the Millennium population who depend on mobile and online channels for a large proportion of their social, work and domestic activities. Some 1.8B consumers are now connected via smart phones and the world-wide web.
- Digital also enables more intimate connection with physical and virtual assets deployed across the entire supply chain in areas such as production, logistics, and procurement. In all such cases, vast volumes of data are being generated that can influence decisions of all kinds, from inventory and asset management to product and service innovations.
- Digital poses a more fundamental challenge to corporate management – helping to determine where are the sustaining elements of differentiation within the organisation. In an era of 'everything as a service', what remains core and what can be externalised becomes a key issue. This was at the heart of our 'Atomic' thinking in 2003, post the dot.com revolution (Atomic: reforming the business landscape into the new structures of tomorrow by Roger Camrass and Martin Farncombe).

Such dramatic improvements in connectivity and processing power have opened-up a digital universe that is being populated rapidly by newcomers such as Apple, Alibaba, Amazon, Google, Netflix, Facebook and Tencent. These Digital natives have amongst the highest stock market valuations in the World. Incumbents must exploit their vast customer assets and scale to compete with such newcomers if they are to satisfy their shareholders and remain in business.

Implications for incumbents

Most large and successful organisations have built up rigid structures that are optimised for prevailing, steady state conditions. Culture, process, systems, incentives, and skills are designed to reinforce historic market behaviour. In the digital world of volatility and ambiguity (VUCA), these may prove to be impediments rather than enablers. Enlightened digital leaders such as Jeff Immelt, CEO of GE recognise that all such business practices must be reformed to meet the demands of a digital enabled marketplace.

Organisational agility and responsiveness are pre-requisites for a VUCA World

Competing in the new global environment requires more flexible and agile approaches to the market, and more innovative ways of developing and delivering products and services. Incumbents are faced with three choices as to how they might approach digital leadership:

- Concentrate on 'protecting the core' by introducing incremental and continuous improvement regimes (as Toyota did in the nineties).
- 'Changing the game' by applying digital techniques such as data analytics, IoT and AI to reengineer core processes and systems (as in the case of GE).
- 'Creating the new' by investing large sums ($1B) in entirely new enterprises (Moon-shots) that are built on digital infrastructures (Goldman Sachs and its new retail bank, MARCUS).

In all cases, executives must evaluate the risks of taking radical action against maintaining 'business as usual'. In our view, the 'do-nothing' option is no longer a viable path to tread. Management must examine new ways of working and adopt an approach that is relevant to their current context and prospects within a digital marketplace.

Adopting new digital leadership principles

To help executives make a clear choice, we have developed six principles that can assist large incumbent organisations to achieve leadership within the new digital-enabled environment.

1. Exploit new sources of customer data to drive business decisions in near real-time (e.g. smart metering, connected car, tele-medicine). This is particularly relevant to b2c businesses that serve end consumers.
2. Introduce cycles of continuous improvement, especially where software based products and services are concerned. Techniques now exist to update software and related apps in minutes or hours rather than weeks or months.
3. Adopt agile structures that are responsive to changes in the external environment (customers, trading partners, etc) as well as optimising internal assets (e.g. through IoT).
4. Experiment quickly to tackle business problems and opportunities, producing minimum viable solutions that can be tested and scaled rapidly. This follows the path of 'lean start-up' that seeks to emulate the success of newcomers.
5. Deploy flexible business platforms to enable rapid scaling of new products and services. Cloud delivers a convenient means to achieve hyper-scaling once a new product or technique has been taken to the 'minimum viable' stage of development.
6. Embrace a culture that promotes entrepreneurship and risk taking, with appropriate incentives to encourage such behaviour. Breaking down hierarchies and associated rigid cultures may be the biggest challenge for digital leadership.

Whether a company is in the consumer or business marketplace, these principles should help management develop some guiding concepts for digital leadership.

What is our vision for digital leadership?

