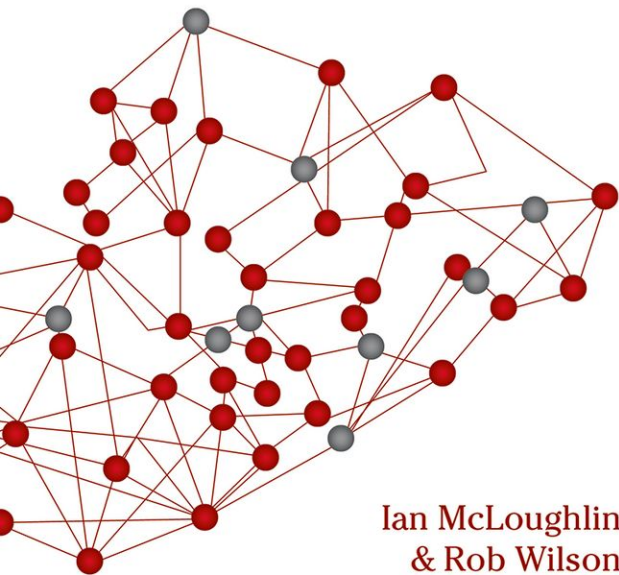# Digital Government @ Work

A Social Informatics Perspective

Ian McLoughlin
& Rob Wilson
with Mike Martin

Digital Government at Work

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Digital Government at Work

A Social Informatics Perspective

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For our Spouses and Families

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Preface

This book takes an essentially social scientific stance as befits the expertise of the principal authors and its target audience. However, the story it presents and analyses has been the outcome of a truly multi-disciplinary engagement beyond the normal boundaries of social science. For me, trained as a hardware designer in electronics, the work on which this book is based was the culmination of a long journey. I spent my early career developing speech technologies and tools for the analysis of human factors in the ICL Systems Strategy Centre at Stevenage. I was then privileged to be associated with a long series of national and European collaborative research projects that contributed to the invention and development of, amongst other things, distributed systems architectures.

Next, by chance, I was parachuted into the world of telecommunications. This was a deeply shocking experience. They seemed to use the same technologies and terminologies as we IT folk did but they were completely different, to the point of alienation, in both the detail of their engineering practice and the business environment in which they operated. It took me quite a time to begin to understand and appreciate the differences between our applications and their services and to learn to work with them, at a time when the technological world was changing profoundly with deregulation and the emergence of the internet and these very distinctions were undergoing a complete transformation.

In the next phase of my career, in the Centre for Software Reliability at Newcastle University, I seemed to spend most of my time in 'forensic' work, trying to understand why things go so horribly wrong so often in the world of big ICT projects, in particular in the public sector. It was at this stage that seeds sown in the distributed systems architecture projects of the 1980s started to develop. I began to recognize the need to be as serious and rigorous about the intentional or 'conversational' aspects of systems as we were about the physical aspects of function, capability, and capacity. Roles and responsibilities had to become

first-class concepts in the architectural discourse or we would continue to make the same mistakes.

Two things then happened in close succession which profoundly changed things. The first was being appointed the technical director of the regional health record development project mentioned in Chapter 3, having had no previous contact with clinical informatics or the public sector. The second was the funding of the AMASE project (outlined in the Appendix) and the fortuitous option of it being hosted at Newcastle University in a social science oriented business school rather than in a school of computing science. From this the collaboration with Ian, Rob, and colleagues, and the struggle to make sense of each other and of the world of public service practice, began.

Usually, the presenting problem involved partnership formation and the building of trust and understanding in the context of the creation of 'systems of care'—a term which is, ultimately, an oxymoron. And faced with these problems, and attempting to adopt the role of honest, disinterested, and informed technologist and systems architect, I was forced to come to the conclusion that the marvellous edifice of rational systems design, which had been the core of my career and interests all my professional life, was a significant part of the problem rather than the source of the solution. This conclusion was, of course, strongly reinforced by my critical social science colleagues! This challenge and dilemma has forced me to delve deeper and deeper into a wide range of literatures in the search for useful meta-theory but I remain an engineer who wants to make better things and to make things better. In social informatics, being critical is not enough. The aim of this book is to make a better mistake than this.

Mike Martin

Acknowledgements

and services users who worked with us on various parts of the research programme. Ultimately, of course, the views presented are our own take on a long collective experience and we exonerate all of the above from any blame with regard to mistakes, misinterpretations, and any other failings of the text.

The writing of this book has been undertaken at opposite ends of the globe as Ian relishes the Melbourne lifestyle and Rob and Mike continue to live out the 'Geordie dream'. Our interactions in completing the text have been aided in various ways by both Monash and Newcastle Universities for which we express our gratitude. Finally, of course, we would like to acknowledge the help and support of our nearest and dearest—Jane, Ellen, Marie, Patrick, Lou, James, Alistair, Fleur and Bernadette, Marie-Louise and Paul—none of whom has been neglected during the writing of this book. This in part explains why it has taken rather longer than expected to complete! A very final thanks then to our Commissioning Editors, especially Emma Booth, for their patience and forbearance.

