

# **The Impact of e-Government in the UK**

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**The candidate confirms that the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.**

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## **ABSTRACT**

From the latter decades of the 20<sup>th</sup> century, information and communication technologies (ICTs) permeated societies and the internet emerged as a mass medium across many parts of the globe. The thesis investigates the efforts of government to exploit these technologies in the delivery of public services in the UK up to 2004, under the aegis of e-government.

This thesis critically examines the development of e-government in the UK from the 1950s. Specifically it looks at the role of ICTs in facilitating joined up or seamless government in a range of contexts. Aside from the work of a few key scholars, the relationship between e-government and joined up government had not received sustained attention within the public administration scholarly domain. The thesis aims to fill this gap, through an exploration into the history of government computing, research into the central e-government strategy and two case studies.

The study finds both a longstanding desire to use ICTs to coordinate the delivery of services across government and a number of organisational and institutional barriers to doing so. A succession of central units used a range of tools and measures to achieve ICT-mediated joining up across government, which met with varying levels of success. The case studies illustrate strong variation in the institutional landscape in which e-government operated. Through historical analysis over a sustained period, the thesis offers a fuller understanding of the relationship between ICTs and government than was offered by contemporary explorations of e-government.

The thesis concludes that, whilst national technical infrastructural systems were a viable option to e-government policymakers wishing to initiate joining up through ICTs, it was also possible to take other more consensual or localised routes, which could go with, rather than against, the institutional grain.

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## **ABBREVIATIONS**

**AC – AUDIT COMMISSION**

**ACE – AUTOMATIC COMPUTING ENGINE**

**ADP – AUTOMATIC DATA PROCESSING**

**AGI – ASSOCIATION FOR GEOGRAPHIC INFORMATION**

**BJHC&IM - BRITISH JOURNAL OF HEALTHCARE COMPUTING AND INFORMATION MANAGEMENT**

**BMA - BRITISH MEDICAL ASSOCIATION**

**BPR – BUSINESS PROCESS REENGINEERING**

**BT – BRITISH TELECOM**

**CCA/CCTA – CENTRAL COMPUTER (AND TELECOMMUNICATIONS) AGENCY**

**CD – COMPACT DISC**

**CDRP – CRIME AND DISORDER REDUCTION PARTNERSHIP**

**CITU – CENTRAL INFORMATION TECHNOLOGY UNIT**

**CJIT – CRIMINAL JUSTICE INFORMATION TECHNOLOGY**

**CMPS – CENTRE FOR MANAGEMENT AND POLICY STUDIES**

**CCCJS - COORDINATION OF COMPUTERIZATION IN THE CRIMINAL JUSTICE SYSTEM**

**CSA – CHILD SUPPORT AGENCY**

**COP – COMPUTERIZATION OF PAYE**

**CPRS - CENTRAL POLICY REVIEW STAFF**

**CRAMS - CASE RECORD AND MANAGEMENT SYSTEM**

**CSD – CIVIL SERVICE DEPARTMENT**

**DEFRA - DEPARTMENT FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS**

**DETR – DEPARTMENT OF THE ENVIRONMENT, TRANSPORT AND THE REGIONS**

**DES - THE DEPARTMENT FOR EDUCATION AND SKILLS**

**DSS/DHSS – DEPARTMENT OF (HEALTH AND) SOCIAL SECURITY**

**DOH – DEPARTMENT OF HEALTH**

**DoTP – DELIVERING ON THE PROMISE**

**DSIR – DEPARTMENT OF SCIENCE AND INDUSTRIAL RESEARCH**

**DTI – DEPARTMENT OF TRADE AND INDUSTRY**

**DTLR – DEPARTMENT OF TRANSPORT, LOCAL GOVERNMENT AND THE REGIONS**

**DVLA – DRIVER AND VEHICLE LICENSING AGENCY**

**DWP – DEPARTMENT OF WORK AND PENSIONS**

**ECR – ELECTRONIC CARE RECORDS**

**ECU – EXPERIMENTAL CARTOGRAPHY UNIT**

**EDI – ELECTRONIC DATA INTERCHANGE**

**EDS – ELECTRONIC DATA SYSTEMS**

**E-GIF – E-GOVERNMENT INTEROPERABILITY FRAMEWORK**

**E-GOVERNMENT – ELECTRONIC GOVERNMENT**

**EHI – E-HEALTH INSIDER**

**EHR – ELECTRONIC HEALTH RECORDS**

**EPR – ELECTRONIC PATIENT RECORDS**  
**ERDIP - ELECTRONIC RECORD DEVELOPMENT AND IMPLEMENTATION PROGRAMME**  
**ESCR – ELECTRONIC SOCIAL CARE RECORDS**  
**FMI – FINANCIAL MANAGEMENT INITIATIVE**  
**GIS – GEOGRAPHICAL INFORMATION SYSTEMS**  
**GISP - GENERAL INFORMATION SYSTEMS FOR PLANNING**  
**GOL – GOVERNMENT ONLINE**  
**GSI – GOVERNMENT SECURE INTRANET**  
**HISS – HOSPITAL INFORMATION AND SUPPORT SYSTEMS**  
**HMCE - HER MAJESTIES CUSTOMS AND EXCISE**  
**HMIC – HER MAJESTIES INSPECTORATE OF THE CONSTABULARY**  
**HMSO – HER MAJESTIES STATIONARY OFFICE**  
**HOTN – THE HEALTH OF THE NATION**  
**IACS - INTEGRATED ADMINISTRATION AND CONTROL SYSTEMS**  
**IBM – INTERNATIONAL BUSINESS MACHINES**  
**ICL – INTERNATIONAL COMPUTERS LIMITED**  
**ICRS – INTEGRATED CARE RECORDS SERVICE**  
**ICT - INFORMATION COMMUNICATION TECHNOLOGY**  
**IEEE - INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS**  
**IGGI - INTRA-GOVERNMENTAL GROUP ON GEOGRAPHICAL INFORMATION**  
**ILA – INDIVIDUAL LEARNING ACCOUNT**  
**IM&T – INFORMATION MANAGEMENT AND TECHNOLOGY**  
**IPU – INFORMATION POLICY UNIT**  
**ISH – INFORMATION SUPERHIGHWAY**  
**IT – INFORMATION TECHNOLOGY**  
**ITSA – INFORMATION TECHNOLOGY SERVICES AGENCY**  
**JASP – JOINT APPROACH TO SOCIAL POLICY**  
**LEO - LYONS ELECTRONIC OFFICE**  
**LOP – LOCAL OFFICE PROJECT**  
**MAFF - MINISTRY OF AGRICULTURE, FISHERIES AND FOOD**  
**MINTECH – MINISTRY OF TECHNOLOGY**  
**MIS – MANAGEMENT INFORMATION SYSTEMS**  
**MoD – MINISTRY OF DEFENCE**  
**MOH – MINISTRY OF HEALTH**  
**MPNI – MINISTRY OF PENSIONS AND NATIONAL INSURANCE**  
**MR – MONTHLY REPORTS**  
**NAO – NATIONAL AUDIT OFFICE**  
**NCC – NATIONAL COMPUTING CENTRE**  
**NHS – NATIONAL HEALTH SERVICE**  
**NHSIA – NHS INFORMATION AUTHORITY**  
**NHSE – NHS EXECUTIVE**  
**NIRS – NATIONAL INSURANCE RECORDING SYSTEM**  
**NLPG – NATIONAL LAND AND PROPERTY GAZETTEER**  
**NLIS - NATIONAL LAND INFORMATION SERVICE**  
**NPfIT – NATIONAL PROGRAMME FOR IT**

**NPL – NATIONAL PHYSICAL LABORATORY**  
**NSPSIS – NATIONAL STRATEGY FOR POLICE INFORMATION SYSTEMS**  
**NPM – NEW PUBLIC MANAGEMENT**  
**NPSISS - NATIONAL PROBATION SERVICE INFORMATION SYSTEMS STRATEGY**  
**NRDC – NATIONAL RESEARCH DEVELOPMENT CORPORATION**  
**O&M - ORGANISATION AND METHODS**  
**OCI – OFFICE OF CENTRAL INFORMATION**  
**ODPM - OFFICE OF THE DEPUTY PRIME MINISTER**  
**OECD - ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT**  
**OeE – OFFICE OF THE e-ENVOY**  
**OGC – OFFICE OF GOVERNMENT COMMERCE**  
**OMCS - OFFICE OF THE MINISTER FOR THE CIVIL SERVICE**  
**ONS – OFFICE FOR NATIONAL STATISTICS**  
**OPSS – OFFICE OF PUBLIC SERVICE AND SCIENCE**  
**OS – ORDNANCE SURVEY**  
**PAC – PUBLIC ACCOUNTS COMMITTEE**  
**PAS – PATIENT ADMINISTRATION SYSTEM**  
**PAYE – PAY AS YOU EARN**  
**PBM – PARTNERSHIP BUSINESS MODEL**  
**PESC - PUBLIC EXPENDITURE SURVEY COMMITTEE**  
**PFI - PRIVATE FINANCE INITIATIVE**  
**PIN – PERSONAL IDENTIFICATION NUMBER**  
**PITO - POLICE INFORMATION TECHNOLOGY ORGANISATION**  
**PIU – PERFORMANCE AND INNOVATION UNIT**  
**PNC – POLICE NATIONAL COMPUTER**  
**PO – POST OFFICE**  
**PPP – PUBLIC PRIVATE PARTNERSHIP**  
**SOCITM – SOCIETY OF IT MANAGERS**  
**SS&T – SUBCOMMITTEE ON SCIENCE AND TECHNOLOGY**  
**SSI – SOCIAL SERVICES INSPECTORATE**  
**TSU – TECHNICAL SUPPORT UNIT**  
**UNDPEPA - NATIONS DIVISION FOR PUBLIC ECONOMICS AND PUBLIC ADMINISTRATION**  
**VAT – VALUE ADDED TAX**

# **CHAPTER ONE: INTRODUCTION**

## **1.1 INTRODUCTION**

From the latter decades of the 20<sup>th</sup> century, information and communication technologies permeated societies, in industry, commerce, banking, education, leisure, mass media and other sectors (Castells,1996; 2001). Government and the delivery of multifarious public services had been no exception. From the 1990s in particular, governments had begun investing heavily in such technologies; for instance in the UK, billions of pounds of public funds had been poured into projects in central government alone and public sector information technology (IT) spending had been estimated at £12.4 billion for 2003/04 (OGC,2003,p11). By the late 1990s, these IT or information and communication technology (ICT)<sup>1</sup> investments were largely being made under the auspices of ‘electronic government’, usually abbreviated to ‘e-government’.

E-government was defined as ‘the use of electronic channels for interaction between government and citizens, businesses or other government organisations’ (Margetts/Yared,2003,p1). In particular, e-government programmes across the world had an emphasis on use of the internet and related ICT applications to improve and modernise public service delivery. According to Hansard, electronic government became a common term in the British parliament in 1998 and was used in that arena for the first time by Margaret Moran in April of that year (Hansard,1997/98d,col. 133).

But what was expected from e-governments investments? Many governments, including Australia, Canada, Netherlands, United States, UK, Japan and others, had associated ICTs with transformations in the business of public service delivery (Heeks/Davies,1999,p24-25). Broadly, this thesis is an assessment of the roots,

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<sup>1</sup> Which, in line with government definitions, did not include telephony or other traditional telecommunications.

development, initiation and implementation of policies, strategies, programmes and projects associated with e-government. Specifically, the thesis explores the role of e-government in joining up service delivery to the public, as explained below. To give this broad objective structure, the thesis has chosen to study the specific case of e-government in the UK.

*The UK e-Government Strategy: Achieving joined up government through ICTs*

The application of new ICTs to public service delivery, particularly under the auspices of e-government, had been associated in many countries with positive transformations. The UK was no exception to this; the argument originating from the heart of government just before and at the beginning of the new millennium was that profound change would be achieved through e-government. The *government.direct* green paper of 1996 heralded a new phase of 'radical and wide ranging reform' that was 'founded on the new possibilities offered by information technology' (CITU,1996/97,p1). The reform would:

change fundamentally and for the better the way that government provides services to citizens and businesses. Services will be more accessible, more convenient, easier to use, quicker in response and less costly to the taxpayer. And they will be delivered electronically (*ibid.*)

A few years later, Minister Ian McCartney repeated and developed this aspiration:

The Government's objective, though, is to do more than put individual services online, important though that is. It is to transform the delivery of government services, so that they are based on customer needs rather than the structures of government...working across organisational boundaries to deliver joined-up services; transforming the internal efficiency of government by organising to meet consumer needs not producer preferences; putting e-government at the heart of strategic planning; and developing new partnerships in service delivery (Hansard,2000/01f,col. 782)

These comments encapsulated the approach underpinning the UK e-government strategy emanating from central government, setting electronic service delivery as the

jewel of the wider modernisation project crystallised in the Cabinet Office *Modernising Government* white paper of 1999, building on the *government.direct* green paper of 1996. In the foreword to the White Paper the then Minister for the Cabinet Office, Jack Cunningham, made it clear that departmental collaboration was the key to the ultimate mission of the modernisation project, that of improved public services. Collaboration between government organisations, consisting of a wide range of policies, strategies and tools, was expressed as ‘joined up government’ in the new mantra of modernisation. Moreover, e-government was seen as the vital tool in achieving this joining up, hence:

To improve the way we provide services, we need all parts of government to work together better. We need joined-up government. We need integrated government. And we need to make sure that government services are brought forward using the best and most modern techniques, to match the best of the private sector – including one-stop shops, single contacts which link to a range of government Departments and especially electronic information-age services (Cabinet Office, 1998/99, p5)

Using the private sector as a model, the *Modernising Government* white paper argued that government organisations too often tended to be structured around their own needs rather than that of the users (*ibid.*, p11-12). Research for the paper indicated that services were falling short of customer expectations (*ibid.*, p23); the reason offered was that ‘the separation of government into different units... often means that people do not receive services in a co-ordinated way’ (*ibid.*). A joined up approach was offered as a solution to this problem and became the focus of the modernisation project. The paper went on to argue that it was ICTs that would be the vital element in achieving joined up service delivery, with them being used for;

achieving joined up working between different parts of government and providing new, efficient and convenient ways for citizens and businesses to communicate with government and to receive services (*ibid.*, p45)

However, a problem was identified in that the IT systems already in place in government tended to reflect the departmental configuration of service delivery; ‘we have incompatible systems and services which are not integrated. We must do more if

we are to obtain the real benefits of information age government' (*ibid.*) and 'IT systems have tended to be developed separately by different public service agencies; we need now to encourage them to converge and inter-connect' (*ibid.*,p46). Thus, under the rubric of a 'corporate IT strategy' (*ibid.*), the objective was to join up IT systems and information, and this in turn would help unlock a joined up approach to service delivery.

There had been a perceived step-change in ICT capability brought with the internet; 'information technology is changing our lives: the way we work, the way we do business, the way we communicate with each other, how we spend our time...It will make our lives easier' commented the paper (*ibid.*,p45). *Modernising Government* had outlined an approach to take advantage of this change; to use ICTs more effectively, specifically to integrate, converge, coordinate and synchronise information systems. The argument was that this process would lead to joined up working between different parts of government, which would in turn lead to responsive, efficient and seamless public service provision. E-government was placed at the centre of the modernisation project in these terms.

The Performance and Innovation Unit (PIU) was set up within the Cabinet Office in 1998 to review and improve the capacity of government to address 'strategic and cross-cutting issues' as part of the drive for 'better and more joined up government' (PIU,2000b,p104). In 2000, the unit brought that remit to bear on e-government, continuing and expanding on the policy discussions in *Modernising Government* with *e-gov – Electronic Government Services for the 21<sup>st</sup> Century*. The overarching message was familiar:

Electronic service delivery should be used to join up service provision across departmental boundaries, to break down silo-based delivery networks and to allow citizens to interact with government whenever they choose, whether at home, or work or on the move (*ibid.*,p6)

*Studying e-Government in the UK*

Because of the policy developments and underlying rationales outlined above, the UK was chosen for study; the high investment levels, centrality of e-government in the public service modernisation plans and its role in achieving forms of joined up government in UK policymaking made for a suitable case for research. Furthermore, the existing configuration of public administration in the UK would bring into sharper relief the impact of e-government. Following Haldane (1918) in particular, the long traditions of the British civil service were cemented in hierarchical and functional departments (Bridges,1957; Hennessy,1989). Despite constant efforts to reform machinery and service delivery, there had been an enduring perception by scholars and other observers that the institutions of the UK public sector were not conducive to change (Fry,1979; 1993; 1995; Theakston,1995a; Smellie,1950; Pyper,1991; Willson,1968; Pollitt,1984; Jordan,1994), although, as discussed elsewhere in the thesis, the agentification of the civil service in the late 1980s and 1990s did create some significant alteration.

Considering this functional configuration, the UK was particularly appropriate for study as the modernisation agenda, with e-government at its heart, was explicitly positioned to challenge the modus operandi of departments by, amongst other things, inducing increased coordination or joining up (Cabinet Office,1998/99,p23). The role of ICTs in the UK case was therefore of particular interest, with the new technologies placed to facilitate this coordination within a landscape where services were delivered within segregated silos. In addition, the history of government computing, as discussed in Chapter Two, provided a further reason to research e-government in the UK. As demonstrated in the thesis, computers pervaded many areas of the public sector yet development had largely followed a different pattern to the orchestrated mode implied by e-government policy documentation.

The broad objective of the thesis is to investigate the role of new ICTs in facilitating joined up government under the auspices of e-government, as articulated at the heart of the UK government and embodied in particular in the work of the Office of the e-Envoy at the beginning of the new millennium. To set the stage for this, the thesis will provide original research into the history of government computing, finding that there



have been attempts to coordinate IT across departments in the past, with limited success. Then, central e-government strategy and activity will be profiled and two case studies will be presented to explore the facilitation of joined up government through ICTs.

This first chapter however will review and characterise the relevant existing literature; whilst the contribution of some key scholars in particular is identified, the thesis provides the first rich research into the role of e-government in achieving joining up in public service delivery.

Firstly, despite an erstwhile lacuna, there was more research on the relationship between government and ICTs from the beginning of the 1990s, sometimes under the specific remit of understanding and discussing e-government. Secondly, there was also a body of literature that considered the attempts in, and possibilities of, forging higher levels of coordination and collaboration between discrete public sector units, and of creating seamless provision of services for citizens. From 1997 some scholars looked specifically at the New Labour incarnation of this broad objective, expressed as joined up government. However, despite some important work discussed below, overall there had been little in public administration that attempted to put the two together, to consider the role of ICTs in facilitating coordination of service delivery, particularly as a means of understanding the crux of the modernisation project as expressed in parts of the *Modernising Government* white paper. The thesis researches e-government's contribution and role in joined up government in the UK specifically to add to understanding of this under-explored issue.

## 1.2 STUDYING GOVERNMENT IN THE INFORMATION SOCIETY

Since Daniel Bell's *The Coming of Post-Industrial Society*, published in 1973, there had been a large volume of scholarly texts attributing transformational capabilities to ICTs in society. Many of these works drew from the theory that industrial age structures were being replaced by a post-industrial information society. Operating under this rationale, bodies of literature developed which sought to understand ICT or

information-led changes in the economy, in organisations, at work, at home or at play and in society as a whole (Porat,1978; Dizard,1982; Nora/Minc,1980; Perez,1983; Liepietz,1987; Negroponte,1995; Leadbeater,1999; Brown,1997; Tapscott,1998; Lyon,1988; Castells,1996). Some of these 'information society' writers tended to trace the impact of ICTs upon societal relationships with 'heady images being called up of a more egalitarian society' as a result of new forms of knowledge and heightened information access (Bellamy/Taylor;1998a,p1). Others tended to adopt a more sceptical view of the emergence of a new mode of human existence (Slack,1984; May,2002) or argued that the 'information society' concept was not helpful (Webster,2002).

Specifically in terms of government, Margetts observed that, within the broad context of scholarly attention to the 'information society', ICTs had been associated with a definitive process of modernisation (1999,p164-165). Max Weber's texts, placed within a much wider Western phenomenon, saw society changing and developing through rationality. This rationality would be enshrined in bureaucratic systems, which could allow precise methodical control over society. ICTs seemed apt enough to provide the tools of this rationalisation process far beyond the imagination of Weber himself; to 'out-Weber Weber' (Hood,1994,p140). Certainly, the indications given from the *Modernising Government* white paper, even in the title itself, suggested that high-level UK government policy had taken this association between ICTs and public administrative modernisation to heart.

At times, the assertion that ICTs could modernise public administration had been taken to the extreme in scholarly work, with bold claims of a technologically driven society. Alvin Toffler's trilogy (1970; 1980; 1990) had been seminal in predicting startling transformations to society and government through ICTs. He noted that computers with 'unprecedented power for analysis and dissemination of extremely varied kinds of data in unbelievable quantities and at mind-staggering speeds' were driving accelerated change (1970,p30-31). In subsequent works (1980; 1990) Toffler suggested ICTs would cause a decentralisation of political power and transform government; a theory refuted elsewhere despite the infiltration of Toffler's ideas into

US policy in the early 1990s (Margetts,1999,p166,172; May,2002,p21-22). Similarly to Toffler, other authors suggested that the importance of the state and government would decline with the rise of the information society (e.g. Cairncross,1998; Coyle,1997); a theory strongly contested by others (Keohane/Nye,1988; May,2002).

### *Surveillance and the Information Society*

Contrasted with the bright allusions by Toffler and others to a much improved, ICT-enabled society, other writers predicted that ICTs would be used by governments and other institutions to control and restrict a citizenry. Part of the concern was that powerful technologies would provide governments with new abilities in gathering and joining together personal citizen data. Beniger (1986; 1991) argued that ICTs were inherently technologies of control used by malevolent governments to dominate society. Burnham (1983), Warner and Stone (1970), Angell (2000) and Whitaker (1999) provided similarly pessimistic observations and predications. O'Harrow, writing largely about the USA, provided a catalogue of alarming government and commercial surveillance techniques and networks, working through internet, mobile, radio tags, CCTV and other channels (2004).

Related to these works, there were also concerted attempts to understand the role of new ICTs in society and government in terms of their propensity to provide surveillance capabilities. 'Surveillance Studies' was led by David Lyon (1994; 2001; 2003) and influenced by Rule (1973), Dandeker (1990) and ultimately Foucault (1975; McNay,1994). Scholarly attention to surveillance, monitoring and data collection grew to cover many different fields and perspectives (e.g. Bain/Taylor,2000; Gandy,1993; Norris/Armstrong,1999; Graham/Marvin,2001; Ball,2003; Ball/Webster,2003; McCahill,2001) and often considered surveillance processes in government. A dedicated journal entitled *Surveillance and Society* was created, and the literature not only embraced important observations on the real or potential threats to privacy by ICT-enabled surveillance, but also uncovered wider implications of new surveillance processes on society, governing and the individual. For example, in a subset of the Surveillance Studies corpus, attention was paid to the 'sorting' capabilities and processes applied to citizen data derived from various collection procedures (e.g.

Gandy,1993; Lyon,2003; Bowker/Star,1999; Lessig,1999; Graham/Wood,2003). Surveillance Studies then, did draw attention to the role of ICTs in affording new powers to government through the joining together and manipulation of citizen information.

The concerns expressed in Surveillance Studies literature about the potentially negative effects of the use of ICTs in public administration had filtered through to some political circles. As far back as 1972 Tony Benn expressed concern that, because of computing, 'the spectre that haunts us...is that every child at birth will be traced and tapped by government and business' (1972,p14). Furthermore, popular literature and film had often fuelled fear of a society overshadowed by close state surveillance, usually enabled by technologies. Novels by Orwell (1949), Huxley (1932), Kafka (1925), Zamyatim (1920) and feature films such as *The Conversation* (1974), *Brazil* (1985), *Gattaca* (1997), *The Matrix* (1999) and *Minority Report* (2002) contributed to something of a general perception that government may wish to use ICTs and other technologies to impose surveillance and control. Journalists took to using phrases taken from such works, most prominently 'Big Brother', as an argot to describe virtually any notable instance whereby governments collected and used personal citizen data, or monitored individuals in ways which could be considered intrusive, via new technologies.

#### *Critical Public Administration: The information polity*

Existing in parallel to some of these wider patterns, researchers in the UK began to provide more systematic scholarly attention to the influence of ICTs in public administration, most notably within a wide ranging Economic and Social Research Council research initiative, known as the Programme on Information and Communications Technologies (PICT). From the PICT, some scholars carved out the 'information polity' in the early and mid-1990s as a useful conceptual tool from which important work derived.

The PICT was a ten-year programme begun in 1986 to research the long-term economic, social and policy implications of ICTs; many articles were published under

its broad remit, some of which looked at ICTs in public administration (see Bellamy/Taylor,1994). This work was set within a general climate in the academic discipline during the 1990s and before, where ICTs were given little by way of serious consideration (Frissen,1998,p33); a trend that was set to continue (Fountain,2001,p16; Taylor/Lips,2004,p1-2). This thesis is positioned to enrich this under-researched arena.

Protagonists in the PICT, such as Taylor and Williams in particular, argued that a number of changes were occurring within government organisations, including the widespread adoption of ICTs, the increased use of information in service delivery, increased provision of information to third parties, changes in labour processes contingent on ICTs and increased use of information for strategic management purposes (1990,p159). They argued that these changes had received little scholarly attention and suggested that the term 'information polity' would provide the 'conceptual focus' for these changes (*ibid.*,p151). Taylor and Williams had conviction that, despite caveats, the 'transformation of contemporary public administration is being enabled by the adoption of new information and communication technologies' and profound changes, such as significant decentralization, could ensue (1991,p187-188).

Subsequent work by some writers (Bellamy/Taylor,1992; 1994; 1996; Taylor,1992) developed the information polity, a 'parallel concept' to the information economy and society, which drew 'attention to the need for systematic investigation of the significance of changing information and communication capabilities for government' (Bellamy/Taylor,1998a,p148). The term 'polity' was used to refer to a 'stable, legitimized, "routinized" form of governance', conjoined with 'information' to emphasise the importance of information to the 'definition, maintenance and reform of the institutional order which it reflects and represents' (Bellamy/Taylor,1996,p57).

Later, Bellamy would reflect that despite avoiding a 'simple technological-deterministic' stance that might suggest a linear relationship between ICT implementation and government change (2003,p7), some of the PICT-related output of the early 1990s assumed properties of ICTs were 'given and generic' and showed little

interest in how 'particular technological applications are formed or varied by specific social contexts or human agencies' (*ibid.*). Although never strongly deterministic in its views on the abilities of information technologies, the PICT and information polity work did enter into the debate couched as technological determinism versus social shaping of technology, which emerged in part from scholarly considerations of the information society. Some writers tended to infer that technologies had the power to instil profound transformations in society (Toffler,1970; 1980; 1990; Negroponte,1995; Frissen,1994), others retorted that society itself also had a prominent role in shaping technology (Edge,1995; Wajcman/Makenzie,1999). Whilst many scholars (e.g. Winner,1999) reasoned that there was some form of balanced interaction between technology and its societal context, the subject matter of this thesis does raise questions in terms of the assumptions of policymakers regarding the power of new ICTs to transform service delivery.

Beyond the PICT, other scholars were adopting a critical stance to the implementation and management of IT projects in the public sector. Margetts and Willcocks highlighted a number of factors that impinged on the adoption of IT in the public sector, using examples of problematic IT implementation in the Foreign and Commonwealth Office and the Department of Social Security (DSS). They concluded that 'IT as an instrument of policy is not an uncontentious or unproblematic issue' (1993,p56). A little earlier, Margetts described the large 'Operational Strategy' to computerise the social security benefits system in the then DSS. Her preliminary evaluation indicated that few of the expected benefits of the programme materialised; as well as running dramatically over budget and offering little by way of efficiency gains, the more innovative aspects of the programme, such as the 'whole person' concept, failed to materialise (Margetts,1991,p331-332). The whole person approach aimed to reform services by doing away with fragmented 'benefit-by-benefit' delivery and developing a seamless service for all benefits, for each citizen (*ibid.*,p328). This did not emerge, and Margetts argued the experience of the Operational Strategy indicated the prospect that, with reference to the work of Taylor and Williams, 'other possible benefits embodied in the notion of the 'information polity' will remain elusive' (*ibid.*,p341).

### *Critical Public Administration: Informatization*

Further scholarly work on the use of ICTs in social security service delivery helped develop and focus analytical concepts. Drawing in particular from Frissen (1992) and Bellamy and Taylor (1994), Bellamy argued that many of the post-Operational Strategy ICT policies amounted to the 'informatization' of benefits administration (Bellamy, 1996, p160). Informatization was taken as the emphasis on creating and exploiting new information capabilities, particularly through new information flows across networking computer systems, and was set against 'automation', where computers were used to mimic existing information structures and replace human labour (*ibid.*). Bellamy argued that informatization did feature in the original Operational Strategy, particularly with the whole person concept (*ibid.*, p162).

Informatization had become a prominent concept in discussions regarding ICT use in government processes and began to provide a focus on the role of technology in drawing together service delivery around needs of the user. The concept was developed in Dutch scholarly discussions (e.g. Frissen, 1992; Snellen, 1994) and was picked up in Britain. For instance, Muid (1992) and Bellamy and Taylor (1994) associated the rise of New Public Management with informatization processes, while Taylor (1998) argued that the concept enabled an 'x-ray vision' of government by focusing on informational relationships.

In the case of the Operational Strategy, the informatizing whole person concept did not emerge and the strategy settled on a more straightforward and 'not unsuccessful' automation programme (Bellamy, 1996, p165). However, post-Operational Strategy, the Benefits Agency proposed that a one-stop service should be developed for clients, through convergence and connectivity of technical systems, a unified computer database and a fundamental reengineering of the benefits system (*ibid.*, p168-170). Not only an indication of an appreciation of the benefits of informatization in the use of IT in service delivery (*ibid.*, p176-177), the post-Operational Strategy plans demonstrated the aspiration to coordinate IT and data systems to help join up benefits services

around clients. However, the barriers to one-stop services were also apparent; the influence of existing mainframe systems in the Benefits Agency, the 'cultural hegemony' of dominant automation perspectives on technology in Whitehall and ascendant political agendas affected the direction and pace of informatization (*ibid.*,p177). Despite the long-standing notion in the DSS that ICTs could reform welfare services to join up around client groups, barriers often stymied wholesale progress, although in 2002 the DSS was reorganised into the Department of Work and Pensions, a department structured around the needs of different groups (Bellamy,2002,p217-218).

Research on the *Coordination of Computerization in the Criminal Justice System* (CCCJS) programme, a long-term initiative originating in the mid-1980s, provided further important observations on informatization that feed into this thesis. The various arms of the criminal justice system, police, Home Office, probation, the courts etc had been decentralised and compartmentalised historically (Bellamy,1998b,p300). During the 1980s these institutions were implementing or were considering implementing national information systems. Home Office officials thought it beneficial to induce interoperability between these systems (Bellamy/Taylor,1998a,p59), to streamline case management, encourage effectiveness and efficiency across the system and improve the quality of statistics (Bellamy,1998b,p302; Bellamy/Taylor,1996,p52-53); to informatize criminal justice services.

However, scholars argued that existing compartmentalised criminal justice information domains were protected by civil and constitutional rights, the traditions, sensibilities, priorities and operations of the professions and organisations involved, uncoordinated budgeting and the legacy of incompatible IT systems (*ibid.*,p62). The research indicated that this highly institutionalised configuration would not accommodate interoperability and new information flows easily. However, there was also reason to suppose that the institutional order of the criminal justice system could conceivably be altered to a more integrated form. Bellamy and Taylor suggest that a widespread perception of inefficiency and ineffectiveness within the system, along with rising crime rates, had led to a political momentum during the period that could



generate institutional change in accordance with the informatizing objectives of the CCCJS (*ibid.*,p67-68). However, these objectives and those of subsequent initiatives would prove difficult to achieve and, despite renewed attempts to improve data quality within, and interconnectivity between the arms of the criminal justice system in the e-government era (discussed in the first case study), progress had been slow (HMIC,1999; HMIC,2000; 2002; Audit Commission,2002b).

*Critical Public Administration: The institutional approach*

In their later collaborations Bellamy and Taylor were categorical in their use of an institutional approach in answering key questions under the auspices of the information polity. Institutions had received attention and rich treatment in wider political science (see Hall/Taylor,1996; Pierson/Skocpol,2002); broadly, institutions are taken as ‘formal or informal procedures, routines, norms and conventions embedded in the organisational order of the polity’ (Hall/Taylor,1996,p6). These institutions guided activities through providing continuity, rationalities and ordering in public sector organisations yet, although institutions could demarcate organisational boundaries, they were not necessarily restricted or defined by them (Bellamy/Taylor,1998a,p157); multiple institutions could co-exist and interrelate within one government organisation, or a single institution could extend across many organisations, representing policy networks and communities (*ibid.*; Lowndes,1996).

Considerations of the role of institutions led Bellamy and Taylor to view information and its communication in a way that ‘reduces to sterility the antonymical discourse between utopian and dystopian approaches to understanding ICTs’ and to look at the power of institutions in the shaping of information processing in government (1998a,p157). Their approach rejected alternative perspectives on understanding the information polity as overly technicist but also avoided viewing the shaping of ICTs in government as a result of ‘free and conscious choice in the exploitation’ of neutral technologies (*ibid.*,p150-151). Whereas they did not see ICTs driving change alone, they also argued that technologies are not ‘infinitely malleable and portable artefacts which can be bent at will’ (*ibid.*,p151), thus seeking to reflect a balance between the

power of information technologies and the contextual environment in which these technologies would operate.

