

UK Digital Transformation Strategy

The end of the beginning?

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Background

Over the last few weeks we have seen the release of a flurry of new documents aimed at stimulating the digital economy and accelerating adoption of digital technologies across UK government itself. Fuelled by the drive for job growth and increased UK productivity, the impact and influence of the digital economy is more and more viewed as critical to future prosperity in a time of growing uncertainty. Whether it is encouraging new digital businesses to grow or helping traditional businesses to transform in a digitally-enabled world, creating the conditions for the UK to be at the forefront of digital economy activities is now at the top of the Government's agenda. And it is seen by businesses as essential to their future survival.

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Broadly, the digital economy is concerned with the adoption of new digital technologies, particularly Information and Communication Technologies (ICT), and the subsequent reengineering of the digitally-delivered products, services, and business practices that are enabled by these new capabilities. This breadth underlies much of the evolution of current business activity and investment in a digital age. In fact, the European Commission goes as far as to call the digital economy “the single most important driver of innovation, competitiveness and growth” [1].

Consequently, it is essential that UK government understands and participates in the digital economy in support of all its citizens, and in the broader national interest. The positive view of the UK as a digitally-connected place to live and carry out business must be balanced with the risks that, as William Gibson stated, “the future is here, but not evenly distributed”. The accelerated pace of change is already stretching us as individuals, and redefining many aspects of our society. New technology advances bring to the forefront questions concerning

job insecurity due to adoption of digital solutions for increasing efficiency and flexibility, inequalities due to lack of consistent availability and fair access to basic social services through digital channels, out-of-date approaches to overseeing ethical and legal standards enforcement for digitised services, ineffective governance for protecting the most vulnerable in our communities from malicious or unforeseen dangers online, etc.

In fact, these concerns are exacerbated with the most recent trends and directions, pulling at the core of established business and cultural norms. Three areas are illustrative:

- **Automation, Artificial Intelligence (AI) and Machine Learning (ML).** The immense computing power that is being brought online through ever more reliable high-speed Internet infrastructure is now being utilised to analyse large amounts of data being generated by all sorts of digitally-enabled devices. The sophisticated algorithms being developed are “trained” by this data to look for regularly occurring patterns that could be replaced with simplified automated approaches, and for anomalies that may identify deviant or divergent activities requiring further investigation. Such systems are compelling in their speed of analysis and their ability to predict actions with increasing accuracy. Hence, they begin to augment, and often to replace, human interpretation when applied to domains such as financial management, healthcare, legal services, and many more.
- **Industrial strategy, manufacturing output, and productivity.** The UK government has turned its attention toward the broader concerns that surround the competitiveness of UK industry, and announced that it will produce an industrial strategy to galvanize action in this area. Currently emerging, the focus areas are seen in the selection of a number of key domains in which the UK must invest to gain or retain a leadership position, a reshaping of the relationship between research investigations and industrial practice, and the development of the skills necessary to retune the workforce to be more effective, productive, and engaged in driving the UK forwards. However, even the very notion of “productivity” in a digital era must now be redefined, to say nothing of the reforming job markets due to increased automation, and the re-skilling of the workforce [2].

- **Brexit and on-going macro-level uncertainty.** Today, any strategic activity must be positioned within the reshaping of UK society and a world that is undergoing widespread political change. As the UK comes to terms with the implications of Brexit, the only certainty appears to be that we must prepare for uncertainty and ambiguity for some period of time. We must expect changes will occur in our working and living conditions, and become more accustomed to dealing with that change. That means that we will need faster ways to carry out analysis of emerging situations and their potential impact, to implement changes in complex, ambiguous circumstances, to measure the impact of change and offer a balanced assessment of the status of alternatives, and to apply the lessons learned from sub-optimal actions to improve our on-going execution.

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Highlighting these three areas reinforces the view that flexibility and speed of action will be essential future attributes. The importance of ICT and other technological advances, therefore, will drive the UK government and businesses to embed digital technologies within their operational model to speed up existing practices, and at the same time force us toward reimagining the kinds of products and services that will be necessary in a digitally-connected world. Hence, this raises the importance of digital economy concerns as a foundation for future industrial competitiveness. For the UK this will be particularly important as it seeks to address the economic and societal risks that emerge, and as it exploits the digital technologies that underscore the essential alignment between the UK government, businesses, and individuals.