<div align="right">Ian McLoughlin, Rob Wilson, and Mike Martin</div>

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Contents

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List of Tables

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List of Figures

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List of Boxes

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Abbreviations

AGIMO	Australian Government Information Management Office
AMA	Australian Medical Association
AMASE	Advanced Multi-Agency Service Environment
ANAO	Australian National Audit Office
APC	Australian Productivity Commission
ATO	Australian Tax Office
B2B	Business to Business
CAF	Common Assessment Framework
COAG	Council of Australian Governments
CSIR	Council for Scientific and Industrial Research (South Africa)
EC	Commission of the European Community
EU	European Union
EHR	Electronic Health Record
ERDIP	Electronic Record Development And Implementation Program
ERP	Enterprise Resource Planning
FAME	FrAmework for Multi-agency Environments
G2B	Government to Business
G2C	Government to Citizen
G2G	Government to Government
GFC	Global Financial Crisis
IfSC	Information for Social Care
IG	Infomation Government
IRT	Information, Referral, and Tracking
JUG	Joined-Up Government
LSP	Local Service Provider
NAO	National Audit Office
NBN	National Broadband Network (Australia)
NEHTA	National e-Health Transition Authority
NHIMAC	National Health Information Management Advisory Council
NHS	National Health Service
NESTA	National Endowment for Science, Technology and the Arts
NPfIT	National Programme for Information Technology

Abbreviations

ODPM	Office of the Deputy Prime Minister
OECD	Organization for Economic Cooperation and Development
OLDES	Older Peoples E-Services @ Home
PCEHR	Personally Controlled Electronic Health Record
PD	Participatory Design
PwC	Pricewaterhouse Coopers
RFA	Requirements for Accreditation
RSCC	Regional Smart Card Consortium
SAP	Single Assessment Process
SEHR	Shareable Electronic Health Records
SPOT	Single Point of Truth
UN	United Nations
VESCR	Virtual Electronic Social Care Record
WHO	World Health Organization

Introduction

Mrs Cannybody's Dilemma[1]

'Mary' is 17 years old and is a single mother with a six-month-old baby. She has been attending her local Sure Start centre located in a provincial region of England. The UK Government established Sure Start in 1998 with the aim of 'giving children the best possible start in life' and assisting in reducing child poverty. The centres are places where the parents of babies and toddlers in particular can find support, advice, and a range of health, social, educational, and other services. Local government authorities in the UK have a statutory responsibility to provide services for children, along with many other public services, in their locality. In the region where Mary lives, the authority has commissioned a national charity concerned with the interests of children and young people—*The Charity*—to manage and deliver the Sure Start project. The commissioning of organizations from the voluntary and community sector to deliver services in this way has been a growing trend in the UK, not least because of the perceived 'special relationship' that organizations like *The Charity* have with their clients compared to statutory public agencies. The centre which Mary is attending is located in a city in the north of the region and is being managed, on a temporary basis, by a Mrs Cannybody.

In the same region, *The Charity* also delivers counselling, therapy, and support services to children and young people who have suffered sexual abuse or exploitation. This is a specialized service, whose availability is not widely publicized and to which professional practitioners refer clients. *The Charity* also works with the police, probation service, courts, and social services. For example, in another city in the south of the region, *The Charity* is involved in a programme of initiatives to control prostitution—seen as a particular problem in that locality. Here, a year previously, a police-led action closed down a prostitution

1 This case is based on real events. It is drawn from Martin (2007) and Wilson *et al*. (2010).

ring. The pimp, 'Derek', who ran the ring, was prosecuted and sent to prison. Mary was one of Derek's prostitutes. As part of a 'Prostitution Response Programme', initiatives were taken by *The Charity* to support the then-pregnant Mary. She was relocated from the southern city to the northern city in the region and a number of services were activated to help her rehabilitate herself and build a new life. Mary had made it clear that she wanted to put her previous experiences behind her but that she was only prepared to discuss these with her individual counsellor at *The Charity*'s specialist support service.

Mrs Cannybody is not a qualified social worker but is highly experienced, having been involved in voluntary and contract social work for *The Charity* for many years. Recently she has noticed that Mary has become withdrawn and unhappy. She cannot, however, get Mary to discuss her problems and, as a result, is concerned about her well-being. Of course neither Mrs Cannybody nor anybody else in the *Sure Start* centre is aware that Mary is also attending sessions at *The Charity*'s counselling service. Meanwhile, Derek had been released on parole, after serving twelve months, on condition that he attended one-on-one and group counselling sessions for ex-abusers. *The Charity*'s office in the city where the prostitution ring was based also runs these sessions. The relationship between Derek and his ex-abuser counsellor is intended to be therapeutic and supportive and not one of supervision and control. Whilst in prison, Derek had told his counsellor that he had become a 'born-again Christian'. He also claimed to be the father of Mary's child and said that he now wants to 'do the right thing by her' and support both her and the child.

Digital Technology in Public Services

Until relatively recently information and communication technologies (ICTs) have rarely figured in discussions and literature concerning the nature and development of public organizations and the delivery of public services (Dunleavy *et al.*, 2006: 2–3). Whilst computers have been a core part of government operation since the 1950s, their impact was largely internal (Margetts, 2006). However, the development of the internet and related digital technologies has profoundly changed this. Over the past ten or so years the core operations of government and public service agencies have become increasingly dependent upon the efficient operation of networked digital technologies and the effective functioning of associated management and organizational arrangements (Dunleavy *et al.*, 2006: 10). Governments are now able, for

example, to distribute information to the wider society in new ways and also to capture and store much more information about citizens and the effectiveness of the services they receive (Margetts, 2006: 262).

In keeping with such developments, organizations like *The Charity* has been under increasing pressure to provide detailed reporting to both local and central government to conform to policy requirements for better information on the services that are funded. This has included, for example, providing information to local government on the services delivered, their activities, costs, and outcomes to enable more 'joined-up' delivery between different levels of government. In addition (during the early 2000s) the UK Government proposed a new national database of all children under the age of 18 in England (see Chapter 4). This required that voluntary organizations report information to it as well. The implications of these requirements for service providers were significant, often raising issues of how to gather and provide aggregate data across their local, regional, and national operations to meet these and other reporting requirements.

In the case of *The Charity* the response to this issue was a proposal by the head of the information technology department to procure and deploy a 'data warehouse'—a concept common in the private sector—as part of a new 'enterprise information architecture'. This would replace existing computerized but fragmented local case management and record systems. All information pertaining to Mary and Derek's cases, and all other cases with which *The Charity* was involved, would instead be captured, cleansed, and integrated into a warehouse where data could then be accessed by all of the different support services. The warehouse would therefore provide the basis for the interrogation and analysis required to satisfy the new external reporting requirements and a more effective means of sharing information across *The Charity*'s many service operations and projects. The basic outline of the proposed scheme, along with the various envisaged relationships between front-line practitioners and their clients, is illustrated schematically in Figure 0.1.

