DIGITAL TRANSFORMATION

A Primer for Non-Technical Leaders

DI Data Driven

INTRODUCTION

Digital Technology is altering human activity

Digital technology, in all its forms, is rapidly transforming business and society. Virtually every area of human activity is being profoundly altered. The most successful people and organisations are those embracing Digital Transformation (DX) to build new products and services based on innovative business models enabled by many new technologies and processes.

There is a sometimes-bewildering array of enabling technologies driving this revolution. Foremost amongst them is the Internet, which has given rise to the Cloud, to the Internet of Things (IOT), and to new ways of delivering and sharing software and services.

Another key driver is the range of technologies known collectively as Artificial Intelligence (AI), which are enabling new ways of working, and new ways of analysing data now referred to as Big Data/Analytics.

Massive changes are happening all around us. In the workplace, mobile technologies increasingly mean that for the first time in history many of us can be location independent. This has enabled new applications and new ways of working, often referred to as Workplace Innovation, to improve employee productivity and engagement.

Enterprise Application/ERP systems are called ‘mission-critical’ applications for good reason. Without them the organization will cease to function. In this increasingly connected world, ERP extends beyond the enterprise. Modern ERP systems are interconnected in a giant business matrix that enables a world of global commerce.

All of these developments mean new opportunities, bad as well as well as good such that in a totally connected world, Cybersecurity has become a major issue.

The effects of Digital Transformation are significant

Its effects are felt at every level of business and society. Leaders in all spheres of human endeavour will be impacted and need to become aware of the essential DX concepts and implications so as to effectively manage in this rapidly evolving environment and maximise opportunities for innovation.

About this Primer

So, what does it all mean, and how can non-tech leaders make sense of the Digital Transformation trend?

In this brief 'Primer on Digital Transformation for Non-Technical Leaders' we introduce each of the key concepts comprising Digital Transformation (DX). In non-technical, every-day business terms we hope to make it just a bit easier for business leaders to make some level of sense of the rapidly evolving digital economy. After introducing DX and the related technologies and concepts, we conclude with a brief summary and implications for today's leaders.

I trust that you find this primer useful and look forward to your feedback at the email address below.

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DIGITAL TRANSFORMATION

What is digital transformation? (DX)?

Digital technology, in all its forms, is transforming business and society. Virtually every area of human activity is being profoundly altered. The most successful people and organisations are those embracing this transformation to build new products and services based on innovative business models enabled by the many technologies that comprise the trend.

The famous Austrian economist Joseph Schumpeter, regarded as the father of the study of innovation, described it as 'creative destruction'. That is what is happening now, all around us. The old ways of doing things are being destroyed. In their stead are rising new ideas, new techniques and whole new industries. In our increasingly digital economy that process is called Digital Transformation (DX).

What is driving this revolution?

There are many enabling technologies driving this revolution. Foremost amongst them is the Internet, which has allowed levels of communication, connectivity and information sharing unimaginable a few short years ago. It has given rise to the Cloud, to the Internet of Things (IoT), and to new ways of delivering and sharing software and services. In a few short decades the internet has grown from a limited low bandwidth network connecting just a few computers to a universal high-speed matrix covering the whole planet.

Another key driver is the range of technologies known collectively as Artificial Intelligence (AI), which are enabling new ways of working, new ways of analysing data, and new ways of using existing technology. Massive advances in computing power have made possible AI technologies like machine learning, robotic process automation (RPA) and predictive data analytics. These techniques enable us to make sense of the vast amounts of information (often called 'Big Data') generated by the new technologies of the era of Digital Transformation.

DX impacts all aspects of leadership

THE SEPARATION OF THE DIGITAL AND PHYSICAL WORLD IS BLURRING

Massive changes are happening all around us. In the workplace, mobile technologies increasingly mean that for the first time in history we are location independent. We are connected any time and anywhere. Smart phones have transformed many people's lives and have been the most quickly adopted technology in human history. They have also enabled many new applications and new ways of working, driving a whole range of initiatives and technologies, often referred to as Workplace Innovation, to improve employee productivity and engagement.

At the enterprise level, corporate data and corporate applications have also become untethered from the physical world. Large scale corporate wide applications (Enterprise Applications/Enterprise Resource Planning (ERP)), services and even infrastructure are now delivered by the Internet. The separation of the digital world from the physical world is blurring, with robotics transforming manufacturing, drones being used for an increasing number of applications and autonomous vehicles becoming a reality.