Whilst the capabilities of ICTs could lead to ambiguous outcomes, they were also shaped by the social processes, and ultimately the specific institutional settings within which they were embedded (*ibid.*,p152), as shown in earlier work on the Department of Social Security and criminal justice system. Thus the ‘potentially radical tendencies of ICTs’ were juxtaposed with ‘the inherently evolutionary and incremental nature of institutional change’ (*ibid.*). They conclude that:

Despite the powerful hyperbole which surrounds the notion of an information age, heroic scenarios for reinventing government through the application of ICTs are fundamentally misleading. The institutions of governance will mould and fashion the revolutionary potential of ICTs into an evolutionary reality...The heady images which are so often associated with ICTs, together with the technologically determinist expectations that they will transform the nature of relationships in and around governance, are balanced by the relative insusceptibility to change of the normative and assumptive worlds which suffuse political institutions (*ibid.*,p170)

Margetts provided an equally cautionary message in her own book *Information Technology in Government: Britain and America*. Here, she noted that whilst information technology had become ‘a new fairy godmother for government’ (1999,p1), research indicated that it had not had the expected influence. A primary reason was that ‘as well as information technology changing public administration, public administration has changed information technology’ (*ibid.*,p178). Despite the pervasive status of IT, developments were localised, varied and of limited success; evidence from four case studies in Britain and America pointed to the enduring influence of distinct institutional settings in the implementation of IT systems. Thus ‘the experience of the four organisations involved constitute four distinct stories, with social, economic and organisational factors continuing to influence the use of information technology, thereby ensuring that the effects of computerisation continue to vary’ (*ibid.*). Margetts found that organisational decisions taken before and during IT system implementation ‘dictates the future possibilities for policy innovation, creating a new form of ‘administrative inertia’ within government agencies’

(*ibid.*,p179-180). Thus, applied to the UK e-government strategy, Margetts implied that modernisation could be restrained as well as unlocked by ICTs.

Working from America, Fountain tied ICTs with institutional perspectives on governance and organisations, by endeavouring to show how institutions and organisational configurations mediated technologies. Fountain rejected the notion that bureaucracy was likely to diminish in the face of networked computing (2001,p62-63) and set out an institutional theory (tested in case studies) of ICTs in contemporary government (*ibid.*,p83-103). Her central accomplishment was to account for information technology in institutional theory and to demonstrate that, whilst the internet in particular was a ‘revolutionary lever for institutional change’, the machinery of government institutions mediated and altered the actions of this lever (*ibid.*,p193-194).

As e-government strategies developed in governments around the world, including the UK, public administration scholars should have found the above literature as intellectual heritage, from which closer understanding of IT in public administration could develop. Through an interest in the information polity lens, key scholars turned to demonstrating the institutional dimensions of government, which provided insight into the difficulties of instilling informatization into public service delivery. This thesis moves these considerations of institutions on in the study of e-government and its role in joining up, providing a rich, and deep examination of multiple organisations and institutional arrangements across time.

However, as noted above there was not a sustained and concerted scholarly effort in public administration to consider the influence of ICTs in government processes, despite the endeavours of key scholars, some of whom will be returned to later in the Chapter. As a result of the paucity of critical scholarly attention, notions derived from wider literature tended to dominate approaches to the understanding and assessment of e-government in the new millennium.

### 1.3 CONCEPTIONS OF E-GOVERNMENT IN WIDER LITERATURE

While the information polity acted as an important focus for key public administration scholars, who were able to uncover some of the institutional factors involved in the applications of ICTs to government processes, writers from other spheres were seeking to understand the role of ICT in other organisations. Some of this work considered the role of electronic processes in coordinating the outputs of organisations, and would influence dominant perceptions of the purpose and format of e-government.

In particular, as new information technologies began to be used increasingly in the private sector, business and management literature sought to understand how best to exploit IT in light of growing investment levels. In the mid 1990s, a strain of this thinking developed into the Business Process Reengineering (BPR) movement and in 1993 Hammer and Champy offered their manifesto for reengineering corporations. Part of the mantra was that ICTs needed to be harnessed by thinking inductively; 'to first recognise a powerful solution and then seek the problems it might solve' (1993,p88). Although BPR was by no means about new technology alone, Hammer and Champy argued that ICTs could be utilised to fundamentally alter and improve business practices in organisations, to refocus operations to the needs of customers and increase profitability. The BPR doctrine held that IT should not be used to 'pave over cow paths', to automate existing organisational practices, but instead could be used in aggressive obliteration and redesign of business processes.

Under BPR, information could flow freely across electronic networks regardless of traditional functional and organisational boundaries, integrating operations to improve the customer experience (Taylor,1995; Bellamy/Taylor,1998a,p51-53; 1998b,p6). BPR emphasised flexible organisational practices enabled by new ICTs, which could preclude the need for restrictive command structures and divisions of labour (Bellamy,1998b,p297). Horizontal integration across organisational units and vertical integration through supply chains and out to customers or clients was advocated to secure a customer-focused modus operandi (Bellamy/Taylor,1998a,p74-75). Thus, BPR turned attention towards joining up the services of the functional silos of business organisations around the needs of customers, in part through ICTs.

As well as being discussed in public administration literature (e.g. Taylor,1995; Taylor et al,1997; Anderson,1999), BPR was officially adopted by the British government in the mid-1990s (Bellamy/Taylor,1998b,p6), as seen in the Central Computer and Telecommunications Agency report and other documents (CCTA,1994b; OPSS,1994a; 1995). However, most of the government projects used as examples of BPR at the time were somewhat modest compared to the severe forms advocated by Hammer and others (Bellamy/Taylor,1998b,p6). Still, the sentiments of BPR could be seen manifested strongly in ICT-mediated modernisation processes and projects in the UK and elsewhere during the 1990s (Bellamy/Taylor,1998a,p76-86), as well as *government.direct* (Bellamy/Taylor,1998b), *Modernising Government* and the central e-government strategy examined in this thesis.

As BPR literature was adopted as a potential tool in policymaking, some scholars were cautious of its application in public service delivery. For instance, BPR was said to be used to 'explain away' the IT productivity paradox (Bellamy,1999a,p90), the uneasy lack of evidence of clear links between IT investment and increases in business productivity in organisations (Strassman,1997,p23; Bellamy/Taylor,1998a,p51). BPR advocates argued that the lack of apparent success with IT over many spheres could be blamed on its common use for supporting failing business methods instead of appliance to reengineering (*ibid.*,p51-52). Yet it was argued that BPR style techniques, although positioned to transform organisations, particularly through creating new information flows, failed to take into account the threats caused to existing information domains and the actors that controlled them (*ibid.*,p153-154). Still, arguably the BPR movement and the notions and sentiments therein continued to have an influence on the conceptualisation of the role of ICTs in government processes. In particular, BPR laid emphasis on creating holistic and seamless responses to clients through coordinating information flows across boundaries using ICTs, which parallels with the central principle of the e-government strategy as outlined above.

### *Conceptions of e-Government in Business and Management Literature: The stages model*

Whilst BPR represented a mode of thinking that may have informed early e-government policy development, subsequent business and management literature also provided input into the required trajectory of e-government across the world. A reoccurring theme was that the documents advocated the use of ICTs, particularly internet technologies, for the coordination or joining up of public services; indeed the realisation of seamless service delivery was promoted as the zenith of e-government. Despite the existence of cautionary messages provided by Margetts, Fountain, Bellamy and Taylor outlined above, some of the literature resembled the ‘intoxicating visions of government in the information age’ (Bellamy/Taylor, 1998a, p170) that had been warned against.

Commercial research reports mapped out a projection for public sector adoption of new ICTs. For Accenture (2002) the overarching argument was that new ICTs, and particularly online applications offered ‘faster, cheaper, more personalized and efficient service delivery’ (Accenture, 2002, p2). The report measured e-government performance across the world in terms of ‘maturity’; governments were expected to progress from ‘publish’ or ‘passive’ stages (where electronic communication was restricted to informational websites), to ‘interact’ stages (where users could also communicate with government agencies through email for instance) and finally to ‘transact’ stages where fully two-way communication occurred (*ibid.*, p4). Similarly to the *Modernising Government* white paper, Accenture argued that the ultimate goal of e-government was to create ‘intergrat[ion] across agencies to simplify interaction, reduce cost and improve service’. (*ibid.*, p2). Integration across agencies should be accompanied by ‘true integration between the web front-end and the back office systems’ (*ibid.*, p12).

Deloitte and Touche provided a similar message in its *At the Dawn of e-Government* report, where familiar themes set the tone; ‘the explosive entry of technology into every facet of life has changed how people live, how they work, how companies do business – and how governments serve their constituents. The result: the emergence of

e-Government' (2000,p1). The report, again with an emphasis on online service delivery, argued that there was a direct correlation between the 'eminence of web-based applications' and the 'degree of enterprise transformation' in governments (*ibid.*,p22). A progression through stages of e-government maturity was again expected; from informational websites, to two-way interaction, clustering of services through portals and finally to 'full integration and enterprise transformation' (*ibid.*,p24-25). At this final stage 'old walls defining silos of services have been torn down, and technology is integrated across the new enterprise to bridge the shortened gap between the front and back office' (*ibid.*,p25). Electronic government was seen as crucial in facilitating 'customer-centric' governments by 'breaking down obsolete structures and the 'silo' thinking that has long characterised the way governments have operated' (*ibid.*,p2).

International public sector organisations had also increasingly turned attention to e-government at the beginning of the new millennium. The United Nations Division for Public Economics and Public Administration produced a report in 2002 that looked to benchmark e-government advancements; it again provided a number of stages through which 'e-services' should develop. 'Emerging' governments would establish a web presence, 'interactive' facilitated enhanced electronic communication, 'transactional' allowed online payments and other transactions. Finally, the 'seamless' stage equated to 'total integration of e-functions and services across administrative and departmental boundaries' (UNDPEPA,2002,p2,10). The Organisation for Economic Co-Operation and Development (OECD) argued in *the e-Government Imperative* that e-government could lead to 'seamless government, cutting across the boundaries that separate different structures and functions in the public administration, to provide seamless interface to both users of services and to citizens' (2003,p17).

The four reports detailed above, and other similar material, did not usually suggest that progress to these higher echelons of e-government service provision would be easy and had to be placed within a wider reform process to succeed. Nonetheless, despite these caveats the overriding message was that, mirroring *Modernising Government*, uses of new ICTs in public services would be instrumental in achieving a new phase of

government where services would be joined up, delivered seamlessly and tailored to the needs of the user rather than provider.

Whilst the 'stages model' was the dominant approach to e-government, there were some doubts about its appropriateness for the full breadth of public services (NAO,2001/02d,p10-12). The model's emphasis was less on critically assessing the underlying assumptions and philosophies behind e-government policy and more on measuring, benchmarking and league tabling comparative progress, in terms of the assumed ultimate objectives of seamless and integrated delivery (Taylor/Lips,2004,p7). Nonetheless, arguments pertaining to the instrumental role of e-government in achieving joined up government were relentlessly driven from these business and management sources; e-government was set to achieve an advanced incarnation of joined up delivery through a modernist progression, particular through online channels. However, despite the positioning of e-government as a facilitator of joining up in business and management literature, there was little in terms of critical appraisal of these assumptions in public administration literature.

However there was, as discussed below, scholarly attention to the notions of joining up that had figured prominently in the 'stages model' and government policy. Yet, the role of ICTs in joining up had largely escaped this academic attention, despite their close association in policy discussions and business and management literature, beginning in the late 1990s.

#### 1.4 ACADEMIC UNDERSTANDING OF JOINED UP GOVERNMENT IN THE UK

Joined up government is the second key theme considered in this chapter; it received academic scrutiny from public administration scholars for a number years. It emerged as a popular term in the UK near the beginning of the Blair government from 1997 (Mulgan,2002), coming to encapsulate a 'central objective of public sector reform' (Ling,2002,p615). The term and associated parlance was said to emerge more from 'fashionable leftish think tanks' than Whitehall (Pollitt,2003,p36) but was then



discussed and promoted in a number of government policy documents (Cabinet Office,1999; PIU,2000a; 2000c; Centre for Management and Policy Studies,2001; SEU,2001).

Joined up government was seen as a reaction to perceived systemic inadequacies in the delivery of public services. Thus, the movement was 'best viewed as a group of responses to the perception that services had become fragmented and that this fragmentation was preventing the achievement of important goals of public policy' (Ling,2002,p616). Kavanagh and Richards argued that the traditional departmental structure and policy-making model, based in part on the Haldane Committee's 1918 recommendations for vertical functional departments organised by service, created unintended and unforeseen pathologies in service delivery (2000a,p1-2). This point was discussed further in particular by Perri 6 (1997,p16-25), who argued that many contemporary problems with government derived from 'the failure to challenge the functional principle of organisation' (*ibid.*,p25). By the late 20<sup>th</sup> century there was a growing view that government functions were contributing to societal problems rather than alleviating them; 'public services were perceived to have grown, to become ossified consumers of resources and sources of obstruction to reform' (Lawton/Rose,1999,p287).

However, before joined up government rose to prominence, public service reform took an alternative course which, as well as providing solutions to the perceived problems, also created an environment where coordination became a more significant issue. This course was the Next Steps reforms under Margaret Thatcher, who believed the civil service was bloated and bureaucratic and required restructuring. She demonstrated her intentions in the employment of Lord Rayner as head of her Efficiency Unit in the early 1980s, charged with eliminating waste in departments (Butcher,1995,p63). Following the precursory Financial Management Initiative, Thatcher contracted Sir Robin Ibbs to produce a report in 1987 that recommended that many government departments should be divided into smaller policy units. The ensuing reform in the departmental structure was perhaps the most fundamental change of the 20<sup>th</sup> century, and continued under Prime Minister John Major with 74% of the civil service

operating in 130 agencies by 1997 (Greenwood et al,2002,p33). The agentification of the civil service had arguably increased the effectiveness and efficiency of service delivery through a 'greater clarity of purpose' (Foster/Plowden,1996,p166), but may have also magnified the perceived problem of fragmentation (Kavanagh/Richards,2000a,p8; Richards,2001,p62; Rhodes,2000d,p156). Ling noted that whilst Next Steps and subsequent reforms 'intended to break up what was held to be a monolithic, inward-looking public sector', it also 'exacerbated the difficulty of co-ordinating multi-agency responses to complex problems' (Ling,2002,p618).

Joined up government had thus been viewed by scholars as a response not only to 'weaknesses in conventional delivery processes' but also 'perceived problems associated with fragmentation during the 1980s' (*ibid*). In particular, this fragmentation had left government less able to deal with the so-called 'wicked' issues related to crime, unemployment, welfare, education and so on (6,1997,p9-10). There was agreement in the literature that one way that joined up government could be understood was as a response to these enduring wicked issues that the reforms of the 1980s failed to resolve (Kavanagh/Richards,2000a,p8; Pollitt,2003,p46; Richards,2001,p63-65). This point was echoed in the *Modernising Government* white paper and other central government publications cited above.

However, further context to the rise of joined up government could be found in an appreciation of 'governance' rather than government. From the 1990s, there was increasing acknowledgement that, as well as fragmentation in and between government organisations, an increasingly complex and heterogeneous society had provided challenges for public service delivery. Thus, government should seek to govern flexibly, acknowledging and using partnerships, co-operatives and networks beyond the purview of traditional hierarchical models of delivery (Rhodes,1997; 2000a; 2000b; 2000c; Kickert,1992). This view struck a chord with joined up government, and thus provided a frame within which joined up government policies, and academic discussions thereof, emerged.

### *Joined Up Government: Parallels with the past*

Some scholarly attention to joined up government focused on demonstrating the similarities between the Blair Labour government's emphasis on joining up and previous policy and strategy responses through the decades. Kavanagh and Richards described a series of government responses to perceived organisational deficiencies (which they termed 'departmentalism') including Winston Churchill's 'overlords' experiment, attempts to create super-departments through mergers in the 1960s, Edward Heath's Think-Tank style Central Policy Review Staff and the Programme Analysis and Review (2000a,p3-5). The general consensus was that these initiatives largely ran out of steam (Theakston,1995a,p84,86,113; Hennessy,1989,p244-245; Pollitt,1984,p154-55; Greenwood et al,2002,p41). Similarly, the Civil Service Department, created in 1968 following the Fulton Committee report, aimed to address pathological obstacles to service delivery but ultimately failed (Greenwood et al,1992,p144; Hennessy,1989,p206). Kavanagh and Richards pointed out that previous initiatives had similar objectives of creating coordination across departments as the joined up government movement of the late 1990s and beyond.

Writing as a contribution to a National Audit Office report on *Joining Up to Improve Public Services* (NAO,2001/02e), Richards took a different line in pointing out continuities between joined up government and previous attempts to deliver coordinated services. She argued that joined up government was precisely what had occurred during the post-war period up until the late 1970s, through planning and professional consensus (2001,p62). Richards suggested that this paradigm was replaced by one based on economy and efficiency until the late 1990s, where a third paradigm in public policy aimed at countering a legacy of fragmentation from the 1980s and 1990s through tackling 'wicked problems'. Clark noted that, looking at previous attempts at joining up, 'it is remarkable how much in common the past now has with the present' (2002,p111), citing similar examples to that of Kavanagh and Richards noted above. Pollitt concurred, adding that John Major's Conservative administration laid considerable emphasis on partnerships, a prominent aspect of joined up government (2003,p36). 6 (2004,p103) noted that strategies from as far back as the 1830s, such as those instigated by Edwin Chadwick, were essentially an

exercise in improving coordination not dissimilar to the notions underpinning joined up government.

The two case studies in this thesis pick up on the continuity between the joined up thrust of the Blair Labour government and previous policies and strategies to improve coordination and integration between government organisations, of which there were many in both cases. The case studies will trace not only the history of IT use in the government organisations concerned but also the policy history of coordination, partnerships and integration within the two service delivery areas under scrutiny (crime prevention and welfare), as well as any points where IT and joined up government have been associated in the past. This will provide a closer understanding of the institutional and organisational landscape within which the e-government projects and tools under scrutiny operated.

#### *Joined Up Government under the Labour Government from 1997*

Another strong theme of literature considering joined up government was attempts to unpack and categorise the constituents of the Labour government's approach to joining up from 1997; to understand the 'group of responses to the perception that services had become fragmented' (Ling,2002,p616). This had been in part because government documents had often failed to provide definitions of joined up government (Pollitt,2003,p34). This haziness may have been the result of a 'deliberate decision to experiment with a range of different forms' with joining up (Mulgan,2002,p5). However, some official guidance on the term's meaning was published in a PIU policy document entitled *Wiring it Up. Building from Modernising Government* the PIU recommended more effective leadership, flexible funding, cross-cutting policymaking, a more skilled civil service, powerful and timely audits and a more appropriate role for the centre of government (PIU,2000a,p7-8) as a means of improving joined up service delivery. The report also noted that joining up could take different forms depending on requirements; sharing information, objectives, measures, budgets or creating joint teams, customer interfaces and management arrangements were among the options listed (*ibid.*,p18).

Despite *Wiring it Up*, scholars continued to provide characterisations and recommendations for joined up government. Pollitt's review of government literature proposed that joined up government denotes 'an aspiration to achieve horizontally and vertically co-ordinated thinking and action' (2003,p35). However, this could equate to a variety of different approaches and objectives including joined up policy formulation and joined up implementation, vertical joining up (between central and local government), horizontal joining up (between departments) and joining up for groups (e.g. older people), regions, localities or policy sectors (e.g. transport or healthcare) (*ibid.*,p37). Ling also described the multiple dimensions of joining up government using a fourfold 'pragmatic typology' incorporating new ways of working across organisations (pooled budgets, joint teams etc), new methods of delivering services (e.g. shared customer interfaces), new types of organisations and new accountabilities and incentives (e.g. joint targets and performance measures) (Ling,2002,p625-626).

In striving for 'holistic government', 6 provided a series of recommendations in 'achieving greater integration across the public sector' (1997,p10). He advocated holistic budgets, integrated information systems, organisations defined by outcomes rather than functions and other measures to achieve integration (*ibid.*,p44-69). In later work, 6 would seek to explain the relative take up of joined up government in the UK and elsewhere, resting on a Neo-Durkeimian institutional approach to demonstrate the influence of constraints and bonds (6,2004,p109-117).

Richards argued that joined up government responded to both 'intractable' problems without obvious remedies and 'tame' problems with known solutions. She endorsed decentralised strategies to allow local resolutions to generate best practice generally for the former (2001,p64). For the latter, Richards argued that known solutions had not been applied as 'tame' problems 'lie on the boundaries between different jurisdictions'; thus national strategies, cross-sector leadership, pooled budgets and systems of evaluation and learning were required (*ibid.*,p65). Clark referred in particular to the PIU *Wiring It Up* (2000a) report to list joined up working methods as including joint customer interfaces, merged structures and budgets and sharing information (2002,p109). Rhodes agreed that joined up government took various

forms, citing area-based and citizen group-based programmes (2000d,p155) but reminded us that ultimately joined up government was there to 'build bridges between the organisations involved in designing policies and delivering services' (*ibid.*).

The above review of the literature indicates that joined up government was a diffuse phenomena that included a raft of measures, tools and strategies, which all shared a common goal of encouraging coordination, collaboration, partnerships and integration between organisations and sectors that had previously delivered services discretely. Furthermore, joined up government had often targeted the 'wicked' issues of service delivery such as crime, employment, health, social care, education and so on. The thesis takes this broad definition as the basis for research and in case study selection.

#### *Understanding of Joined Up Government: The omission of ICT considerations*

However, to return to the argument noted above, there was evidently a paucity of consideration of the question of ICTs in scholarly literature discussing joined up government. This paucity remained despite the clear association between ICTs and joining up in the *Modernising Government* white paper and the subsequent orientation of the central e-government strategy. In terms of the literature on joined up government mentioned above, Rhodes (2000d), Mulgan (2002), Clark (2002) and Ling (2002) had no or negligible discussion of e-government strategies specifically, or ICTs generally. Furthermore, the PIU report (2000a) provided little discussion of the e-government programme, despite alignment with the *Modernising Government* white paper. Some other central policy documents considering the prospects for joining up were neglectful of ICT issues to a similar extent (e.g. SEU,2001). This was less the case in two independent reports produced from enquiries of purported policy failing in government. The Bichard report recommended that, to ensure that police forces and social service organisations were nationally coordinated enough to prevent dangerous individuals working with children, ICTs would need to be improved to enable better intelligence and information sharing (Bichard,2004). Laming recognised that better collaboration was needed to protect vulnerable young people and that effective information sharing, supported by ICTs and a national database for children, would facilitate this to an extent (Laming,2003).

Other sources did consider the role of ICTs in passing. Kavanagh and Richards (2000a,p9) briefly noted that the ‘primitive state of IT provision’ held back joining up whilst Pollitt listed the use of common IT systems and databases as a potential tool for joined up government (2003,p44). Richards provided more depth, discussing the role ICTs had to play in joining up services around clusters of citizen needs and the implications of the reconfigurations needed to create such a change (2001,p63-64,66,70). The National Audit Office report, to which Richards contributed, did consider the role of websites in the operations of the joined up initiatives under review (NAO,2001/02,p39) but did not discuss the role of the e-government strategy as a whole. 6 (1997,p42-43) was published before the e-government agenda in the UK had gathered significant momentum but did discuss the *government.direct* green paper, the potential of an integrated electronic citizen interface and increases in flows of information across functional boundaries.

In his later work, 6 briefly noted a trend in the use of government web portals aimed to join up related services around common ‘life events’ or ‘distinct clienteles’ (2004,p120-122). 6 also pointed out the potential tensions between the increased data sharing often associated with joined up government, and data protection and privacy (*ibid.*,p121). As 6 argued, this became a major issue that scholars (e.g. Bennett,1997; Raab,2001) and government organisations (PIU,2002) addressed. The government maintained that privacy and data protection were reconcilable with the increased data use and sharing implied in the central e-government strategy; the PIU argued that it was possible to pursue ‘the twin objectives of enhancing privacy and making better use of personal data’ (*ibid.*,p5)<sup>2</sup>.

Despite these brief considerations, the overriding sense was that attention to ICTs and e-government had been neglected in joined up government literature. Many of the common components identified, including sharing information, joint teams, shared customer interfaces, organisational integration and partnerships would logically

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<sup>2</sup> Academic research, particularly that which was still ongoing in 2004 by Bellamy, Raab and 6, was set to provide insight into this claim.

require ICTs, informatization and electronic processes at their heart. Nonetheless, without the benefits of the information polity lens, the authors discussed above largely missed these considerations; a significant failing in light of the importance placed on ICTs in government policy and elsewhere.

This thesis will help reconcile scholarly considerations of ICTs and joined up government, to provide critical appraisal of the role of new technologies in achieving joining up with reference to the central e-government strategy. Achieving this reconciliation entails building upon some important existing academic work, some of which has been referred to in prior sections of this chapter. This work did recognise the function of ICTs in the coordination of service delivery, particularly as discussions around this issue arose in government policy publications.

As noted on p12 above, informatization had become an important scholarly concept in discussions around the application of ICTs in service delivery. Whilst the concept had been used generally to point to the tendency of ICTs to produce information that could be utilised in a reflective sense by organisations (Bellamy/Taylor,1998a,p26-27), informatization can also be employed specifically to indicate the potential to exploit technologies to enable new flows of information (*ibid.*,p46-47,84). In this sense, informatization is used in this thesis as a concept to denote innovative uses of ICTs beyond that of automation, where new technologies imitate existing informational processes, for efficiency and staff savings purposes. In contrast to automation, references to informatization in this thesis point to instances where ICTs have been applied creatively, particularly to enable new uses of information across pre-existing boundaries. Thus, informatization has a strong link with the use of ICTs in joining up service delivery; this link is borne out in discussions throughout the thesis.

## 1.5 ICT-MEDIATED JOINED UP GOVERNMENT: CONSIDERATIONS OF THE PUBLIC ADMINISTRATION VANGUARD



A major thrust of UK e-government strategy documents and the commercial research reports of Accenture and others was the close intertwining of ICTs and electronic service delivery with integration, seamless provision and joined up government. Despite the prominence of the association in policy documents, there was less by way of critical academic commentary on this matter in public administration, although related work that considered the use of new technologies in surveillance did bring some general attention to the powers offered to government through joining together citizen data. Still, in particular the work primarily focused on joined up government had neglected a consideration of ICTs and e-government.

However, arguments that ICTs may have a prominent role in forging integrated or co-ordinated service delivery, particularly between traditionally distinct government organisations or policy fields, had had a small but important voice, even well before the emergence of e-government in Britain. One of the objectives of this thesis has been to trace the derivation of the idea in policy discussions, and this original research will be related in Chapter Two. However, in terms of critical academic work, Taylor and Williams began to think about the potential for ICTs to bring about coordination in service delivery in the early 1990s, using the information polity lens. In considering the potentially transformational capacities of information technologies, they noted that the ability of 'agencies to bring together services at the point of the customer is made more possible through the use of common information bases, themselves made available via networked computing' (Taylor/Williams, 1991, p188-189).

Scholarly considerations of informatization in the information polity led to further discussions on the potential benefits of ICT-mediated public service coordination. For instance, Bellamy observed that intrinsic to efforts in the informatization of social security benefits towards 'whole person' capabilities during the 1980s was the integration of computer systems (Bellamy, 1996, p167). Although whole person was unsuccessful, the subsequent emphasis on one-stop services in Benefits Agency policy required a convergence of technical systems (*ibid.*, p169). Despite barriers and difficulties, Bellamy argued that such potential informatization could portend 'holistic administrative systems in which traditional barriers to capturing and exploiting

information would be increasingly irrelevant, including those between different parts of public bureaucracies' (*ibid.*,p177). Similarly, Bellamy and Taylor observed that efficiency and effectiveness benefits were identified in creating electronic links across criminal justice agencies by policymakers embarking on the CCCJS programme (1998a,p59-60; 1996; Bellamy,1998b,p302-303). The inference was that, in the shift away from policy emphasis on automation and towards unlocking the potential of information through ICTs in public services, establishing electronic links between government organisations as a means to proffer holistic delivery would be a commonly held aspiration.

Considerations of the 'governance' concept in public administration also led some scholars to reflect on the potential role of the integrative power of ICTs. Whilst it was suggested above that governance and networks were important contextual concepts for joined up government, Bellamy asked why ICTs had not figured prominently in scholarly attempts to understand the governance phenomena (Bellamy,1998b,p294). This was more surprising, Bellamy noted, as other areas of social science, such as in the work of Castells (1996), had highlighted information technology as a conspicuous factor in the shift towards networked organisations (Bellamy,1998b,p294). It was argued that ICTs could unlock the essential resource of information in organisations, bringing 'co-operation across the hitherto impermeable boundaries' (*ibid.*,p298). Using the case of the CCCJS, Bellamy pointed out the dangers in the assumption that the introduction of ICTs would readily improve information flows across government, as technological barriers, professional and commercial interests, and political power may prove hardy obstacles (*ibid.*,p298-306).

Elsewhere in Europe, ICTs were being earmarked as facilitators of new forms of government organisations and public service delivery. For instance Bekkers argued that the networking power of ICTs were blurring, altering, redefining and integrating government organisations in the Netherlands (1998,p57-77). Zuurmond discussed the emergence of 'infocracies', where traditional government boundaries were disappearing as information flowed through electronic networks (1998,p269). Killian and Wind (1998) examined inter-organisational ICT systems, exploring the extent to

which these might be enabling coordination and co-operation between government organisations in Germany. Salza and Mecalla noted that the creation of a 'unified network' for Italian government had been a priority for policymakers to encourage connectivity, interoperability co-operation and database integration (2001,p139-140,147). In America, Fountain considered the role of the internet and associated technologies in facilitating bureaucratic coordination and inter-organisational networks (2001,p51-52,79-81).

### *The Vanguard in the e-Government Era: Reviewing government.direct*

Thus, for some time a select group of public administration scholars were discussing the relationship between ICTs and coordination, networking and integration in service delivery, often within wider debates pertaining to informatization and governance. In the UK, the emergence of *government.direct* sharpened the focus on this relationship in some key public administration texts; the green paper brought to the fore the role of ICTs in prominent central public service reform policy for the first time (Bellamy/Taylor,1998b,p1) and suggested a more holistic approach to delivery, less limited by traditional organisational boundaries and enabled by new technologies (Margetts,1999,p47; Bellamy/Taylor,1998a,p77). Scholars noted that the green paper suggested a focus on vertical information flows between government and users, through for instance 'one-stop' citizen access via new electronic channels, and an emphasis on horizontal flows of information between service sectors. Here, improved electronic data capture and efficient sharing between back office systems could 'allow government agencies to redesign their business processes, enabling them to streamline bureaucracy, rationalize provision and breakdown organizational barriers to the provision of 'seamless' public services' (Bellamy/Taylor,1998b,p4).

Whilst the green paper remained largely unnoticed in mainstream public administration academia, a select group of scholars had observed the links made in policy discussions between ICTs and a radical path for public service reform (Bellamy,1999a) aimed at holistic, client-focused provision, as sketched out in embryonic form in *government.direct*. Bellamy and Taylor argued that the ICT-enabled reform outlined in the green paper might best be understood in terms of BPR,

which held that, using the networking power of new technologies, business processes would be ‘technically integrated across organisational boundaries’ to aggressively reassert the ‘hierarchical power of managers’ (1998b,p5). Although ‘a seductive methodology’ for the implementation of e-government Bellamy and Taylor contended that BPR overstated the ability of managerial authority to overcome evident barriers (*ibid.*,p5-8,15).

The scholars also considered the utility of the ‘governance’ concept in characterising the implications of *government.direct*. They concluded that the prominent use of the ‘network metaphor’ in the governance literature tended to overestimate the role of autonomous individuals and underestimate the importance of wider institutional configurations on networks (*ibid.*,p10). It was suggested instead that a useful approach was to consider distinct ‘information domains’ in government organisations, over which legitimate control was held by specific groups of actors (*ibid.*,p11-12). *Government.direct* should be understood as providing several sets of challenges to the information domains embedded in institutions (*ibid.*,p11-15).

By 1999 ‘joined up government’, both in terms of horizontal links between departments and vertical links with citizens, was becoming a popular mantra in policy circles. Although public administration scholars largely neglected the issue, Bellamy noted a clear association between joined up government and the ‘information age’ agenda emerging from *government.direct*. Underlying this association, she argued, was a ‘widespread assumption that it is the power of new technology that will enable governments to be reconfigured around customer needs’ (1999a,p89). As seen in the *Modernising Government* white paper published following Bellamy’s work here, this power was intended to focus on moving beyond departmental silos to integrate and streamline public services. However the reputed problem with the putative role ICTs were to play in joined up government was:

in the real world of government, organisational silos do not simply dissolve under the weight of the business logic of ICTs. On the contrary, there are many reasons why the functional segmentation of service delivery has become deeply embedded in the institutions of government. Each part of government possesses its own

mission statement, its own business aims, its own information and business systems...its own sets of clients, its own clusters of suppliers, its own external partners and its own budgetary and stewardship responsibilities (*ibid.*,p90)

Despite the bold plans that were emerging from central government during the mid to late 1990s, a small core vanguard of critical public administration literature warned that in the 'vast intricate webs of incompatible legislative frameworks, data standards, legacy systems and business relationships lie some of the most difficult issues involved in joining-up public services with ICTs' (*ibid.*,p91).