Mrs Cannybody's dilemma is born of an all too common 'wicked problem' of providing care services in situations of complex need on the front line of public service delivery. It revolves around her concern for Mary's well-being and the question of whether anyone else in *The Charity* might have information that they could share and which might have a bearing on this concern? The relationships in which Mary's case is embedded are complex. Of the three case workers within *The Charity*, two have a relationship with Mary—Mrs Cannybody herself and Mary's specialist support counsellor. A third case worker, the
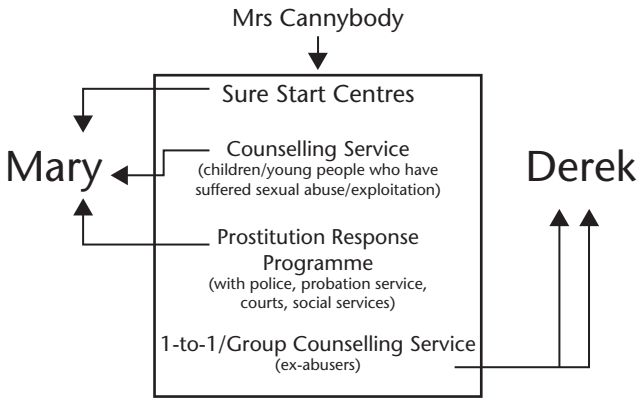
Figure 0.1 The Data Warehouse Proposal

Source: Wilson *et al*. (2011). Reprinted with permission of Cambridge University Press.

counsellor for ex-abusers, has a relationship with Derek. In addition, Derek's record may have a historical, indirect link to Mary, for example via police records concerning the prostitution ring or through the birth record of Mary's child.

Mrs Cannybody, of course, does not know any of this and neither do any of the other participants have the full picture or 'view' of the client and their situation. As it happens, some information is available to her via existing case management and record systems. However, it is very difficult to match cases using the systems because the unique identifiers of each individual client are specific to the service or project within which the case has arisen (indicated by the horizontal lines between the different services in Figure 0.2). Therefore, unless Mrs Cannybody knows people in that other service or works across services within the organization, joining up this information is very difficult. This of course has some significant merits, in that these internal barriers to sharing information do serve by default to protect the wishes of clients such as Mary where they wish to keep certain matters confidential. It is in this context, given her concerns over Mary's well-being, that Mrs Cannybody had to work out how best to seek more information.

In principle the proposed data warehouse could provide Mrs Cannybody with a more systematic way of exploring these concerns. However, a move towards a more integrated information system solution of this type also poses new issues concerning the sharing of

Mrs Cannybody

| Sure Start Centres |
| Counselling Service
(children/young people who have
suffered sexual abuse/exploitation) |
| Prostitution Response
Programme
(with police, probation service,
courts, social services) |
| 1-to-1/Group Counselling Service
(ex-abusers) |

Mary

Derek
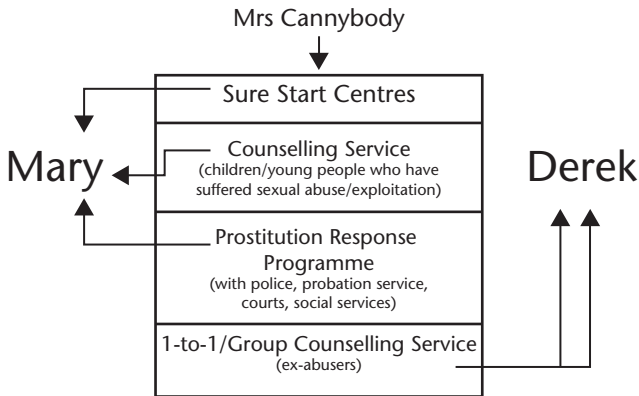
Figure 0.2 Existing Case Management and Record System

Source: Wilson *et al.* (2011). Reprinted with permission of Cambridge University Press..

information in complex circumstances such as those in Mary's case. In particular, the barriers that may have by default offered some protection to clients like Mary in the past would be removed. How, in a more 'disintermediated' and digitalized environment, would the necessary information—whatever that may be—get shared at the right time, with the right consents, with the right people for the right reasons? In a digitalized world, we would suggest, Mrs Cannybody's dilemma takes on a further and more profound dimension. How for example, could she be sure that the acts of accessing information in the data warehouse and sharing it with other colleagues and agencies, and their subsequent use of it, would be consistent with the wishes of the client?

The Digital Government Phenomenon

It is issues such as these and the interlocking informational and organizational challenges that lie behind them that provide the focus for this book. The point of the data warehouse for *The Charity* was to respond, as many public service providers have been challenged to do, to the need to modernize the way they gather and report information on the one hand and to share information in the practice of front-line service delivery on the other—in both instances, with the aim of providing a more customized and effective service for clients. For some observers, such developments are seen positively and as being at the heart of attempts to transform the delivery of public services through

e-enabling their delivery and the digitalization of information. Others take an opposite and negative view and see the 'disintermediation' that this implies—that is, the substitution of digital means for traditional face-to-face and paper-based service delivery—as posing a threat to privacy and civil liberties and as breaking the essential 'subjective relationship' between service providers and those for whom services are being provided. In this book we argue that both of these views are ultimately limiting.

Governments across the globe increasingly view digital technologies as the primary means through which public services and other core activities of government can be transformed. Terms such as 'electronic' or 'e-government', 'the virtual state', and 'digital government' have emerged as ways in which these developments might be captured, and the claimed improvement they offer over bureaucratic, paper-based, and face-to-face organizational forms and practices inferred. We will use the term digital government to refer to the phenomenon in general, although from time to time, to save repetition in the text, we shall also use the terms e-government and e-enabled services.