Governments at every level are delivering their services digitally and are opening government data to third parties to help them develop new information-based services. Electronic identity management has become commonplace.

These changes are revolutionary. But they are not without cost. New technologies mean new opportunities, bad as well as good. In a totally connected world, Cybersecurity has become a major issue. It encompasses a range of technologies designed to protect computers and networks from unwelcome intrusion and to ensure their continued reliability.

Digital Transformation is sweeping the world. Its effects are significant, at every level of business and society. Leaders in all spheres of human endeavour will be impacted and need to become aware of the essential concepts and implications to maximise opportunities for innovation and managing in this rapidly evolving environment.

INTERNET OF THINGS

From Internet to Internet of Things (IoT)

The Internet was first developed as a way of connecting computers to each other. With the rapid growth of digital technology almost anything can now be connected to the Internet – hence the term 'the Internet of Things' (IoT).

There is a multiplicity of 'things' that can be connected to the Internet. It is not only devices. By definition, anything with an IP (Internet Protocol) address can be connected. Wireless technologies such as WiFi, Bluetooth and 4G and 5G telephony mean that devices and sensors do not need to be physically connected – indeed, with IoT, remote connectivity is the norm.

The key to IoT is the 'embedding' of Internet connectivity into virtually any kind of physical device, which means they can be controlled and monitored over the Internet. They can also act as monitors – or sensors – for other devices and applications. This opens almost infinite possibilities and expands the scope of the Internet and what it can be used for.

Putting IoT to work

IoT can be best understood using examples in different environments, as introduced in this non-exhaustive list of IoT applications:
Medical and health: IoT is the key technology for e-health, enabling remote diagnostics and monitoring, inside hospitals and in the community. Monitoring patients' clinical condition and behaviour is a key aspect of effective healthcare.
Buildings and dwellings: The so-called 'smart home' is a primary example of IoT technology. Virtually all domestic appliances can be IoT enabled, allowing them to be remotely controlled or activated according to external conditions. At the commercial level, building management systems do the same thing on an industrial scale.

Energy and Environment: The so-called 'smart grid' uses IoT technology to monitor and control the efficient distribution of energy. Smart sensors can be used to monitor all aspects of the environment and are increasingly being used for such applications as earthquake and tsunami prediction, warning and mitigation and wind-farm optimisation.
Transport: A high-profile application of IoT technology to transportation is the rise of the Autonomous Vehicle (AV), otherwise known as driverless cars. More important than the technology and the vehicle itself are the monitoring and control mechanisms that enable it to move safely and efficiently around the transport network. IoT technology is also important and controls transportation systems such as trains and aircraft.
Manufacturing: Automation has long been part of the manufacturing process. IoT takes this to a new level, enabling vastly improved process automation, much of it based on big data and the sophisticated analysis of it. Digital twinning using IoT enables factory management to effectively replicate their factory on-screen or use virtual reality/augmented reality (VR/AR) to monitor, manage and maximise factory floor operations from a remote location.
Agriculture: IoT has made possible such applications as driverless tractors and automated irrigation systems. However, its primary application of agriculture is in monitoring the environment to enable the right decisions to be made about the most efficient farming practices.
Smart Cities: The term means different things to different people, but what they all have in common is the widespread deployment of IoT enabled applications including traffic and parking management, public space lighting, infrastructure monitoring, disaster recovery facilitation, and the like.

IoT has now moved beyond its earlier limited industrial applications and now permeates most aspects of society. As IoT can be embedded in almost anything, people are becoming very inventive. However just because your front door mat, your toothbrush and your mower could all be connected, it doesn't mean that they should be. Leaders need to resist the desire of their employees and management to connect absolutely everything, and work with their teams to develop ideas for IoT use that can enhance corporate operations, improve safety, and create a competitive advantage.

CLOUD

Cloud is not a single technology

The ‘cloud’ describes a mix of hardware, software, communications and business practices that enable applications and information to be hosted across widely dispersed locations connected by the internet.

The term derives from the early use of a stylised cloud to indicate communications networks and the internet in diagrams and charts. Outside of the cloud are physical entities such as devices and organizations. The interior of the cloud, which can contain hundreds of communications enabled and Internet connected devices and software, is invisible to outside observers.

Enabler of the information utility

The cloud is the enabler of the information utility. It is more important for the way it changes business models than it is because of the technology it comprises. Applications and services that are contained within the cloud are delivered over the internet. Usage can be ramped up or throttled down on demand.