Although *government.direct* held back from the severe BPR advocated by some quarters, pilots to join up information systems and provide integrated electronic portals were nonetheless instigated during the late 1990s off the back of the green paper. Although perhaps initially masking rather than obliterating fragmentation, the association in the emerging e-government agenda between ICTs and joining up was very clear. Whilst the need for service redesign towards holistic delivery was acted upon previously in criminal justice (with the CCCJS) and social security (Operational Strategy and subsequent work), with both cases revealing profound problems, the 'political salience' bestowed upon joined up government (*ibid.*,p93) had led to renewed or fresh attempts to lever integration and coordination in these and other sectors of delivery.

### *Researching e-Government: The thesis approach*

Following the publication of *Modernising Government* and several other policy documents, the central e-government initiative was in full swing soon after the passing of the millennium (see Chapter Three), with a variety of projects aimed at joining up using new technologies (Bellamy,2002,p214-216; Holliday,2001,p319-323; Hudson,2001,p520). Nonetheless, it was only a minority voice that applied critical scrutiny to the e-government, often arguing that institutional influences needed to be factored in to understand the role and performance of ICTs in public service delivery. The aim of this thesis is to add to the critical voice in public administration; it will research the history of attempts to coordinate government IT and study the role of e-government in facilitating joined up government in practice, both in terms of the

central, Cabinet Office based e-government strategy and activity, and the two case studies. It will provide a deeper understanding of e-government, bringing insight into the complex relationship between institutions and ICTs over time.

Even by 2004 the verdict was that public administration had failed to provide a comprehensive body of critical literature spotlighting the motives, designs and strategies behind e-government (Taylor/Lips,2004,p4), including its application to joining up. The study of e-government had, according to some critics, largely accepted the formal intentions of governments in designing and implementing electronic service delivery, subjecting them to little critical appraisal (*ibid.*,p6). Thus the emphasis was on the techno-centric, positivistic and comparative approaches (*ibid.*,p7) as seen in the 'stages model' of Accenture reports and other management sources discussed above.

However, by acknowledging the benefits of an information polity lens, this thesis is able to take a more critical view. E-government 'potentially undermines the rationale for existing departmental structures and government jurisdictions' as well as challenging other responsibilities and relationships (Bellamy/Taylor,1998b,p4). Whilst the assumption by some commentators and policymakers may have been that the flexibilities associated with new ICTs would lead to the desired information flows and changes in the business of delivery, it was argued that in fact 'the scale and complexity of government is such' that one would not effortlessly follow the other (*ibid.*,p4-5). Rather, electronic service delivery was 'inevitably shaped by the institutionalization within government of existing business processes and information flows...these flows can be understood as legacies of earlier business and technological paradigms, serving simultaneously to legitimate existing ways of doing business and to provide a buttress against pressures for change' (*ibid.*,p5).

It is this notion that informs the work found in this thesis, as it enables an intimate examination of the application of e-government to joined up government. In 2003 Bellamy commented that there were 'obvious gaps' in our knowledge about the implementation of e-government (2003,p8). In particular there were few richly qualitative empirical works which tackled the specific social dynamics, organisational

struggles and personal involvement in e-government implementation. Furthermore, Bellamy argued there were little meso or macro-level studies examining the e-government policy community or offering a contemporary history of e-government and its role in the wider modernisation project (*ibid.*,p9). This thesis contributes to the rectification of these shortcomings in the study of e-government; it will provide insight into the institutional, organisational and individual actor dynamics involved in the development and use of e-government and its application to joining up.

## 1.6 METHODOLOGY AND CONCLUSIONS

The messages of key policy documents such as *Modernising Government* made it clear that electronic service delivery was being positioned to help provide joining up across traditional organisational boundaries, which in turn would improve the users' experience. This thesis will examine the role of ICTs in joined up government within e-government practice, using critical tools developed through scholarly attention to the information polity and bringing a broad institutional perspective, with historical components, to bear on the subject matter.

This broad institutional perspective draws on key observations derived from scholarly attention to institutions, bringing them to bear on the subject matter of the thesis to provide focus to the research. Key to institutional perspectives is that procedures, customs, traditions, rules and routines embedded in organisational structures can govern collective behaviour, shape options, allocate resources and generate particular outcomes (Hall/Taylor,1996,p6; Pierson/Skocpol,2002,p706). These institutions can provide long-term stability and impose elements of order (March/Olsen,1984), and are often not liable to rapid or constant change over time. Although institutional perspectives do not generally argue that profound change cannot occur in institutions, rather they suggest that change is more likely to be the result of a variety of factors coming together (Thelen/Steinmo,1992; Orren/Showronek,1994). This point gives some indications on the likely reaction of some areas of government to the central policy emphasis on joining up through ICTs, for instance where institutional norms

and traditions have not included much by way of joint working, data sharing, technical interoperation and information flows in the past.

Building from observations into the stability of institutions, some branches of institutional thought have placed emphasis on empirical inquiries on path analysis, where there is an acknowledgement that actions, developments and processes in institutions will be partially dependent on decisions and factors from earlier in their trajectory (Pierson,2000). This concern for path analysis is another key element from institutional perspectives, which guide the thesis towards considering how a variety of institutional factors across time can be brought to bear on understanding of e-government in public service organisations and sectors. Drawing from broad institutional perspectives then, the thesis takes history seriously, looking at processes and institutional interactions over time (Pierson/Skocpol,2002,p698,706), to provide illumination of contemporary e-government. In this sense, the thesis places emphasis on investigating the historic development of ICTs in government, capturing the often long-term development and interaction of an array of factors over time. In this way, the thesis is able to avoid attributing 'misleading' revolutionary powers to new ICTs (Bellamy/Taylor,1998a,p170) by placing them in the context of the complex and evolutionary nature of institutions. Furthermore, using this historical approach also enables the thesis to uncover how ICTs take on and crystallise institutional traits and boundaries, particularly in the case studies, which can influence the trajectory of subsequent ICT-mediated joining up across government departments.

The remainder of this section briefly states the methodological parameters and approaches adopted to achieve this research objective. Full methodological details including evidence base, case study selection and interview techniques, can be found in Annex One.

As stated above, the decision was made to study e-government in the UK because of the high profile nature of the e-government strategy that emerged in the late 1990s, that was accompanied by high levels of investment. The policy emphasis on joining up in e-government and wider modernisation plans, juxtaposed with the historic



functional separation and agentification of service delivery organisations, made the UK a relevant case for research. Whilst parts of the thesis consider policy, institutional and technological histories across the post-war period, a demarcation is made at 1996, the year when the government published the *government.direct* green paper just as the internet had begun to reach the attention of society at large. The thesis considers events up to summer 2004, when the empirical phase of the research was concluded.

Drawing from Bellamy's observation stated above (2003,p8-9), the thesis utilises a case study based approach to produce empirical data to accompany historical and policy literature based research. Scholarly and some policy context for this research is found in Chapter One, whilst Chapter Two sets the stage for the exploration into e-government by providing original research into the history of government computing. Chapter Three examines the development of the central e-government strategy and in particular the activities of the Office of the e-Envoy in introducing measures and tools to encourage joining up through ICTs. The two case studies, found in Chapters Four and Five, research the role of e-government in facilitating joining up in different service delivery settings. The concluding chapter brings the themes discussed across the chapters together in providing a final assessment of the e-government strategy under the terms stated. A more in-depth depiction of the rationale used and objectives set for the preceding chapters is presented below.

It was judged that the case studies, and the thesis as a whole, would benefit from a fuller understanding of the policy and institutional histories involved in government computing, to look at the notion of ICT-mediated joining up across time. In particular it was beneficial to uncover more in terms of the adoption of computers in public service delivery and patterns of central government thinking and policy on this issue. This work, comprising of Chapter Two provides new insights into a hidden world of post-war government IT, demonstrating that notions pertaining to the transformational powers of computers existed in policy circles throughout the decades. The chapter finds that the perceived benefits of the coordination and interoperation of computer systems across departments and the use of IT to coordinate and integrate service

delivery had often been identified during the post-war period. At various points, government units had been charged with IT coordination across departments; the story of these units is a theme of the chapter as it points to the institutional and organisational factors and difficulties associated with this task, which remained relevant to the study of e-government.

Chapter Three narrates the emergence and progress of the central e-government strategy outlined above. It takes the publication of the green paper *government.direct* in 1996 as the beginning of the e-government era in the UK, as this paper brought ICTs to the fore of central service delivery reform for the first time (Bellamy/Taylor,1998b,p1) and the ideas and proposals put forward in it were generally taken forward in the e-government strategy subsequently. The publication of the green paper also coincided with a period where the internet had begun to gain popular attention, grow in size and reach more people (e.g. Anderson/Tracey,2002,p144). Chapter Three provides an in-depth exploration into the activities of the Cabinet Office's Office of the e-Envoy in particular, as this was the unit charged with steering e-government strategy, in parallel with previous government IT policy organisations described in Chapter Two. Not only concerned with policy, the Office of the e-Envoy also introduced and managed a number of central internet portals and technical infrastructure tools through which, it was envisaged, significant amounts of joined up e-government transactions and interactions between departments and out to citizens could be channelled. Thus, not only did the Office of the e-Envoy develop policies and strategies for joining up through e-government, it also created the tools through which some of this was to be achieved. The development and implementation of these tools will also be covered in Chapter Three. Furthermore, the chapter provides indications of the development and implementation of e-government projects and tools across the public sector, set alongside the evolution of the central strategy and the work of the Office of the e-Envoy, and to provide sketches of the state of play in departments and service sectors other than those discussed in the case studies. Building from Chapter Two, Chapter Three provides a detailed, rich focus on the central e-government strategy that was constructed around *government.direct* and *Modernising Government*.

Chapters Two and Three then narrate the history of government IT, picking up relevant themes, and profile the central e-government strategy and associated infrastructures; both serve as contextual tools for the empirical case study work found in Chapters Four and Five. As Yin notes, the case study approach is most appropriate when asking the 'how' and 'why' (2003,p5-8). Its use derives out of the need to understand complex social phenomena, to retain a fuller and more meaningful understanding of real-life events and to take account of an array of evidence (*ibid.*,p2,8). It was judged that the case study approach was most fitting to uncover the complex and long term processes expected with the amalgam of actors, organisations, policy, technology and institutions involved in e-government. The case studies are able to uncover the way in which information flows, crucial to the joining up orientation of UK e-government strategies, were enmeshed in the public organisations and institutions that surrounded them. Although essentially explorative in approach, the task was augmented by the scholarly heritage charted above, which acknowledged and observed the power of institutions in the application of ICTs in government. Further methodological details can be found in Annex One.

To conclude this initial chapter, it should be reiterated that this thesis illustrates and tests the central premise of the electronic government strategy as expressed in *government.direct*, *Modernising Government*, subsequent documents and the activities of the Office of the e-Envoy; this premise is that new ICTs and electronic methods can be used to foster joined up service delivery for the benefit of citizens. Ultimately, the research objective is to demonstrate if and how joined up e-government works in practice, and to illustrate the barriers and enablers that exist.

To achieve this, the thesis will look back at previous patterns of government IT policy, provide an in-depth profile of e-government policy and activity from 1996, and investigate how the premise was being played out at service delivery level, in two case studies. The groundwork for this task has been achieved in this chapter; firstly it has provided an outline of e-government policy and the perspectives that underpinned it, which will be fleshed out as the thesis progresses. Secondly it has sketched the

scholarly heritage of studies into government IT and joined up government. It argues that a general lacuna had existed within public administration for these issues and specifically, academic considerations of joined up government had largely failed to account for the role of ICTs. Conversely, business and management literature (Accenture,2002; Deloitte and Touche,2000) promoted seamless, joined up service delivery as the zenith of e-government under the 'stages model'. This literature tended to take an uncritical approach to the general policy perspectives of e-government and its role in joined up government. As a result, there was a lack of critical appraisal of the notions and practices associated with e-government in the UK.

However, using an information polity lens, some key authors developed an institutionalist argument to help provide critical insight into the manner in which ICTs and government organisations interacted. Using this, the thesis will contribute to filling a void of academic understanding regarding the association between e-government and joined up government, which appeared so prominently in government policy from the late 1990s. In doing this, the concluding sections of this thesis will move from exploration, observation and examination, towards providing some critical reflections and recommendations on the UK e-government strategy, based on the empirical evidence amassed and the insights gleaned from an appreciation of the role of institutions.

## CHAPTER TWO: THE HISTORY OF COMPUTERS IN THE UK GOVERNMENT – 1945 to 1996

### 2.1 INTRODUCTION

The e-government strategy discussed in *government.direct* and embodied in *Modernising Government* associated ICTs with profound transformations in public service delivery, through their application to joined up government. Research conducted for this chapter provides a historic focus to this notion by presenting a chronological history of government computing, concentrating on themes, patterns and developments in IT policy in the post-war period up to the publication of the *government.direct* green paper in 1996.

The chapter goes beyond previous research in uncovering a hidden world of government computing, where the notion that the steering of IT across departments could lead to enhanced coordination of service delivery existed in policy and was manifested in the activity of centrally positioned units. Certainly, automation perspectives were dominant across the post-war period (see Bellamy/Taylor, 1998a, p39-40), yet computers and computer networks had, from an early stage and at various points, been considered by some significant sources as capable of achieving or contributing to transformations in the delivery of public services and the configuration of the organisations charged with their provision. Thus, even in the 1950s and 1960s there were discussions that highlighted the potential informatizing capabilities of information technology, largely within the context of internal back office reform.

In providing a policy history, the chapter will demonstrate that, analogous with the central e-government strategy that emerged from 1996, arguments were made at various points previously that coordinating IT systems within and across departments would facilitate increased integration in service delivery. However, the policy history depicted here indicates that various attempts to coordinate equipment procurement, IT systems,

data sharing, project management etc, often by government organisations placed in the Treasury or Cabinet Office, seemed onerous, complex and not obviously successful.

Furthermore, IT development will be shown to largely have occurred discretely within the purview of departments and service delivery areas, as government organisations quite reasonably sought to apply technology to their own specific needs. In concurrence with Margetts (1999,p179), the research indicates that information technology itself, often applied with the perfectly rational business logic of automating procedures and processes, became seen as a barrier to forms of coordination, as it reflected and reinforced the institutions and organizations in which systems were located. The chapter also accounts for broad yet shifting political paradigms as important factors in dominant approaches to IT policy; it observes that changing and evolving governments and political environments influenced approaches to IT and IT coordination. Not least, some of the administrative reforms of the 1980s worked against the specific objectives of the government units charged with the coordination of computing across departments.

Consideration of these inter-related political, institutional and technological factors and patterns portray the landscape in which the e-government strategy eventually emerged and operated. The chapter provides an understanding of the history of government IT, paving the way for the profile of central e-government strategies and activities found in Chapter Three and for the case studies that follow. The short history sections found in the case study chapters are grouped with the broader work in this chapter, which provides a wider perspective on the specific histories found in the two cases. This chapter begins by describing the first developments and uses of computing in public service delivery in the post war period.

## 2.2 THE DEVELOPMENT OF GOVERNMENT COMPUTING: AUTOMATING OPERATIONS

The early post-war period saw computer technology largely developed in scientific and military arenas being applied firstly to 'clerical' back office processes in government organisations. The automation of administrative processes, incorporating time and labour saving computer mediation, became a major focus of government laboratories soon after World War Two, in conjunction with some government departments.

Before World War Two however, the British government had had experience with mechanical punched-card apparatus, as early as 1911, when such machines were used in the census (Agar,2003,p155); by 1948, 26 departments were using or planned to use punched-card systems (*ibid.*,p295). One example was the Ministry of National Insurance (later the Ministry of Pensions and National Insurance) which was created in the mid-1940s following Beveridge's recommendations to administer the newly created national insurance system, taking contributions from the working population to fund unemployment payments, pensions and other benefits (Beveridge,1942; King,1958). The public service was based around the National Insurance Number, a unique code given to each citizen registered (MPI,1950,p15,32); the original format was still used in 2004. By 1950 there were 25 million citizen records held centrally, supported by hundreds of local benefits offices (*ibid.*,p15-16); the system generated the need for vast amounts of record-keeping, communication and information flows. Correspondence between these local offices or labour exchanges and the headquarters near Newcastle would use machine-read punch cards (King,1958,p113-115; MNI,1950,p15-16).

The use of punch-cards may have given some departments a certain predilection towards automation, whether mechanical or electronic, that would later help the proliferation of computing systems. For instance, as discussed below, the renamed Ministry of Pensions and National Insurance (MPNI) was experimenting with automatic data processing by the mid-1950s. There were a number of developments that facilitated this experimental phase. During the war, the Colossus (according to some, the first computer) was constructed at Bletchley Park, to help crack the German Enigma code (Agar,2003,p208-09). Although early post-war developments in computers were occurring in academic

institutions simultaneously at, for example, the University of Pennsylvania (ENIAC), Cambridge University (EDSAC) and Manchester University (Mark I), the most significant developments for British government use were found at its National Physical Laboratory (NPL), in Teddington, Middlesex.

### *The NPL and Government Computing*

Soon after the war, the government's Department of Scientific and Industrial Research (DSIR) arranged an interdepartmental technical committee meeting to discuss the need for a computing unit. Such an organisation was considered vital, particularly in military settings, following advances during the war; most famously Alan Turing et al and the Bletchley Park code breaking operations (see Hodges, 1983), as noted above. The committee provided the Mathematics Division, created within the laboratory following pressure from the Admiralty Computing Service and the NPL itself, with a remit to develop and provide computing services and consultation to government departments, industry and universities (Croarken, 1990, p75-78,81). The NPL came under the jurisdiction of the DSIR, whilst the National Research Development Corporation (NRDC) had a supervisory role. For ten years after the cessation of World War Two, these were the dominant instruments of computer policy in Britain (Hendry, 1989, p1). Work in the NPL was initiated in the mid-1940s on an early prototype, called the Automatic Computing Engine (ACE); this was to prove important to the development and application of computing to departmental administrative tasks in the future.

The ACE section team initially consisted of Alan Turing and James Hardy Wilkinson only, and Turing submitted a proposal to build the ACE to the NPL Executive Committee in 1946. It was decided that a smaller pilot model should be built first, through collaboration between the newly established Electronics Division, and the Mathematics Division; later the two groups were merged to support work on the pilot ACE (Pyatt, 1983, p150). Alan Turing, however, was never in favour of building a pilot, and he left the NPL in October 1947 (Croarken, 1990, p94). He never returned, tragically committing suicide in 1954 after prosecution for an alleged indecency. During this period



however, computers, or 'electronic brains' as they were known in journalistic argot at the time, were said to have captured the popular imagination through their 'astounding feats of arithmetic' (Bowden,1953,page vii).

The 1948/49, the NPL annual report promised the pilot ACE to be 'one of the largest and most powerful machines in the world' (p68) but did not provide details of its uses. It was not until late 1951 that the pilot was completed, by which point military organisations had become increasingly interested in the benefits computers could offer to defence (Agar,2003,p269-274). At this time the ACE was used for complex scientific problems in the Ministry of Supply, such as aircraft wing pressure distribution and missile trajectory (NPL,1951/52,p75). However, during this period of development, the NPL reports provide illumination of the growing realization of the potential of computers beyond military and scientific applications and towards automation in public services. Agar noted that this realization was partially due to the influence of the Advisory Committee on High Speed Calculating Machines, set up in 1949 as the first working group devised to address government computing issues (Agar,2003,p301). The 1952/53 NPL annual report provided one of the first references to the use of computing in administrative processes;

The application of digital computing machine techniques to administrative and commercial purposes, i.e., the mechanization of large scale clerical operations, may prove to be even more important economically than their use for computation (p97)

By large scale clerical operations, the report refers in part to the vast administrative processes involved in public service delivery, such as those associated with taxation, pensions and benefits payments, for instance with national insurance. Processes within the national insurance system and elsewhere were becoming increasingly complex in supporting the developing welfare state, as government responsibilities towards healthcare, education, childcare, pensions and sickness and unemployment benefit expanded rapidly during the Attlee government in the latter part of the 1940s.

The possibility of computer technology use in government administration also clearly stimulated several departments; as the NPL continued to widen its expertise and experience in the field, working towards the completion of the full-scale ACE in 1958, a number of government departments commissioned its technology for clerical applications. Furthermore, the DSIR set up a Departmental Working Party to investigate 'the possibilities of applying electronic and other high speed mathematical equipment to the problems of large-scale clerical work' (NPL,1952/53,p78). A major stumbling block to clerical applications, that of lack of memory in computers, was being tackled through the development of magnetic storage tapes by the English Electric Company in conjunction with NPL (NPL,1951/52,p81). This company, which began work with the NPL in 1949, engineered a marketable version of the pilot ACE in 1955, called DEUCE. Between 1956 and 1961 nearly 30 DEUCEs were supplied to customers (Hendry,1989,p204).

The progress in computer development by English Electric and other fledgling technology companies proved to the DSIR that interest had been sufficiently stimulated in computer design (Pyatt,1983,p152). The NPL Electronics Division was effectively closed in 1960; the annual report by the NPL noted with regard to the division that,

The whole of our work in this field of application of computers has been re-evaluated, and it has been decided that it can be done more effectively within industry and by departments directly concerned. It has, therefore, been closed down (NPL,1959,p56)

However, before this date, work within the NPL successfully stimulated government interest in computers as a clerical tool, in a variety of departments<sup>3</sup>. An important collaboration began between the NPL and the MPNI in 1955, which sought to research the possibilities of using computers initially in large-scale wage accounting and payroll

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<sup>3</sup> In the first ten years of its existence, the Mathematics Division of NPL was employed in some manner by many government departments, including; the Admiralty, Atomic Energy Research Establishment, UK Atomic Energy Authority, Board of Trade, Civil Service Commission, Home Office, Inland Revenue, Post Office, Ministries of Civil Aviation, Agriculture, Education, Pensions and National Insurance, Supply, Works and Health (Croarken,1990,p138-140).

output. A payroll working group was drawn together from NPL, the MPNI, the Treasury and Royal Ordnance Factories to steer the project (NPL,1954/55,p88; 1955,p28) with the automation of wage accounting becoming the flagship early application of computers in government.

Developments centred on the MPNI headquarters in Newcastle, where 25,000 staff were to have computerized payrolls by 1960 (MPNI,1959,para. 240). The focus was on automation to yield staff savings (NPL/DSIR,1956); by the beginning of the 1960s, MPNI claimed to be using 63 fewer staff than with the equivalent manual payroll system (MPNI,1961,para. 332). Automatic Data Processing was also being used to speed up statistical computation during this period (MPNI,1964,p75). Originally the working group produced a report which discussed using DEUCE computers for the automation of payroll at the MPNI (NPL/DSIR,1956). The computer that was installed was, however, not produced by the NPL or even the English Electric Company; instead it was a LEO II (MPNI,1960,p159), produced by a technical team at Lyons Bakery, that had first applied computers to its own payroll system as early as 1953 (Caminer et al,1996,p4). The move to use LEO II symbolized a new attitude in government IT policy, where private British computer companies were to be supported rather than government research laboratories.

Despite the emphasis on automation, there were examples of the application of computing for innovative purposes that could be considered closer to concepts of informatization. For instance, due to a growing shortfall in welfare finances, graduated, rather than flat-rate contributions to national insurance were needed (MPNI,1960,p21-22). A decision was made by the MPNI to use the Inland Revenue's existing 'Pay as You Earn' (PAYE) system to collect graduated contributions, as well as income tax, from employees in large firms (MPNI,1960,p22-24; 1961,p34-35). There was a need for large scale data sharing to occur between the two departments involved here; the Inland Revenue would send an enormous 30 million PAYE records to the MPNI every year, for staff to update national insurance records (*ibid.*). The Ministry chose to microfilm the

PAYE records and ordered an EMIDEC 2400 computer to convert the information to 'magnetised spots on magnetic tape' to facilitate easier processing (MPNI,1961,p76). By the mid-1960s the EMIDEC was also being used to flag up records of citizens approaching pension age so that invitations could be sent out to claim the benefit. Furthermore, it was used to identify potentially erroneous, fraudulent or excessive national insurance contributions for closer inspection' (MPNI,1965,p68). Although the administrative processes above may have been carried out manually had the technology been unavailable, the example here does show that relatively innovative computing applications, which in part facilitated essential data sharing between departments, were in use at this early stage.

A common perception during this period was that 'the welfare state can only be run effectively on a diet of numbers' (Bowden,1953,page vii) and computing could provide a means to lessen the administrative burden. Although by 1955 there were only seven computers installed in government organisations (Agar,2003,p300), the new technology was being heralded as providing added efficiency in the emerging large service provider state, through automation. From the late 1990s, the e-government strategy as expressed in *Modernising Government* and subsequent output suggested ICTs should be applied to informatize service delivery, for instance by using, sharing and integrating information flows across traditional boundaries to improve service delivery. However, not unsurprisingly or unreasonably, the main focus of IT remained largely on the automation of some departmental processes during the early post-war decades, notwithstanding the example of inter-departmental data flows between the MPNI and the Inland Revenue.

By the beginning of the 1960s the NPL's role in government computing development began to diminish, as technology advanced rapidly (the pilot ACE was already in London's Science Museum in 1956) and commercial high-speed computers were becoming available. In spring 1957 the industry-led British Computer Society was established, with its long-running journal appearing the following year; an indication of the rapid development of the fledgling industry. Henceforth, the pioneering laboratory

took to an advisory role, and researched numerical analysis, software, cryptography and 'packet switching' (Pyatt,1983,p157-158); the latter contributing to the body of work which developed the modern internet (Agar,2003,p381). Had the NPL's role endured, with its unique expertise and experience, perhaps to act as a central hub for computer development and implementation in the years to come, the trajectory of government computing may have been significantly altered. Potentially, e-government protagonists may have found less of what was described in *Modernising Government* as 'incompatible systems' across departments (Cabinet Office,1998/99,p45) if the NPL had tarried to instill a certain level of orchestration across departmental IT (Organ,2003,p22).

### *The Proliferation of Computing across Government Organisations*

Partially as a result of the stimulation provided by the NPL, British computers continued to be adopted by most government departments throughout the early 1960s, against the backdrop of the struggles of the industry. In the early years of the decade the Ministry of Defence continued to be the most prolific computer user, maintaining its interest from before the war (Agar,2003); its applications were limited though, restricted to new payroll and stores computers in the Army, Navy and Air Force (Hansard,1964/65a,cols. 209-10 (W)). For instance the Royal Army Pay Corps had commenced the transfer of pay records to an IBM 705 computer system by 1961 (Slater,1960). Outside of the military, the MPNI remained at the forefront; it embarked on a project to digitally store pensions, family allowance and short term benefits records (MPNI,1965,p69-70). These projects and other computer applications continued to progress over the next decade, with dedicated MPNI computer centres opening in Reading and Worcester (*ibid.*,p70; MPNI,1966,p62; DHSS,1970,p81; 1971,p81; 1972a,p101; 1973,p139; 1974,p96; 1975,p98-99).

Further examples of early computerization can be found across the wider public sector during this period. The City of Norwich Treasury installed an Elliot 405 for payroll and bookkeeping in 1958 (Bernard,1958). In the same year, the Ministry of Public Building and Works had forwarded 'a very ambitious proposal for a computer-based system

embracing all the routine work of the department, involving linking payroll, bill payment, stock control and vote and repayment accounting' (Lamb,1973,p125); this system was installed in April 1963 (Hansard,1964/65a,col. 210 (W)). The Ministry of Labour and the Central Statistical Office were using the NPL's DEUCE for a Family Expenditure Survey in 1959 (Refearn,1960). In 1961 the census employed computers for the first time, admittedly in a limited capacity (Thorby/Benjamin,1962). Universities were also using their computer research in clerical applications, for instance Leeds University was experimenting with computerized student registrations by 1957 (Windley et al,1960). LEO was also being used widely during the late 1950s and early 1960s; Customs and Excise and the Board of Trade employed the computers. At the local level, a consortium of London boroughs and the Manchester corporation were using LEO by 1963 (Caminer et al,1996,p101).

The Fulton Committee report stated (in a memorandum from the Treasury) that the first computers for payroll work were installed in the Ministry of Aviation and the National Assistance Board in January 1958 (Fulton Committee,1968,vol. 4,p634), although the MPNI payroll system was at an advanced developmental stage at a similar time. Other early computer installations for administrative work could be found in the Inland Revenue, the Ministry of Agriculture, the Stationary Office, the Ministry of Labour and the General Post Office (*ibid.*,p636; Hansard,1964/65a,col. 210(W)). Uses were largely for payroll, accounting and statistics; installations found justification in the number of staff positions saved, although some were identified as carrying out completely new work.

*The Organisation and Methods section of the Treasury: Early concepts of computer-mediated joining up*

Following the initial work of the NPL, various attempts were made later to imbue a corporate approach to computing across departments well before the emergence of the e-government strategy. For instance, since World War Two, the Organisation and Methods (O&M) section of the Treasury had shown an interest in the use of computers in

conjunction with the issues pertaining to departmental reform (Agar,2003,p293). The O&M was wary of computing in public administration initially, but by 1957 it was keen to promote its use in clerical operations, not least because of advice given by the NPL (*ibid.*,p305).

Originally, the section promoted awareness of computers to departments through lectures, courses and pamphlets (*ibid.*,p308), however, a report in 1957 signified a step-change. In it, the O&M section analysed Whitehall data-flows, and recommended a ten-year programme of computer installation (*ibid.*,p313). Of specific interest, the latter stages of the programme were to include the development of 'integrated processing systems, possibly on a supra-departmental scale'. Furthermore, it was considered that departmental boundaries might be of 'waning significance' because of potential new data systems (quoted in *ibid.*,p313). This radical suggestion, appearing in the late 1950s, was reminiscent of some of the ideas expressed forty years later in *Modernising Government* (e.g. Cabinet Office,1998/99,p5,45; PIU,2000b,p6) regarding the application of information technologies to joined up government.

Following the 1957 report, the O&M contributed to the stimulation of interest in computers by departments, taking a fuller role following the reduction of the NPL's involvement. It contributed to a project to automate payroll for government employees, to the increased role of computing in the national census in 1961 and, along with the NPL, the automation of administrative procedures connected with national insurance (Agar,2003,p318-324). However, its attempt to unify the IT-enabled production of government statistics was scuppered by 'strong departmental interests' (*ibid.*,p321), providing early evidence of the difficulties of orchestrating technological initiatives with a corporate, cross-departmental component. Similarly to the NPL, the influence of the O&M ebbed in the mid-1960s; its 'remit was whittled away and it gradually lost its potential as an overall shaper of government mechanization' (*ibid.*,p339). Yet it was still the case that it contributed, as did the NPL, to the stimulation of computer use across government and provided an early attempt to instigate control and coordination to the

new technologies. Although its more ambitious plans were never carried out, the O&M stood as testament to the long standing association between computing and transformations in the delivery of public services; a sentiment later conveyed in the central e-government strategy. During this period, departments were largely left to determine their own levels and applications for computing, which was a logical approach considering the functional configuration of departmental service delivery. However, the ideas expressed by the O&M and perhaps the experiences with data sharing between the MPNI and Inland Revenue, had begun to germinate the idea that IT could be used across departments, and that some form of coordination across government might be useful.

### 2.3 GOVERNMENT IT POLICY IN THE 1960s: SUPPORTING A FLEDGLING INDUSTRY

Despite the activities of the O&M section of the Treasury, central government IT policy during the 1960s became dominated by growing concern for the fledging British computer industry, which arguably took emphasis away from attention to the application of computing to departmental processes. The 1960s saw the ascendancy of commercial computer companies, such as Ferranti, Elliott Brothers, Plessey, English Electric and ICT; some of these companies would eventually become the conglomerate ICL. Support was provided by the NRDC, which was extremely keen to promote British firms to compete against American manufactures, most notably IBM. Part of British policy was to employ domestic technology for use in government wherever possible. Government departments did at first generally support this policy in their piecemeal adoption of computers<sup>4</sup>, but the relationship between the computer industry and government soon became punctuated by difficulty.

Historians have identified the apparent failure of government policy to incite commercial success (Hendry,1989,p173-174; Caminer et al,1996,p84). By 1964 the new Prime

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<sup>4</sup> from 1959 to 1964, 56 computer were installed in government departments, only 8 of them were of foreign origin (Hansard,1963/64,cols. 205 (W)).



Minister, Harold Wilson, was concerned that if drastic action was not taken, 'the British computer industry would rapidly cease to exist' (Wilson,1971,p9). Statistics exemplify the extent of the problem that quickly emerged; in 1958 US manufacturers had no share of the UK market, but by 1965 they had a 51% share (Hendry,1989,p197).

Despite this situation, the importance of the commercial success of UK computer companies was being emphasised from the highest political levels in the mid-1960s. In 1963, Harold Wilson delivered his 'White Heat of Technology' speech in Scarborough. The speech was seen by some historians as a 'rhetorical albatross' in light of the declining British computer industry, and wider economy in the mid-1960s (Coopey,1991,p115). Its content mixed science and socialism in a modernist vision of progress through technology, using rhetoric that was echoed in subsequent political output on IT policy, including that pertaining to e-government. Despite criticism, the speech provided the blueprint for modernisation, which crystallized around the Ministry of Technology (*ibid.*), created shortly after to give the speech purpose (Edgerton,1996,p65).