The idea of the e-enablement of government and public service delivery has its origins in the Clinton–Gore Administration (1993–2001) in the USA (Lips, 2008). In one of the first uses of the term 'electronic government' (Hughes, 2008), the Clinton–Gore vision was of a 're-invention' of government as a 'virtual state' in which 'smart cards' loaded with information about the citizen holder and other technologies would be used to replace paper-based systems and be 'fairer, more secure' and 'more responsive to the customer' (Gore, 1993: 114). Such virtual systems would operate in parallel to what Vice-President Gore referred to as the emerging 'information super-highway' constituted by the networking of computers that we now commonly refer to as the world wide web and the internet. As a result of this super-highway, 'the interaction between government and citizens would be transformed with the goal to provide better access to government services' (Lips, 2001: 76).

The metaphor of the 'super-highway' has long since been surpassed and in the ensuing twenty years the meanings and possibilities associated with 'the internet' have both expanded and been enhanced. For example, the idea of the internet as both an interactive and open medium, through which users can share information and knowledge and collaborate to develop new technological, social, and cultural innovations, is currently the focus of much attention. In the arena of digital government this is claimed to be supporting a 'second wave' (Dunleavy and Margetts, 2010) of transformation. Innovations cited here include

the much-vaunted 'Web 2.0 Government' (where citizens use social networking and related technologies to participate in the design of their own digital content); open data and 'citizen sourcing' (where governments make available data through websites for citizens and others to use, for example to develop new social innovations); and 'the internet of things' (enabled by ambient computer and so-called 'media-info-com' devices which permit material objects to have a virtual presence and communicate and share information about their status and use on the internet with 'zero touch' by humans). All of the above can be supported, it is claimed, by 'government in the cloud' (the use of flexible third-party-provided shared computing resources and services) and the spread of super-fast broadband networks. Indeed, some claim that innovations in virtual and networked forms of service delivery will finally signal the end of public bureaucracies and their monopoly on the delivery of public services (see e.g. Benkler, 2006; Comode and Krishanmurthy, 2008; Eggers and Goldsmith, 2008; Lukensmeyer and Torres, 2008; Codagnone and Osimo, 2010; Deloitte, 2011).

However, in one of the earliest and most influential in-depth academic studies of initial attempts in the USA to 'build the virtual state', Jane Fountain (2001) found that such developments were in no way inevitable. In fundamental ways, she argued, the outcomes of the adoption of digital technologies in public services are conditioned by the way public managers 'enact' these possibilities in particular organizational and institutional circumstances. In countries such as the UK, for example, it has been noted that attempts to use new digital technologies and the internet to 'e-enable' services have been conducted in the wider context of the management and institutional paradigm of so-called New Public Management (NPM). NPM places a strong emphasis on the marketization of public services, reducing the size of the state, and improving the efficiency of public agencies and service delivery. Some have argued that NPM has been a major constraint on the development of the 'virtual state' (see e.g. Pollitt, 2003; Alford and Hughes, 2008; Harris *et al.*, 2011). Whether entirely down to NPM or not, typically it seems digital government projects exhibit relatively high rates of project cancellation, whilst a significant proportion are completed over budget, late, or are not fully functional (Heeks, 2006; Foley and Alfonso, 2009; Margetts, 2006). One UK Government report concurred in the following fashion, 'Government IT projects have too often missed delivery dates, run over budget or failed to fulfil requirements' (Cabinet Office, 2000*b*: 4). Many commentators also point to the high levels of investment involved but the low take-up by their intended users and the emergence of new

risks and costs such as data breaches and the threat to citizen privacy and civil liberties (see e.g. Heeks, 2005, 2006; Margetts, 2006; *The Economist*, 2008; Lips, 2008).

Such critiques notwithstanding, other researchers have remained optimistic concerning the possible emergence of what they term a 'new era of digital governance' (Dunleavy *et al*., 2006; Dunleavy and Margetts, 2010). They claim an emerging fragmentation, erosion, and at least partial collapse of the existing dominant NPM reform paradigm. Indeed, it is argued that this is now sufficiently established to permit the emergence of new and alternative paradigms. These are more facilitative of the requirements for 'a range of information technology-centered changes, involving the reintegration of functions into the governmental sphere, adopting holistic and needs-oriented structures and progressive digitalization of administrative processes' (Margetts, 2006: 255).

Digital Government: A Social Informatics Perspective

How, in the light of a decade and half of experience of digital government are we to explore, make sense of, and evaluate such competing claims? Two of the most influential scholars in the field of public management have recently suggested that 'joining-up' the hitherto disparate disciplinary worlds of public management and information technology is a 'key challenge for contemporary study' in addressing such questions (Hood and Margetts, 2007: 177). In a similar vein, our own starting point rests on the assumption that technology-related organizational change must be understood as a socio-technical process through which context-specific outcomes are shaped (Clark *et al.,* 1988; McLoughlin and Clark, 1994; McLoughlin, 1999; McLoughlin and Badham, 2005). When applied specifically to the relationship between information technology and organizational change this perspective is strongly related to the field of organizational and social informatics (henceforth 'social informatics' for short).

The late Robert Kling, one of the founders of this approach, defined social informatics as 'the interdisciplinary study of the design, uses and consequences of ICTs that takes into account their interaction with institutional and cultural contexts' (Kling *et al*., 2000: 15). One consequence is a specific focus on the users of new technologies and the context in which that use takes place. A second is that the development of digital technologies is not dictated solely by a technological logic. Rather this is inevitably entwined with a social one or, as Brown

and Duguid (2000) put it, despite often being portrayed and thought of differently, information has a 'social life'. A third is that, whatever the creative possibilities enabled by digital technology, these are frequently denied or limited by existing ways of making sense of things, be these dominant technological, managerial, or cultural paradigms or a combination of all three (McLoughlin, 1999). Finally, a prerequisite to a social informatics perspective is an 'analytical scepticism' (Woolgar, 2002) towards grand narratives and taken-for-granted assumptions about the capabilities of digital technologies and 'definitive accounts' about their likely impact or effects on the social world.