Almost anything that can be delivered electronically is available through the cloud on a service model. ‘Software-as-a-Service’ (SaaS), ‘Platform-as-a-Service’ (PaaS), and many others have led to the term ‘Anything-as-a-Service’ (XaaS) to describe the ubiquity of this approach.

On demand everything

The ability to use as much or as little as is needed for any application or service changed the way in which they are consumed and how they are paid for. In the pre-cloud model, applications were paid for upfront and ongoing maintenance licences were paid by the user organization. If an individual or organization wanted the functionality of a particular piece of software, they had to buy that software. This is the capital expenditure (CapEx) model. With the cloud, payments are made as services are used. The functionality of the software is essentially rented as needed. This is the operational expenditure (OpEx) model. This allows much greater control over costs.

Cloud is a broad term

Three different cloud models are often described as follows:
Public Cloud: essentially services and resources that are available to anybody via the Internet. Public cloud service providers offer a range of applications that are typically accessed through a web browser. Many major providers provide a complete infrastructure on the public cloud.
Private Cloud: similar to the public cloud, except that the applications and services are exclusive to one organization, or a closed group of organizations. Private clouds deliver over the Internet but are not publicly available.
Hybrid Cloud: as the name suggests is a mixture of public and private cloud, with each employed as appropriate. Both public and private cloud have advantages and disadvantages, and a hybrid approach offers the best of both worlds.

The biggest revolution

Cloud computing has been the biggest revolution in information process over the last decade or two. It has altered forever the way most organizations and individuals consume and use information. Cloud represents a fundamental redistribution of computing power and of business functionality. Leaders need to have exacting standards for selection criteria and a very clear understand of where their data will be held and backed up. Identifying appropriate workloads for cloud support, defining metrics and selecting a provider type is a complex process, but is key to the overall success of digital transformation.

WORKPLACE INNOVATION

Defining today's workplace

WORK IS NO LONGER A PHYSICAL LOCATION

Digital technology has transformed the workplace, as it has so much else. The very concept of the workplace has evolved. For an increasing number of people, it is no longer a physical location. Rather, it describes the wider virtual environment enabled by such technology as smartphones, mobile broadband, virtual and augmented reality, collaboration tools and a range of other workplace productivity technologies.

It is now more than 40 years since digital technology transformed the back offices of large organisations. It is just over 30 years since the PC revolution swept through the front office and brought personal productivity tools such as word processors and spreadsheets to all information workers. Twenty years ago, the Internet became a common business tool and the Apple iPhone ushered in the smart phone revolution around 10 years ago.

Each of these waves of technology transformed the workplace. We are now experiencing another revolution, driven by new technologies such as Artificial Intelligence and the cloud-based delivery of personal and workplace productivity tools.

Backbone of the modern workplace

There are many names for the rapidly changing use of technology and related enabling policies at work including Workplace Innovation, Workstyle Innovation, Smart Workplace and others. Many technologies work together to make it happen. These include:

Collaboration tools: software that helps individuals in the workplace to work together on projects by sharing applications and data. Collaboration is not a new idea, but the cloud and artificial intelligence have enabled new ways of working together. At the same time existing personal productivity tools such as Microsoft Office migrated to the cloud and brought a new dimension to collaboration.

Social media: a consumer technology increasingly being used for workplace productivity. Sophisticated analysis tools, many of them driven by AI techniques, are leveraging social networks as important business tools.

Workflow and content management: another existing workplace application that has been revolutionised by new technology.

Mobility: smart phones, mobile broadband and mobile apps have enabled individuals to work anytime and anywhere.

Unified Communications: the bringing together of different media – voice, data, image, video – into one integrated corporate communication system.

Not everybody is an information worker. New technologies are also transforming workplaces in areas as diverse as manufacturing, transport, energy, utilities and mining. Many of these applications, such as virtual and augmented reality, use a combination of technologies based on AI, the Internet of Things and other innovations.

Individuals, the workplace, and the enterprise have never been more connected. Leaders should continue to work with their HR/HCM teams to identify any blockages to productivity and employee satisfaction, safety and engagement and with their ICT teams to co-create appropriate policies and procure the technology to enable them.

ENTERPRISE APPLICATIONS

Enterprise applications are core to business

All enterprises run core application software essential to their business. These include financial software and applications like human resources/human capital management (HR/HCM) and customer relationship management (CRM). They also typically run mission-critical applications like manufacturing, distribution and logistics, and others, depending on their vertical market sector.