The Department of Scientific and Industrial Research was subsequently disbanded and Frank Cousins (the first Minister of the new Ministry) announced in parliament on 1<sup>st</sup> March 1965 that he would form a Computer Advisory unit to advise on computer requirements for the whole public sector. (Hansard,1964/65b,col. 924). The Technical Support Unit, previously operating in the Treasury, was incorporated into the Ministry of Technology in April 1965 to bolster its expertise in computing. In the same speech Cousins also mooted the creation of a National Computing Centre (NCC), an autonomous body to be set up in partnership with government to promote computing nationwide (*ibid.*,col. 927). The NCC funded computer training and established a national program bank (Vig,1968,p148), and survived as a consultancy company. Throughout the mid-1960s computer policy continued to concentrate on industry, which it was argued had been allowed 'to get into parlous state during the last few years' (Hansard,1964/65b,col. 927).

However, the government would find supporting the industry so troublesome that it took up most computer policy resources and attention for several years. According to Harold Wilson the Ministry of Technology ('MinTech' as its second Minister, Tony Benn christened it) saved the computer industry by creating the consortium company ICL in 1968; he commented that ICL became 'the biggest computer enterprise in the world outside American ownership' (Wilson,1971,p63). Government departments were still adopting computers largely for clerical purposes, with ICL the most popular choice in 1968 (Fulton Committee,1968,vol. 4,p636-638). However, American systems were seen as superior and were often preferred despite MinTech's directive for departments to use domestic technology (Benn,1988,p161). The departments retained autonomy in computer policy as MinTech did not have sufficient power to force protectionist procurement of British technology across the board; departments were able to bypass official procedure (Lamb,1973,p73).

Particularly since the White Heat speech, successive governments had concentrated on supporting the British computer industry but had ultimately failed; the government aided ICL was continually on the verge of collapse (SS&T,1969/70,p246). Part of this failure was in attempts to enforce a restrictive procurement policy as departments had seemingly often retained the right to choose computer systems in accordance to their needs. During the late 1960s, departments such as the Royal Army Pay Corps, the Meteorological Office and the Home Office selected American equipment over ICL (SS&T,1969/70,p447-453). Nonetheless the relationship with government was always crucial for company; 90% of computer orders for central government were for ICL technology in 1970/71 (SS&T,1970/71,p76). Still, ten years later the company was teetering on the brink once again, but relied heavily on the enormous computerization of the Inland Revenue system amongst other methods of government support (Margetts,1999,p116-117).

During the late 1960s MinTech adopted the motto 'profit through technology' as it attempted to be seen as having 'gone commercial' (Edgerton,1996,p72-73). However, at the beginning of the 1970s MinTech was completely altered to form part of the Department of Trade and Industry (DTI) (SS&T,1970/71,page xxxvi). Although the relationship between government and the UK computer industry, particularly ICL, would continue for some time, the close bonds created during the White Heat phase were loosened in the 1970s.

#### 2.4 TOWARDS COORDINATION: THE ROLE OF PARLIAMENTARY COMMITTEES AND THE CIVIL SERVICE DEPARTMENT

Despite some policy discussions on the need to inject levels of coordination in government computing, there were little signs of activity to encourage this by the 1970s. In part, cross-government coordination measures were less likely to emerge due to pervading views of the role of information technology. The feeling was that computers were nothing more than mechanical office machines and therefore a responsibility for departments (Lamb,1973,p68), firmly rooting computer applications within the automation perspective. In 1969 many departments had successfully but independently automated payroll and other clerical operations (SS&T,1969/70,p428). However there was also the sentiment that computing could have a pan-government role to play, which would require steering and coordination to germinate.

By 1970 there growing discontentment regarding the discrete use of computers in government; the first full decade of government IT was being characterized by incompatibility and fragmentation:

A wide variety of computers of differing manufacture was bought which, while suited to the applications then envisaged, resulted in a degree of incompatibility

which impedes the easy transfer of data, programs, and staff between installations  
(Subcommittee on Science and Technology<sup>5</sup>, 1969/70, vol. 1, p429)

Although made within a parliamentary setting, this statement represented a burgeoning feeling in and around policy circles during the 1970s that computers could be used to qualitatively improve service delivery, through unlocking information flows and enabling flexible working. However, the opinion was that government was missing an opportunity to transform its operations.

To correct this missed opportunity, the SS&T began in 1970 with the publication of an investigation into the *UK Computer Industry*; a clear message from the witnesses called to participate was that the use of computers needed to be coordinated across government. Effective guidance and steering of computer policy was required to improve compatibility, connectivity and coordination between the disparate computer systems that had developed. But this enduring theme was overshadowed by what was considered to be an urgent need for the automation of more administrative systems in the public sector. First and foremost it was perceived to be vital for there to be a 'rapid increase in the use of computers', as the public sector share in the UK computer population was decreasing rapidly (down to 25% by 1968/69).

Judging by the subcommittee's arguments, there was a strong commitment to the transformational powers of computing. Although somewhat preoccupied by the need for rapid computerization, the committee was advised repeatedly that greater coordination and integration was needed to fully realize the potential computing offered to the improvement of public services, to the extent that a corporate, government-wide approach was called for. For example, ICL advised that:

Further centralisation of departmental operations and inter-departmental relationships where departments could be linked through related computer systems and common data

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<sup>5</sup> From here referred to as SS&T.

bases, would be important developments...One would look for proposals for developing and monitoring an overall plan for implementation of computer-systems in government (SS&T,1969/70.,p2)

The suggestion of data sharing and ICT-mediated departmental interoperation was not dissimilar to the proposals contained in e-government strategy documents, published some thirty years later. ICL went on to caution that 'too much information is duplicated' and 'interdepartmental barriers' were erected to obstruct the flow of information (*ibid.*,p19). The British Computer Society echoed these caveats and recommendations; its memorandum complained that 'there has been little evidence to suggest that any substantial progress has been made towards such a national policy' and called for 'greater coordination' (*ibid.*,p113). Adding to the evidence, Systems Programming Limited noted that 'there are 23 [computerized] payrolls in the various ministries... all doing virtually the same job, each of which has been developed separately' (*ibid.*,p218).

The protests by industry were certainly mirrored by the government bodies responsible for computer policy. MinTech (which was about to be dissolved under Edward Heath) admitted that 'the peculiarities of individual systems have resulted in a departure from standards in the interests of efficiency, and there has been a general lack of coordination' (*ibid.*,p362). The emphasis on increased connectivity and coordination formed a central tenet of e-government strategy (see Cabinet Office,1998/99; PIU,2000b), just as they appeared strongly here, in the early 1970s. However, as discussed below the mechanisms that were put in place to work towards coordination in the 1970s encountered problems not only of a technological nature.

Although apparently a logical aspiration for observers, private sector representatives and policymakers alike, the coordination imperative, in terms of procurement, compatibility, electronic data sharing, IT integration and so on proved difficult to effect. A key institutional explanation can be offered that holds that historically computers had largely been used to automate existing departmental procedures, therefore reflecting the functional, hierarchical and discrete configuration of service delivery organisations

(Bellamy/Taylor,1998a,p169-170). The coordination of IT across these functional segments, potentially offering new informatizing capabilities, could threaten and meet impediments within the institutional order of departmental service delivery. For instance, data sharing could unlock information hitherto confined to systems housed in autonomous departments, potentially destabilizing the organisation that previously acted as the sole custodian to this data. The transfer of 30 million PAYE records between the Inland Revenue and MPNI in the early 1960s demonstrated that, where appropriate, sharing and coordination could occur. However, as the imperative to coordinate IT grew and evolved over the post-war decades, not least through the output of the SS&T, institutional factors were increasingly brought into sharper relief.

#### *The Creation and Work of the Civil Service Department*

By 1970, MinTech had been dissolved, and although its computer policy functions had been retained and transferred to the DTI, it was the new Civil Service Department (CSD) that had been given responsibility for central government computer policy. This was significant, as IT policy had been refocused again to civil service management issues, a similar approach to the O&M section of the Treasury some years before. The CSD was created on the 1<sup>st</sup> November 1968 on the recommendation of the Fulton Committee; although its broad remit was to create a more efficient and professional civil service, this included the concept of IT coordination.

Following the Fulton Committee, it was perceived that a new impetus had to be given to computer policy to initiate some form of interdepartmental coordination, particularly in terms of common procurement processes. Therefore the CSD adopted some of the operations of the Technical Support Unit (TSU), which had begun life in the Post Office but was seconded to the Treasury in the early 1960s (SS&T,1969/70,p371). The TSU was then shared between MinTech and the CSD before MinTech's demise, when the DTI took on MinTech's portion of the TSU. This unstable history contributed to the significant confusion in procurement policy in central government, which received criticism from select committees. Departments wishing to procure a new computer

system would establish communications with the CSD, Treasury, DTI and, due to the 'office machinery' approach still prevalent in the late 1960s and early 1970s, Her Majesties Stationery Office (HMSO) for the actual purchase of the computer equipment (Lamb,1973,p97; SS&T,1969/70,p442,443). A further objective of the CSD concerned the standardization of computer languages and equipment across government. This task was officially assigned to the CSD, yet the National Computing Centre was heavily involved in standards but reported to MinTech/DTI rather than the CSD; progress with standardization policy was thus impeded by this confusion (*ibid.*,p74). The CSD admitted to implementing only one successful universal standard across government, for the use of magnetic storage tape (SS&T,1969/70,p473).

The CSD was charged with providing coordination and cohesion in the uptake of computers across central government; it was involved in sponsoring public service wide computer projects and long term planning (Lamb,1973,p68). Its PRISM endeavor aimed to draw together all the payroll systems across government (with 500,000 files) to guide personnel policy and other management concerns (SS&T,1969/70,p431; Lamb,1973,p83). However, although payroll received much attention beginning at the start of the post-war period, the coordination of systems across government would ultimately fail. In a 1979/80 parliamentary report, it was noted that attempts to instigate interdepartmental standardization of payroll systems had encountered unsolvable difficulties at the first obstacle; over five years only three of the targeting six departments had even agreed in principle to coordinate their systems (PAC,1979/80,page x). By 2004, government departments and other organisations still largely operated with discrete payroll systems, despite the enduring belief that significant efficiency savings could be made with unified accounting.

The CSD also turned attention to long-term planning, with the *Computers in Central Government: Ten Years Ahead* publication (1971), which strived to introduce an overarching framework for computer policy. The department was also involved in

research and development, for instance with explorations into data-banks, information retrieval and computer communications (SS&T,1969/70,p431).

The CSD was also keen to promote the use of computers to transform and informatize service delivery, hoping to transcend the automation and tangible cash savings model. As advised by the Fulton committee (1968,vol. 4,p281) computers were upheld by the CSD as a tool to quantitatively alter departmental operations and service delivery (SS&T,1969/70,p429; Bellamy/Taylor,1998a,p33-34). By the early 1970s it was claimed that innovative computer projects, under the observation of the CSD, were running in the Ministry of Transport (vehicle registrations), the Home Office (Police National Computer), the Lord Chancellor's Department, the CSD itself and several other departments (SS&T,1969/70,p430-431). Arguably, the transformational ethos promoted by the CSD, holding that computers could be used to profoundly improve service delivery, was beginning to percolate into departmental thinking in these examples. Following *government.direct* and *Modernising Government*, the central e-government strategy promoted the strong transformational powers of new ICTs. Despite the dominance of automation perspectives in the first decades of government computing, the roots of this ethos in policy can perhaps be detected in the work of the CSD and the O&M section before it.

The CSD was, however, an ailing department, struggling to progress with its wider remit, which stretched well beyond computing. Although it aimed to 'coordinate computer policy and encourage departments to take full account of the developing capabilities of computers' (SS&T,1969/70,p433), the reality of influencing departments consistently was more difficult, despite some positive examples. Looking at the departmental mission as a whole, Chapman identified three main reasons why the CSD was, in Lord Crowther-Hunt's words, 'an enormous disappointment' (Chapman,1983,p53). Firstly the economic difficulties of the late 1960s and early 1970s channeled resources away from the seemingly ancillary endeavors of the CSD (*ibid.*,p41). Secondly the civil service remained unconvinced of the new management ethos which the CSD embodied (*ibid.*),



and which computer policy formed a part of. Finally, departments vehemently prized their autonomy, and defied attempts to change operations (*ibid.*). These observations give indications of how departments may have reacted to any attempts by the CSD to influence their own IT practices.

During this period, computers remained largely an internal automation tool for individual departments (Lamb,1973,p71), with the coordinating aspects of the CSD remit proving difficult to apply. In some departments, innovative computer applications (such as the Police National Computer or the Vehicle Licensing system) were arguably transforming some aspects of service delivery. However, these projects were few and far between.

The CSD battled throughout the 1970s to encourage professionalism and efficiency in the civil service. A new SS&T was appointed under the Heath government in 1970, with the same remit. The changes it implemented in the CSD and computer policy are discussed in the next section.

## 2.5 THE CENTRAL COMPUTER AGENCY: REINVIGORATING COORDINATION

In the first of the new subcommittee reports, the CSD suggested that it had given up trying to directly influence departmental computer policy, noting that it wished to 'devolve responsibility to all departments [and] should reduce the support role of our computers division' (SS&T,1970/71,p326). Thus, the CSD had withdrawn from fulfilling the original remit that had been set.

Before returning to the issue of coordination, it should also be noted that the subcommittee covered a number of other relevant areas. Firstly, it recommended that departments should 'substantially increase their use of external service organisations' for the installation and maintenance of their computer systems (*ibid.*,page lvi). It was beginning to be recognized that, whilst British government was at the fore of computer innovation in the 1950s and 1960s, its position had ebbed considerably since

(Margetts,1999,p31). Computers were no longer accepted as one of government's core competencies, and outsourcing to private companies was seen as the solution.

In 1970-71 the CSD spent £88,000 pounds on external consultants (SS&T,1970/71,p345). Shortly after, CSD were predicting yearly expenditure on external service organisations to be £2 million, with some 200 contracts (SS&T,1971/72,p3). This was to become a key feature of government IT; by 2004 the e-government environment included a labyrinth of contracts, partnerships and outsourcing for ICT systems. Commercial impetus became a crucial component of ICT-mediated public services, yet Dunleavy et al have argued that, across seven countries including the UK, the power of the IT industry in each case was correlated with the performance of government IT (Dunleavy et al,2004). Thus, apparent poor performance of government IT in the e-government era could have been attributable to the powerful position commercial IT companies enjoyed in terms of the contracts awarded to them by government (*ibid.*). The imperative of impelling IT systems to 'converge and inter-connect' across the public sector (Cabinet Office,1998/99,p46) could have been complicated as well as enabled by myriad powerful incumbent suppliers of these systems.

Secondly, the subcommittee also identified a recurrent theme of growing importance and intricacy; the concern that civil liberties would be impaired due to the increasing power of computer technology, most prominently in databases such as the Police National Computer (SS&T,1970/71,p81). A major NCC conference in 1971 demonstrated the general fear of the 'spectre of the ultimate record-keeping society' (Westin,1972,p53), and included participation from Tony Benn (Benn,1972). The civil liberties problem did not become any easier to address over the decades, despite considerable attention from academia (e.g. Bennett,1997; Raab,2001) and policymakers. In essence, e-government attracted similar criticisms and concerns as database technology in the early 1970s, and e-government policymakers were keen to show that they had addressed issues of privacy, confidentiality, fairness and justice sufficiently in their strategies (see PIU,2002; OeE,2001b; 2001c; 2001g). Although policy documents insisted that privacy issues were

a prime objective of e-government strategies, a key question was whether the attractiveness of ICT-enabled data sharing, matching and mining across previously discrete data sets, with the objective for instance of joining up to improve efficiency and effectiveness of services or national security, may have proved too alluring for such privacy issues to be properly considered.

Putting these issues to one side, the SS&T also readdressed the issue of IT coordination; it recommended that a dedicated agency be created charged with IT procurement, development and coordination across central government. More focused on IT issues than the CSD, the creation of the new agency was an indication of the strength of the notion, expressed frequently by a variety of protagonists over several decades, that government computing required some form of steering and coordination across departments. The 1971/72 report contained a statement from the DTI that read:

The Government agree with the Committee on the need for greater co-ordination in the use of computers and for purchasing policy and procedures to take account of this and for a single, strong, technically competent agency to purchase computer equipment and services and to develop and co-ordinate their use in Central Government  
(SS&T,1971/72,p3)

The Central Computer Agency (CCA) was created and placed under the CSD in 1972 to fulfill this need, inheriting some of the old functions of the O&M section of the Treasury (Agar,2003,p371). An early task was to simplify procurement procedures by incorporating sections of the TSU (from DTI), the Management Services (Computers) Division from the CSD and the Computer Bureau in the HMSO. As one interviewee noted 'CCA was placed in the position of buying all central government IT, regardless of the department making the request' (*personal correspondence – 6*). Controversially, this also signaled the return of a protectionist procurement policy that favoured the government backed ICL conglomerate. ICL had 50% of the central and local government market in the mid-1970s (SS&T,1974,p1), and the DTI promised extra funding (£14.2 million during 1972 and 1973) to help ICL cope with a global recession (SS&T,1972/73,p28).

The Heath government had introduced a policy of 'preferential public purchasing' with ICL (Moon et al,1986,p69), which was channeled through the central control mechanism of the CCA. As one thesis interviewee noted, during the approximate period of 1975 to 1980 'any government department could buy any mainframe computer it liked as long as the box had ICL on it' (*personal correspondence* – 6). It may have been hoped that interoperation between different IT systems might have been easier to achieve through a policy of coercing departments to purchase compatible systems from ICL, although there is little evidence that increased interoperation occurred during the period. The tactic certainly did not work for ICL; in 1981 Kenneth Baker noted that the company was 'hanging on by its teeth' (Baker,1993,p59), having never managed to conquer its industry.

The CCA operated throughout the mid-1970s under the CSD, working with its remit to purchase, develop and coordinate IT use across central government. In the late 1970s, as the Thatcher government came into power, the Public Accounts Committee (PAC) and the Audit bodies began to take a serious interest in computers in government, an interest that continued into the e-government era. It is this attention, the shifting political patterns of the 1980s and the role of the CCA that is discussed in the next section.

## 2.6 GOVERNMENT COMPUTING DURING THE THATCHER ERA: DEPARTMENTAL AUTONOMY AND THE STRUGGLE TO COORDINATE

The Public Accounts Committee (PAC) and the Comptroller and Auditor General began their interest in computers in 1974/75 through looking at the implementation of three major computer projects. Reports appeared in the late-1970s that were damning of the way departments went about developing their systems:

they found shortcomings in system specification, implementation time-tables, project planning, monitoring and control and that parts of the projects had been abandoned because

plans were too ambitious and because the complexity of the tasks had been under-estimated (PAC,1979/80,page v)

The PAC complained of a profound lack of cooperation between the CCA and departments, which preferred to implement computer systems in isolation (*ibid.*); the opinion of the committee was that some of the perceived failures in departmental IT could have been obviated through closer consultation with the central agency. One interviewee agreed with this notion, arguing that the CCA had amassed enough experience by the late-1970s to be able to advise and guide most departmental endeavors, yet departments were reluctant to listen to it (*personal correspondence – 6*). Certainly audit scrutiny deemed many computer projects as failures; the Ministry of Defence's Royal Navy Supply and Transport Service computerization was seen as over ambitious, with an under-estimation of the complexity of implementation. It was calculated that the project wasted £1 million (PAC,1979/80,page vi). Secondly, the Inland Revenue's Accounts Office project was subject to massive delays throughout the 1970s, and the CCA contracted consultants to examine the project in 1976. The PAC expressed grave concern that in both cases the CCA had stressed to the departments in question that their projects had fundamental problems, and in both cases the advice was ignored until it was reiterated to them by external consultants (*ibid.*,page vii-viv).

By the late-1970s, the CCA altered its approach by abandoning previous levels of involvement in departmental IT procurement and use it attempted in its infancy. Departments were given more financial responsibility for the purchase and maintenance of systems (PAC,1978/79,p2), partially in the hope that this might stem the flow of audited 'failures'. Inevitably this enfeebled the coordination that the CCA initially hoped to instill across departments. An interviewee involved at the time noted that the changes in policy 'meant that they [departments] buy what they want and they take responsibility for it. Of course the CCA was there to advise and guide if required but there was no mandatory requirement for departments to seek CCA help' (*personal correspondence –*

6). Thus, the stronger incarnation of the CCA as a central agency closely involved in departmental IT had disappeared.

Observers had previously argued that public service delivery would benefit from IT orchestration across departments. Government had apparently bought into this perspective with the creation of the CCA, through which coordination was to be achieved. Evidence from the 1970s suggested however that, in terms of procurement and advice services, departments had preferred to act with the utmost independence, despite criticisms from audit and parliamentary bodies.

At the beginning of the 1980s, Margaret Thatcher abolished the CSD, and the CCA (renamed the Central Computer and Telecommunications Agency because telecommunications procurement and policy had become an additional responsibility in 1979<sup>6</sup>) was put in the Treasury. Thatcher began to instigate wholesale administrative reform in the public sector during this period, beginning with her use of Derek Rayner and his efficiency scrutinies, and culminating with the Next Steps transformations of the late 1980s. Rayner's efficiency probes and scrutinies mutated into the Financial Management Initiative (FMI) in 1983 (Cmnd. 9058, 1983/84). FMI was a move to embed efficiency through decentralization, with the creation of discrete units, where performance could be more easily measurable and quantified (Carter et al, 1992).

Computer systems were pushed up the agenda with FMI because management information systems (MIS) were seen as an excellent solution to the requirements of the Initiative, and the CCTA saw its workload temporarily increase as departments sought advice regarding them (CCTA News, 1983a, p1; 1983b, p3). MIS systems such as MINIS gained currency as they were championed by Michael Heseltine, and also represented a

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<sup>6</sup> The Agency was given the responsibility for interdepartmental telephone networks, but it only formed a small part of the operation; a mere 32 staff worked in the division (CCTA, 1984, p29) compared to hundreds in the computers divisions.

renaissance of sorts in the uses of IT advocated by the O&M section<sup>7</sup> of the Treasury in previous decades, although much of MINIS was paper-based (Agar,2003,p370).

However, there was a general drive towards computerized MIS across government, which included plans to introduce coordinated and integrated horizontal and vertical flows of information to benefit the management of service delivery; to 'informatize' government (Bellamy/Taylor,1998a,p44).

At the same time, the centrifugal forces which underpinning FMI and subsequent Tory policies favoured departmental autonomy and extensive private sector involvement in computer use, rather than central steering. Thus, despite the enduring notion that coordination of IT should occur across departments, as crystallized in the original remit of the CCTA, this was pushed further to the periphery due to the political climate. A major review of the CCTA in 1984, conducted by its own director, found that it was in keeping with political trends that departments should be 'given clear control over the choice of systems' (CCTA,1984,page iii). Additionally, the ambitions of MIS failed to materialize as systems were confined to the existing restrictive structures of mainframe computing but also because profound tensions were embedded in the politics of the MIS information systems; there was concern in government organisations about the character of the management reforms associated with MIS (Bellamy/Taylor,1998a,p44-45). For instance the Treasury was fearful that management reforms possible through the plans for MIS might undermine its control over expenditure (*ibid.*). For both the CCTA and the MIS movement, attempts to instill coordination across government were being challenged by these wider political factors.

Nonetheless, as commercial technology developed during the 1980s, IT would remain a prominent policy concern for government. According to Kenneth Baker, Thatcher became an enthusiast for computer systems seeing potential in new technology as a tool, particularly in education (Baker,1993,p59). However, whilst central agencies were given

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<sup>7</sup> As Agar noted, IT as a management tool had already had a long history, with the O&M promoted the PERT system being used in government departments during the mid-1960s (Agar,2003,p333-337).

a role in departmental IT coordination in the 1970s, the 1980s saw the balance swing firmly towards departmental control (NAO,1999/2000a,p49). During this decade, IT systems continued to be implemented with only the departmental or agency purview in mind. Although this was a logical and reasonable approach considering the functional separation of service delivery, it was this approach which the *Modernising Government* white paper took particular issue with, arguing that whilst the 'decentralised approach to IT development' allowed departments or agencies to 'meet their own needs', it led to 'incompatible system and services which are not integrated' (Cabinet Office,1998/99,p45). Thus, the inference for the e-government era, mirroring previous observations depicted in the sections above, was that government computing had to transcend the confines of narrow departmental objectives, if, as the white paper puts it, 'we are to obtain the real benefits of information age government' (*ibid.*). However, despite much interest in IT coordination and integration during the post-war decades, the political emphasis in the 1980s allowed institutions to continue to adopt IT systems to suit and reflect discrete processes and needs.

Still, in 1981 Kenneth Baker was appointed as Minister of State for Industry and Information Technology within the Department of Industry<sup>8</sup>, after proposing a ten-point plan to promote IT to the Industry Secretary of the time, Sir Keith Joseph (Theakston,1987,p163). Thus, Baker was considered to be the world's first IT Minister, having attained credentials for the position through his business links with the computer industry (Baker,1993,p57). Under Baker there was a recognition that IT 'posed complex interdepartmental problems' (Theakston,1987,p163), indicating that the aspiration of a coordinated approach was not lost during these years.

#### *Scrutiny of Departmental Computer Projects in the 1980s*

Despite the emphasis on departmental control of IT in 1980s, the National Audit Office (NAO) would continually find flaws in the project management skills of

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<sup>8</sup> The DTI was split up into the Department of Industry and the Department of Trade in 1974, and reunited in 1983 by Margaret Thatcher.



individual government organisations and their IT programmes; this trend was set to continue. During 1982 the NAO undertook an investigation into the progress of four major computer projects in four separate departments. The research produced a report that found 'a number of areas of common weaknesses in planning and control' in all four computer projects, in the Department of Health and Social Security (DHSS), the HMSO, the Lord Chancellor's Department and the Manpower Services Commission (NAO,1983/84,p1). The DHSS had abandoned its enormous CAMELOT project, with a reported wastage of £12 million. CAMELOT, conceived in 1977, was set to computerize over 5000 DHSS local offices across the country from 1981 to 1986. In 1977, many offices were still operating with paper-based administration alone, and the pockets of computerization that had developed, although innovative in the late 1950s, were considered outdated (Margetts,1999,p53). Yet it was recognized in 1981 that expected staff savings and economy improvements from CAMELOT were mythical (NAO,1983/84,p5).

The abandonment of CAMELOT in 1981 was followed by the DSS Operational Strategy; the NAO was reasonably optimistic its early progress (NAO,1983/84,p5-6). As Margetts (1999,p53) noted, the Operational Strategy received unprecedented academic attention (e.g Margetts,1991; Bellamy,1996; Margetts/Willcocks,1993; Margetts,1999). As documented in the first chapter, although aimed at informatizing benefits systems around the needs of claimants, this was not attained (Margetts,1991), as academics began to explore the institutional, political and organisational factors involved in government IT. For instance, it was found that parts of the Operational Strategy were abandoned in an attempt to reach Treasury and Public Accounts Committee rules on efficiency savings; essentially potentially informatizing elements were eschewed in favour of dominant concerns for automation (Bellamy/Taylor,1998a,p42). Although initially involved in the Operational Strategy, the CCTA lost overall financial control for the project in 1984 and became increasingly ostracized (Margetts,1999,p62).

The other three departments scrutinized in the NAO report, HMSO, the Lord Chancellor's Department and the Manpower Services Commission, experienced similar difficulties to the DSS on a smaller scale (NAO,1983/84,p6-10). The NAO report finished by comparing the perceived failures of the four projects examined with patterns across the rest of government computing, finding further cause for concern within its terms of reference (*ibid.*,p6).

During the 1980s, departmental computer projects were repeatedly portrayed as the epitome of bureaucratic ineptitude and waste by audit and parliamentary bodies. Other than the aforementioned, examples included the alleged wasting of £40 million on the Ministry of Defence's Trawlerman project (PAC,1999/2000b,annex,p5-6), and the accounting system of the Foreign and Commonwealth Office which collapsed in 1989; without back-up the Office had to face an imbalance of £54 million (Margetts/Willcocks,1993). However, some large projects could be considered a success overall; the Inland Revenue serves as an example. Its relationship with computers followed a similar initial pattern to the DHSS, where early innovation in the late 1950s and 1960s led to the installation of computers which became seen as outmoded and in need of overhaul by the late 1970s (Margetts,1999,p109). However, unlike the DHSS, the overhaul and expansion (named the Computerization of PAYE - COP) was seen as a 'considerable achievement', with 6800 staff savings through only a 9% increase in budget (*ibid.*,p112). COP was not without its difficulties, precursory overhaul plans were continually scuppered from 1970 onwards by political tax reforms and changes of government, and even after COP was proposed, political wrangling prohibited genuine progress throughout the early 1980s (*ibid.*,p110-111; Matheson,1984,p92).

Despite this the project was deemed a success, not least because of the highly influential director, Steve Matheson, and the modesty of the project (Margetts,1999,p111,120). In his own version of events with COP, Matheson stressed flexibility as fundamental to large computer projects (1984,p94). He noted that 'in the past, computer systems, particularly big computer systems, have been pretty monolithic, not easily susceptible to

change' (*ibid.*). COP had to cope with 'about a thousand changes to the requirements since 1980' (*ibid.*,p103), yet had the in-built organizational and technological flexibility to manage, unlike many other of the large scale projects in the 1980s and in previous decades. ICL was the main supplier of COP, winning the contract because the DTI put pressure on the DSS to draw up a specification for the project which the company could comply to (Margetts,1999,p116). Yet despite this dubious procurement process, both the DSS and ICL benefited from the relationship that developed (*ibid.*).

### *The Politics of Government IT in the mid-1980s: The diminishing role of the CCTA*

Computer projects and systems proliferated across government during the 1980s, as hardware became cheaper and microchip technology expanded the potential of IT applications. Largely, the approach was to automate existing processes, with the explicit objective of reducing the number of staff that government organisations needed to employ (Margetts,1999,p18). Also, the CCTA was continuing to diminish in its prominence as an orchestrating force; one senior staff member acknowledged it could not achieve the overarching coordination originally desired (PAC,1983/84,p6), whilst the Agency newsletter made the position clear; 'CCTA does not challenge a department's authority to identify, manage and control its own projects' (CCTA News,1982,p3). Instead, the Agency was settling for an optional consultancy role, whilst departments unsurprisingly concentrated on computerization attuned to their needs and practices. Still, the belief that coordination was desirable was not lost during this period; although the government had an IT Minister in Kenneth Baker, the feeling was that it did not, but should have a coherent IT policy (Theakston,1987,p163).

Although the CCTA was not in a position to be a strong body for IT procurement, development and coordination across government, as envisaged in the early 1970s, it was providing advice and guidance to many departments. However, one observer felt that CCTA was being used unwisely by departments, disrupting accountability and holding back IT development:

I felt that it [the CCTA] served as a wonderful alibi for departments. If they went to the CCTA and said, "Shall we do this?" and the CCTA said, "Yes", then even if it ended up in total disaster, they would say, "But CCTA told us to do it". And if the CCTA said, "No", then they would say, "Well, we don't have to think about it any more because the CCTA has told us that it is not a good idea." So that was a terrible alibi (Trade and Industry Select Committee,1987/88,p107)

Conversely, the comprehensive Freeman Review provided an indication of the desire of departments for even greater autonomy from the CCTA, despite the gradual retraction from its original remit over the previous decade. The review invited feedback from departments and nearly all asked for the Agency to be less 'overbearing' in its involvement (CCTA,1984,p15). An interviewee supported this, pointing out that often, the 'CCA was accused of second guessing requirements; departments would say –"you do not understand our business, so how can you challenge our requirements?"' (*personal correspondence – 6*). The CCTA was considered as an intrusion by departments, but was also used to transfer blame; either way its position appeared perilous considering the opinions of departments toward it and the prevailing political environment.

Soon after the Freeman Review, the CCTA was moved to Norwich, and occupied an even more distant advisory capacity; the feeling in the larger departments was that the Agency was out of touch, as one DHSS official remarked after the CCTA move that 'we don't go them for advice' (Margetts,1999,p62-63). The CCTA received further criticism for over involvement in departmental computer projects (Margetts,1996,p73) and for being slow and cumbersome in delivering advice to departments (Trade and Industry Committee,1987/88,p165-68). From April 1987, departments were permitted to 'untie' themselves further from CCTA procurement services (*ibid.*,p159). The importance of departments being able to control all aspects of their own projects had become paramount, perhaps preventing any aspirations the CCTA may have had about coordination, common technological infrastructures or data sharing projects that spanned across government organizations. Whilst in the 1970s and early 1980s the CCTA had actually 'owned' all computers in government and had exercised close control over

departmental IT budgets, by the mid-1980s departments had reclaimed responsibility for procurement whilst other financial controls were fed back into other Treasury divisions (Margetts,1996,p73; 1999,p44).

Still, the sentiment of coordination lived on; the then chairman of Logica commented that he would like to see 'a much-strengthened consensus process with Government' through enabling the CCTA to adopt a stronger lead (Trade and Industry Committee,1987/88,p101). However, the CCTA continued to recede and was unlikely to be able to revitalize efforts; there were continual rumours that the Agency would be privatized or abolished (Margetts,1996,p73). Whilst coordination was an initial objective of the CCTA, by 1988 its director at the time, Paul Freeman, was making it clear that individual departments were in control of IT, and that there was no 'super-strategy' across government (quoted in Margetts,1999,p44).