Digital Reboot

Recognising the importance of the digital economy to the UK, the UK Government has been active for a number of years in various digitization, e-commerce, and online service delivery efforts. While much of this activity has been focused on opening up existing government services to online channels, there has also been targeted work to redefine the business model of government. The “New Public Management” reforms of the 1980s and beyond helped reshape government service delivery to be more decentralised and customer-centric [3]. With the maturing of Internet-based technologies in the late 1990s, and its significant impact on business and society, governments around the world began migrating back office services to managed data centres to improve service delivery efficiency. This was followed by newly-designed digital service delivery for customer-facing activities driven by growing pressure from citizens, residents, and businesses for easier access to government-owned data and processes. The arrival of “Digital Public Management” [4] exposed the challenges and opportunities for digitally-delivered government service, and led to major initiatives such as the UK Government Digital Service (GDS), a model that has been copied in the USA, Australia, and elsewhere.

Early successes by GDS were based around the broad theme of “digital-by-default” – a rallying cry to expose services and data via the web, and to move to digital channels for delivery wherever possible. This had the impact of galvanizing disparate efforts and communities toward the need for online access to services, and for new design approaches for optimizing customer experience through these channels. However, it also had the limitation that services were frequently exposed to web interfaces without due consideration for the suitability of those processes for digital delivery. It has been argued that the resulting digitization activities focused too much on presentation of existing services rather than questioning the validity or value that the service provided in a digital world [5]. A more fundamental shift in government digital service delivery was required.

Discussion within and across government has resulted in a series of new digital government initiatives. Three documents form the heart of this “reboot” for digital transformation in the UK: [The UK Digital Strategy](#) [6], [the UK government transformation strategy](#) [7], and the [Digital Economy Bill](#) [8].

UK Digital Strategy

At the beginning of March 2017 the Department of Culture, Media and Sport (DCMS) issued an updated UK Digital Strategy with the goal of ensuring that the UK delivers a “world-leading digital economy that works for everyone”.

The strategy focuses on four key areas:

- Expanding and speeding up digital connectivity with the technology infrastructure and data management capabilities needed to connect businesses and homes across the UK.
- Making citizens and businesses safer and less vulnerable online.
- Encouraging more new digital businesses and the digital transformation of existing businesses.
- Reconfiguring government services to take more advantage of digital technologies and new digital business models.

Through this combination of initiatives, DCMS aims to push the UK to capitalize on perceived leadership positions it holds through its advanced research at several world-ranked universities, digital infrastructure investments in 5G future mobile technology, emerging Artificial Intelligence (AI) and Machine Learning (ML) capabilities, and digital business hubs in London, Cambridge, Manchester, and elsewhere. The successes seen in these areas are early indications of how the UK could establish dominant positions in a future digitally-driven world. However, the UK is naturally fearful that any such success may be short-lived. The UK may be caught between three challengers: the ability for centres such as Silicon Valley to spin new ideas with the ecosystem of university research, large Venture Capital funding pots, and the growth channels offered by US-based software platform providers; the enormous talent pools offered by China and India with increasing skills and productivity for massive scaling in short time periods; and the economic and regulatory uncertainty of Brexit driving European organizations to create centres in mainland Europe, and delaying foreign investment in existing UK facilities.

The UK Digital Strategy is an attempt to address these concerns. The digital infrastructure investments and the business skills investment aim to “reduce the friction” of working in the UK. Businesses based here need to feel that they can start faster, find new partners and skills necessary to grow, and get better support to manage their business when connecting with customers around the world. For citizens of the UK, the importance is to ensure that the benefits to UK society are equitable and evenly distributed.

Government Transformation Strategy

The newly-refreshed Government Transformation Strategy (GTS) is focused on digital transformation across the UK Government over the coming years. To a large extent, this document signals the next phase of the Government's digital journey with its explicit aim to "look beyond channel shift" to broad business transformation in government, and its broadening of scope from central government to embracing local government issues.

Although short on specifics, the GTS is quite an important re-statement of the government's goals and directions for digital transformation. The initial phase, dominated by the "digital-by-default" mantra and embodied in the 25 demonstrator projects, was aimed largely at replacing costly high volume citizen transactions with their online cheaper equivalents. The vast potential savings that were calculated for the initial programme, claimed to be in excess of £3B, largely were based on the shift from manual processing due to paper-based activities and call centres, to self-service and automated processing online. Additionally, the overarching "Gov.UK" portal to online government services has been an important entry point for citizens to access online capabilities, and the showcase for digital service design across government agencies.