Banks and insurance companies run vast client databases. Manufacturers run sophisticated production and asset management systems. Retailers, government agencies, educational institutions, transport companies – organizations in every market sector – run specialised applications that enable them to efficiently run and manage their operations.

Generically referred to as ERP

These important but disparate applications are often called ERP systems. The term stands for Enterprise Resource Planning. It was originally applied to manufacturing systems, but today ERP describes the software at the core of an organization's business, without which it could not function.

ERP software has evolved significantly since the term first came into widespread use in the 1980s. Major vendors like SAP and Oracle offer sophisticated suites of software that integrate several functions. Other vendors offer 'best-of-breed' applications optimised for a particular purpose or market segment. The implementation, maintenance and efficient management of ERP software is a large industry in its own right. ERP services companies are a major part of the global ICT industry.

ERP is increasingly cloud based

Like all applications, ERP systems are increasingly cloud-based, or use cloud infrastructure for much of their functionality. All the major vendors are migrating their product offerings to the cloud, using the SaaS (Software-as-a-Service) mode. Many user organizations are following, though the urge to maintain mission-critical systems in-house remains strong.

As ERP migrates to the cloud it is changing the business models of both vendors and user organizations. It is also affecting the ERP services market. Cloud computing encourages a pay-per-use subscription model, for ERP and other applications, which is changing the structure of the industry. Users are moving their budgets from the CapEx (capital expenditure) to the OpEx (operational expenditure) model, where outgoings are better able to be varied according to use.

ERP plays a visible role externally

A key change in ERP in recent years has been the imperative to ensure it is outward facing as well as internally focused. It has never been more important to interface with clients, business partners, and the wider community. ERP systems are integral to ensuring the efficient operation of the digital age.

A giant, mission critical matrix

ERP, by whatever name, will always be with us. They are called 'mission-critical' applications for a very good reason. The organization's core business functions are non-negotiable. Without them the organization will cease to function. They need to be robust and flexible, and capable of meeting the demands of changing technologies, economics and business conditions. In this increasingly connected world, ERP extends beyond the enterprise. Modern ERP systems are interconnected in a giant business matrix that enables a world of global commerce. Leaders need to continue to update themselves on new trends in this area and increase their knowledge and awareness of the critical role that enterprise applications play in connecting organizations in the rapidly evolving digitalized business environment.

ARTIFICIAL INTELLIGENCE

Augmenting human capability

Artificial Intelligence is the application of computing power to problems previously solvable only by human thought, if at all. It comes in many forms. Key technologies and applications include:

Advanced analytics: the proliferation of Big Data has led to the creation of massive data sets that can be effectively analysed only with AI tools. AI can spot complex patterns in the data visible to humans. AI's usefulness as an analytics tool is especially relevant in the use of predictive analytics and decision automation.

Natural language processing (NLP) and speech recognition: NLP involves the interaction between computers and unstructured speech and text. The technology involves massive processing power and complex algorithms and is used in such applications as speech recognition and machine translation.

Cognitive processing: Otherwise known as semantic computing, refers to digital processing that attempts to mimic the operation of the human brain. It is especially suited to the analysis of large unstructured datasets and has been shown to be more effective than humans in the diagnosis of many diseases.

Robotic process automation (RPA): RPA has grown out of Business Process Automation (BPA), and refers to the use of AI techniques to automate workflow and business processes. A good example is the use of NLP to scan incoming emails and undertake the appropriate action, such as generating an invoice or flagging a complaint.

Machine learning: The use of AI techniques to help computers make decisions based on previous events. Like many AI techniques, machine learning involves a combination of raw computing power and logic-based models to simulate the human learning process.

Chatbots and virtual assistants: Chatbots are robotic processes that simulate human conversation. They are often used for automated online help functions. The technology is also used for so-called 'virtual assistants', which uses AI to interact with humans to provide information that helps them undertake specific tasks.

Brain and body: AI and robots

AI is software, while robotics is hardware. Robots are machines, often but not always driven by AI-based software. Their first widespread use was in production line manufacturing, where they could be programmed to perform repetitive tasks. As AI becomes more sophisticated and robotics technology evolves, robots are increasingly performing more complex functions, from domestic tasks to education and training to mimicking human performance and behaviour.