According to one long-serving member of CCTA staff, interviewed for this thesis, the feeling within the Agency was that government departments had disregarded much of its advice over the decades. His opinion was that departments ignored recommendations and by the new millennium were having 'chickens coming home to roost' in terms of their inability to deal with the joining up aspects of the e-government strategy (*personal correspondence – 6*). The feeling from within the CCTA was that there was a 'huge silo mentality' in departments that 'did not want to see what they were being shown by an organisation that could, and was required, to stand back and see the wider picture, and they certainly made a collective case...for not having a third part tell them what to do' (*personal correspondence – 6*).

Conversely, departments clearly felt their own IT projects would often not be improved by interference from an external body and preferred levels of autonomy. Despite negative audit scrutiny, this decentralized approach was judged to be optimal as the CCTA gradually lost power. This thesis does not argue that departmental deference to a stronger CCTA would have meant that projects would have been more successful, or that the

strategic issues of informatization and coordination would have been better addressed. However, the thesis does note that the experiences of the CSD and CCTA do provide some indications of the potential difficulties in steering, supervising and orchestrating a more coordinated approach to ICT applications in the e-government environment. Although under different political and technological circumstances, the history presented here assists understanding of the e-government strategy and the difficulties faced.

As the 1980s began to draw to a close, the approach to government IT policy was dominated by automation, where a powerful managerialist logic held that computers should be applied to generate staff savings (Bellamy/Taylor,1998a,p41). To illustrate this, Bellamy and Taylor pointed to the publication *Efficiency in the Civil Service*, from 1981, which discussed computers purely in terms of monitoring workloads and staff economies (*ibid.*). Similarly, a Cabinet Office paper revealed much when it was noted 'technical improvements have generally been introduced to improve the efficiency of working procedures and to make resource savings. Improvements in service to the public have tended to be a welcome but indirect by-product' (OMCS,1988,p20).

This approach did have its critics, for example a parliamentary committee complained that departments tended to vindicate IT spending by 'a spurious arithmetic calculation that produces a pounds, shilling and pence justification at the bottom of a piece of paper' (Trade and Industry Committee,1987/88,p108). Although IT applications which sought to informatize service delivery operations were still discussed and considered, the climate of the period provided a propensity for departments to concentrate on efficiency opportunities pertaining to existing operations, rather than to explore other possibilities, including links with other departments. In the e-government environment there was more emphasis on ICT-mediated joining up across organisations, although departments still had a clear responsibility to improve efficiency, particularly since the Gershon Review identified a potential £20 billion in savings across the public sector for government organisations to work towards (Gershon,2004).

The narrative will now explore the government computing landscape following the introduction of the Next Steps programme, where centrifugal pressures further influenced the position of IT in public service delivery.

## 2.7 NEXT STEPS AND MARKET TESTING: INCREASING THE COMPLEXITY OF GOVERNMENT IT

Before the Next Steps programme, which began in the late 1980s, the decade saw the gradual reduction in the role of the CCTA (although the Agency would continue to produce advice, reports and procurement services) and, to some extent, a continuation of the dominant automation perspective in IT applications in government. However Next Steps, discussed briefly in Chapter One, was set to significantly alter the government IT landscape, an observation which did not escape the attention of key public administration scholars; academic attention to government IT increased during this period. The ethos behind Next Steps was to break down centralisation and hierarchy in favour of a looser, delegated managerial environment; a belief, borrowed from modern business analysts, that 'small was beautiful' (Zifcak,1994,p74). Following on from the FMI, the Next Steps programme eventually created hundreds of agencies, within which 74% of the civil service were operating by 1997 (Greenwood et al,2002,p33).

The introduction of agencies to provide services, accountable to central departments, generated significant upheavals and changes in the public sector, not least with IT. For instance, at the beginning of the 1990s the Benefits Agency, Contributions Agency and several other smaller units were formed from what was the bulk of the DSS. As the agency responsible for providing payments to the young, sick, poor and old, the Benefits Agency took on the computerization of the social security (Margetts,1999,p52). As discussed in Chapter One, the phase of the programme during the early 1990s placed emphasis on client orientated one-stop services, suggesting an informatization of benefits operations through connecting information systems to provide consistent assistance for citizens (Bellamy,1996,p168-177). Writing about the experiences with computerization

of social security up to the mid-1990s, Margetts argued that, whilst the achievements were a considerable feat, none of the key objectives were met (1999,p68; NAO,1989). Whilst the project was not likely to ever be cost-justified and there were doubts that accuracy levels and overall service quality had improved (Margetts/Collingridge,1994, p70; Wyatt,1989,p91), it was also the case that innovations such as 'whole person' and one-stop services were unlikely to materialise. A major reason for this was innovation was obstructed by the institutionally embedded technological infrastructure developed in the previous decades; thus 'computing and policy innovation in the Benefits Agency will be shaped by the systems in place' (Margetts,1999,p70).

However, Next Steps provided more than a political backcloth for these events. The initiative led to the unification and hiving off of DSS IT units, to form the Information Technology Services Agency (ITSA), from which other DSS agencies would bid for IT services (*ibid.*,p59). A situation arose as a result of Next Steps reforms where authority over IT was held within the core DSS, whilst knowledge and expertise were located in the ITSA and Benefits Agency (*ibid.*). Furthermore, the creation of the ITSA widened the division between IT and administrative staff (Willcocks,1994,p20) and divorced information issues from wider management concerns (Muid,1994,p117-119).

### *Contractualization*

Informatizing innovation such as 'whole person' and one-stop services were hampered because the co-operation and central management needed across DSS agencies to move service based on delivery by benefit to unified provision for each citizen was against the grain of Next Steps (Margetts,1999,p60). The managerial rationale that informed Next Steps required a separation between political and operational responsibilities, with an emphasis on contract-based relationships between the two (Bellamy/Taylor,1998a,p47). What emerged from Next Steps and the managerial agenda sitting behind it, was an increased emphasis on networks of independent and quasi-independent organisations delivering services based on contracts, rather than traditional bureaucratic, hierarchical delivery (*ibid.*,p48). Whereas the traditional functional format



for service delivery had received substantial criticism for the limitations it placed on effective service delivery (Lawton/Rose,1999,p287), including coordinated IT, the Next Steps reforms aimed to remedy these limitations also created new divisions.

Part of the significant shift to contractualization was an increase in informational requirements, as purchasers and myriad contractors required new flows of data to deal with performance levels, procurement, budgets, customer requirements, finances and so on (Bellamy/Taylor,1998a,p48-49). Thus, whilst the creation of devolved agencies may have introduced new types of fragmentation in service delivery, creating coordination problems (Kavanagh/Richards,2000a,p8; Richards,2001,p62; Rhodes,2000,p156; Ling,2002,p618) the implied rapid increase in contracts stimulated a need for increased data flows between organisations (Bellamy/Taylor,1998a,p49). This requirement could be seen not only in the plans for one-stop services in the Benefits Agency, which were difficult to attain, but also in the e-government era, where government organisations needed to interface with each other and commercial bodies if they wish to provide seamless services to citizens. Margetts argued that in particular, Next Steps had created further difficulties with fragmentation and incompatibility of computer systems across departments; she provided one example of an attempt to improve coordination across DSS agencies using information technology; a 'joint screen' showing common customer information shared between the Benefits and Contributions agencies failed to materialize as there was no agreement on the design (Margetts,1996,p79).

#### *Market Testing: Privatization and outsourcing*

The emphasis on contracts borne in part out of the Next Steps initiatives contributed to another, related pattern. In principle, whether core central departments were contracting public sector agencies or commercial firms to provide services was irrelevant in the new climate (Bellamy/Taylor,1998a,p47). Next Steps caused IT functions of several major departments to be grouped together as agencies and referred to 'Prior Options' regulations, which was a method of considering whether the operations of agencies could be privatised. The operations of the IT agencies of the Department of

Transport and Inland Revenue were indeed privatised in the early 1990s, with large contracts going to the American company, Electronic Data Systems (EDS) (PAC,1999/2000b,p4; Margetts,1999,p147-149). With social security, the ITSA engaged in a 'bewildering array of contracts', many of which were not successfully concluded and some of which ended in legal action (*ibid.*,p61); again EDS took a lucrative share of what was offered (*ibid.*). This change was not always welcomed within departments, the involvement of EDS in Inland Revenue IT caused departmental staff to take a one-day strike and embark on a year long policy of non-co-operation with management (*ibid.*,p115).

The Market Testing approach, instigated by the government in 1991, held that an array of government operations should be considered for contracting out to commercial organisations, with the objective of improving quality through competition (Rhodes,1997,p48). Informational Technology was generally accepted as being the most apt aspect of operations to consider for outsourcing, and it was the most commonly cited element in departmental Market Testing plans (Margetts,1999,p150; Bellamy/Taylor,1998a,p155). By 1995 central government departments had contracted out 30% of IT operations (Margett,1996,p76). Although the sections above indicate that government had a long history of close collaboration with commercial IT companies, and Market Testing specifically was followed less closely after 1994 (Margetts,1999,p152), the outsourcing instigated after Next Steps was a watershed period. The contracts proliferated in number and grew in size, whilst government departments lost competency in dealing with IT operations without being dependent on external agents such as EDS (Margetts,1999,p159). As Market Testing fell out of favour, the Treasury began to prefer the use of Private Finance Initiatives (Margetts,1999,p152), where private firms would take on more financial accountability for government projects. Margetts argued that the approach was in fact very similar to Market Testing in that larger companies tended to capture contracts. She also noted the criticism that the long term, large scale characteristics of the most Private Finance Initiatives (PFIs) tended to freeze existing

departmental demarcations and precluded coordinated or integrated IT development (*ibid.*,p153).

Next Steps and related developments had had a significant impact on the government IT landscape, particularly through the increased role of private companies. Next Steps also directly affected the CCTA as it was made into an executive agency in 1996 (as was the NPL in 1990). The Agency continued to publish a variety of guidelines at a prolific rate, on management and planning in IT projects, the nature of information and the potential use of new technologies, including the internet and email. It existed in its distant advisory role, relying on selling some services and guidance on a commercial fees basis (NAO,1990/2000a,p51). The Agency did experience a period of rejuvenation at the end of the decade however, when responsibility for running the rapidly expanding central government web portal and pan-government email infrastructure remained with it for some time (NAO,1999/2000a,p51). This despite the move to Norwich, and drastic staff cuts (*ibid.*). However, responsibility for e-government went to the Office of the e-Envoy via the Central IT Unit (see Chapter Three) and the CCTA's thirty-year history finally came to an end on April 1<sup>st</sup> 2001, when it was subsumed into the Office of Government Commerce.

## 2.8 GOVERNMENT IT IN THE EARLY 1990s: THE PERCEIVED FAILURES IN DEPARTMENTAL PROJECTS

Despite the oft-stated need for coordination across government computing, as embodied in the CCTA, the Next Steps era underlined a decentralised approach, which permitted departmental autonomy with IT policy, although considerations of commercial impetus and market sensibilities were emphasised. Thus, a vacuum had gradually developed as the CCTA altered its role; as indicated below, a new government organisation emerged in the mid-1990s that provided fresh support for the enduring issue of IT coordination.

However, continuing a historic pattern, departmental computing during the 1990s was also blighted by negative audit and press scrutiny of initiatives, to the extent that the project management skills of government organisations were being characterized as endemically poor. Furthermore, the role and performance of involved commercial IT firms, and the relationship between these firms and departments would increasingly come under pressure. In the mid-1990s the Public Accounts Committee found that departments were 'embarking on ambitious computer projects on the basis of inadequate appraisal, and failing to ensure that the system delivers what is required' followed by 'inadequate re-appraisal of computer etc projects in response to changing circumstances and requirements' (PAC,1993/94a,page viii). Later the same committee would identify 25 cases during the 1990s where it judged that IT projects had run seriously over budget or failed to match specifications (PAC,1999/2000b), and cases were discussed widely in the national press (Islam,2001). According to the PAC, the failures had resulted in 'delay, confusion and inconvenience to the citizen and, in many cases, poor value for money to the taxpayer' (PAC,1999/2000b,p2).

Examples cited by the PAC included the update of the National Insurance Recording System in the Contributions Agency, contracting Andersen Consulting (later known as Accenture). The company was accused of underestimating the size and scope of the project, and serious delays were experienced. The PAC reported on the problem in the early stages, and reexamined the situation a year later, only to find its advice was unheeded and the problems had increased. Compensation of £38 million was paid out to personal pension scheme holders due to the delays, yet in 2000 the Labour government abandoned efforts to seek further compensation off Andersen Consulting, allegedly in case it jeopardized other contracts (PAC,1999/2000b; Agar,2003,p376-377).

The Home Office also suffered negative audit scrutiny during the 1990s. Its Immigration and Nationality Directorate Casework programme was intended to improve the speed and fairness with which people could apply for citizenship or asylum. However, Siemens were reported to have made errors in the design of the IT system, discarded its

subcontractor and started afresh when the implementation was already severely delayed. The PAC found in this case that hardship and frustration was experienced by those reliant on the Home Office, with a backlog of 76,000 asylum cases (PAC,1998/99b; PAC,1999/2000b). Asylum was already a hot issue for the press, so the delays were highly publicized; the Guardian estimated the cost of failure as £76 million when the project was forsook (Left,2001).

A third example of PAC criticism was centred on the Driver and Vehicle Licensing Agency, which decided to replace the Northern Ireland vehicle system in the early 1990s. The project was unable to cope with the unforeseen privatization of the IT department of the Department of Transport. The project was revised by EDS but the NAO concluded that £3.7 million had been written off during the period (PAC,1996/97; 1999/2000b). As well as the infamous Trawlerman project, eventually terminated in 1996 with £41 million written off (Agar,2003,p378), the Ministry of Defence also had negative coverage of its management and administration IT system; the contractor SEMA made significant misjudgments about the size of the project and it ran over budget before eventually being cancelled without being used (PAC,1991/92; 1999/2000b). Finally the Department of Employment attempted to implement an integrated system into its regional and area offices in 1988, yet the creation of the Training and Enterprise Councils created confusion which was not managed sufficiently, and £48 million was spent without any improvement in performance (PAC,1993/94b; 1999/2000b).

These examples serve to illustrate an aspect of the government IT climate within which the e-government strategy operated, where projects were often negatively scrutinized by auditors. After the publication of *Modernising Government* the PAC wholeheartedly supported the policy of instilling coordination in government IT. However, although the PAC acknowledged that it was often only negative cases that were drawn to its attention and that private sector IT frequently also performed badly, the committee was concerned that the promise of the e-government strategy would not materialize as a result of the perceived poor track record of departmental IT projects (*ibid.*,p6). Although this thesis

does not argue that the joining up sentiments of the e-government strategy were doomed due to this perceived endemic weakness, it was a factor worthy of consideration. This thesis takes evidence of perceived IT project failure into account, as it contributes to understanding the role of ICTs in joining up. However, it is argued that this is by no means the only factor; the thesis points in particular to the role of institutions in providing insight into ICT-mediated joining up in the e-government era. The NAO and PAC continued to find fault in projects in the e-government era, as discussed in the next chapter.

## 2.9 CONCLUSIONS

A small number of public administration scholars subjected the assumptions behind the information age government notion of the 1990s to critical scrutiny. One observation was that the configuration and nature of the institutions of British government were uncondusive to an inter-agency emphasis to IT that was being promoted during this period (Margetts,1996,p74). The evidence presented in this chapter allows the identification of a number of important points, patterns and themes that help assess this observation.

The history of government IT demonstrates the prevalence of the automation perspective across the decades. Since the early developments in the NPL and MPNI, the mechanization of paper-based administrative tasks, with the objective of offsetting rising costs and staff levels of a large provider state, had been an understandable goal. Departments applied information technology with varied success, to existing, discrete operations to reduce costs within their own purview. Computing systems were largely designed to serve individual departmental objectives, budgets, client groups and procedures, whilst central government policy interests were dominated by concern for the UK IT industry, particularly in the 1960s. Although the political environment of the 1980s and early 1990s was very different to the 1950s, bringing managerial techniques

and an influx of private initiative into public sector IT, there was still a strong emphasis on automation as departments searched for efficiency in their operations.

Thus, at one level the history presented in this chapter would indicate that automation had been the dominant mode. It could be argued here that only under the e-government strategy had central government come to terms with the informatizing potential of ICTs and the virtue of coordination, integration and interoperation of departmental computing in creating joining up. However, the history of government computing indicates that the informatizing potential of ICTs had been recognised at an early stage particularly in the context of internal back office reform, and indeed became one of the motifs of the post-war period which existed alongside the more dominant departmental automation perspective. The ephemeral O&M section of the Treasury discussed supra-departmental integrated processing systems which could render departmental boundaries insignificant (Agar,2003,p313), whilst the MPNI was using new computing technology to facilitate large scale data sharing with the Inland Revenue in the early 1960s (MPNI,1960; 1961). The CSD was tasked with providing computer strategy and coordination from the late 1960s whilst the SS&T was, amongst other things, a forum for discussions on technical compatibility and the need for greater coordination. Although the success of the CSD in its role was questionable, as it preferred to devolve responsibility for computing back to departments by the early 1970s (SS&T,1970/71,p326), the notion that the existing arrangements for government IT were inadequate, and that computing offered opportunities beyond departmental automation, seemed to endure.

The SS&T perspective that there should be a dedicated central unit to coordinate computing procurement, development and use eventually influenced the government enough for it to create the CCTA (SS&T,1971/72,p3). Admittedly, most of the CCTA activities may have been supporting, or at least not challenging dominant departmental automation perspectives. The Agency often offered procurement services (initially to support preferential purchasing of ICL equipment), advice and recommendations to departments rather than anything that stimulated them towards interoperation or

collaborative IT strategies. Despite increases in perceived computing project failures, departments gradually enjoyed more and more independence from the CCTA, which was an organisation that they often viewed as an interfering force. Nonetheless, despite the changing role of the CCTA towards an optional advice service, its existence in part was testament to the enduring notion that some form of IT coordination across government organisations, whether in terms of procurement or the actual operations of departments, was seen as necessary. The sentiment that computing could help transcend the departmental delivery of public services and to informatize operations was present as a minority voice during the post-war period, and the activities of the CCTA (and CSD before it) in part embodied this sentiment, even though arguably little was achieved. By the 1990s the Treasury was the only central organisation with any level of control over departmental IT; it was said to have a 'hands-off' approach, in part due to its lack of expertise in computing issues (Margetts,1999,p44-45).

Using the evidence presented in this chapter, the experiences of the CCTA and its relationship with departments puts weight behind Margetts' (1996,p74) argument that the institutions of British government were uncondusive to interdepartmental coordination in some instances. Drawing parallels with the scholarly observations on the informatizing efforts of the computerization of social security and the CCCJS in criminal justice (Bellamy,1996; 1998; Bellamy/Taylor,1996; 1998a; Margetts,1991; 1999), it can be argued that institutional factors had a part to play in the apparent difficulties the CCTA met with inducing any level of coordination across departments.

The concept of coordination, whether pertaining to procurement, common standards, compatibility, computer use, interoperability or integration, was ordained as a desirable aim by observers and the government; in particular the CCTA was set to provide a wide range of coordination and steering. However, by the birth of the CCTA in the early 1970s, departmental IT was embedded in existing operations. Despite criticism from audit and parliamentary bodies, which concentrated on overspending and weak project management, departmental IT systems largely automated suitable operations to fit the



specific objectives of the incumbent actors, organisations and institutions. The potential involvement of the CCTA in departmental IT policy threatened the autonomy departments had over existing information systems, domains and flows. Although the Agency gradually retreated from the original remit given to it, towards an advice service and away from any pretensions of a corporate, coordinated IT strategy across government, significant opposition and animosity was felt towards it according to one interviewee (*personal correspondence – 6*).

Thus, despite the continual calls for coordination and inter-organisational information flows that appeared at various points during the history of government computing, there was strong evidence to suggest that the service delivery institutions of government had largely adopted IT for their own discrete and functional requirements. Although the CSD and CCTA had played an active part in the history, departments did seem capable of using the services available on their own terms, if at all, in pursuing particular objectives and absorbed audit criticism. The political movement towards managerialism during the 1980s and 1990s appeared to increase the independence with which government organisations would act whilst providing an additional dimension to the challenge of coordinating IT.

As a related issue, it should also be noted that the configuration of the public sector and the power wielded by its core executive and central agencies was likely to have directly influenced the impact of the CCTA. Traditionally, the centre of government; the Cabinet system, Prime Minister's Office and Treasury, had struggled to attain the desired general levels of orchestration and steering, whereas departments had considerable power with which to pursue objectives (Macintosh,1977,p546; Hennessy,1989,p301; Greenwood et al,2002,p64; Hogwood/Peters,1985,p40). Following Next Steps and the emergence of European governing structures, an argument gained credence that the centre of government had been 'hollowed out' whilst networks of service delivery agencies and other organisations increased in autonomy (Rhodes,2000a,p257-258; Smith,2000,p40). It may have been that the CCTA was unable to pursue coordination and other objectives to

the extent envisaged in part because of the weak institutional position of central agencies operating outside of departmental umbrellas. This point could also be applied to the main central unit that was charged with steering the e-government agenda, the Office of the e-Envoy (see Chapter Three).

Despite the historical patterns outlined above and the gradual change in the CCTA's approach, the mid-1990s saw the creation of a new centrally placed strategic unit with a remit to look at the use of IT across government. This, the Central IT Unit (CITU), placed within the Cabinet Office in 1995, represented a rejuvenation of the concept of coordination, and was accompanied by a rise in interest in new information and communication technologies associated with the internet. Whereas the focus was previously often on the application of IT to internal back office processes, the internet and associated technologies brought also a new interest in coordination at the interface with citizens. As discussed in the next chapter, the creation of the CITU was followed by the *government.direct* green paper and the e-government strategy itself, which placed emphasis on achieving joined up government through ICTs. However, this chapter uncovers a hidden world of government IT, which demonstrates that there was an enduring interest in coordination, yet central bodies were largely unable to incentivise departments, not least as the administrative reforms of the 1980s made orchestration more difficult. Armed with this insight, the thesis moves to consider the role of ICTs in facilitating joined up government, under the central e-government strategy.

## **CHAPTER THREE: THE UK E-GOVERNMENT STRATEGY – 1996-2004**

### **3.1 INTRODUCTION**

Whilst the previous decades had seen the application of computers largely to internal departmental back office operations, by 1996 the growing popularity of the internet meant that governments were also able to consider utilising the medium to reach out and interface with citizens directly to a greater extent. During the 1990s, the PC revolution had brought cheap and accessible computer hardware to many homes and businesses, and internet technology had rapidly become a genuine mass medium across many parts of the globe. By 2002 nearly half of all UK households and most businesses and schools were connected to the internet through PCs, whilst other channels such as digital TV and mobile phone internet access were developing (NAO,2001/02d). By October 2004 it was estimated by the Office for National Statistics that only 34% of adults in the UK had never used the internet (ONS,2004a). In households, 13% of homes had personal computers in 1985, compared with 54% in 2002, whilst in terms of telecommunications (often needed for internet access) 42% had telephones in 1972 compared with 98% in 2000 (ONS,2004b). The surge in the internet's popularity was reinvigorating the notion that ICTs could further transform aspects of work, leisure, learning, commerce, government and other sectors. After decades as the tool of specialised communities, the internet was 'to catch fire in business and in society at large' (Castells,2002,pxxxi), becoming embedded in everyday life (Wellman/Haythornthwaite,2002) and creating a new capacity for information flows (Castells,2001).

For government however, there was a strong sense by the late 1990s that the use of ICTs had not lived up to high expectations, despite fifty years of experience; this perceived failure was even acknowledged by Cabinet Office publications (Cabinet Office,1998/99,p45; OeE,2000; PIU,2000b). The ubiquity of ICTs, and particularly the rise of the internet, magnified the failures of the government to reap the perceived benefits of new applications; indeed Patrick Dunleavy cited major computer project

disasters as one of the chief policy failures of the late 20<sup>th</sup> century (Public Administration Committee,2000/01b,p149). However, this thesis has also highlighted that there had been shortcomings not only in the management of departmental IT projects but also in terms of the failure to instil the desired levels of coordination in computing across departments.

Yet, within the context of a growing interest in the reinvention of government (e.g. Osborne/Gaebler,1992) and the emphasis on the reengineering of organisations around the needs of customers (e.g. Hammer/Champy,1993), the internet and other new technologies led during this period to an optimism that new ICTs would transform delivery (Holliday,2001,p315), by ‘revolutionising how government operates and interfaces with the citizens it serves’ (Nixon,2000,p28). Thus, the allure of pursuing transformations in government through ICTs took on a new dimension, that of reaching out to citizens, through the properties of the internet. For instance, two of the key features of the internet that were emerging around 1996 offered new possibilities for joined up service delivery; websites could act as a hub for information and services to be drawn together and accessed at a single point (NAO,1999/2000a,p1) whilst electronic mail could furnish departmental officials with a new method of communication with other government organisations and with citizens.

This chapter will chart the rise of e-government and the Cabinet Office’s approach, against the backdrop of the history of computing, beginning with the first developments and influences on the inchoate ‘information age government’ policies and strategies. It will demonstrate how, drawing on the long-standing emphasis on coordination in various guises and the availability of new technologies that lent themselves to flexibility, communication and networks, the emerging e-government agenda became associated with and guided by the context of joined up government. The Chapter will provide assessment of the e-government strategy and the activities and output of the Office of the e-Envoy as the body charged with its development and steering, to pave the way for the case studies in subsequent chapters.

### 3.2 E-GOVERNMENT UP TO 1997: STEERING 'INFORMATION AGE' GOVERNMENT

By the mid-1990s John Major's government was well established and had spent several years developing the perspectives and policies, which, it was argued, was an attempt to assert a political identity external to Thatcherism (Pollitt,1993,p180). The Major government emphasised the role of contracts, competition and markets in service delivery but with the imperative of empowering and improving the citizen experience (Bellamy/Taylor,1998a,p68). This, along with the Citizen's Charter movement (see Chandler,1996b) and Open Government created a further need for new information resources and flows to fuel a new genre of empowering consumerism in service delivery (Bellamy/Taylor,1998a,p68).

As for Information and Communication Technologies in government during this period, the UK initially took the lead from the United States. There, partially as a result of embracing the Toffler vision of an IT-enabled society (Margetts,1999,p172), the American government perspective brought ICTs on board as a means to help achieve the reinvention of government (Bellamy/Taylor,1998a,p65) in light of the developing internet and associated technologies.

Al Gore, the then vice-president, became an early champion of new ICTs in government, particularly with the National Performance Review of the early 1990s, which aimed to reengineer some government services and placed some forms and other information on the internet. Gore coined the phrase 'Information Superhighway' to describe the National Information Infrastructure which he wished to build, partially to instigate electronic service delivery to citizens. The Review's strategies promoted inter-organisational electronic data flows to drive up the efficiency and quality of internal processes and services to business and citizens (Bellamy/Taylor,1998a,p55). From the mid-1990s, other developed nations such as Canada, Australia and the Netherlands began to associate new ICTs with improved efficiencies, choice and quality in holistic service delivery (Heeks/Davies,1999,p24-25; Bellamy/Taylor,1998a,p64). News of these developments filtered across to the UK, and it was seen as urgent that the Conservative government generated a comparable

plan of action, which detailed how Britain would be able to take full advantage of the internet and other ICTs in improving business, commerce and public service delivery.

In parliament, as internet and web technologies began to capture the imagination, opposition MPs saw the perceived lack of activity as an opportunity to pour scorn on Conservative government ICT policies. In March 1995 Graham Allen described the government's response to what was often referred as the Information Superhighway as 'piecemeal and uninspiring', whilst he praised Al Gore's attempt to coordinate strategy and vision and called urgently for a similar reaction in Britain (Hansard, 1994/95c, col. 241). Interest was also mounting in the press, where Al Gore's proposals were discussed along with the possible applications of internet technology in Britain<sup>9</sup>. Waiting in the wings, the Labour party seemed keen to express an interest in the internet<sup>10</sup>. Further pressure for action came from a G7 ministerial meeting in February 1995, where it was agreed by participants that more government information would be disseminated online, and GOL (Government On Line) pilot projects were begun (G7, 1995).

#### *The Birth of Government Online in the UK: Open.gov.uk*

The Conservative government's reaction to the internet in particular was orientated around wider political movements of the period; encapsulated in the *Citizen's Charter* (1991), the *Open Government* white paper (OPSS, 1993) and William Waldegrave's *Code of Practice on Access to Government Information* (OPSS, 1994b – updated in 1997). Two CCTA reports were produced on the Information Superhighway during this time. Although the Agency lacked 'political clout' (Bellamy, 2002, p214) the reports did have some influence in that they paved the way for Open Government projects (Bellamy/Taylor, 1998a, p101) that sought to publish information over the internet; the full text of many of the charters were quickly posted onto the internet and the Citizen's Charter Unit was one of the first government organisations to develop a website (Hansard, 1994/95a, col. 53(W)).

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<sup>9</sup> Significant articles in *the Guardian*: 7 April 1994, 12 May 1994, 4 July 1994, 28 August 1994 and 19 November 1994.

<sup>10</sup> Examples of the 'internet according to Labour' articles in *the Guardian*: 28 November 1994, 12 December 1994, 24 February 1995, 18 July 1995 and 9 October 1995.

The government had created its own server, which became live in November 1994, marking the beginning of a consistent government web presence in Britain. The main government portal was found at open.gov.uk, and generated significant interest; it was said to be accessed 100,000 times in its first month (Hansard,1994/95b,col. 340(W)). In 1995 a 'Government Information Service' was launched over the open.gov.uk portal, which posted contact details, ministerial speeches, press releases, performance targets and consultation papers for different government organisations (Bellamy/Taylor,1998a,p101). The significance of open.gov.uk was that central government was making some attempt in principle to coordinate and centralise its internet presence, by drawing together information from across departments to present to citizens from a unified location. The judgement was that the flexibilities of internet technology offered new possibilities for coordinated service delivery, at least in terms of posting information.

By February 1995, 18 departments had posted information on the portal site, and half a million requests for information had been received through it (Hansard,1994/95a,col. 53(W)). A National Audit Office survey in 1999 found that many departmental officials saw the creation of this central web portal as crucial early encouragement for government bodies to develop an internet presence (1999/2000a,p51).

### *The Steering Mechanisms for 'Information Age' Government: The Central IT Unit*

In terms of high level political steering, the Conservatives appointed Ian Taylor, as Minister for Science and Technology at the DTI, to coordinate 'information age government'. Leading by example, he claimed to be the first Minister with an email address (Hansard,1994/95d,col. 248). In fact, there had been a long-standing public sector interest in email applications, which by 2004 was as a cornerstone of digital communication in both general society and government. The Post Office had been investigating various processes that combined telecommunications with computers for decades, and the CCTA had been interested in email since the 1980s. In March 1985 its CCTA News bulletin noted that 45 'mailboxes' were in use across government, although the main problem with take-up was the unwillingness of civil servants to use keyboards, specifically senior ranks; 'with a few exceptions, the higher

the management grade the greater the reluctance' (1985,p21). Still, email had a natural asset of being cheap and efficient once a suitable infrastructure had been put in place, and was able to traverse departmental boundaries and provide a channel for the public to interact with government. In the American National Performance Review, a government-wide electronic mail service was recommended (Bellamy/Taylor,1998a,p55). A similar email infrastructure across government was also a preoccupation of British central government in the years to come, as discussed later in the Chapter.

Parliamentary committee scrutiny examined Ian Taylor's role briefly, and when pressed on his intentions he replied that he would:

shy away from the thought that I was presenting myself to you as the Government coordinator of all information superhighways...[but] I think you will accept that I am trying to pull it together in a way that it has not been previously pulled together and after six months I am beginning to see things taking shape (Trade and Industry Committee,1994/95,p4)

Although stopping short of accepting overall responsibility for new internet technologies in government, Ian Taylor attempted to add coherence and coordination in government policy for the new technologies.

Shortly after this, a definite commitment by central government to adopt a more strategic approach to internet and general IT policy occurred. Michael Heseltine had reportedly been alarmed that departments were permitted to develop computer systems independently without orchestration (Margetts,1996,p74). He and the then Chancellor of the Duchy of Lancaster<sup>11</sup> Roger Freeman, involved in machinery of government questions at policy level, created a central steering body for IT, the aforementioned Central Information Technology Unit (CITU). This was set up in 1995 within the Office of Public Service at the Cabinet Office; it had a remit to analyse potential ICT-mediated links between departments and the use of internet

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<sup>11</sup> A historic non-departmental position usually given to a Cabinet minister who took on a coordinating role for a variety of issues; from the mid-1990s onwards this included e-government.



based central portal between government and citizens (Margetts,1996,p73; CITU,1996/97,p12). It initially housed around ten staff, largely seconded from the private sector and run using a company board model (Margetts,1999,p44). The CITU was intended to 'take a strategic view of the way IT is used across government' and to 'ensure that the opportunities that IT offers are exploited to maximize efficiency within government and its dealings with businesses and the citizen' (Select Committee on Science and Technology,1996,para. 3.42). Thus, issues of coordination, networking and integration would be addressed anew through the CITU, particularly in light of new internet technologies.