We suggest that the phenomenon of digital government provides a new and highly fruitful arena in which to apply a social informatics perspective and to develop new insights. First, digital government projects represent one of the largest and most significant areas of public investment in information technologies at the organizational, sectoral, or even national level. These investments are based on a sometimes extreme faith in, if not 'pathological enthusiasm' about, the capacity and capability of digital technologies and their capacity to transform government (Gauld and Goldfinch, 2006). Second, many of the technological solutions being applied have been developed in the private sector, and whilst in many instances successful in transforming both the business world and the customer experience (see e.g. Li, 2007), their seamless translation into the rather different social organizational and institutional context of public service and government presents a new and fundamental challenge.

Third, in contrast to the private realm, the nature of innovation in public service is not well understood or researched (Hartley, 2008). This suggests that e-commerce 'products' (and their associated system architectures, business models and processes, project and change management methods), which may work well in a private sector context, may not be so relevant or effective in the public realm where innovation will also need to embrace changes in roles, relationships, and responsibilities both within and across a range of service providing agencies (Martin, 2013). Finally, and following from this, the consequences of the large-scale deployment and adoption of digital technologies and their interaction with the institutional and cultural context of public service and administration are likely to highlight in fundamental ways new and novel relationships between technology and organization. In turn this calls for new concepts and approaches for understanding and influencing the unfolding events, trends, and developments as public agencies, managers, professionals, and others grapple with what Fountain (2001) terms the 'puzzles' posed by the digital age.

In this book we argue that a social informatics perspective provides the basis for such a new conceptualization of the relationship between technological and organizational change in the context of digital government. This is necessary both for our understanding of the fate of existing attempts through policy and practice to transform the delivery of public services using digital technologies and, most importantly, the identification of new ways in which digital government might be made to work better. We suggest that our approach has the potential to move both theory and practice beyond the polarized positions of optimism/pessimism and opportunity/threat that follow from adopting, without due analysis, simple dichotomies such as 'virtual versus real' and 'digital versus paper'. Critically, it also places the 'denizens of communities' (Lefevre, 1991) in the realm of public service delivery—be they engaged in commissioning, delivery, or service use (collectively 'the users')—and their needs and requirements at the centre of innovation in both technology and services.

Research Focus and Book Outline

This book reflects the findings of a substantial programme of original public-funded research conducted by the authors and colleagues since the late 1990s. The research programme embraced a wide variety of digital government projects concerned with innovation and improvement in the delivery of services. As such, we were not concerned with digital government as a means of directly improving the democratic or policy-making processes (e.g. through e-voting or on-line petitioning, and the like). Important though these dimensions are, services and their delivery are the most 'visible' aspect of government and the aspect citizens 'care about the most' (6 *et al.*, 2002: 140). Arguably, there are even more opportunities to strengthen the democratic process by deploying digital technology to empower both service providers and users. Equally, of course, digital technology might be deployed in ways which pose a threat to democracy by threatening the autonomy and discretion of service providers, and the privacy and civil liberties of citizens as service users.

In exploring such issues, the services we examined covered attempts to 'join up' or integrate health and social services for children and young people, adults, and older people. In many instances the services concerned addressed complex care needs within these broader populations, such as children with disabilities or 'vulnerable' older people living alone at home. Our studies also focused on collaborative

partnerships with the private sector in the provision of a mix of integrated services such as the procurement of software systems, the application of 'smart cards', and the design and development of 'virtual' tele-care platforms. Our studies focused on the specific issues of service delivery at the local level and on local government authorities, in particular, as the pivotal agency in managing the processes of technological and organizational change required to coordinate and join up service delivery. The research was conducted mainly in the UK, but has also involved projects in Europe and Australia and was informed by parallel developments in comparable national settings. Further details can be found in the Appendix.

In Chapter 1 we explore digital government and its potential to transform public services. We examine the policy context as it has evolved over the past two decades with a focus on the policy origins of key objectives such as 'joined-up working', 'information sharing', and the 'transformation' of service delivery through greater information system integration. In Chapter 2 we examine what we term the 'three dimensions' (Badham, 2005) of the analysis of 'digital government' and develop an understanding of both the 'user' and 'technology' as co-constructed (Oudshoorn and Pinch, 2003). In Chapter 3 we turn to what many see as the central problematic of digital government—the nature of integration. In information systems terms, integration is typically represented as the linking together of disparate computer systems and databases in some way. In public management, integration has been understood in organizational terms as the means through which more coordinated services and joined-up delivery can be achieved. Chapter 4 focuses on the arena in which these two notions of integration come together, attempts to join up government through information sharing and multi-agency working. In Chapter 5 we explore the issues of information governance and the management of identity that come to the fore when attempts are made to record and share information by digital means. Chapter 6 considers the central role of service providers at the local level—the so-called 'street level bureaucrats'—who are in the 'front line' of attempts to bring about service transformation. Chapter 7 returns to the designer/user issues and considers more closely one of the key arguments of the book. That is, that users—be they citizens or other 'end-users' and front-line service providers—can be a key source for the co-production of innovation in public service delivery.

Chapter 8 draws all of these arguments together and seeks to identify key insights into how digital government can be made to work more effectively in practice.

In keeping with our social informatics perspective, the scope and possibilities for public managers, professionals, and the users and clients of services to configure and shape both services and systems through their own practice are once again stressed. If there is to be a new era of digital government, it is not technology that will drive such innovation but rather the co-production of new configurations, meanings, and actions—what we term a new form of 'architectural discourse'. It is through such a discourse that any new technological and organizational possibilities will be co-constructed and realized. As we will try to show through our original research, the ability to embed this kind of discourse and practice in the trajectory taken by the future evolution of 'digital era governance' is the core issue in the emergence and sustainable development of the digital government phenomenon. Moreover, this is vital if we are to avoid the many mistakes of the past and present.