Any application that involves AI being applied to the physical world is essentially robotics. This includes autonomous vehicles and aerial and seaborne drones. These also cross into Internet of Things (IoT). It is common that these evolving applications typically draw on a range of technologies.

Although we are many many decades away from AI being able to completely replicate human decision making and behaviour (and opinion is divided as to whether this will ever happen), AI is not going away and will increasingly permeate all aspects of daily life. To remain ahead of the curve, leaders need to understand the potential for using AI to augment their capabilities and should begin the process by working with their teams to identify potential applications, then develop these ideas into proofs-of-concept (POC).

CYBERSECURITY

The evolution of security

What used to be called computer security is now most commonly called cybersecurity. The change in terminology reflects the evolution from discrete to interconnected computer systems. It is only since computers have been connected to each other that issues around protecting them from unwanted intrusion become prominent.

Cybersecurity has many parts, from the protection of individual devices to the protection of the enterprise and even the nation state. One important aspect is identity and access management, a range of technologies intended to ensure that only validated individuals have access to the appropriate levels of information. Identity management systems are now being implemented at the national level with the increasing popularity of e-government systems. Many identity management systems include a biometric component, using voice or facial recognition, fingerprints, and other distinctive physical attributes to verify and identify individuals.

Keeping enterprise information safe

The term Security Information and Event Management (SIEM) is increasingly being used to describe the range of techniques and technologies employed to ensure that enterprise information systems are secured from outside interference. Such interference can come from individuals, organised crime groups, other enterprises, or even nation states. They can be motivated by political, economic and national security policies, revenge, mischief and thrill-seeking in the case of individuals, or by financial advantage in the case of access to proprietary information.

SIEM systems are the fastest-growing and most important product area in cybersecurity. They have three major components:
Data collection: Gathering data about system activity from syslogs, firewalls, application monitors, and operating system and network traffic logs.
Data analysis: Log management and retention, event correlation, user activity monitoring, and predictive and forensic analysis.
Reporting: Real-time dashboard alerts, email and SMS with alerts, analytical reporting, auditing and governance, and compliance.

Cyber-safety beyond borders

LEADERS MUST UNDERSTAND THESE THREATS

Cybersecurity is increasingly important to governments, where it is now an area of active international conflict. Cyber-warfare is a reality, with nation states (and sponsored terrorists/ black-hats) as perpetrators as well as victims. Most countries now have national cybersecurity centres, drawing on the capabilities of private industry, government and academic specialists in the area.

Cybersecurity is a constant battle of changing technology. There are many excellent point solutions, a range of comprehensive suites and a large services and systems integration industry that provide clients with cybersecurity solutions based on a range of products. However malicious players are constantly employing new techniques and technologies. It is a new arms race, a new cold war and there is no one size fits all solution.

Leaders at all levels need to arm themselves with enough knowledge to understand these threats and work with appropriate organisations to develop and implement individual, corporate and community plans for mitigating negative impacts.

IMPLICATIONS FOR LEADERS

Digital Transformation (DX)

Digital Transformation is sweeping the world. Its effects are significant at every level of business and society. Leaders in all spheres of human endeavour will be impacted and need to become aware of the essential concepts and implications to maximise opportunities for innovation and managing in this rapidly evolving environment.

Internet of Things (IoT)

IoT has now moved beyond its earlier limited industrial applications and permeates most aspects of society. As IoT can be embedded in almost anything, people are becoming very inventive. However just because your front door mat, your toothbrush and your mower could all be connected, it doesn't mean that they should be. Leaders need to resist the desire of their employees and management to connect absolutely everything and work with their teams to develop ideas for IoT use that can enhance corporate operations, improve safety, and create a competitive advantage.

Cloud

Cloud computing has been the biggest revolution in information process over the last decade or two. Cloud represents a fundamental redistribution of computing power and of business functionality and is used by almost all individuals and businesses. Leaders need to have exacting standards for selection criteria and a very clear understand of where their data will be held and backed up. Identifying appropriate workloads for cloud support, defining metrics and selecting a provider type is a complex process, but is key to the overall success of DX.

Workplace Innovation

Not everybody is an information worker. New technologies are also transforming workplaces in areas as diverse as manufacturing, transport, energy, utilities and mining. Individuals, the workplace, and the enterprise have never been more connected. Leaders should continue to work with their HR/HCM teams to identify any blockages to productivity and employee satisfaction, safety and engagement and with their ICT teams to co-create appropriate policies and procure the technology to enable them.