The creation of the CITU ultimately symbolised the demise of the CCTA. Some members of the Agency agreed that it would be prudent to establish a fresh, centrally positioned body to steer internet development in government; they helped persuade Heseltine and Freeman to set up the CITU (Bellamy,2002,p214). Others were less sure; one source, working inside the CCTA at the time, commented that the feeling in the agency was 'how the hell did we allow this to happen?' (*personal correspondence - 6*), as the CITU initially took away some of the responsibilities of the CCTA. Using the strategic focus of the CITU, Roger Freeman was given responsibility for the day-to-day operations of IT in the civil service, and, along with Ian Taylor, he was the major protagonist in political steering of e-government activity.

Freeman gave an indication of the political thinking about the role of central IT policy in the mid-1990s; he gave the perceived shortcomings of the CCTA as the motive to create CITU. In November 1995 he told parliament that the CCTA 'does not have a sufficiently central place to influence or coordinate the strategy of government in relation to information systems...to improve coordination across government and the effective delivery of services to the public' (Hansard,1995/96a,col. 859). This indicated that coordination was again seen as an imperative in political circles, yet the CCTA was not viewed upon as the organisation suitable to provide such a function. The solution was to create a completely new body, which soon began to overshadow the CCTA, even though it was stated that the two organisations were supposed to 'work in close co-ordination'

(Roger Freeman in Hansard, 1995/96b, col. 750). However, although the life of the CCTA was drawing to a close, it was briefly given control of both the interdepartmental Government Secure Intranet in 1998 and the open.gov.uk website in 1994, although the CITU did have overall responsibility for e-government and sponsored both projects. Nevertheless, the CCTA did play a central role in early e-government development, and continued to do so well into Blair's term as Prime Minister from 1997.

By the end of 1995, interest and discourse surrounding internet technologies were reaching fever pitch; this was reflected in increases in parliamentary activity centred on what was termed 'information age government'<sup>12</sup>. The House of Lords Select Committee on Science and Technology organised an investigation into the application of new ICTs in society and government (1996). Witnesses felt that there was a fragmentation of responsibility for ICTs across departments, whilst government use of internet applications was variable (*ibid.*, para. 4.176-4.177). Calls for improved coordination did appear to be taken on board by government; as well as the CITU, in 1996 a Ministerial Group was set up to 'identify and take forward significant cross-departmental initiatives in information technology' (CITU, 1996/97, p12).

### *The Emerging Central Strategy: e-government to achieve joining up*

In November 1996 the CITU produced the seminal *government.direct* prospectus, discussed in Chapter One. This paper was heralded by ministers as a 'new phase of public service reform' (Bellamy/Taylor, 1998a, p10) and marked the beginning of the e-government era, providing the first indication of what an information age government strategy might entail (Bellamy, 2002, p214). Not only did *government.direct* associate new ICTs with profound transformations in the business of government but also argued that a coordinated approach to the technologies across government would help deliver holistic and seamless services to citizens. There was a clear commitment to reach out to citizens through internet-based mediums (Bellamy/Taylor, 1998a, p82). *Government.direct* began to crystallise the association

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<sup>12</sup> At the time this was the preferred generic term for new ICT applications in government; the Information Superhighway used less often whereas e-government was yet to be a common phrase.

between e-government and joined up government in this way; an association that would become clearer in the years after its publication.

The green paper promised to use information technology to ‘change fundamentally and for the better the way that government provides services to citizens and businesses’ (CITU,1996/97,p1). By way of achieving this, the paper set out policies for delivering central government services through IT that emphasised ‘new ways of working and sharing information between government departments and agencies’ (*ibid.*,p3). Looking at governments around the world, the green paper identified the universal need for a ‘strategic approach which looks across the whole of government’ (*ibid.*,p12) in taking full advantage of the new technologies. It also recommended the ‘streamlining and integration of processes across the boundaries between government departments and agencies...The strategy should also enable those dealing with government to obtain near instantaneous responses wherever practicable’ (*ibid.*,p13). In *Government Computing* magazine, Freeman provided further information regarding the philosophy behind the green paper; he identified that new ICTs should ensure that ‘our dealing with citizens and businesses are structured around their needs and these will not necessarily align with – or even recognize – the divisions between agencies’ (quoted in ETHOS,1996,p4).

In parliament Roger Freeman said that the *government.direct* paper:

envisages a time when people will no longer have to queue up, fill out paper forms and send off cheques for Government licences; instead, they will be able to link directly into government...Services will be more accessible, more convenient, easier to use, quicker in response and less costly to the taxpayer...as a means of raising the quality of services and making them customer-driven (Hansard,1996/97,col. 625)

Thus, the green paper brought to the fore the association between new ICTs and the streamlining and coordination of service delivery. The proposition inferred in the paper was that a coordinated approach to ICT, particularly new internet technologies, could aid the transformation of service delivery away from the restrictions of a functional departmental format and towards a more holistic, citizen-centric mode. This

proposition was crystallized further in the subsequent *Modernising Government* white paper as the fundamental premise of the central e-government strategy.

As discussed in Chapter One, a select group of academics (see Bellamy/Taylor, 1998b; Bellamy/Taylor, 1998a, p84; Margetts, 1999, p47; Bellamy, 1999a) recognised the potential salience of the proposals, which suggested a movement towards informatizing service delivery by redesigning business processes to include inter-organisational data sharing and integrated processes. Arguably, the approach in the green paper was aligned with the BPR movement that was gaining credence at the time. The Conservative government certainly saw ICTs as a tool for serious change in public sector business practice; Roger Freeman boasted to a parliamentary council that the proposals in *government.direct* 'have got Sir Humphrey terrified' (Sarson, 2000, p2) because of the emphasis on new ICT-mediated modes of delivery divergent to traditional methods.

However, despite the compelling logic of transformation offered by new 'information age' technologies and the enthusiasm shown by government, a key message offered not only by select scholarly attention, but also the history of government computing presented in this thesis, was that the changes suggested in *government.direct* would be difficult to achieve within the institutional landscape of government. With its suggestion of inter-organisational links and coordination, the green paper challenged the existing information domains found in service delivery (Bellamy/Taylor, 1998b, p11-15). The institutions of government had discrete information processes, client-groups, legislative environments, cultures, semantics and objectives, which were reflected in existing IT systems (*ibid.*, p4, 7, 8). These institutional patterns were threatened by some of the inferences of the green paper. Nonetheless, the premise of ICT-mediated coordinated delivery, and the growing association between e-government and joined up government, continued and gathered pace subsequent to the green paper, as described below.

The green paper was published at the end of John Major's administration; Blair's incumbency began a few months later. The period before spring 1997 did however provide a lasting legacy in terms of the initial response to the information age. Firstly,

the creation of the open.gov.uk website had provided a tool through which departmental information could be found at a unified point, using the Open Government movement as a focus. Secondly, the green paper had established the blueprint for what would become an e-government strategy, although one interviewee argued that this was published too close to the 1997 election for it to have a chance to be 'bedded into government practice' (*interview – 9*). Thirdly, and despite this remark, a number of pilot projects had been instigated, applying some of the ideas put forward in the paper (Bellamy/Taylor,1998b,p2). For instance; an Intelligent Form project converted six paper forms for the notification of self employment to one 'e-form', for distribution to Customs and Excise, the Inland Revenue and the Contributions Agency; a rural post office internet based kiosk scheme for benefits information in Broadclyst (near Exeter); a kiosk project involving Customs and Excise, the Inland Revenue and the Contributions Agency to provide information on different taxes; and another kiosk project to make Citizen's Charter data available on a network of 200 Touchpoint screens around the M25 (Hansard,1997/98a,col. 239-40(W)).

The e-government agenda emerged following this short yet important phase, where, in part spurred on by pressure for action by politicians, parliamentary groups and activity in other governments and business organisations, the administration under the Conservative government pushed on with putting in place a plan for information age government. The policies and activities of the period carried in them not only the Open Government values but also the sentiment that governments and their services could be reinvented and reengineered through ICTs. As a result, the oft-discussed notion of coordination, particularly through high-level political involvement at this stage, had become a resurgent and revitalized issue within the new context of internet related technologies.

### 3.3 E-GOVERNMENT IN THE LATE 1990s: THE MODERNISING GOVERNMENT APPROACH

Modernising proponents within Labour had long been convinced that new ICTs may play an integral part in public service and economic reform, and had mooted these

interests (Bellamy,2002,p214; Labour Party,1995); Blair himself was firmly in this camp (Bellamy,2002,p214), along with MPs John Battle and Chris Smith. In November 1994 Blair set up a commission to investigate the creation of an Information Superhighway in the UK (Wintour,1994). Furthermore in 1995, at a Labour conference at Brighton, Blair linked reform and social change with ideas connected to the Information Superhighway, in a way that reminded some of Wilson's 'White Heat of Technology' speech in 1963 (White,1995). In his *New Britain* book, Blair criticised the Conservatives for being 'passive' in internet development, and he expressed embryonic ideas about online 'interactive public services that put the user in control' (Blair,1996,p98,106), despite being a self-confessed ICT novice (Blair,1999).

Once in power, Labour set about reviewing new ICT processes in government. As with Roger Freeman, Dr David Clark was given responsibility for e-government issues as the Chancellor of the Duchy of Lancaster, indicating that ICT strategy was seen as a responsibility for the centre of government. The first policy document of relevance under Labour firmly allied the use of ICTs with profound reform in public service delivery. *Our Information Age* (OCI,1998) offered arguments regarding a fundamental shift towards an information society that were reminiscent of the writings of Daniel Bell and Alvin Toffler (Hudson,2001,p516).

The document emphasised that 'information age government' entailed providing 'services in ways geared to the convenience of citizens and business rather than the boundaries of government departments and agencies' (OCI,1998,p28). The report recommended enhanced interdepartmental coordination to enable the provision of public information and other services over the internet, and confirmed that a white paper, first promised in by CITU in early 1997 as a follow up to *government.direct* (Bellamy/Taylor,1998b,p2), would be published as soon as possible. Furthermore, in 1998 the government produced results of a survey of citizen views on electronic interaction with government; this was circulated as *Electronic Government: The View from the Queue* (NAO,1999/2000a,p50).

However, despite this, unrest was beginning to be conveyed from within the Labour Party's own parliamentary ranks, centred on a perceived lack of political steering and understanding of information age opportunities. Derek Wyatt, a Labour MP commented in parliament that:

Because no single Department is in charge of the internet, it falls into the black hole of cyberspace. Few Cabinet Ministers understand it: many still have no email addresses, and they clearly do not look regularly at their own departmental websites, which are woefully inadequate and make us look like bumbling amateurs (Hansard, 1997/98c, col. 1201)

However, despite the existence of the open.gov.uk central portal, David Clark argued that it was 'the responsibility of individual departments' to encourage and develop an internet presence (Hansard, 1997/98b, col. 499-500). Thus, whilst the notion that coordination was desirable, particularly with governmental websites, it was not clear exactly what format this would take and whether a strong centralised model should or could be adopted.

There were indications that common technological architecture would be a clear aim however; the Government Secure Intranet (GSI) service was launched in April 1998, in partnership with Cable and Wireless. It provided a secure means of communication between civil servants across departments and access to the internet (OCI, 1998, p29); it was claimed to be the first secure government-wide network in the world (Petrie et al, 1999, p9). David Clark saw the GSI as a vital tool in information age government, he once commented that he was 'staggered on coming to office to discover that Government Departments could not communicate with each other electronically; nor could they even email each other. One of my key priorities was to put that right' (Hansard, 1997/98e, col. 1063). By 2004, after significant efforts over several years, vast amounts of emails were sent via GSI between departments and out to citizens and businesses, yet many health organisations for instance used a separate system. Still, GSI could be considered a considerable success as an architectural tool; it brought a common platform to many government organisations, contributed to the adoption of email by public sector workers and provided a useful tool for inter-organisational

communication and data exchange. However, despite these claims, it could also be claimed that GSI did not live up to expectations, as observed later in the chapter.

Certainly, government actors identified the GSI as a tool for ICT-mediated coordinated service delivery, a notion that was being rejuvenated close to the end of the millennium. Peter Kilfoyle, parliamentary secretary for the Office of Public Service (where the CITU was located), commented during a Commons debate that GSI was created to facilitate 'a more coherent, customer-focused and integrated electronic service delivery' (Hansard, 1997/98d, col. 135-138). This was by now familiar rhetoric, which would be found in subsequent reports and speeches; a mantra that bound new ICTs to a joined up approach to service delivery.

*The Modernising Government White Paper: Crystallising the joined up approach in e-government*

It was judged that a strategy document was needed quickly to clarify the e-government vision, despite previous publications. As promised in the *Our Information Age* report, a project known as 'Better Government' was instigated, to flesh out the approach to the perceived opportunities that new technologies offered. The scheme was sponsored by Dr David Clark and overseen by a Ministerial Group (Holliday, 2001, p320), and was due to publish in the summer of 1998. Yet serious delays were experienced when Clark was pushed out of his position during a reshuffle<sup>13</sup>, and the report was revised to ensure that it conformed to other government priorities.

Jack Cunningham replaced Dr David Clark as Cabinet Office Minister and Chancellor of the Duchy of Lancaster in July 1998. Although the much-anticipated report was to be called 'Better Government', this was changed to the more moderate *Modernising Government* during the delay. This was published as a white paper in March 1999 (Cabinet Office, 1998/99) and included a wide range of statements and strategies pertaining to a broad spectrum of policy areas, setting out the modernising approach of the new government. Yet there was little by way of a significant reaction in the first

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<sup>13</sup> Allegedly because his *Your Right to Know* White Paper (1997/98), which detailed plans for the implementation of the Freedom of Information Act, was too radical.



few months of its circulation. Peter Hennessy noted that it had initially been 'largely ignored' as a general roadmap of reform, and criticised the tone of the report for being 'evangelical' in style (Hennessy,1999). Still, the white paper did appear to have credence with civil servants; the NAO found that 82% of surveyed agency and department heads thought the paper was at least of 'some importance' as a driver for e-government development, whilst half thought it was 'quite important' or 'very important' (1999/2000a,p20).

As discussed in Chapter One, the *Modernising Government* white paper associated the use of ICTs with profound transformations in government and public service delivery. To recapitulate, the paper proposed to reform government away from introspective, provider centred organisational forms towards citizen-focused, coordinated and corporate models (Cabinet Office,1998/99,p23). To achieve this, new internet technologies in particular would be used to converge, align and integrate the information systems and flows of government, which would lead to seamless service delivery that disregarded functional departmental boundaries. The white paper conveyed the perception that government had failed to keep 'sufficient pace' with developments under the rubric of the digital, networked, information age and that, whilst previously IT systems were developed separately by government organisations under a decentralized model, there was a need to 'converge and inter-connect' them (*ibid.*,p44-46). This would provide the desired levels of joined up working to attain efficient, responsive and effective service delivery.

To achieve this, the paper recommended a corporate IT strategy, including a coordinated approach to procurement, mandatory participation in the use of the GSI to 'boost cross-departmental working' as a 'platform for management of electronic government records', the designation of senior officials to 'champion' information age government within departments and continuing partnerships with the private sector (*ibid.*,p46-47). The paper also argued that the development of new information age government services would require impetus by 'stronger central co-ordination' to promote technological compatibility and bring different government bodies together (*ibid.*,p55). Nothing more was said on this issue in the paper, although it was the Office of the e-Envoy that emerged shortly after its publication to provide the

perceived levels of steering. In 1997, the Prime Minister announced that by 2002, a quarter of all transactions between citizens and government should be possible electronically (NAO,1999/2000a,p2). The white paper added to this that 50% of 'dealings with government' should be available to the public in electronic format by 2005 and 100% by 2008 (Cabinet Office,1998/99,p53); these targets, which would later be put forward, would be the subject of considerable attention in the coming years.

A key emphasis of the paper was on electronic interfaces with the citizenry; it set a target that by 2002 citizens should be able to electronically book driving and theory tests, search for jobs, submit self-assessment tax returns, receive benefits and health advice, apply for training loans and access a National Grid for learning (*ibid.*,p50). The most obvious way to provide such services would have been through the internet.

Furthermore, the paper recognised that a more 'coherent approach' to government websites should be adopted and that 'gateways' or 'portals' that draw information from the 'widest possible range of government services' should be developed (*ibid.*,p52). These gateways would be organised to cluster government functions around citizen-focused 'life episodes', coordinating information to one source rather than users having to interact with several departments or agencies separately (*ibid.*,p54-55). Thus, many of the proposals under the new strategy centred on modernising and orchestrating the front-end interface with citizens through internet websites and portals. However, there were also proposals that hinted at back-office coordination; the paper conveyed plans to examine the role of greater data sharing between government organisations in improving financial dealings with citizens and noted that new technologies were bringing closer integration between complex tax and benefits arrangements (*ibid.*,p52).

Although there were still further details yet to emerge, the white paper clearly positioned ICTs as a central tool in modernised, integrated service delivery; the application of ICTs to joined up government. ICTs were set to 'give effect to the vision in this White Paper' yet the 'incompatible systems and services which are not

integrated' would need to be amended for the new aspirations to materialize (*ibid.*,p45).

It was argued that *Modernising Government* 'endorses and significantly extends' the content of *government.direct* (Bellamy/Petrie,1999,p2), written and published under the Conservatives. However, one Labour MP interviewed for this thesis questioned this notion in arguing that *government.direct* was not particularly taken into account; 'to be deadly honest we wouldn't study each other's documents...we weren't allowed to meet the civil service. We could read a green paper but we could never get behind it' (*interview – 9*). A civil servant close to e-government activity at the time concurred by arguing that *government.direct* 'became a non-paper; we had huge piles of CDs of it lying around. By the time I arrived in 1999 you couldn't possibly refer to it – it was just some previous administration work' (*interview – 1*). Despite these arguments, there is a clear lineage from green paper to white paper (Hudson,2001,p518); the development of the central e-government strategy and its underlying notions and assumptions can be seen in both.

Shortly after the white paper emerged, Jack Cunningham retired to the backbenches (in October 1999) and Mo Mowlam took up the mantle of Chancellor of the Duchy of Lancaster and the e-government responsibilities that came with it. The paper was debated in parliament, and in Mowlam's absence, Ian McCartney (Minister of State for the Cabinet Office, appointed in July 1999) was left to defend it. Both Tory and Liberal MPs (Andrew Lansley and Andrew Sewell) conveyed their doubts that information age government could be delivered (Hansard,1999/2000,cols. 285-300). Mo Mowlam was, however, present at the first Public Administration Committee investigation of the modernisation agenda; yet because she was newly appointed, she was unable to answer many of the questions, confessing that she was still 'ploughing my way through a lot of detail' (1999/2000c,p3). The white paper carried with it bold proposals (Hudson,2001,p516) and inferred strong political leadership would be required (Cabinet Office,1998/99,p46,55). Yet, four different individuals (including Roger Freeman) had occupied the key Cabinet Office post in the space of just over two years, and Lord MacDonalld would replace Mowlam herself in June 2001. In 2003 Lord Macdonalld was replaced by Douglas Alexander only to be supplanted by

Ruth Kelly in 2004, who herself left shortly afterwards to leave David Miliband as the Cabinet Office Minister with e-government responsibilities.

The transience of ministerial personalities steering e-government from within the Cabinet Office may not have been judged as ideal, yet nonetheless government organisations were beginning to embrace some of the messages of *government.direct* and *Modernising Government*. For instance public sector websites began to appear during the late 1990s, whilst the CCTA and CITU were both involved to varying degrees in strategy, policy and technical developments across government. The contents of *Modernising Government* suggested that coordination, networking, data sharing, integration and orchestration would be key watchwords in information age government. Applied to governmental internet presence in particular, it was indicated that this would mean portals drawing diverse information and services together under clusters aimed at citizen 'life episodes'. To encourage departments to pull together for this objective, the white paper proposed the use of champions, common platforms such as the GSI and the setting of targets. Further than this however, it was not precisely clear how information age government, or e-government as it became known as at the end of the 1990s, would be achieved and with what levels of success. The audit and parliamentary bodies, which historically had close involvement in government IT, proved to be a useful medium through which the e-government strategy would be expressed and scrutinized more clearly.

### 3.4 E-GOVERNMENT UNDER SCRUTINY: GOVERNMENT ON THE WEB

By 1999, internet and web based tools were deemed to be of sufficient importance that the NAO devoted a large study to the government's use of the new technologies; the Office commissioned Helen Margetts and Patrick Dunleavy at the London School of Economics to conduct the research. The NAO reasoned that, as internet access in the UK increased, then citizens would expect to interact with government electronically. Furthermore, the report agreed with the sentiments of *Modernising Government* in that web-based technologies had the asset of being able to 'facilitate 'joined up' government' and that the internet could provide a centralised access point to an 'otherwise organisational arrangement, allowing citizens to transact with several departments and agencies and across different tiers of government simultaneously'

(NAO,1999/2000a,p1). Whilst managerial and budgetary responsibilities for features such as websites and intranets essentially lay with departments, it was also the case that because of the emphasis on joining up, government organisations were looking to the centre for guidance (*ibid.*,p49). Furthermore, the changes required for the corporate IT structure recommended in *Modernising Government* implied an important strategic role for the centre of government, despite the historic pattern of decentralisation in IT policy (*ibid.*), as discussed in Chapter One.

However, a key finding of the report was that, regardless of important early work with the open.gov.uk portal, central impetus into coordination had flagged and as a result government websites appeared ‘disconnected and relatively hard to navigate’ (*ibid.*,p2). Whilst most government organisations had developed a web presence (60% of those surveyed appeared to have a web site), many of them did not provide links to other relevant government sites, which the NAO took as a rudimentary signal that simple joining up conventions had often not been adopted by departments (*ibid.*,p12,13).

The CITU attempted to remedy this situation through a variety of measures. In 1999 it created a ‘Government on the internet’ working group to consider bringing coherence to websites through the production of guidelines. Secondly, the working group assessed the open.gov.uk portal which, although important in stimulating early internet use by hosting the sites of organisations new to the internet (*ibid.*,p51), had more recently come in for criticism. The website had not been redesigned at any point from 1994 to 1999, the search engine did not function effectively and there had been a drift of departments away from open.gov.uk and towards their own discrete sites (*ibid.*,p52). In late 1998 the decision was made to relaunch the portal to improve its role in orchestrating a corporate government web presence.

Furthermore, CITU had grand designs for the GSI, which had already stimulated many departments into email use and was being managed by the CCTA. It was hoped that the GSI would become a pan-government portal through which citizens could interact with departments and the CITU envisioned that all government data would be compatible with the GSI architecture (*ibid.*,p53). Additionally, it was recognised that

departmental e-government strategies could be coordinated through more traditional means as well as through providing unified technological platforms. Each Whitehall department had nominated a senior Information Age Champion to ensure, through the support of the Cabinet Office, that the organisation was aligned with the emerging central e-government strategy (*ibid.*,p54). The CITU (contracting the services of CCTA) had also taken on the role of monitoring progress towards the overarching 25% electronically enabled target for 2002, which was said to have provided stimulation to many departments (*ibid.*,p58).

However, the NAO were detected difficulties in the coordinating activities of the CITU. It was generally the case that 'central machinery for co-ordinating and promoting the development of government on the Web is rather weakly developed' (*ibid.*,p58). There were doubts that the GSI would become anything more than an expensive email system whilst it was argued that the central collating powers and definitions associated with the overarching 25% target were inadequate (*ibid.*,p55,58-59). Whilst the Government on the internet working group was important, it had limited membership, whilst the Central Office of Information's Government Internet Forum offered a wider range of viewpoints (*ibid.*,p54). The CITU had a limited capacity to influence departmental policies; its budget was small and the unit's staff had seen its role to be to spot future trends or conduct research rather than provide a regulatory role. Departments with large IT budgets did not see either the CITU or CCTA as 'significant players' with any right to regulate website design for instance, although the CITU could involve Cabinet ministers in initiatives (*ibid.*,p50).

*Government on the Web* was crucial in that it provided some of the first critical insights into the development of the e-government strategy, in particular by the CITU. However, the report also provided a useful sketch of the adoption of information age government in the DSS, which had been the subject of notable academic scrutiny, as described in previous chapters. The NAO argued that existing IT systems, deployed often by private contractors under the Operational Strategy and other initiatives, would prevent the adoption of web-based facilities unless significant investment was forthcoming. The existence of nearly 200 mainframe computer systems across the DSS contributed to a fragmented, often paper-based service but the department

planned a solution, likely to cost billions, to integrate the mainframes (*ibid.*,p25-26). The different agencies and units under the DSS had developed websites with their own distinctive design and branding, which had limited functionality. It was judged that there would be considerable savings and improvements in service by shifting some interactions, such as simple enquiries and forms, online. However, progress in the DSS had been slow, not least because of organisational barriers such as complex and fragmented administrative and budgetary arrangements for IT policy (*ibid.*,p32-34).

*Government on the Web* had acted as an important foil to *Modernising Government*; it provided a reminder of the institutional realities that came to bear on attempts to orchestrate ICT policy across government. Whilst *Modernising Government* had helped to focus departments on the clear opportunities involved in internet-based applications, *Government on the Web* brought these aspirations into context. The CITU had put efforts into providing a central technological architecture, in conjunction with the CCTA, in the form of the GSI and open.gov.uk, to join up departmental activities and services online. However, despite notable successes the NAO provided indications of difficulties and complexities with bringing government organisations in line in the manner envisaged.

A key message of the seminal scholarly works on government computing discussed in Chapter One was that, as Bellamy puts it, the ‘functional segmentation of service delivery has become deeply embedded in the institutions of government’ (1999,p90) and this would still be an important factor as applications developed under the emerging e-government strategy. Although the flexibilities and capabilities of internet-related technologies, which offered new tools such as email and web portals, lent themselves to the possibility of coordination, interoperation and integration, *Government on the Web* helped alert readers to the context within which e-government would operate.

For instance, the back office fragmentation across the DSS was likely to remain for some time regardless of the use of internet tools, either unilaterally or via a central portal, by the Department. Despite the availability of new ICTs, the history of

government IT and the cautionary messages of, for instance, Bellamy and Taylor (1998a,p168-170), would still be relevant. Nonetheless, *Government on the Web* also provided some positive examples of internet use in departments; the Department of Environment, Transport and the Regions was found to have a well-designed and helpful website, whilst the HM Registry, Employment Service, Inland Revenue and Customs and Excise all experienced an increase in the volume of electronic transactions (NAO,1999/2000a,p23,57-58). The report also found examples of 'good practice' in government websites, such as the provision of 'clickable' links to other agencies (*ibid.*,p15).

#### *Parliamentary Committee Reports: Scrutinizing the steering of e-government*

A Public Accounts Committee (PAC) investigation, published in July 2000, was conducted using the NAO report; in particular, it provided illuminations into the philosophies underlying strategic thinking regarding the coordination of e-government in the Cabinet Office. Members of the committee were in consensus with government and the NAO regarding the role of new ICTs in the coordinated delivery of public services. The report noted that new technologies should be 'more integrated' and 'compatible' so services could be delivered in a more 'joined up way' (PAC,1999/2000a,p5). The PAC also had conviction that the Cabinet Office had an important role to play in this objective and committee members questioned witnesses on this basis.

In answer to the accusation that central impetus into the orchestration of government web presence had 'flagged', Brian Bender, as Permanent Secretary to the Cabinet Office, stated:

I think we recognised a year or so ago that the pendulum of decentralisation to departments that happened over the last decade...has swung too far in the area of IT. For that reason the Modernising Government White Paper and a significant number of actions that have been set out since then foresaw the pendulum swinging back a little bit, not to take power away from departments but to coordinate, set frameworks and then drive the programme from the centre (*ibid.*,Q2)



Thus, although the Cabinet Office acknowledged the importance of departmental autonomy, it still wanted 'a coordinated framework to ensure that what departments did individually was properly joined up' (*ibid.*,p7). Mechanisms and architecture, such as the Information Age Champions (later renamed 'e-champions'), GSI and website guidelines were being put into effect with this underlying approach in mind. During PAC examinations, the witnesses indicated that the approach by the Cabinet Office would be to take closer command in some circumstances. The CITU considered adopting 'greater control' over website development, possibly by central checking of departmental websites to monitor compliance to issued guidelines (*ibid.*,Q9). Furthermore, finely-grained data standards had been produced to encourage technical integration (*ibid.*,Q22). However, witnesses were very keen to emphasise the point that the intention was not to re-centralise but to ensure that, for instance, a common platform was provided to 'draw together information from different departments' at a single point such as a web portal (*ibid.*,Q72-73).

Still, changes were required in the operations and business of departments to move towards this format of e-government. A representative of the DSS was questioned during the examination and provided indications of the department's intentions to comply with the sentiments expressed in *Modernising Government* and echoed by the Cabinet Office witnesses. Whilst the NAO report referred to the department's administrative arrangements as 'complex and fragmented', a key imperative was to bring together the agencies within the DSS online. A new website was to be launched which was 'helpful to people out in the real world rather than along the organisational boundaries of the DSS' (*ibid.*,Q133). However, a more coordinated approach to the transactional elements to benefits operations was likely to remain an aspiration for some time as the DSS was 'very heavily constrained by our mainframe computer systems' (*ibid.*,Q59) that made more significant changes to joining up across benefits agencies difficult. The case studies found in subsequent chapters of this thesis will provide illuminations into similar issues encountered as government organisations in the service fields of criminal justice and welfare began implementing e-government projects with joining up attributes.

Other early audit scrutiny of the e-government strategy came from the Select Committee on Trade and Industry, which investigated the issue of 'electronic government' as part of a wider report on e-commerce in Britain. The committee argued that the e-government agenda had been 'characterised by hyperbole [and] over-optimism about the capabilities of management to implement novel technological systems on a large scale, and repeated failures to learn from past mistakes' (TIC,1998/99a, para. 96). Committee members identified a gulf between the policy documentation that was largely positive about the potential for new ICTs to transform service delivery and the realities of the government's track record in implementing new technologies. The report argued that 'ambitious cross-departmental projects and 'one-stop-shops' are of no use to man or beast unless they can be delivered on time, in budget, and in full working order' (*ibid.*). The issue of the project management capabilities of government organisations would continue to be a major concern for not only the organisations themselves but also audit bodies and, as it was seen as a sufficiently crucial and cross-cutting topic, the centre of government.

### 3.5 THE E-ENVOY: FACILITATING E-GOVERNMENT FROM THE CENTRE

Partially, no doubt, as a result of thought-provoking output from the NAO and parliamentary committees, central government appeared committed to providing added political and strategic steering to the e-government strategy, to accompany the Chancellor of the Duchy of Lancaster and the CITU within the Cabinet Office. The influential Performance and Innovation Unit (PIU), which worked close to the Prime Minister in the Cabinet Office, published a report entitled *e-commerce@its.best.uk*. For e-government, in the words of the PIU director, Geoff Mulgan, it:

defined Government thinking and policy development...It led to the establishment of new mechanisms to coordinate and drive forward policy-making, including the appointment of an e-Minister and e-Envoy to lead work on the Information Age agenda across Government (Public Administration Committee,1999/2000b,PIU memo,para. 3.1)

The main corollary of the report was twofold: firstly an e-Minister was appointed from the DTI, to share e-government responsibilities with the Chancellor of the Duchy of Lancaster; Patricia Hewitt was given the job in July 1999, and unlike the

ephemeral Chancellors, she retained e-government responsibilities for a number of years. Secondly, the report reiterated the importance of the appointment of an e-Envoy to help drive the e-government and e-commerce agenda. The idea of an e-Envoy was first announced in parliament when Peter Mandelson, then Secretary of State for Trade and Industry, declared plans for a 'high-ranking digital envoy' on 25<sup>th</sup> November 1998 (Hansard, 1998/99, col. 217); his turn of phrase drew laughter from the opposition. However, there was no appointment for over a year but both the Trade and Industry Committee and the PIU recommended that the post should be assigned. Despite the apparent tardiness, the e-Envoy would quickly become a central component of the e-government strategy.

The idea of an e-Envoy was said to be modelled on the post created for the US presidential advisor Ira Magaziner (TIC, 2000/01, page vi); however, the first e-Envoy, Alex Allan, was not appointed until January 2000 despite Mandelson's announcement of November 1998. Allan was formerly a High Commissioner to Australia, senior civil servant in the Treasury and John Major's principal private secretary, and early on he proved not afraid to criticise departments for past mistakes, specifically the Passport Agency crisis in 1999 (Kable, 2000a). However, Allan lasted only matter of months before returning to Australia; 'he didn't want the job' noted one interviewee (*interview – 1*). Later, Andrew Pinder filled the position, first of all temporarily, and then on a permanent basis.

Despite the delay involved in the appointment of the e-Envoy, an office of staff quickly emerged to support the work involved; the Office of the e-Envoy (OeE). The OeE had three broad policy objectives fashioned around the exploitation of the internet and related technologies; to induce a fertile environment for e-commerce in Britain, to make the internet available to anyone who wanted access to it, and finally to achieve the electronic service delivery target of 100% by 2005<sup>14</sup>. It was the last section of this remit that would embody the OeE's efforts to realise the recommendations of *Modernising Government* on joining up service delivery through new ICTs.

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<sup>14</sup> The *Modernising Government* white paper set the target at 2008, but the PIU's *e-commerce@its.best.uk* (1999) report brought it forward to the more challenging 2005.