Reviews of the first phase of government digital transformation are on-going. The key successes the Government Digital Service (GDS) have achieved to date are widely seen to have been in the focus on service consumers through the adoption of design thinking techniques, the core digital design concepts that have introduced agile approaches in software delivery across government, and the re-examination of large contracts to ensure that such agreements for IT capabilities are appropriate and offer sufficient flexibility, innovation, and value (e.g., [9], [10]). The result is a vibrant dialogue that GDS has opened with the various government agencies on their strategies for the digital economy. However, it is widely acknowledged that perhaps no more than half of the 25 demonstrators have resulted in working systems that achieve their intended goals. Furthermore, the focus on web-enabling existing government services has been a useful starting point, but has largely avoided the need to redesign or eliminate services in the context of digitization. The National Audit Office (NAO) review of GDS progress is promised for later in Spring 2017.

Addressing these concerns, this refreshed GTS broadens the focus of the work of GDS in several important ways:

- Build on the design thinking approaches to take a more extensive look at user-facing services to improve customer experiences interacting with government services.
- Work more closely with government departments and agencies to look at deeper business transformation enabled by digitally-delivered services.
- Turn attention to local government, and the opportunity to take the learning from the initial successes in central government agencies to the over 400 local government councils who deliver citizen-facing services.
- Consolidate commonly delivered services into shared components that are reused as necessary across different departments and agencies rather than being rebuilt each time.

This last point is particularly worth highlighting. In fact, the re-architecting of government services to create a common core set of capabilities, often called “Government-as-a-Platform”, is now prominently highlighted as one of the differentiating aspects of the government strategy reboot.

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UK Digital Economy Bill

Underlying the UK's digital strategies and aspirations is a legal framework embodied in the Digital Economy Bill currently finding its way through the House of Lords (having previously passed through the House of Commons). The basis of this Bill is a set of standards and regulations covering several aspects of digital infrastructure, connectivity, privacy, and online behaviours. While this Bill includes many individual pieces of legislation, the key unifying theme is that the UK digital economy must be based on ways of working that facilitate connectivity and transparency, while not overwhelming individuals' rights. This is a difficult balance to strike, made more difficult by the dynamic nature of the threats and challenges we face in a digital age, the speed of technology evolutions, and the lack of meaningful boundaries for technologies that are able to operate independently of jurisdictions, cross

traditional business silos, and stretch interpretations of existing laws toward and beyond breaking point.

The details of the standards and regulations within the Digital Economy Bill cannot easily be summarised, and for those affected by them, they should be closely reviewed. However, broadly the critical reactions have focused on the implications of the Bill for data sharing and for personal data rights [11]. Openness drives collaboration and innovation, yet can lead to manipulation and abuse. Government's ability to understand, arbitrate, and regulate is being severely tested. Recent investments in a National Cyber Security Centre based in London will help. However, this critical element of digital economy impact will remain a challenging area.

Commentary

The future prosperity of the UK and its role in the world is intimately linked to the government's ability to understand, support, and accelerate the creation of a thriving digital economy. However, it must do so in the knowledge that digital technology adoption may bring as much disruption as earlier industrial revolutions with regard to social upheaval, redefinition of jobs, and a growing gap between those advantaged and disadvantaged by on-going changes [12]. Striking a balance between enabling the state-of-the-art to grow rapidly and managing the controlled evolution of the state-of-the-practice will be a struggle occupying much UK government time over the coming years.

The recently-announced initiative to focus much of this effort in the UK around a broad industrial strategy is cause for optimism. The enabling ICT advances supporting the digital economy will be organized in support of critical domains for advanced research, leadership in modern engineering practice, creation of new businesses, and ultimately the improvement of the UK's overall productivity. The challenges for the digital economy will be to coordinate efforts that simultaneously encourage UK businesses to:

- **Open up**, creating new business opportunities for all sectors, and ensuring larger businesses use digital technologies to develop the ecosystems that support massive job growth.
- **Join up**, solidifying the advanced research excellence in the UK by accelerating the delivery of new ideas into practice where the benefits of commercial success can be recognized.

- **Smarten up**, adopting practices and principles that support rapid evolution of UK business and society in the context of unpredictable change and increasing ambiguity.

The final commentary is necessarily a reminder that many individuals fear the future of a digital economy as a dystopian vision where personal control, responsibility, and trust are replaced by the nightmare of automatons deciding on what is right and wrong based on a hidden collective intelligence directed by big business and the State. It is our responsibility to refute this, and to work diligently toward a different vision where the digital economy offers a better place for us all to live and work.

Endnotes

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About the Author



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