Enterprise Applications

In this increasingly connected world, ERP extends beyond the enterprise. Modern ERP systems are interconnected in a giant business matrix that enables a world of global commerce. Leaders need to continue to update themselves on new trends in this area and increase their knowledge and awareness of the critical role that enterprise applications play in connecting organizations in the rapidly evolving digitalized business environment.

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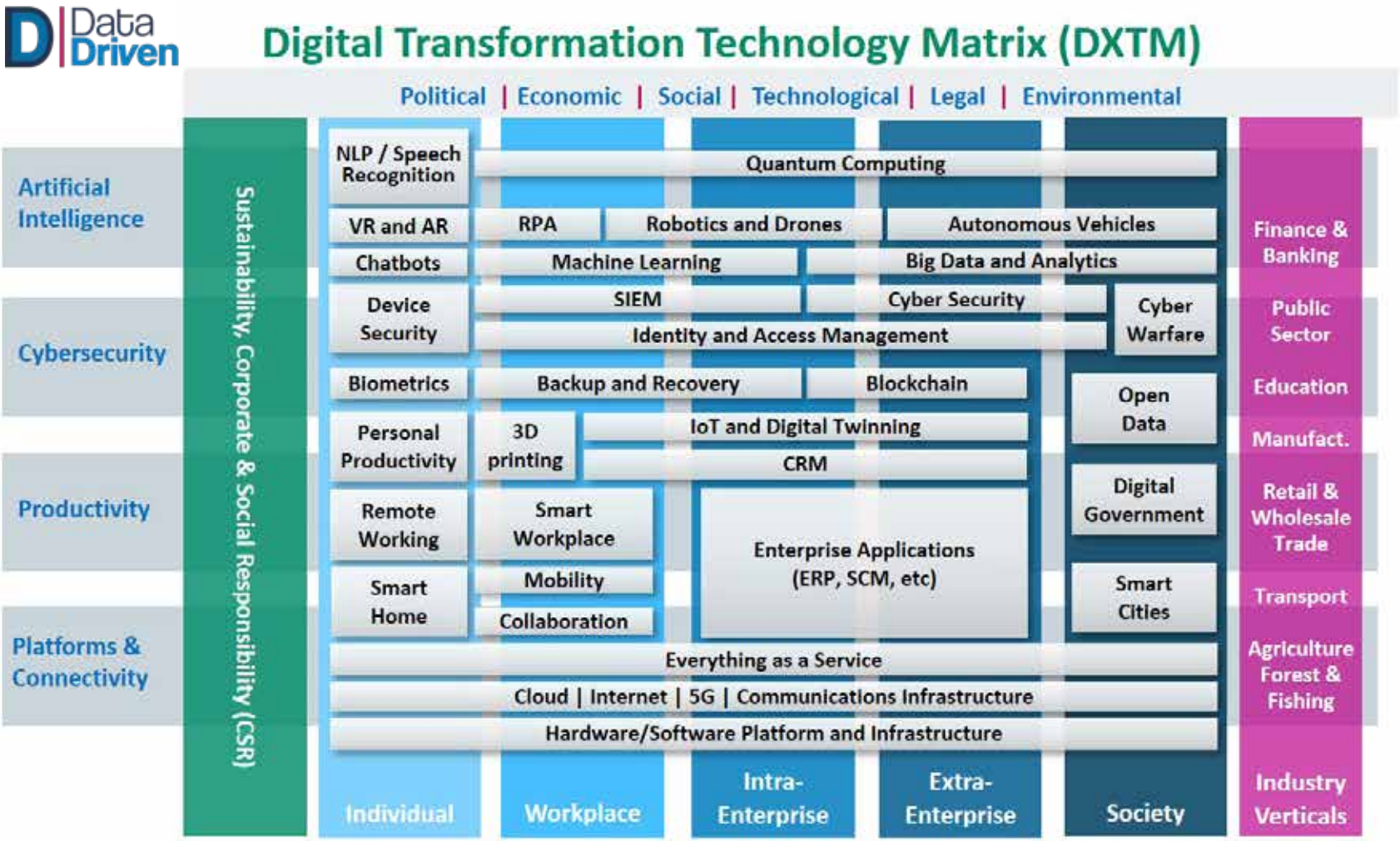
We encourage you to dig deeper into DX

In this brief *'Primer on Digital Transformation for Non-Technical Leaders'* we introduced each of the key concepts comprising Digital Transformation (DX) in what we believe to be non-technical everyday business terminology. Hopefully this has given you at least a basic understanding of DX and some of the implications for leaders. However, this document barely scratches the surface of DX and we encourage you to dig deeper into areas that interest you. It has never been easier to learn and there are literally thousands of free courses and tutorials online which cover all of the above topics or more. If authorised courses are more your thing, you can find what you need in the resource libraries and professional development offerings of industry associations and leadership institutes, or through colleges of higher education. The following page contains a handy matrix of major DX technologies to assist your exploration. Whatever you decide, we wish you luck on your DX journey!