Applying these principles to traditional structures, we see a new operating model emerging with the following characteristics:

- Product managers, supported by small teams, having full control over profitability. They have access to all customer data and employ analytical techniques to constantly test and enhance customer experience.
- Products themselves becoming increasingly software dependent, enabling continuous improvement and automatic testing of functionality and content (e.g. the connected car). These are made up of re-usable components with open 'API's.
- Hyper-scaling through digital platforms, typically based on public or private cloud infrastructures. Such platforms connect assets, physical and virtual, across the entire supply chain leading to high levels of efficiency and responsiveness.
- Functions becoming increasingly automated, relying on 'everything as a service' cloud offerings, and software based robotics to take over workflow processes. They retain responsibility for improving capabilities and resources necessary to serve digital business.
- Leadership focusing on shifting cultural values within the organisation and altering external perceptions of how the business operates and generates value. It needs to demonstrate 'actions' as much as 'intentions' to gain credibility.

Although many of these characteristics were pioneered by Digital natives, they have direct relevance to incumbent organisations that seek to win in the new digital environment. Such organisations may transform the 'core' to embrace new ways of working, or launch green-field operations. Both are viable options and need to be considered carefully.

How to enact digital transformation - playing to win

Our point of view here is that most large incumbents will focus on 'protecting the core' and 'changing the game' rather than 'creating the new'. In both the former cases, executives need a conceptual vision of where they intend to be in 5-10 years, recognising that this is likely to morph as conditions change over that time – and well beyond. What is critical is that organisations need to build appropriate capability to commence the digital journey.

There is no concrete 'end-point' but merely a preferred 'direction of travel'

Our recommended approach to top management is to regard digital leadership as a journey, not a 'big-bang' programme (as in the reengineering days of the nineties). Here are five main activities to commence the journey:

1. Promote digital education, starting top-down, to help build awareness and drive a consensus on what the digital vision might be for the organisation. Focus on desired outcomes and key points of differentiation within a digital landscape. Which needles to influence? What impact on shareholder value? Use GE as a benchmark for 'changing the game'.
2. Promote dialogue through the organisation and out to external parties – customers, trade partners, etc. This should flush out the first-steps on the journey to a digital end-point. It should trigger experiments to solve existing problems and surface new opportunities. Consider how digital might affect the brand – as perceived internally as well as externally.
3. Sponsor and invest actively in such experiments and external collaboration. Some partnerships (old or new) could bring massive benefits, and will need to be incorporated into existing business models – as per GE and PREDIX; Ford and PIVOTAL. Identify how successful experiments can be scaled rapidly via digital platforms such as Cloud.
4. Introduce effective oversight and governance that monitors progress, and can make course corrections as necessary, addressing issues and removing barriers. This implies a stronger role for the corporate centre during periods of fundamental change – parenting the business units while they prepare for digital leadership.
5. Strengthen corporate functions as a means of channelling new methods and tools into the businesses. For example, giving IT the responsibility to integrate data, core applications and infrastructures to enable innovation and hyper-scaling within a secure and compliant environment.

In all cases, the issue of removing barriers become paramount to progress on the digital journey. For example, legacy systems can be a powerful stumbling-block that needs early resolution. The University of Surrey published an influential report on this subject 'Escaping Legacy' in 2016. Building new skills and capabilities is also a key issue today. IBM has hired 100,000 new staff in the last few years.

Equally, organisations must seek to exploit current assets where possible. Many of these will remain viable as the landscape changes from analogue to digital. GE continues to build MRI scanners and Ford continues to manufacture cars. However, the offer to the market can change dramatically as software services are overlaid.

How can functions support digital leadership

The IT function is reaching a crossroads. Having been largely about supporting a 'business as usual' environment through large system implementations such as SAP, it is now able to provide the tools and techniques to enable new ways of operating at the business level. In the figure below we illustrate just how IT needs to transform as a function to operate effectively in the digital era:

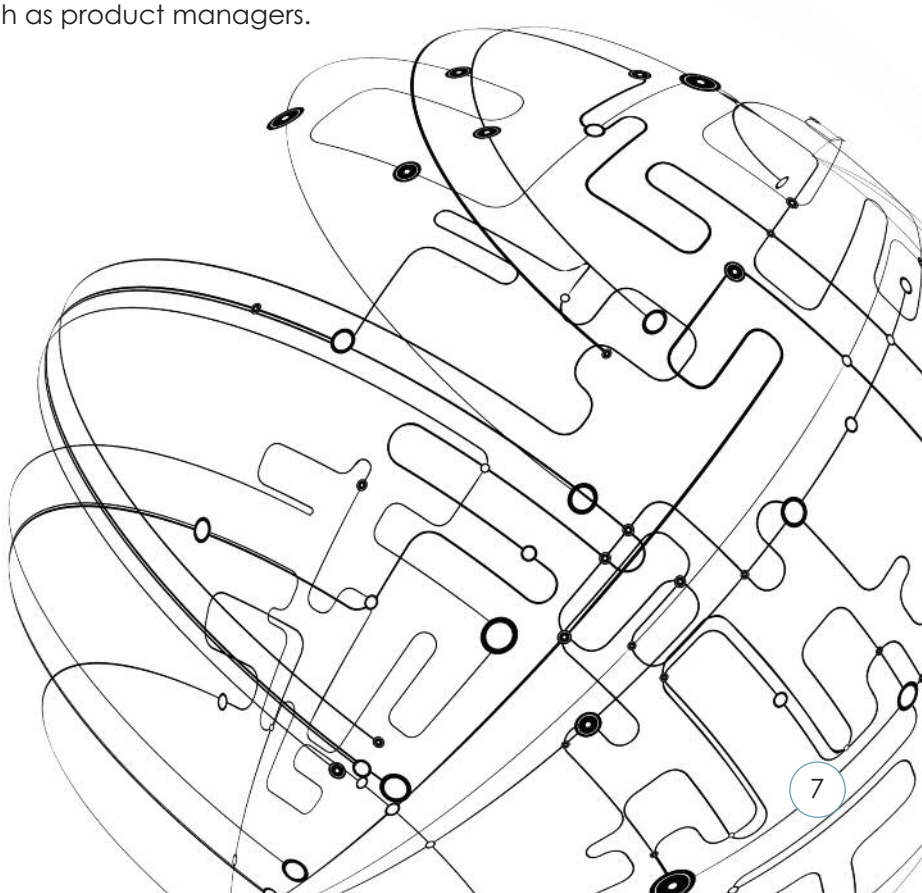
Figure 2 – IT functional transformation, from analogue to digital

Historic state	Transformed state	Implications
Projects	Software Products	Focus on what business managers need such as reusable software components or micro-services, and scalable platforms to support digital products and services
Waterfall and Scrum	Continuous delivery	Small product teams that release software updates using high levels of automation for speed and quality assurance
Monolithic Applications	Web Services	Re-usable components that can contribute to multiple products with open 'API' Interfaces enabling rapid integration. Such components can be sourced on a 'build or buy' basis
Captive IT facilities and customised services	Hyper-scale platform services	Adoption of cloud services that have global scale and reach. Each service is intensively monitored and integrated seamlessly into the corporate environment
Skills associated with legacy IT applications and sourcing	Pathfinder skills associated with digital leadership	Shift away from legacy preoccupations towards data analytics and security, cognitive learning, automatic testing and new partnering skills

Source: Andy Singleton, CEO, MAXOS Group

Other functions such as HR, Finance, and Sales face similar transformational challenges. One aspect is the ability to buy 'everything as a service' from cloud providers such as Workday and Salesforce. This will reduce the clerical and administrative side of a function by as much as 70%, allowing senior management to focus on what adds value to business partners i.e. those in the front line such as product managers.

Time now for the IT function to either Step-up or Step-out



Taking a more radical stance

For some CEOs, 'changing the current game' by streamlining processes and introducing more agile structures may not be sufficient to achieve desired outcomes such as a doubling or tripling market of capitalisation – as NVIDIA proved in 2016 (shares escalated 300%). Instead, these CEOs may opt for a moon-shot approach to 'create the new', as Ian Conn is demonstrating in Centrica with his five growth initiatives.

Digital natives (e.g. Google, Amazon, and Tesla) are driven by market paranoia – always seeking to stay ahead of competition and ever fearful of potential newcomers who can threaten their position. Such companies are constantly reinventing rather than merely adapting. This requires large injections of capital and new capabilities that can either be generated internally or bought from outside. CISCO built its success on acquisitions of technology leaders.