Because of the third policy objective, the OeE began to operate in a similar territory to the CITU, jeopardising the existence of the Unit in its own right, which had itself begun to overshadow the work of the CCTA only a few years previously. Ironically, the CITU was absorbed into the OeE in September 2000 after a brief period acting under the direction of the e-Envoy whilst it completed its outstanding commitments; this was a few months before the CCTA was subsumed into the Office of Government Commerce (OGC). One interviewee, involved at the time, provided some illumination into the reasons for the termination of the CITU, noting that the thinking was ‘well we’ve got the e-Envoy and we’ve got the CITU and of course the CITU was a previous administration thing – so the CITU would have to become aligned with e-government, and become part of the OeE’ (*interview – 1*). Still, there were briefly three bodies involved in the development of e-government at the end of the millennium.

The CITU still produced policy and strategy reports after the creation of the OeE. In April 2000 its *e-government: A strategic framework for public services in the Information Age* was published, building from an assessment of the government’s handling of the ‘Millennium Bug’ (Cabinet Office, 1999/2000). The *e-government* report was presented explicitly as the strategy document to fulfil the commitments proposed in *Modernising Government* (CITU, 2000, p1). The strategy was to be applied to the whole of the public sector, including central government, local government and the NHS (*ibid.*, p9). Unsurprisingly, the report held a matching approach to the white paper; it argued that much needed to be done for government to ‘play a full part’ in the ‘radical transformation of society’ that the ‘information age revolution’ was bringing (*ibid.*). Four guiding principles were set to help achieve this goal; citizen-focused government, accessible services, inclusiveness and better managed information (*ibid.*, p1-2). The strategy described distinct (but closely related) roles for CITU and the e-Envoy (*ibid.*, p3), and, although arguing that no monolithic model for e-government existed, provided detailed guidance on a range of issues. The imperative was, to continue the theme established in previous policy documents, that new ICTs could be used to coordinate, integrate and join up delivery to provide significant improvements to services. Whilst the strategy was owned by the e-Envoy,

CITU was given the task of coordinating and monitoring it (*ibid.*,p24), although a few months after publication the Unit was subsumed in the OeE.

The strategy put emphasis on web portals, developed in local government and specific service areas beyond the central open.gov.uk website. The approach was that CITU should provide technical and architectural standards or guidance on issues such as security, authentication and privacy, so that government organisations would be facilitated to develop portals (*ibid.*,p16-20). However, the strategy went beyond the use of web technologies providing a more unified ‘front end’ to citizens that could access government via electronic channels. It also described plans to increase interoperability and data-sharing capacity across the public sector, through increased use of the existing GSI and the introduction of a ‘middleware service’ called the Government Gateway. The strategy held that government organisations would be required to migrate their IT systems to support IP standards and, using a CITU produced interoperability framework, communications and data could be exchanged between departments to facilitate joined up services (*ibid.*,p20-21). The Government Gateway would join up many existing information systems and, through a process of authentication, would allow citizens and businesses to interact directly with relevant back office systems through an online portal (*ibid.*,p21). This then was a key component of the strategy; CITU (and soon after the OeE) would provide guidelines, technical standards and architecture through which public sector organisations would not only be able to provide unified web portals but would also begin to integrate and join up back office information systems where appropriate.

However, there was a further role for the e-Envoy in particular, as the feeling was that there was considerable scope to create new cross-cutting services using internet technology and ICTs. As ‘launching joined up services will call for innovation which may not be within the scope of a single agency’ the e-Envoy was charged with ‘identifying candidates for joined up services’ (*ibid.*,p12). In particular, the report warned against government organisations developing ‘separate systems’ to be joined up at a later point (*ibid.*,p28).

The report *e-government: A strategic framework for public services in the Information Age* had fleshed out the approach of central government to e-government policy, adding to the detail provided by *Government on the Web*. However, CITU's final significant output before being subsumed into the OeE turned attention away from the strategic direction of coordinated e-government services and towards concern with a more established issue. This final phase in the life of the CITU as a separate entity, along with surrounding events, is discussed in the next section.

### 3.6 SUCCESSFUL IT? THE FINAL OUTPUT OF THE CITU

During last decades of the 20<sup>th</sup> Century, audit, parliamentary and press scrutiny of individual departmental IT projects had found project management skills lacking in some cases. The CCTA had provided advice and controlled procurement in an attempt to obviate such perceived disasters, although its role became increasingly distant from the 1980s. However, central government actors saw major government IT projects as a sufficient risk to address anew in the context of the e-government agenda. The CITU was therefore charged with producing a review of major IT projects, published as *Successful IT: Modernising Government in Action*, otherwise known as 'The McCartney Report' (OeE/CITU,2000). Using observations of previous audit and parliamentary committee scrutiny, the report provided guidelines and suggestions on the successful implementation of IT projects; the imperative was that 'mistakes of the past' had to be avoided (*ibid*,p4). Suggestions included placing IT projects in the context of the wider business change, strong leadership, risks assessments, performance measurements and indicators, improved relationships with suppliers and, in line with strategic thinking, that ICTs must be used to enable work across traditional departmental boundaries. The report acknowledged that there were no simple and clear solutions to project management difficulties and therefore recommendations, rather than prescriptions, were offered.

However, it was clear that compliance to the recommendations was being strongly promoted; success in the 'Information Age Government vision' would only be achieved if they were incorporated into the implementation of the e-government strategy (*ibid*.,p60). The report advised that 'implementation of the recommendations

in this report cannot be considered optional if improved practices and greater success are to be achieved' (*ibid.*,p61). The e-Envoy was given the task of supervising and managing the implementation of the recommendations, with permanent secretaries of departments reporting progress up to the e-Envoy (*ibid.*). A few months later the government indicated that the recommendations were indeed being utilized; in December 2000 Ian McCartney claimed that two thirds of the measures detailed in *Successful IT* had been successfully applied to new IT projects (Kable,2000f).

*Successful IT* also proposed that the OGC (which the CCTA become part of shortly after the report was published) would have a prominent role in central involvement in departmental IT project management. In particular the OGC was asked to subject departmental e-government projects to a 'peer review' at certain 'gateway points', should the e-Envoy decide that such inspection was required (OeE/CITU,2000,61). This mechanism would become a notable tool with which the OGC, operating in the Treasury, would assess many projects in subsequent years. Thus, although a Cabinet Office unit had led the *Successful IT* report, it was a Treasury unit that would provide central testing and advice to e-government project managers in departments.

The OGC had conducted over 60 reviews of IT projects by February 2001. The aim of these 'Gateway Reviews' was to curb failure rates by 'testing projects at five crucial stages in their life cycle', and Peter Gershon, then head of the OGC, thought that the scheme could save the taxpayer £500 million (Kable,2002v). However, the OGC did not have any power to cancel projects, and the review reports themselves were kept secret. Questions were asked in parliament regarding the effectiveness of the Gateway Reviews (Hansard,2002/03a,col. 315(W)). One MP, interviewed for this thesis, noted that the problem was that departments could disregard the reviews, and the relevant information was not in the public domain. Hence, 'if they want to ignore the Review and go ahead but it's in the public domain then fair enough, on their heads be it – but what I wouldn't want is for them to ignore it and for it not to be in the public domain – we need to know' (*interview – 4*).

However, it was argued that the OGC saw the Gateway Review process as more of an advice service than anything more proscriptive. A civil servant involved in OGC activity in this area clarified the position:

I don't think that the OGC or anyone else is best suited to understand every departments' business strategy, some of that responsibility has to stay with departments... You have someone coming in and assessing a single project, looking at how that project works but you can't see how that project fits with everything else, so we wouldn't be in a suitable position to make a be-all-and-end-all judgment (*interview – 8*)

Nonetheless, it was clear that, using mechanisms of the OGC and strategy of the Cabinet Office, central government had energized its interest and involvement in project management processes in department and agencies, spurred by the e-government agenda and Modernising Government programme.

*Departmental IT Failure in the e-government Era: Detracting from the facilitation of joined up government*

Simultaneously however, away from the development of websites, audit and press scrutiny continued to point the finger at departmental IT projects for failing to deliver improvements in service delivery. Arguably, this took attention away from the ambitions of e-government policymakers, and acted as a reminder of the departmental track record with IT project management, which constrained the ambitions of ICT-mediated joined up government.

A prominent example was the case of the National Probation Service Information Systems Strategy (NPSISS) managed by the Home Office's Probation Unit, with Bull Information Systems being the main contractor. As the NAO and the PAC found, the main problem was the case record and management system (CRAMS), which had proved to be difficult to use and failed to keep up with the requirements of the Probation Service (NAO,2000/01; PAC,2001/02e).

Work on CRAMS was suspended in 1999, when the NPSISS was substantially over budget (NAO,2000/01,summary para. 3; PAC,2001/02e,paras. 2,3). CRAMS was



initially expected to cost £4 million, but was reassessed at £11 million after the problems (NAO,2000/01,summary para. 11). The Home Office management team was found to lack consistent leadership and resources, responsibilities were unclear and communication was weak (*ibid.*,para. 3). The relationship with Bull also drew criticism; the NAO found that ‘the performance of Bull was not managed effectively’ and the Home Office made unnecessary purchase orders to the company, leading to ‘duplication and overlap, and a risk of overpayment’ (*ibid.*,paras. 13,14). Harry Fletcher from the National Association of Probation Officers, commented that CRAMS had been ‘a complete waste of the taxpayers’ money’ (Maguire/Hencke,2001).

Another example was the Benefits Payment Card project, conceived during the Conservative government in 1995, which drew considerable attention from the NAO (1999/2000b) and the PAC (2000/01; 2001/02g). A partnership between the Department of Social Security and Post Office Counters awarded a contract to a subsidiary of ICL, known as Pathway, in May 1996. The project was set to computerize the benefit payment system in Post Offices across the country, and replace paper-based methods with a magnetic stripe payment card. The project’s contract was one of the first examples of the PFI (Private Finance Initiative), where the supplier would take more financial responsibility for the scheme. The project was found to be disastrous by audit examination; it cost the involved parties and the taxpayer over £1 billion in abortive expenses (PAC,2001/02g,para. 2) and effectively signaled the end of ICL (Gibbs,2001). Even though the Treasury expressed grave doubts about the viability of the project (Watt,1999), the NAO found that all parties underestimated the difficulties involved in the enormous scheme (PAC,2001/02g,para. 3). The project was dropped on the 25th May 1999 and, overall, the PAC found it to be ‘one the biggest IT failures in the public sector’ (*ibid.*,para. 4v). Sir John Bourn, the Comptroller and Auditor General, blamed ‘organisational myopia’ for the disaster, which caused mistakes in IT projects to be made ‘time and time again’ (Hencke,2000).

A third eminent example of perceived failure was found in the scandal at the Passports Agency at the end of the millennium. From early 1999 the agency was

experiencing major problems in meeting demands for new passports, the root of the problem being the new computerized passport systems at the Liverpool and Newport offices. Siemens, the supplier for the project, failed to successfully roll out the new systems on time due to unforeseen problems, and without sufficient contingency plans, significant delays were experienced (NAO,1999/2000c,summary paras. 3,4). The delays cost the agency an estimated £12.6 million, and Siemens £9 million (*ibid.*,para. 11). The PAC considered the breakdown of service to the public to be 'a deplorable departure from the high standards of service the public has a right to expect' (PAC,1999/2000c,paras. 3,4). It was also concluded that the relationship between the supplier and the government body was unsatisfactory; the agency found itself unable to hold Siemens liable for anything near the full costs of the disaster (*ibid.*,para. 48).

There were also continuing problems in the Contributions Agency, with the National Insurance Recording System and the Home Office, with the Immigration and Nationality Directorate Casework programme. Both of these programmes, instigated in the mid-1990s, were discussed in Chapter Two but had remained as ongoing difficulties well into the e-government era (see PAC,1997/98; 1998/99b; 1999/2000b; Kable,2002w; Travis,1999).

ICL was taken over by Fujitsu and renamed Fujitsu Services during this period. One of its most prominent contracts was with the Libra project, which aimed to cut delays in processing criminal cases by electronically transferring case files between 400 magistrate courts, the police, prisons, the probation services and other governmental bodies. However *Route to Justice*, an Audit Commission (AC) report, found that, by summer 2002, the Lord Chancellor's Department was fighting to save the project, which had experienced major IT problems since its inception in 1998 (AC,2002b; Cross,2002a; Kable,2002x). The Public Accounts Committee were damning of the actions of both the department and the private supplier in the programme, commenting that it was 'one of the worst PFI deals that we have seen' (PAC,2003,p4). Fujitsu Services were dropped from the project, and the ensuing search for a new supplier would cause further delays in the ailing venture (eGov

Monitor,2002c). Nonetheless Fujitsu Services were soon involved in a £300 million project to upgrade the DVLA's IT system (eGov Monitor,2002e).

Finally, in August 2002, the Child Support Agency announced that its IT system would not be ready for 'another year or so' despite already being £50 million over budget and well behind schedule (Kable,2002o). The government had already held back new child support reforms in March 2002 because the system was not in a sufficient condition; the agency and the supplier (EDS) both apportioned blame to each other (*ibid.*). The table below provides further details of perceived IT project failures, according to audit investigations.

**TABLE ONE**

**MAJOR GOVERNMENT IT 'FAILURES' IN THE E-GOVERNMENT ERA**

	PROJECT NAME	DEPT(s)	IT SUPPLIER	DATES	NOTES
1	NPSISS-Case Record and Management System	Probation Unit/Home Office	Bull Information Systems	95-99	Suspended in 1999 £6 million over budget
2	Benefits Payment Card	DSS/PO counters LTD	ICL Pathway	96-99	Suspended in 1999 with £1 billion in abortive expenses. Resurrected in 2002
3	Passports Agency New IT System	Passport Agency	Siemens	97-99	Technical problems cost £12.6 million and 40-day delays in passport turnover
4	NIRS2	Contributions Agency	Andersen	95-99	Continuing problems led to a compensation payment of £38 million to pensioners
5	Immigration and Nationality Directorate Casework Programme	Home Office	Siemens	96-99	Delays and hardship were experienced through a 176,000 backlog of asylum and nationality cases
6	LIBRA	Lord Chancellor's Department	ICL/Fujitsu Services	98-	Collapsed in 2002 at £136 million over the initial budget and no improvements in service. LCD bought itself out of the old supplier contract and sought a new solution
7	Childs Support Agency IT System	CSA	EDS	02-	Huge delays in a new IT system, £50 million over budget. Contributed to the CSA failing to collect £200 million

8	E-Revenue	Inland Revenue	EDS and others	01-	Problems led to slow take up in online tax services. Security breaches and a major error (where £15 million of debts were wiped) tarnished this flagship e-government project
9	Disclosure	Criminal Records Bureau	Capita	01-	Delays and frustration experienced by users. The project received significant negative press attention
10	V.A.T Online	HM Customs and Excise	Microsoft/EDS	01-	Pilot project had 66% dropout rate, as users were not attracted to filing VAT online
11	Government Gateway	Office of the e-Envoy	Compaq	01-	Following project problems relations between with the supplier broke down, allegedly at a cost of £4.77 million
12	Individual Learning Accounts	Department for Education and Skills	Capita	00-	Allegations of security breaches and fraud led to its suspension. The relationship between DfES and supplier was criticised
13	Census Online	Public Records Office	ESS/QinetiQ	00-	Service was overwhelmed and suspended for months after four days. Relations between supplier and department were criticised
14	CPS Tracking System	Crown Prosecution Service	(PFI contract)	90-	Over budget and delayed, the project was downscaled in 1997, to the detriment of the intended service improvements
15	Housing Benefits IT System	DSS/Benefits Agency	EDS/IBM	99-	Delays in the roll out of the system exasperated attempts to combat widespread benefits fraud

SOURCE: ORGAN,2003,p32

Thus, the perception was that there were often severe shortcomings in the IT project management skills of government organisations. A PAC report that identified 25 major IT project disasters during the 1990s (1999/2000b) was still pertinent in the new millennium as similar problems were reoccurring. David Davis, the chairman of the committee at the time, commented:

such projects are too often delivered late or not at all; they come in over budget or fail to work as intended from the outset. The consequence of such poor performance is that the citizen loses out. Basic errors are repeated time and time again, but lessons do not seem to have been learned (quoted in Travis,1999)

This track record, along with continued negative audit scrutiny, put much emphasis on the imperative of improving levels of successful IT project implementation by fulfilling set objectives on time and on budget. Central government had put energies

into helping to improve the situation through recommendations and peer reviews. However, this had arguably taken attention away from the application of e-government to joining up, as the focus on project management issues appeared largely to operate in the purview of discrete departmental IT operations.

Yet, the publication of the PIU's *Wiring it Up* document, as discussed in Chapter One, demonstrated that joining up, through a variety of measures (PIU,2000a,p18), was very much on the agenda for central strategists. Although there was virtually no mention of ICTs in *Wiring it Up*, the OeE would quickly espouse the association between e-government and joined up government communicated in other policy documents. With the OGC accepting the primary role in renewed efforts to offer project management scrutiny and assistance to government departments, the OeE (having subsumed the CITU) concentrated more on addressing some of the issues surrounding the strategic direction of e-government, as departments moved to reach the overarching 2005 target for electronic service delivery.

### 3.7 CONSTRUCTING E-GOVERNMENT TOOLS AND MEASURES: JOINING UP FROM THE CENTRE THROUGH THE OFFICE OF THE E-ENVOY

Just as the CITU was merged with the OeE, the PIU published a further major report; *e.gov: Electronic Government Services for the 21<sup>st</sup> Century*, which covered similar ground in terms of the central policies and technical architecture found in the previous CITU *Strategic Framework* document. However, some significant departures and embellishments did feature in the PIU report that provided indications of the modus operandi of the enlarged OeE. For instance, e-government, it argued, should not only be joined up but should be delivered through a range of electronic channels, by private and voluntary sector actors as well as government organisations (PIU,2000b,p3). The central message of the report was, however, familiar and clear, that electronic methods would transform service delivery into a more joined up model, to the benefit of citizens.

As with previous policy documents, the PIU report put particular emphasis on how the vision for e-government would be realised with the aid of central steering. It

recommended that six-monthly Cabinet meetings to discuss and monitor progress with e-government would be useful, and argued that the OeE should have some control over the release of funding for projects (*ibid.*,p10). Technical standards, developed by the OeE should be adhered to on a 'mandatory' basis across the public sector whilst common functions such as the Government Gateway should be used by departments as a key tool for integration (*ibid.*,p88). The report discussed the proposed 'UK Online' portal (which replaced open.gov.uk in December 2000) as an instrument of joining up, with online services drawn together from different departments and organised as clusters around citizen 'life events' (*ibid.*,p12), a concept originally discussed in *Modernising Government*. Initially, the UK Online portal was to create joined up services around 'Having a Baby', 'Going Away', 'Dealing with Crime' and 'Moving Home'; the report recommended that all government services to the citizen should be available through the UK Online portal, unless the OeE gave a 'specific exemption' (*ibid.*,p51).

Thus, as with previous policy documents, the PIU report gave much prominence to the role of the centre in providing common architecture, technical standards, progress monitoring and web portals; the OeE was placed at the heart of the e-government strategy. However, the PIU expressed concern that the centre of government 'has had few levers with which to influence progress' and discussed how it could become more effective. The report recommended a 'carrots and sticks' approach to incentivise departments to innovate and join up services where possible. Whilst the centre should ensure that government organisations were not acting in isolation from each other, it was also made clear that 'departments and agencies must have sufficient freedom to serve their customers' and that the centre should not 'second-guess' service providers in many circumstances (*ibid.*,p72,87).

Thus, the role for the OeE and surrounding central mechanisms was to be sophisticated and balanced according to the report, not least because the PIU recognised the challenge which lay in creating the necessary institutional and organisational changes for joining up through electronic means. The report warned that the scale and complexity of government, along with the size of client groups, volume of transactions and number of different back office systems would make

coordination difficult, not least as there was little incentive for departments to deliver electronic services in partnership (*ibid.*,p70,79). Key institutional factors were therefore acknowledged in the PIU report, although much of the subsequent output by the OeE itself indicated a wariness to discuss such issues in public documents.

Certainly, the PIU report devoted considerable energy to independently exploring desirable future scenarios and possible options for the direction of e-government (e.g *ibid.*,p16-31) rather than more immediate, wholly concrete issues. Still, the PIU was influential and close to the OeE in the Cabinet Office; the e-Envoy sat on the advisory group for the report. Much of the recommendations can be seen in the subsequent work of the OeE, which was just beginning to increase its activity in implementing and steering the emerging e-government strategy as the report was published.

However, there was a question as to whether the PIU report should have been seen as accompanying or succeeding the CITU strategy document published a few months before. Although the CITU report was mentioned by the PIU, confusion abounded as the Prime Minister's introduction commented that 'government must set out a clear vision of what it is trying to achieve' (*ibid.*,p3); this despite the existence of the CITU strategy for some months. Although the two reports contain similar themes and ideas, some divergence in contents could be considered to have detracted from the coherence of the central e-government strategy. Nonetheless, both documents, informed by *Modernising Government*, contributed significantly to the direction of the OeE and firmed up the components the e-government strategy. With a number of strategy documents to draw from, the OeE, as the leading central body with strategic responsibilities for e-government, was set by late 2000 to step up its activity in helping implement the proposals.

#### *UK Online: Facilitating joining up on the web and in departmental back offices*

The work of the OeE, orientated around encouraging e-commerce, making the internet universally accessible and getting all government services online by 2005, was organised around the general programme of 'UK Online'. Progress with the programme was expressed in annual and monthly UK Online reports by the OeE. According to the first, and indeed subsequent annual reports, the key imperative of coordination in e-government to produce joined up service delivery, expressed in

*Modernising Government* and subsequent policy documents, was taken to heart by the Office. Furthermore, the specific recommendations on how to help achieve the joined up model were taken forward by the Office; these included technical architecture and standards, a more sophisticated central portal, improving data sharing across departments, departmental e-government project budget allocations, identifying opportunities for joined up services, championing private and voluntary sector involvement and monitoring departmental progress with e-government projects.

In the immediate months and years after autumn 2000 it was the OeE run central UK Online web portal that received most attention. The portal [ukonline.gov.uk](http://ukonline.gov.uk) replaced [open.gov.uk](http://open.gov.uk) on the 4<sup>th</sup> of December 2000, and was billed as 'a single point of entry to all online official government information and services' by bringing information together 'from over a 1000 public sector websites' (OeE, December 2000 'Monthly Report'<sup>15</sup>). The UK Online portal was intended to represent an 'overarching brand' to present e-government in 'a coherent and coordinated manner' (OeE,2000,p60). In particular, the Life Episodes project was to feed into the UK Online portal to procure this coherence for users, who would for instance be able to notify government online of a change of address or arrival of a new baby once, with the necessary agencies being automatically informed and services provided in a unified manner. However, by 2000 the appearance of the UK Online portal and Life Episodes had already been delayed (Kable,2001a) and was seen as 'very much work in progress' (OeE, December 2000 MR). Nonetheless, it was claimed that the portal received 1.5 million hits in its first month, despite the 'deliberate lack of publicity' surrounding the site (OeE, February 2001 MR).

The Government Gateway was a second key component to the UK Online programme; it went live in January 2001, with Microsoft being the main contractor. As discussed previously (CITU,2000,p20-21), the Gateway represented 'middleware' that would authenticate, sort and redistribute data to relevant back-office systems and individual online service users. Users would be able to register and log on to the central Gateway portal and transact with multiple government agencies at a single point. It was claimed that it was the first of its kind in the world, and that it would



enable 'true joined up transactions for the first time' (OeE, February 2001 MR). According to the director of the project, by September 2002 the Gateway was 'used by the Inland Revenue, Customs and Excise, Dept of Trade and Industry, Dept of Environment and will soon add the Dept of Work and Pensions, some of the Devolved Administrations and others' (Mather,2002).

Thirdly, the OeE was also making efforts to develop technical standards to which government agencies would adhere to encourage data sharing and integration between back offices, in certain instances. The Office launched the e-Government Interoperability Framework (e-GIF) in October 2000 (OeE,2000,p46) and in subsequent years many technical amendments were made. A year later no less than 11 documents were released (some were revised versions of older documents) which largely provided technical frameworks and standards that dealt with security specifications, registration issues, the minimum requirements for the validation of a user's identity and other issues. For instance, the *e-Services Development Framework* (2001d) was produced to help establish standards for interoperability between departmental IT systems.

Fourthly, the monitoring of departmental progress with e-government projects appeared as an important responsibility for the OeE. All main central departments had produced initial e-government business strategies by October 2000 and submitted them to the OeE for assessment; a second round of documents was submitted in July 2001 by departments. This reporting process was promoted as a facilitator for 'transforming the quality of services offered to individuals and businesses' (Hansard,2000/01e,col. 781) and as 'the foundation for ensuring that the government will meet its target that all key services should be available by 2005' (OeE, December 2000 MR). The OeE would use the submitted documents to monitor and aid departments in reaching the general 2005 target.

It was through these four tools and measures in particular that the OeE was steering the e-government strategy; more would be added following the appointment of the second e-Envoy, as discussed in the next section.

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<sup>15</sup> Referred to as MR forthwith.

### 3.8 E-GOVERNMENT ACTIVITY UNDER ANDREW PINDER

Following the departure of Alex Allan, Andrew Pinder had occupied the position of e-Envoy for three months as an independent IT consultant, having previously spoken at CCTA and other public sector events in this capacity (Kable,2000b; 2000d). Pinder made it clear that he was not interested in the permanent position. However, by December 2000 the pressure was on to find a permanent e-Envoy, as Richard Wilson (then Cabinet Secretary) had already stated that he wanted to make an appointment by the end of November (Kable,2000e) and questions were being asked in parliament (Hansard,2000/01b,cols. 327-328). Yet an internal memo revealed that the quality of applicants had been 'very disappointing' and therefore, bizarrely, Pinder appeared to be the favourite even though he had insisted that he was not applying for the job (Kable,2000d), and he was officially assigned on 31<sup>st</sup> January 2001.

Pinder was immediately positive about the UK Online central portal, describing it as 'a bureaucracy-busting website which is designed to dramatically cut the hassle of dealing with government' (Pinder,2001a,p1). Elsewhere he promoted the familiar aspiration that 'services should be packaged in a tailored, customer-focused fashion...so that the citizen or businessperson is offered real benefits by transacting online' (Pinder,2001c). As for his own role, he saw it as 'an energy source, a focal point' that needed 'someone with a sense of vision...who can help pull things together and make connections' (Pinder,2001b). Pinder also indicated that reform in the business operations of government would be required to realise his aspirations: he wanted 'a cultural revolution to turn the behemoth of bureaucracy into a slick e-business machine' (Pinder,2001a,p1).

A few months after Pinder's appointment there were further changes to the ministerial personnel with responsibility for e-government. Lord Macdonald took up the mantle of Minister for the Cabinet Office and Chancellor of the Duchy of Lancaster, replacing Mo Mowlam. However, while Ian McCartney was moved to the new Department for Work and Pensions, there was no clear replacement for him as a Minister with some e-government responsibility. Within the Cabinet Office,

Christopher Leslie was given some responsibility for IT in government, and also answered some questions in parliament (Hansard,2001/02b,col. 898(W); 2001/02c,col. 383(W)). Blair had spurned calls for the appointment of a dedicated e-Minister at Cabinet level, instead promoting Douglas Alexander to the post of Minister for e-commerce and competitiveness at the DTI (Kable,2001e) to support Patricia Hewitt, who retained overall responsibility for the e-agenda, despite heading her department. Some observers believed the ministerial situation was confused and unlikely to lead to effective coordination. In parliament, Derek Wyatt asked why a high-level Cabinet 'internet Minister' had not been appointed but Ian McCartney retorted that Tony Blair himself fulfilled this role (Hansard,2000/01b,cols. 327-328).

#### *Departmental Projects During Pinder's Tenure: e-government in silos*

As Pinder began his term as permanent e-Envoy in early 2001, it was clear that a number of government agencies had begun instigating e-government projects and online services, largely within the purview of existing organisational boundaries. In December 1999 Tony Blair launched the NHS Direct online service, which provided extensive health advice to aid 'self-help' style diagnosis. The service received over a million hits on its first day (OeE, January 2000 MR) but later leveled out to an average 100,000 hits daily (Bosely,2000). A more in depth online consultation service, the National Electronic Library for Health, was also being developed with the objective of enabling citizens to access the same information as their doctor (Kable,2002t). Another major welfare initiative was to ensure that citizens would have electronic patient records in place of paper documentation (OeE, June 2000 MR), accessible across health and social service agencies and drawing together personal data from a variety of sources (see Chapter Five).

The Inland Revenue was also launching e-government schemes during this period. From March 2000 it was possible for businesses and individuals to file self-assessment tax-returns online (OeE, March 2000 MR), and by January 2001 these taxpayers could pay tax online using a debit card (OeE, February 2001 MR), said to be the first example of a central government body offering citizens the option to pay debts online (NAO,2001/02c,summary para. 7). Also, an internet PAYE service was

introduced, to allow employers to send and receive tax information over the internet. Ultimately it was hoped that there would be universal 'e-filing' of PAYE returns (OeE, May 2002 MR). Some aspects of the Inland Revenue's e-government services used the OeE's Government Gateway system.

In July 2000 the Lord Chancellor announced that a National Land Information Service (NLIS) would be launched to develop an online gateway to property information (OeE, July 2000 MR), and the Land Registry was computerizing 45 million records to allow citizens to view records online (OeE, February 2001 MR). 'Land Registry Direct' also appeared, offering electronic access to more than 17 million registers, title plans and deeds on the Land Register; it aimed to speed up house buying and selling through 'e-conveyancing' (NAO,2001/02d,p2-4). In November 2000 the Employment Service had extended its contract with EDS to include the installation of new computers and touch screen kiosks in a thousand Job Centres and a new website (OeE, December 2000 MR). A few months later worktrain.gov.uk was instigated, a website which drew from several different departments to offer information on jobs, careers and learning for jobseekers (OeE, March 2001 MR). A National Statistics website was launched in June 2000, arranged around 13 themes such as 'crime and justice', 'population and migration', 'social and welfare' and so on (OeE, June 2000 MR). Similarly, the Public Records Office was developing an online database of eight million records, to enable a faster and more convenient service (NAO,2001/02d,p15-16). The Court Service launched an e-court pilot to enable solicitors to issue interim applications by email, where possible for judges to resolve without the need for a court hearing (OeE, February 2001 MR). Later, further services were implemented, where citizens' owed money could issue an online claim, and progress with court cases could be followed over the internet (Dyer,2002). The NAO found that the e-court pilot speeded up the issuing and serving of court applications by 16 days on average (NAO,2001/02d,p13).

Her Majesties Customs and Excise (HMCE) was developing online transactional facilities; this included updating its existing electronic customs declaration system and a new internet-based Value Added Tax (VAT) service (NAO,2001/2002d,p18). The Department of Work and Pensions (DWP) and the Post Office signed a contract with

SchlumbergerSema to convert the payment and order book system, used by 13 million citizens in Britain, to an automated service. From October 2002, claimants were being informed of these reform plans, which represented the successor to the ill-fated Pathway project. Pathway was identified as 'Whitehall's most expensive single IT disaster', and therefore the new project had considerable pressure on it to perform (Kable,2002s).

All of the discussed along with many other examples were bona fide evidence that in particular, web-based services, as an integral component of the central government model for e-government, were being developed enthusiastically by many departments. Although it was the case, in keeping with an enduring pattern, that audit scrutiny was identifying many perceived failures within individual projects (discussed below), the proliferation of e-government projects could be seen as a notable success. The impetus of the centrally set 2005 target, with support from Cabinet Office units (the CITU, PIU and OeE), would have been partially responsible for stimulating and guiding departmental e-government activity. However, evidently, most of the projects, despite using new internet based technologies, were firmly rooted in departmental settings. Although the internet and associated ICTs had been embraced as a new channel for departmental service delivery, there were few indications that government agencies were using technologies to help coordinate or integrate appropriate services by the end of Pinder's first year as e-Envoy, although central infrastructural tools had some influence.

*The Second Annual UK Online Report: Further e-government tools and measures to facilitate joining up*

However, the OeE's second UK Online report, published in December 2001, indicated that central government would continue to attempt to guide and develop measures to encourage joining up through e-government. The report noted that the UK Online portal, which was receiving over a million hits per week, had developed an engine to search 700 government websites and had added further Life Episodes ('death and bereavement', 'learning to drive', 'looking after someone', 'looking for a job' and 'pensions and retirement') to accompany the existing four (OeE,2001a,p53). The intention was to 'integrate many of the presently separate Government sites'

under the UK Online portal (*ibid.*,p54). Still, despite the expansion of the Life Episodes, there was concern in the report that not enough progress had been made with joining up. As a result an 'inventory of joined up projects' had been produced to take forward to departments for potential development (*ibid.*,p47). Furthermore, the Government Gateway was promoted as 'an exemplary piece of infrastructure' that would hide the complexity of dealing with government for online users and provide a platform for departmental back office systems to share data. The aim was to increase the functionality of the Gateway, not least by closely tying it with the UK Online portal, to increase the transactional capabilities of the government's central web presence with a single online payments engine, secure email and downloadable personal documents (*ibid.*,p54-55).

The OeE had also been developing a new service; the Knowledge Network was set to deliver 'a unified cross-Government communications infrastructure to enable officials in all Government departments and associated bodies...to communicate electronically with each other and share common, secure access to databases, discussion forums, web-based community sites and 'knowledge pools'' (*ibid.*,p60). The report argued that, whilst previously civil servants were 'effectively trapped in technical and organisational 'silos'', information and knowledge could be shared freely across government following the emergence of the Knowledge Network, thus facilitating joined up working (*ibid.*).