DXTM

DataDriven Digital Transformation Technology Matrix

DataDriven has developed a proprietary taxonomy of technologies and trends to ensure consistency of terminology. The DataDriven Digital Transformation Technology Matrix (DXTM) provides a comprehensive model for our research focus and advisory thought leadership.



Components of the DXTM

DXTM comprises **five user groups**, from individual to the wider society:
Individual: The effect of Digital Transformation (DX) on individuals, at work and in their personal lives.
Workplace: The effect of DX on individuals and workgroups within the workplace.
Intra-Enterprise: The effect of DX on business practices and business models within the organization.
Extra-Enterprise: The effect of DX on the way the organization interacts with other organizations.
Society: The effect of DX on the economy, government and the wider community.

Overlaid on these five groups are **four major classes of application or technology**. Some of these have their primary effect on only one level, some affect two or more.

The four technology areas are:
Platforms & Connectivity: Technologies which enable individuals and organizations within each level to communicate and interact with others at their level and beyond. At the base are the underlying connectivity technologies – Cloud / Internet / 5G / Comms infrastructure/Hardware & Software Platforms – which sit across all five user groups and are the key enablers of the interconnected world at every level.
Productivity: Technologies which enable and increase productivity across functions at every level and across levels.
Cybersecurity: Technologies which prevent unwanted intrusions and which enable efficient and continued operation of the other technology areas.
Artificial Intelligence: Machine based technologies which enable new applications through the simulation of human reasoning, or processes at very high speed.

Sustainability/Corporate and Social Responsibility (CSR) are increasingly critical considerations at all levels, and this aspect also overlays the four major classes of application and technology.

Industry Verticals have differing levels of technology uptake and maturity and are therefore specifically included in the research focus.

ABOUT DATADRIVEN

DataDriven is an Asia/Pacific based research and advisory services company specialising in research-based data-driven thought leadership, ICT strategy consulting for technology users and providers, outsourcing, vendor management, competitive Intelligence, and technology go-to-market enablement projects.

DataDriven is also highly experienced in the area of cross-cultural communications and leadership, managing virtual teams across multiple geographies, and runs training and workshops in these areas. In addition DataDriven associates are skilled at the delivery of presentations at events ranging from facilitation of small C-level roundtables, through to 'big-tent' major keynotes with audiences in the thousands.

With a combined ICT market experience of over 120 years, DataDriven associates have supported hundreds of ICT providers and other private and public sector organizations. DataDriven has successfully executed projects globally, but has a particularly strong focus on Asia/Pacific and Japan.

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ABOUT CRAIG BATY

Craig Baty is Principal and Founder of DataDriven. He recently returned to Australia from 4 years in Fujitsu's Tokyo HQ as VP Global Strategy/International Marketing & Digital Services, and was the most senior non-Japanese executive and key interface between Fujitsu's $14bn international ICT business and Japan.

Craig was also a key driver of the international roll-out of Fujitsu's Digital Transformation (DX) offering 'MetaArc', a portfolio of solutions, software, services, hardware, and cutting-edge technologies including global Cloud, IOT, Big Data/Analytics, Mobility, AI/Robotics and Cybersecurity offerings.

Prior, Craig was a senior executive in Gartner (the world's largest ICT Research and Advisory firm) for 12 years, including profit and loss responsibility as Group VP Research AP/Japan managing over 300 staff in 16 countries, President Gartner Japan (Tokyo) managing 100 Japanese staff directly, and member of the Board of Gartner International.

Craig currently serves as NSW Vice Chair of the Australian Computer Society (ACS), on the NSW Council of the Australian Information Industry Association (AIIA) and is a Fellow of The institute of Managers and Leaders (IML).

He is currently completing a Doctor of Business Administration by Research (DBA) at USQ focused on the intersection of 'National culture and ICT Strategy and Investment: Australia compared to Japan'.