1

Digital Government and Public Service Innovation

Introduction

Digital technology provides what some see as the basis for transformational change in the way the state operates and public services are delivered and experienced. For some this is leading to a 'virtual state' (Fountain, 2001) and a new 'era of digital governance' (Dunleavy *et al*., 2006) where public services are e-enabled and available on-line to citizens and other users on a '24/7' basis (Kraemer and King, 2006). Digital technologies have also been seen as the basis of radical or 'disruptive innovation' in public service delivery, overturning existing business and service models and radically changing how services are provided and who provides them (Christensen and Raynor, 2003; Christensen *et al*., 2009). We begin this chapter by considering what is meant by digital government in more detail. We then turn to identifying the key policy agendas driving digital government and examine some of the key trends in the development and take-up of e-enabled service delivery in the UK and comparable cases elsewhere. Finally, we examine the nature of innovation and digital disruption of public services and the different forms it may take.

What is 'Digital Government'?

Defining social phenomenon is always a fraught business. The fluid and interpretative nature of the social world inevitably means that any attempt to fix the meaning of something runs the risk of bringing clarity at the expense of the exclusion of other aspects. By the same token, prior assumptions can be allowed to shape the perception of something in a particular way that again excludes, wittingly or otherwise, alternative views and interpretations. The debate over the definition of

digital or e-government—or to be more precise, the very naming of the phenomenon—is illustrative of this problem.

For example, 'digital' or 'e-' government are examples of a range of terms, 'virtual', 'cyber', 'network', 'tele-', and the like, which appear as an 'epithet applied to various existing activities and social institutions' if not society as a whole (Woolgar, 2002: 3). The 'epithetized phenomenon' is typically used to 'conjure a future consequent upon the effects of electronic technologies':

> While it is often unclear from these labels exactly how the application of the epithet actually modifies the activity/institution in question, a claim to novelty is usually central, especially at the hands of those promoting the new entity. The implication is that something new, different, and (usually) better is happening. (Woolgar, 2002: 3)

We can observe, for example, that the attachment of the e-prefix—e.g. 'e-business' or 'e-commerce'—is now widespread in the private sector and has passed into everyday usage. For proponents, the deployment of similar digital technologies in the public sector is a logical corollary and integral part of the 'modernization' of public agencies in much the same way that the world of commerce is assumed to have been transformed. 'E-government' and associated terms such as 'e-enabled public services', 'e-democracy', provide a means through which new 'virtual' forms of service delivery can be contrasted, to use Woolgar's (2002) terms, with the 'ordinary' or 'real' world of existing bureaucratic forms, and indeed to support claims of improvement upon them.

However, critics would suggest that such epithets place too much emphasis on the way in which, in this instance the 'e-', that is, the technologies of digital government, are autonomously shaping state and public organizations. As Lips and Schuppan note, this albeit dominant view, focuses on the impact of digital technologies on public organizations and institutions rather than on how these technologies are, or perhaps could, be used by such entities (Lips and Schuppan, 2009: 740–1). Other writers, mindful of the problems with the 'e-' prefix, have preferred to use the term 'digital' or 'virtual' in an effort to leave open the idea that the outcomes of technological change are in some way shaped by organizational and other choices and decisions (e.g. Dunleavy *et al*., 2006; Fountain, 2001). However, these attempted solutions can still be said to retain a seemingly unquestioned notion of the contrast between the virtual and the real or the digital and the paper-based forms of public organizations and the institutions of the state.

At the same time, the use of the term 'government' has also been called into question. The suggestion is that this places too much

focus on the existing organizational and institutional arrangements for exercising governance and not enough on emergent forms—such as multi-agency working, partnerships, and other 'network' forms of organizing—which many see as prerequisites of the development of new service models (see e.g. 6 *et al.*, 2002; Klijn, 2002). Taken together, therefore, 'e-' and 'government' could be seen to suggest a definition that refers to the manner in which a given set of technologies with assumed characteristics and capabilities are being used to e-enable an existing set of services and associated organizational and institutional arrangements. In short, not a 'disruptive innovation' at all!

Given these issues, others have sought to place more emphasis on the development of new organizational and institutional arrangements and associated innovations in service provision. It is argued that these should be the starting point for any definition that in turn emphasizes improved forms of governance rather than just the technological improvement of existing service delivery. For example:

> Beyond e-government, the notion of e-governance evokes a tantalizing promise: that fully applying 'e' tools to our institutions and processes of governance will be a transformative process. E-governance holds out possibilities for applying new modes of information exchange, providing integrated and distributive approaches to operations and service delivery and leading democracies to open and participatory systems of policy-making. (Oliver and Sanders, 2004: p. viii)

This also points to a problem with the relationship between e-government and transformation. O'Neill (2009), for example, distinguishes between what she terms 'instrumental' and 'systemic' transformation. The former refers to 'doing the same things differently' whilst the latter points to changes in relationships and behaviours which result in 'doing different things' (O'Neill, 2009: 755).

The Stages of Digital Government

A further feature of attempts to define e-government has been a variety of schemata which purport to show the stages of e-government through which progress to more 'mature' or 'sophisticated' arrangements may be mapped, measured, or evaluated. One approach has been to focus on enabling technological capabilities and capacities such as those embodied in the design and functionality of websites (see e.g. EC, 2001; OECD, 2003). Another has been to examine user needs, government provision of e-services and infrastructure, and user take-up, in order to assess the readiness of global regions or nations to

move through different stages of e-government development (e.g. UN, 2008). Whilst varying in their detail, most of these definitions map out a trajectory for evolution through a number of stages—typically four or more. These usually assume an increasing degree of disintermediation of service delivery and integration of underlying technological and organizational arrangements (see e.g. West, 2005: Dunleavy *et al*., 2006: Layne and Lee, 2001).

In a typical example Layne and Lee (2001) provide a four-stage model (see Figure 1.1). This maps the anticipated evolutionary development of digital government along two dimensions. The first refers to the degree of technological and organizational complexity in modes of service delivery. The second to the degree of integration involved between, on the one hand, vertical (state, regional local levels) and the other horizontal layers (lateral relations between levels) of government. Four developmental stages are identified. First, 'cataloging', where much in the same way that notices are posted on conventional notice boards, digitized information is posted on-line to websites where the supply is essentially one-way with little opportunity for two-way communication with citizens. Second, 'transactions', where some services are made available on-line and citizens and others can begin to interact with government and public agencies, in particular in relation to more transactional relationships such as paying taxes and so forth.