For the majority of large incumbents, it is not evident yet that such radical approaches will work. Some companies such as BP tried to create a new digital business stream in 2000. Such efforts failed. The 'Moon-shot' approach may not be appropriate for every large company. Instead, many may prefer the 'Moon-walk': smaller, incremental steps based on rapid experimentation rather than bold new programmes.

What can we learn from history?

Progressive eras of business transformation have failed largely to deliver ambitious outcomes. Reengineering in the nineties was all about the 50% rather than the 5% improvement in time, quality, and cost of product. Major cultural and structural barriers inhibited many reengineering programmes from achieving their ambitions. Instead, most companies adopted integrated ERP systems at enormous expense to streamline their existing operations. The advent of e-commerce in the late nineties energised top management to invest heavily in web-based technology and green-field operations. Again, the outcome fell far short of expectations, and many senior executives returned to business as usual when the NASDAQ crashed in 2001. The global recession of 2008 continued to focus management attention on cost cutting and efficiency rather than technology-led innovation.

However, we can safely say that this time is different because:

- Billions of consumers are now connected and ready to use their collective influence to purchase the products and services they need, rather than those that are offered.
- New public cloud platforms such as AWS and AZURE enable hyper-scaling of new services with almost no investment. This has favoured newcomers such as WhatsApp and Instagram.
- New architectures such as SOA and open standards embedded in API interfaces enable near universal computer-to-computer interaction, and present answers to legacy issues.
- Millennials are not prepared to tolerate out-dated practices or techniques, and demand radical changes in the workplace.

The combination of a VUCA environment, successful digital newcomers, and enabling techniques such as those listed above should prompt senior executives into action.

Concluding remarks

Unlike the years of the dot.com boom and bust in early 2000, digital is becoming a much more permanent aspect of the business landscape, enabling fundamental change and opportunity. Few incumbents have yet to mobilise for this new era, and are frequently confused about what steps to take and what end-point to head for.

Our position is that top management must come to a consensus about who they want to be, and how far they want to travel before unleashing change on their organisations. This can be achieved by an effective form of management education that involves carefully facilitated discussions about what digital can offer and how to take the first steps on a digital journey.

The University of Surrey, The Founders Group and MAXOS are keen to offer appropriate education, thought leadership and advisory services to leaders wishing to embrace digital leadership.

About the Authors

Alan Brown is Professor of Innovation and Entrepreneurship at the University of Surrey's Business School. He has over 25 years of experience in commercial high tech companies leading R&D teams, building cutting-edge solutions, and driving innovation in software delivery. He is the founder and director of the Surrey 'Centre for the Digital Economy' (CoDE). His most recent book is 'Digitizing Government: Understanding and implementing new business models'

Roger Camrass is a visiting professor at the University of Surrey, and a director of Surrey's Centre for the Digital Economy. Roger has over forty years of experience in helping organisations and IT functions transform, ranging from reengineering in the nineties to e-commerce in recent years. He is author of 'Atomic: reforming the business landscape into the new structures of tomorrow', and is a graduate of both Cambridge and MIT. Visit www.rogercamrass.com for more background, publications.

About the sponsor organisations

Surrey Centre for the Digital Economy (CoDE) has been recently established as part of the University of Surrey's Business School. CoDE brings together world class research into 5G mobile, Internet of Things, Cyber Security, Business Platforms, and Agile Development. CoDE provides a vital bridge between business, large and small, to harness the commercial power of innovation and to make management education more relevant to the digital economy. www.surreycode.org

The Founders Group ('Founders') offers Senior Executives access to a team of highly experienced Advisors to support major business change programmes. Founders consists of former FTSE Executives and Senior Consulting Partners who have come together to offer an independent 'Sounding Board' service. Founders is collaborating with CoDE to help large corporations respond to the opportunities and risks posed by digital disruption. www.foundersgroup.co.uk

The MAXOS Group is pioneering new techniques to help large organisations 'innovate at scale' such as front-line product management, micro-service architectures, and hyper-scale platforms. Based in Boston, USA, it has access to leading academics at Harvard, MIT, Boston University, and Babson. MAXOS consists of senior partners and executives who have strong individual reputations. www.maxos.ai