The third and fourth stages are 'vertical integration' and 'horizontal integration'. Here the emphasis is on transforming service delivery rather than just 'automating' and 'digitizing' existing services. Accordingly these stages involve deeper changes in the way government and public service delivery is organized to permit greater coordination between different levels of government on the one hand and different functions on the other. The net effect of greater coordination between agencies at different levels and functions is that citizens see 'government as an integrated information base' (Layne and Lee, 2001: 125). There are also implications for front-line practitioners who, instead of being routine processors of information on bureaucratic 'assembly-lines', become 'overseers' of a fully integrated and automated process (Layne and Lee, 2001: 131).

Similarly, West (2005) identifies a much-cited model of four stages of development: billboard, partial service delivery, portal, and interactive democracy. This schema gives more prominence to the evolving functionality of website interfaces between government and citizens (see West, 2005: 8–12). In the billboard stage—as in the 'catalogue' stage—government websites are deployed to post information about government services. In the second partial service delivery stage
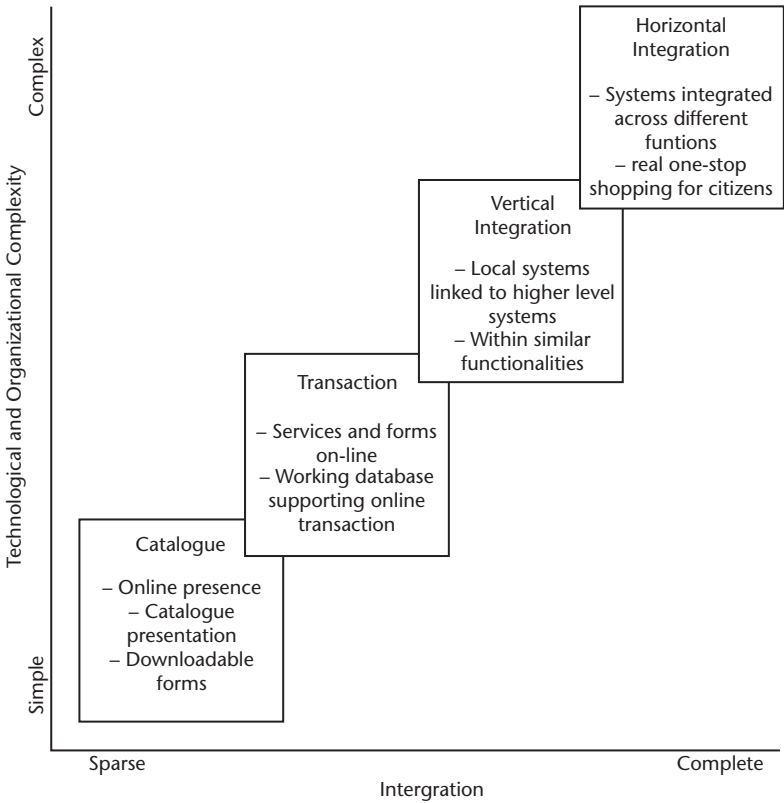
Figure 1.1 Digital Government Maturity Model

Source: Layne and Lee (2001). Reprinted with permission from Elsevier.

more transactional functionality is developed. In the third 'portal' stage, instead of each government department and agency or divisions and departments within agencies, having their own website, a single 'one-stop' point of entry is provided. The fourth stage seeks to move further in this direction by trying to make government and public agencies more responsive to user needs and requirements and also public officials and professionals more accountable to citizens for service delivery.

Of course, passage along such developmental pathways is not necessarily linear and unproblematic and can be expected to vary in different contexts. For example, West (2005) suggests that in some circumstances innovation and change might take place at sufficient pace and with the kind of breadth and depth that it might be regarded as

transformational, bringing about forms of 'interactive democracy'. On the other hand, in other cases, progress might occur at a slower pace and in a less sophisticated manner to the portal stage, in what amounts to more 'secular change'. Finally, even more modest developments involving a shift from 'billboard' to 'partial service delivery' would be indicative of more 'incremental change' (West, 2005: 8–11).

Whilst useful in providing a potential way of assessing the progress of digital government we should note at the outset that such schemata have a major flaw. That is, they start from a set of assumptions about technological capability and then define e-government, or its progression, in terms of the capacity and extent to which government and public agencies are able to adopt and to realize these capabilities in practice. In short, they suffer from the 'e-' problem identified above. In particular, models of the evolution of digital government tend to assume innovation follows a linear sequence, that movement through this sequence is indicative of progress in terms of performance and ultimately transformation, and that the determinants are the capacity of public organizations to adopt and use the technologies of e-government in the way that they were intended by designers and developers and now demanded by citizens and other users (Mayer-Schonbergger and Lazer, 2007: 1). It has also been suggested that such models tend to be overly reflective of those thought to signify progress towards e-commerce in the private sector. For example, they place too much stress on the transactional element of citizen interactions with government and on the achievement of efficiency gains. The nature and evolution of innovation and improvement in more complex areas of social need such as social and health care are not fully considered (Codagnone and Osimo, 2010).

The Transformation Agenda: The UK in Comparative Perspective

The building of the 'virtual state' is a global project. Governments in both the developed and developing world have turned their attention to the manner in which digital technologies might assist in achieving policy objectives to reform, modernize, and bring about improvements in government and public services (Foley and Aflonso, 2009). For the governments of developed nations at least, 'the issue is no longer whether government is on-line, but in what form and with what consequences' (Chadwick and May, 2003: 271). Since the onset of the global financial crisis in late 2008, some observers have identified an

added impetus to use digital government as a means of cutting public expenditure whilst at the same time improving the provision of public services, thereby offsetting the effects of financial crisis on the public purse (UN, 2010: 44). The most significant example of this is provided by President Obama's 2009 stimulus legislation in the USA (see below).

As such initiatives serve to illustrate, behind the policy rhetoric there 'is a general presumption that the use of ICT in government is beneficial' (Foley and Aflonso, 2009: 372). However, there is also a growing realization that the process of transformational change required to realize such benefits involves more than just the adoption of new digital technologies by public agencies and then making available e-enabled services to users. It is also clear that organizational changes, embracing structures, behaviours, and cultures, are required in adopting agencies in order to provide public services in a more user-, rather than producer-, centred way (Lau, 2005). At the same time, the take-up of new services by users does not appear to be related to the sophistication of the services on offer (OECD, 2009) and, as a result, there is a risk that much investment in the supply of e-enabled services may be misplaced or even wasted.

We can illustrate these points through a brief review of the policy goals and progress being made in relation to digital government in three English-speaking countries: the UK, USA, and Australia. Each nation is typically seen as either at, or near the forefront of, the development of the digital transformation of government and public service delivery (see e.g. UN, 2010).

In the UK, digital government emerged in the late 1990s as one element within a broader objective of the then governing Labour Party to modernize the workings of government and the delivery of public services (Cabinet Office, 2000*a*). According to Organ (2003), Labour's reform agenda had 'e-government at its heart, playing an instrumental role in joining-up organizations to create citizen focused public services' (Organ, 2003: 21). As a result, initiated in the 1990s and continuing into the new millennium, a major investment to 'transform' national and local government took place (Cornford *et al.*, 2003). This commitment was initially symbolized by Tony Blair's pledge as Prime Minister in March 2000 that 100 per cent of all public services would, where possible, be made available electronically by 2005—a deadline brought forward from 2008 (Silcock, 2001). Whilst such targets were somewhat vague in their detail and the definition of electronic 'judiciously broad', by the mid-2000s it was estimated that some £14 billion per annum was being spent on digital government projects, even if 'on-line' included

the provision of services over a device invented in the late 19th century—the telephone (Hudson, 2002: 519; Margetts, 2006: 250).

From the mid-2000s, concerned that these investments were not being translated into more tangible and observable benefits, the government placed much greater emphasis on the need to realize efficiency gains through both technological and organizational transformation. Modernization and transformation were now proclaimed as new goals. For example, a key national policy statement—*Transformational Government, Enabled by Technology* (Cabinet Office, 2005)—set out a vision for 21st-century government involving:

- Broadening and deepening of government's professionalism in terms of the planning, delivery, management, skills, and governance of IT enabled change.
- The adoption of a shared services culture in both the front and back office, involving information infrastructure, and enabling efficiency gains through 'standardization, simplification and sharing' (Cabinet Office, 2005: 7).
- The design of services around the citizen or business and not the provider, involving 'coordinated delivery channels' (Cabinet Office, 2005: 7).

A series of reports and strategy statements subsequently emerged detailing elements of this vision and associated implementation plans (see e.g. Cabinet Office, 2005, 2006; Gershon, 2004; Lyons, 2007; Varney, 2006). These documents highlighted, to varying degrees, the problems of bringing about multi-agency working and information sharing across agency boundaries. Notably, the reviews identified this area as the major area where progress was still required in order to achieve productivity and service performance improvements (Varney, 2006).

This assessment seemed to be endorsed by other observers. For example, Accenture, the management consultants, has since the turn of the century carried out a series of annual surveys of the impact of e-government. In their 2007 survey they suggested that, in the previous three years, reform in the UK had 'lost momentum' (Accenture, 2007: 120). In part, this was a consequence of a decline in confidence in the government outwith of the transformation agenda, however, it also reflected the fact that the UK still lagged behind in developing more 'citizen-centric' services relative to others (Accenture 2007: 120–1). Such concerns were fuelled by a seemingly endless run of reports of either project failures or significant data security breaches (Margetts, 2006: 256).

When it came to the actual take-up of e-enabled services by UK citizens, available evidence seemed to suggest that the use of such services was lower than by their European counterparts and the populace of many other countries outside of Europe (Margetts, 2006). Such findings were the more striking when compared to the relative enthusiasm shown for the use of the internet to access other types of information such as on new consumer products, arranging travel, or dealing with financial institutions. British citizens, a relatively small minority of core users aside, were it seems much less likely to interact electronically with their government or public agencies than their bank or on-line retailers (Margetts, 2006: 259). To add insult to injury, despite the levels of investment made, these efforts were not apparently appreciated by those they were intended to benefit. For example, in one national survey only 19 per cent of UK citizens 'considered their government to be doing either a "good" or "excellent" job in this area' (cited by OECD, 2009: 3). Since the election of a Conservative-Liberal coalition government in May 2010, policy towards digital government has been framed within the broader context of austerity measures to combat the impact of the GFC. For example, the government has abandoned costly and controversial projects to create centralized databases containing citizen information, most notably in the National Health Service (see Chapter 4); promoted investment in tele-care in an effort to reduce health and social care costs (see Chapter 7); and most recently declared that transactions between central government and citizens should be 'digital by default' to reduce the costs of service provision (Cabinet Office, 2012).

United States of America

As already noted, the term 'e-government' is generally taken to have originated in the United States. In fact, US Governments and public agencies have historically been leaders in the use of information technologies, in particular at the Federal level where the state is typically 'the largest user of such technologies in the world', often in projects which are the largest attempted (Cortada, 2008: 33). However, the nature of the United States federal system, combined with its 'size and scale', means that the uptake of e-government has resulted in outcomes 'more heterogeneous, fragmented and variable than perhaps any other country' (Fountain, 2009: 19).

Consistent with this legacy, the Clinton–Gore administration commenced a trend that involved digital government being a key element of Federal reform programmes (Fountain, 2009: 102). This entailed public agencies putting information on laws, rules, regulations, policy, and practical advice on-line for citizens, whilst also developing