Coordination, integration and joining up remained the key mission of the OeE and the central e-government strategy. The measures were intended to not only bring together government services online, but also to help 're-engineer departmental business processes' and instigate 'a major programme of change' (*ibid.*,p46,48). The applied logic was that new ICTs were closely associated with profound transformations in the organisations and processes of government. Not only would e-government transform the mode and methods of service delivery but also, government organisations would have to change and adapt to be able take advantage of new ICTs. Either way, the OeE philosophy was clearly that e-government had transformation at its heart.

By 2002 there had undoubtedly been a significant reaction to the internet and other new ICTs across many areas of government. Specifically as a response to the OeE-driven central e-government strategy, many government organisations had submitted e-business plans and were working towards the overarching 2005 target for 100% electronic service delivery. Many also had contributed to the UK Online portal through the Life Episodes functions and a few were using the Government Gateway to provide transactional services to citizens and businesses. By then the public could apply for a passport, buy a TV licence, nominate someone for an honour, book a driving theory test and get a fishing licence through the UK Online portal. The GSI infrastructure was used quite pervasively for email by central departments.

Funding was certainly available for e-government projects at this time; during 2002 there were 100 new IT investments in central government, with a cost nearing £10 billion. Of this figure, the allocation of £1 billion was the responsibility of the OeE in conjunction with the Treasury (NAO,2001/02d,p10). Although still a significant portion, it was clear that tight budgetary control was not the primary means through which the OeE would oversee and steer the departmental response to the e-government strategy; other measures would be relied on to encourage an emphasis on joining up. It was during this period that many departmental e-government projects were critically scrutinised by audit, parliamentary and press observers. This scrutiny, a useful indicator of the wider e-government landscape beyond the activities of the OeE, is related in the next section.

### 3.9 DEPARTMENTAL E-GOVERNMENT AND AUDIT SCRUTINY

The Inland Revenue's e-Revenue programme won some audit praise, with a sophisticated website and innovative transactional services for self-assessment and PAYE, using the Government Gateway architecture (NAO,2001/02c, summary paras. 3,7). The Office of the e-Envoy had offered this as proof that e-government was moving towards more transactional rather than solely informational services (OeE, February, March, May 2002 MRs). However, audit scrutiny from the NAO found that there were problems with some aspects of e-Revenue. For instance, with the submission of tax returns, four out of five internet submission attempts by citizens

failed (NAO,2001/02c, summary para. 8). Although some of these failures may have been due to errors on behalf of the user, there were still clearly some inadequacies in the system. Many of these were improved, and by December 2001 70% of first-time submission attempts were successful (*ibid.*), although only 39,000 taxpayers used the Self-Assessment service in 1999/2000, compared with a projected 315,000 (*ibid.*, summary para. 14).

The NAO did identify successes in the business use of the PAYE online service (*ibid.*) and other ICT projects. Nonetheless, it was the technical problems and levels of take-up of e-Revenue services that made the headlines (e.g. Ward,2002), and prompted questions in parliament (e.g. Andrew Lansley in Hansard,2000/2001d,col. 330). The Liberal Democrats conducted their own research on the costs of self-assessment, which they concluded cost £212 annually per user with e-Revenue rather than £60 for the old paper based system (eGov Monitor,2002a). Also Silcock claimed that, when the Inland Revenue first introduced the online self-assessment service, staff had to take the counterproductive measure of keying data sent over the internet by hand as the technical infrastructure was not yet complete (2000,p90).

Answering questions for the follow-up PAC report (2001/02a), Nicholas Montagu, chairman of the Inland Revenue, argued that a 'build and learn' approach had been adopted, which inevitably led to 'teething problems' that could subsequently be overcome (*ibid.*,Q4-11). Still, on the issue of security fears (the danger of fraud and loss of privacy for users through hacking or computer error), Montagu offered a 'categorical and copper-bottomed reassurance' (*ibid.*,Q71). Ironically, one month after the hearing, the Inland Revenue withdrew its Self-Assessment service after reports that users could see information about other taxpayers on certain web pages, and snippets of information which they had not inputted themselves were appearing on their online forms (*ibid.*,summary para. 29; Inman,2002). This, coupled with a less publicised mistake made in February 2002, where £15 million of taxpayers' debts were wiped from its computer system (Kable,2002d), led to a confidence-building television advertising promotion to encourage citizens into using e-Revenue services.



A further example of internet security failures prompted concern about the trustworthiness of government online services; there were alleged security breaches in the Individual Learning Account (ILA) system. Accounts were opened with the Department for Education and Skills (DfES) by 2.5 million people, to help improve their skills and training, not least by a £150 grant for the first million people to apply (MacLeod,2001). The system was suspended when it was revealed that confidential data could be accessed online by some account holders, leaving open the possibility of fraud (Kingston,2002). This generated an Education and Skills committee report (2001/02) and a House of Commons debate (Hansard,2001/02d,cols. 1033-1062) that scrutinised the relationship between the DfES and supplier Capita. In July 2003 it was announced that the ILA system would not be resurrected and the PAC deemed the DfES's relationship with Capita 'wholly inadequate' (Kable,2003j).

Despite security problems, by 2003/04 the uptake of key e-Revenue services had improved and a sharp rise in take up meant the service had received one million online tax returns (Upton,2004; Kable,2003a); the programme had successfully offered a viable alternative to traditional tax transactions and had attracted many users. Although a notable achievement, the Inland Revenue's premier e-government service did largely mimic existing paper based methods and there was less evidence that, for instance, joined up services offering tax, pensions and benefits services from across departments were being developed. However, in March 2004 it was announced that HMCE and Inland Revenue would be merged in the coming years to form Her Majesties Revenue and Customs. By summer 2004 it remained to be seen if relevant interoperation and integration between the back office systems of the two departments would occur (Morgan/Rae,2004) and whether joined up services for citizens and businesses would emerge as a result of the merger.

During 2002, critical scrutiny was being applied to other e-government projects. The Criminal Records Bureau vetting service, Disclosure, was launched in April 2002 to provide organisations with background checks on new employees set to work with children or vulnerable adults. The checking involved consultation of police, DfES and the Home Office databases to ascertain the suitability of each individual submitted for vetting. Disclosure was initially delayed because of computer difficulties, and this led

to a backlog of applications, which numbered 100,000 by August 2002 (Kable,2002q). An emergency plan included employing clerks in India to help process applications, the temporary suspension of the new system, and a hundred new staff (Curtis,2002; Kable,2002q).

Whilst the Home Office threatened the IT supplier, Capita, with legal action, the murder of two children (Holly Wells and Jessica Chapman) by a school caretaker and the imminent return to term-time after the summer holidays meant that the Disclosure backlog was receiving constant attention in late summer 2002. The service was suspended in March 2003 whilst the problems were reviewed (Kable,2003b). In February 2004 the NAO provided a definitive appraisal of Disclosure, finding fault in the decision to go ahead with the service despite questioning of its readiness by the OGC's Gateway Review team (NAO,2003/04, summary p3). A key issue was that Disclosure found it difficult to glean information from different government databases; information was either gathered too slowly or, in the case of HMCE and British Transport Police, not at all (*ibid.*,p6,4).

One of the most eagerly awaited and lauded e-government projects, the online 1901 census, also ran into problems very early into its existence. The website went live in January 2002, and offered the chance for the public to find lost relatives, conduct research and trace histories. 32 million records from the census conducted in 1901 were digitised by QinetiQ, which subcontracted transcription work out to Enterprise Supply Services, a commercial arm of the Prison Service; much of this work was carried out by inmates (Rayner,2002). However, the main problem emerged the day it was launched, when over one million hits were being received per hour, swamping the site enough to block entry for most users. The site was suspended after four days and its planned relaunch was delayed by several months; the 1901 census project was said by the press to have become 'a byword for inadequate attempts to deliver e-services' (Kable,2002h). However, the service was nonetheless in the favourable position of having high levels of latent demand from users and would become a successful e-government project once the volume of requests were accommodated (NAO,2002/03).

Whilst many departmental e-government projects were considered successful, often after a challenging period where problems were addressed, the critical scrutiny during this period brought home a point that government IT would be as difficult and complex in the e-government environment as previously. Project management skills were an enduring cause for concern; the OGC's Gateway Reviews found that 76% of e-government projects inspected had three or more weak aspects around 2002 (PAC,2001/02c,para. 18). Elsewhere, it was announced that only 10% of IT projects passed through the Review at the highest level (Kable,2001b). Thus, whilst e-government was being embraced by many departments and agencies, the emphasis appeared often to be on successfully managing the implementation of internet and new ICT-based services and tools within existing organisational boundaries. Nonetheless, the OeE continued to promote measures to join up service delivery through e-government even as the Office began to wind down in 2002 and 2003, as discussed in the next section.

### 3.10 THE FINAL PHASE OF OFFICE OF THE E-ENVOY ACTIVITIES: SUSTAINING AND RENEWING ATTEMPTS TO FACILITATE JOINING UP THROUGH E-GOVERNMENT

During 2002 there was a number of changes and developments to the wider operations of the OeE and the political steering of e-government. There was concern that the citizenry were reluctant to access and use the internet, whether for the purposes of interacting with government or other reasons. The OeE used the endorsement of minor celebrities, dubbed 'online ambassadors', along with the creation of a free phone hotline and a new website ([letsallgeton.gov.uk](http://letsallgeton.gov.uk)) to encourage e-government and general internet use. There was also still considerable optimism from the highest political levels for the role of ICTs in public service delivery. For instance, in late 2002, Prime Minister Blair spoke at a highly publicised 'e-summit', where he stated a commitment to wire up every school, GP practice, hospital, police building and pension department to broadband by 2006 to help provide joined up services (Gibson,2002).

Also some appointments in a mini-reshuffle in May 2002 could have been taken as an attempt to inject youth and enthusiasm into the e-government agenda. The young Douglas Alexander was moved from his e-commerce post in the DTI to the Cabinet Office, to take up e-government responsibilities there as Minister of State, and was replaced by Stephen Timms, who took up his position in the DTI armed with more industry experience than Alexander. Christopher Leslie lost his Cabinet Office position, which included some e-government responsibilities; he moved to the new Office of the Deputy Prime Minister. Finally Lord MacDonald had his role tweaked slightly to put him closer to the Prime Minister, but left soon after.

Otherwise, the OeE continued to produce annual UK Online reports (OeE,2002b; 2003) which traced progress and developments of the measures set out in previous publications. Further measures, initiatives and policy directions were however announced during 2002 and 2003 that aimed to improve joining up. Firstly, the 2002 report noted that rather than concentrating on putting all possible services online to attain the overarching target, government agencies should also focus on those areas (taxation, health, education and land/property etc) where customer benefits were likely to be greatest. With this focus in mind, the OeE launched a cross departmental e-Government Delivery Programme to coordinate the development of high impact e-government services (OeE,2002b,46).

Secondly, the same report described the OeE's efforts to build a central infrastructure designed to host and provide content management for multiple government websites (*ibid.*,p65-66). The infrastructure, known as 'Delivering on the Promise' (DotP), was being designed to encourage content syndication and sharing across central departments' websites that would be housed and managed by OeE. In conjunction with the Office, the Treasury was set to require proof that alternative website provision was value for money if government organisations chose not to subscribe to DotP (*ibid.*,p66).

Thirdly, the OeE planned to introduce a 'pan-government toolbar' that would provide a common search facility available on all government websites (*ibid.*,p64). This was an attempt to add levels of coherence and consistency to the government's web

presence, in addition to UK Online and DotP. Fourthly, Project True North was an £83 million programme to develop two resilient (and secret) data centres to consolidate and house central e-government infrastructures (OeE,2003,p34). Plans were made to bring the hardware for the Government Gateway, Knowledge Network and UK Online portal together, to provide efficiency savings and security (OeE,2002b,p68); the government felt this would provide 'a firm planning basis for the delivery of joined up government' (OeE,2003,p34).

Furthermore, the OeE appeared to be exploring new areas and developing additional measures and projects for existing responsibilities. For instance during 2002 and 2003, the Office launched an interactive digital TV service, drove forward a smart card programme, led on e-democracy and electronic voting policy and initiatives, developed a policy framework for the use of private and public sector 'intermediaries' in electronic service delivery, and participated in considerations on the use of Open Source Software in government (OeE,2002b,p50-63).

During this period, the OeE continued to develop existing tools and measures; the Government Gateway was upgraded to allow local authorities to offer services through it, the Knowledge Network took on new facets and the e-GIF was updated every six months to 'ensure that departmental systems are interoperable' (*ibid.*,p64-65; OeE,2003,p33). Meanwhile, the GSI, a secure email service available to central government departments which it was hoped would develop into a sophisticated information sharing tool, was being led jointly by the OGC and OeE (NAO,2001/02d.p53). The OGC had commenced a procurement exercise for an updated GSI during 2002 (OeE,2002b,p66).

### *The Decline of the Office of the e-Envoy*

However, despite continuing OeE activity and the introduction of new measures, there had been some debate about the longevity of the Office beyond 2005; the deadline for the overarching 100% target. In 2002 it was reported that some OeE officials felt that the Office 'would not (or should not) exist beyond 2005' (NAO,2001/02d,p45); thus the organisation arguably carried with it a sense of transience. However, in March 2003, rumours began to surface that the OeE might not

reach 2005 as it was said to be subject to serious cutbacks. The head of the civil service at this point, Sir Andrew Turnbull argued in a PAC meeting that the OeE still had an important role to play, although some cuts were looming and Pinder himself was likely to leave at the expiration of his contract in April 2004 (Kable,2003c), some months before the deadline for the 100% target. Furthermore, the OeE lost the responsibility for the provision of broadband to the DTI, and the Monthly Reports to the Prime Minister began to peter out, often with many months between each briefing. By December 2002 the 100% target was pushed back from March 2005 to the end of that year, indicating that there were doubts about its achievability. In fact, in the same month a director at the OeE, Dr Chris March, was quoted widely as remarking that a 'miracle' was needed to reach the target (Blincoe,2002). In Spring 2004 the OeE had announced that 76% of services earmarked by departments were available electronically (OeE,2004b). However, the full list of e-enabled services indicated that most of them were informational (e.g. posting information and reports online), rather than transactional in nature (*ibid.*). Many of the more difficult transactional services earmarked, that required back office reform, were to be dealt with last by departments (Cross,2004e).

During a review of government communications (the Phillis Review) during 2003, rumours resurfaced that the OeE was nearing the end of its existence, at least in part because the title 'e-Envoy' was beginning to be seen as an embarrassing anachronism from the late-1990s 'dot com' era. On the 15<sup>th</sup> of December 2003, Douglas Alexander announced that the e-Envoy would be replaced, as part of a natural 'evolution', by a head of e-government (Cabinet Office,2003). Thus, the OeE looked certain to be terminated, or at least reformed beyond recognition in April 2004, to coincide with the departure of Andrew Pinder, although he had agreed to stay in some capacity to help with the changes. The Office had a life span of little more than four years, shorter than either the CCTA or CITU. Its termination provided fuel to the speculation that the e-government programme as a whole was being derailed. The Conservative Party, which had remained relatively silent on e-government issues for years, was beginning to voice concern. Michael Fabricant MP remarked that 'the e-Envoy's office is dying of death and UK Online just stutters forward', believing that departmental opposition had hindered progress (Say,2004,p11). During the same periods, a high-profile

efficiency review (Gershon,2004) indicated that less money would be available for departments to spend on e-government projects following the end of 2005 and there was a sense that, in terms of investment, the party was over (Cross,2004a,p6-8).

Nonetheless, the breaking up of the OeE did not single the end of central interest in steering an e-government agenda. The new Cabinet Office e-Government Unit, headed by Ian Watmore, continued the drive to apply ICTs to joined up delivery from 2004 but with some changes in emphasis, as discussed at the end of this Chapter. First, the next section of the Chapter will provide an assessment of the achievements of the OeE and its handling of the central e-government strategy.

### 3.11 ASSESSING THE STRATEGIES AND OUTPUTS OF THE OFFICE OF THE E-ENVOY

The first e-Envoy was appointed in January 2000 and the CITU was merged with the growing OeE in September of that year. The OeE's mission, to facilitate e-commerce, make the internet accessible and reach electronic service delivery targets, was guided by the objective of exploiting the internet to optimum levels, which ministers of the Labour government had seen as an imperative. By April 2004 the OeE had been replaced with the Cabinet Office e-Government Unit, which concentrated on electronic government services alone rather than the wider remit of e-commerce and internet access. From 2000 to 2004 the OeE drove the central e-government strategy, with the key imperative of joining up permeating much of its activity and outputs, as laid down by Labour government ministers and the e-envoy. This Chapter has fulfilled a central objective of the thesis in profiling the approaches and practices which government had offered to reach and develop the objectives set out in *Modernising Government* and related policy documents.

Since its creation, the OeE had as part of its remit a responsibility to introduce, promote and enthuse about the possibilities of the internet and associated technologies in public service delivery and beyond. The second e-Envoy, Andrew Pinder, saw his role as an energetic, evangelical visionary (Pinder,2001a,p1). The OeE, along with the CITU and CCTA, contributed to animation and stimulation of interest in e-

government in departments and agencies; for instance with the request for the submission of e-business plans to the e-Envoy and the creation of the overarching electronic service delivery targets. Also the OeE had been largely responsible for establishing or developing a number of key architectural tools such as GSI, the Government Gateway and the UK Online portal.

The role of the OeE in providing concrete initiatives, tools and guidance to help realise the strategies put forward in *Modernising Government* should not be underestimated. However, the four annual UK Online reports tended to be markedly positive and optimistic in style and content, contrasting with the complex and difficult task which OeE protagonists were well aware that they faced in helping steer electronic service delivery towards a joined up format. This reporting style drew criticism from the Trade and Industry Committee, which argued that there was a 'slight whiff of unreality about the electronic government agenda' (2000/01, page xiii).

There was a similar argument from an academic point of view; Bellamy pointed out that 'the rhetoric of information-age government has outstripped its achievements and governments still have a long way to go in fulfilling the radical promises made for the transformatory powers of information and communication technologies' (2002, p213). Although discussed by the PIU (PIU, 2000b, p70, 79), the institutional, organisational and technological challenges involved in effecting joining up in many instances were not a common topic for OeE publications. Nonetheless, it is possible to provide some assessment of the key measures that the OeE put in place.

The Government Gateway was promoted as a crucial tool in joining up departmental back office systems at a single point for users (PIU, 2000b, p88; OeE, 2001a, p54-55). There were early difficulties for the project; it ran into financial and contractual problems (NAO, 2001/02a, p6) as the OeE lost £4.77 million to Compaq when negotiations to continue work on the Government Gateway broke down. Previously, Compaq had been involved in the decision to downscale the Gateway (Kable, 2000c) and when relations deteriorated, the government paid for work already carried out by the company, but decided to take the management of the project back in-house (NAO, 2001/02a, p7). A raft of companies took over the project, headed by Microsoft,



SEMA and Cable and Wireless. Later, the project director managed to recoup some of the associated losses (*interview – 3*).

Despite these problems, the Government Gateway developed from 2001, tackling intricate and difficult issues such as the online authentication and authorization of users wishing to access multiple transactional services through the internet. Although several government organisations had subscribed to the service, most notably the Inland Revenue, in 2002 the NAO noted that ‘it is unclear how many other central departments in Whitehall will agree to use it’ (2001/02d,p53). The initial five Gateway service pilots (using services from three different departments), four of which were aimed at business-type customers, were found to be ‘disappointing’ by the NAO due to low take up (*ibid.*)

By summer 2004 there were indications that the central premise behind the Gateway was unlikely to translate into practical reality. Although being billed as a single sign on portal for citizens to transact with several departments, the enrolment process for users was cumbersome. To register, a citizen would need to fill in an online form and provide an existing unique identifier, ranging from national insurance numbers, tax reference codes or departmental codes given in previous communication with departments, depending on which service was being applied for. The citizen would then receive a 12-digit user number and set an alphanumeric password that could be used as a single sign on for multiple services. However, each service had to be registered for separately and in every case users would need to receive an activation PIN via post that would need inputting online before services could be accessed. This was because government agencies were unable or unwilling to trust and share each others authentication data; thus, although the OeE had made inroads into solving intricate questions of identity and verification, the benefits of this were less obvious in Gateway operations.

Although eventually dozens of central government services were available on the Government Gateway, many of these were for businesses and some had negligible take up. By 2004 the majority of Gateway enrolments were for the successful Self-Assessment service for online tax submissions of the self-employed. Yet, only a

handful of local authorities participated (OeE,2004a) and the sense was that transactional e-government services, where they occurred, largely took place away from the unified point of the central Gateway infrastructure.

The UK Online portal was promoted as the centre piece of the government's joined up and coherent web presence (PIU,2000b,p12,51; OeE,2000,p60; 2001a,p53-54) from December 2000 until it was replaced in 2004. The NAO found that the initial change over from open.gov.uk was not handled well and criticised the 'static' design of the portal homepage (2001/02d,p47-48). The portal was redesigned and relaunched in January 2002 and represented a concerted effort to bring together useful departmental information and online services accessible at a single point. However, there was some considerable doubt that government organisations were participating in the UK Online portal to the extent desired (*ibid.*,p65).

Despite the upgrades to the UK Online portal, there still a sense that more could be achieved through it. The OeE acknowledged as much in the fourth UK Online report, where it was noted that the portal fell 'a long way short of providing a single delivery point for government services and the joining up of services' (OeE,2003,p30); the imperative was to reengineer the central government portal to something closer to the original aspiration for a single joined up platform for citizens to transact with government. The 'online government store' project was set to be effectively a replacement of the UK Online portal, but with more functionality by way of offering transactional services in a single location, rather than users being redirected to departmental sites. The online government store did not materialise for some time however and eventually was manifested as the 'Directgov' portal in spring 2004. This was indeed a replacement for UK Online and was described by Andrew Pinder as a 'world beater', as it aimed to answer most queries within its own site, rather than redirecting users to myriad government websites. However, it fell short of the vision of the online government store project, as citizens still had to visit separate departmental sites for most transactions, with Pinder blaming 'the complexities of joining up systems at the back end of government' (Cross,2003b) as the cause of this shortcoming.

The Life Episodes aspect of the UK Online portal had originally been discussed in the *Modernising Government* white paper (Cabinet Office, 1998/99, p54-55) and promoted as a means of clustering services from different agencies around the needs of the user (OeE, 2000, p60; 2001a, p53). Despite some initial delays, the Life Episodes component remained and expanded to feature nine functions in total (OeE, 2001a, p53). However, there were criticisms that the Episodes lacked substance and did not deliver the holistic services expected (Jeffery, 2001); much of the Life Episodes service offered simple (albeit useful) links to the websites of other relevant government agencies. As with the Government Gateway, there were institutional complexities apparent that made the required joined up working difficult. For instance, the 'Moving House' Life Episode encountered difficulties as, embedded in different government agencies, there were said to be '56 different statutes and 186 different regulations dealing with the simple matter of changing an address [and] people usually have to tell at least eight different agencies that they've moved' (Holmes, 2001, p66). The difficulties were not easily solved, and in 2004 the Life Episodes approach was dropped, although similar tools were developed in Directgov thereafter.

The UK Online portal, as well the successor (Directgov) and predecessor (open.gov.uk), were intended to unify and coordinate the government's web presence, to enable users to find information and services easily and to integrate separate government websites (OeE, 2001a, p53). Although the central web portal, in all three guises, had provided a focal hub of sorts for government online, it had not succeeded in creating a definitive central point through which all sites were listed or ordered. As a reflection of the large number of public sector organisations in the UK, there was still a confusing labyrinth of 3000 government websites in existence in 2003 (Mathieson, 2003) with varying URL logic and domain names. Central government alone had 900 websites (OeE, 2003, p30). Although the OeE had continued to develop website guidelines and standards (OeE, 2001a, p49), there was no common format, channel or portal through which all government online information could be accessed.

It was the case that many central government websites had been found by the NAO to have improved rapidly between 1999 and 2002 (NAO, 2001/02, p62), by which time a

clear, well-designed and information rich website was an expected mandatory feature of departmental activities, arguably as a result in part of the OeE efforts in providing guidance and advice. However, it was also the case that some websites were found to be inadequate. Research published in November 2002 found that out of 20 'flagship' government websites, three-quarters needed a significant overhaul, ironically with the 10 Downing Street portal rated the worst of all (Interactive Bureau,2002). A similar report a year later found some improvements (Interactive Bureau,2003). Although the OeE had played a role in adding coherence to the government web presence, the dominant model unsurprisingly appeared to be for departments and agencies to develop their own websites rather than solely concentrating on contributing to central platforms. Although some sites were found to be lacking according to some observers, government online was seen to have grown and improved by 2002, yet had not been drawn together to the extent envisaged by the OeE.

Arguably, central government had not succeeded in achieving the desired levels of coherence and commonality in web presence integral to the sentiments of the e-government strategy. Perhaps partially as a reaction to this, the OeE tried a different approach with the pan-government toolbar, to bring joining up to online search facilities if not government sites themselves. However, a common search facility did not emerge and most government organisations used their own search tools specific to individual websites.

The Delivering on the Promise (DotP) infrastructure had been developed to centrally house and manage the content of government websites, with the aim of reducing duplication and sharing resources (OeE,2002b,p65-66; 2003,p33). In part, this had been another attempt by the OeE to bring a sense of commonality to the government's web presence, in this case by bringing departmental websites together under a single infrastructure. However, whilst it was envisaged that 'significant numbers' of central government departments would enrol on DotP and that agencies and local authorities could also participate (OeE,2002b,p66), few seemed to take up the offer. In early 2004 the Department of Health website became the first to join the DotP, whilst soon after the new Directgov portal was launched through it (OeE,2004a). However, there were very few additions to this and there was some doubt as to whether DotP would

be continued, despite the OeE's insistence that the organisations not wishing to participate would need to justify their decision to the Treasury (OeE,2002b,p66). Most central departments appeared to prefer to make their own arrangements for websites content and housing.

During 2002 the OeE had initiated Project True North to provide a secure location to house the Government Gateway, the central portal and the Knowledge Network. However, True North reportedly ran into difficulties, and was running months behind in its implementation (Cuddy,2003), before the contract was finally awarded to a supplier, ITNET. By summer 2004 the head of the new Cabinet Office e-Government Unit said publicly that he was considering cancelling True North (Cross,2004b); the cancellation was announced shortly afterwards (Arnott,2004a).

The Knowledge Network fared better however; by 2004 55,000 civil servants had access to briefing information on the Network via the GSI (Cross,2004c) and the new e-Government Unit appeared keen to maintain and develop the service. The GSI, through which the Network operated, had also endured and had continued to attract government organisations. By 2004 it was claimed that there were 280,000 users across 140 public sector bodies (Coates,2004), providing significant support for the argument that the Intranet service 'underpins e-government by providing secure, resilient network services' (OeE,2002b,p66). However, GSI largely provided email and directory services only, whilst the plans to provide methods of data integration and sharing proved to be slow to germinate (NAO,2001/02d,p53). Furthermore, many of the major public sector organisations, such as the Ministry of Defence and NHS, were not using the GSI network directly. Nonetheless, in early 2004 the OGC contracted a new supplier that promised to improve the functions of the GSI to bring it closer to the original conception (Coates,2004). Regardless of whether these added functions did eventually emerge, the GSI represented a significant triumph for the OeE and OGC, as a working infrastructural tool that was said to provide a secure method of communication for many public sector staff.

The e-GIF had also remained to provide the minimum specifications for data flows, interconnectivity and data integration (OeE,2002a); it had been updated several times,

particularly with the help of the Cabinet Office-led 'govtalk' forum. The e-GIF was described as mandatory (OeE,2002b,p60) although there were no available statistics to suggest how widely the technical specification was used. However, e-GIF was adopted for use in some of the key technological infrastructures discussed in the case studies (see Chapters Four and Five) as well as elsewhere in the public sector. Thus, e-GIF appeared to be a success in, at the very least, contributing to the potential for interoperability and data sharing for many government organisations that had complied.

Conversely, the overarching target for electronic service delivery by the end of 2005, a central plank of the OeE e-government strategy, had received criticism. It was not only considered unlikely that the targets would be attained, even according to some OeE staff (Blincoe,2002) but there were also accusations that they were ill conceived. Although initially a useful stimulation, arguably the overarching targets had taken emphasis away from the crucial factor in engaging with citizens on online, that of the willingness of users to participate (NAO,2001/02d,p1). In 2003 a survey quoted by the OeE found that 29% of adults had visited government websites during a 12-month period and 8% of internet users claimed to have transacted with government online (OeE,2003,p29). Although it was significant that the OeE and government departments had built this figure up from nothing in the space of a few years, the low take up figures were a cause for concern for the e-government agenda (Margetts/Yared,2003,p3-4).

For the specific question of joined up government, the overarching targets could also be criticised as they measured electronic service provision in a way that was largely restricted to departmental purviews. The monitoring regime for the targets were tied into departmental Public Service and Service Delivery Agreements supervised by the Treasury which, although containing some cross-cutting elements, were largely applicable to individual departments (see Treasury,2000). The OeE did also ask departments if they had any plans to integrate or link electronic services with other government organisations or if they were considering using a central web portal (OeE,2000o) in reaching the overarching target; nonetheless, this requirement was not a central aspect of the monitoring regime. Despite the emphasis on developing

departmental collaborations and cross-government services in e-government, a major mechanism for measuring progress with electronic services did little to take this emphasis into account; the anomaly had been noted by some sources (Walsh,2001;Naylor,2004).

There were also calls for the 2005 target itself to be scrapped, as it was argued that it was ultimately a provider-focused incentive, and failed to account fully for the needs of the citizenry in the e-government environment. The Institute of Public Policy Research was a prominent voice in the 'bin the 2005 deadline' campaign (Kable,2003), which called into question the viability of the OeE itself as supervisor of the targets. The break up of the OeE before the 2005 deadline arrived was perhaps an indication of the attitude to the overarching targets in high level policy and political circles. It suggested that the opinion was that a change in emphasis, embodied in the new e-Government Unit, was required.

The conclusion of this chapter will draw together the above observations and other evidence to provide an appraisal of the e-government strategy up to summer 2004.

### 3.12 CONCLUSIONS

This thesis finds that the OeE had experienced mixed results in its attempts to provide the strategies, measures and technical architecture to instigate joining up through e-government. The platforms for communication between the back offices of departments, namely the GSI, Knowledge Network and e-GIF, had appeared to be successfully implemented in many instances. However, other measures which attempted to use the internet to reach out to the citizenry had arguably met with less success, this despite the interfacing powers the web offered.

The Government Gateway, UK Online portal and Life Episodes, pan-government toolbar and DotP epitomised the OeE's attempt to draw together and improve services on the web but all had met with problems and received criticism. Whilst the intention was to integrate many public sector websites through UK Online, drawing services together at a single location (OeE,2001a,p54), this had not occurred even under the

OeE's admission (OeE,2003,p30). Thus, despite the longevity of policies to coordinate government online, fragmentation had remained and increased, although UK Online and Directgov did often provide a useful first port of call for users. Whilst the flexible, networked attributes of the web encouraged central policymakers to steer government organisations towards a unified and consistent web presence, departments had actually largely preferred to develop online services independently.

The OeE had also intended to identify and help incubate entirely new cross-departmental e-government services where appropriate (CITU,2000,p12; OeE,2002b,p46) and to drive deeper ICT-mediated joining up between the back offices of departments, to 'support the integration of services across organisational boundaries' (OeE,2001a,p50). To the OeE, e-government offered 'a unique opportunity to break down the barriers within government' (OeE,2002b,p45). Despite progress made with the GSI, Knowledge Network and e-GIF, it was difficult to argue that barriers between service delivery organisations had been overcome to the extent envisaged, although such a mission was likely to be long term. Also, it was difficult to detect much impact from the OeE's digital TV, smart card, e-democracy, intermediaries and Open Source Software projects (see OeE,2002b,p50-63). Furthermore, although a useful early stimulator, the 100% electronic service delivery target was later seen as a hindrance by some policymakers and observers (*interview – 5*; NAO,2001/02d,p10; Kable,2003l; Blincoe,2002), and did little to encourage joining up across departments (Walsh,2001; Naylor,2004).

With reference to the above, some interviewees provided opinions on what they considered to be weaknesses within the OeE approach and the central e-government strategy. Most commonly, some interviewees voiced concern that the OeE management and ministerial protagonists had apportioned too much emphasis on the transforming power of new ICTs and the need to evangelise to departments on their uptake. One upshot was that technical infrastructures and tools offered by the OeE were not always seen as appropriate or attractive by departments; 'there is a "let's build it if we can" attitude in e-government...industry got over this about ten years ago but we still seem to like new kit around here' observed one OeE employee (*interview – 2*).



Another official conveyed similar feelings regarding the importance placed on the construction of technological systems in the OeE approach; ‘so they put the infrastructure there but it doesn’t mean its going to be used, it’s a bit like the Humber bridge – you can join up these points but it doesn’t mean anyone is going to drive over it’ (*interview – 1*). Elsewhere in central government an interviewee noted ‘a big problem is that you implement an IT system and say ‘look this is going to change everything’ but six months down the line people stop using it’ (*interview – 8*). These comments led to arguments resting on whether policymakers and ministers understood the nature of the relationship between new ICTs and public service reform in a complex institutional environment, and how e-government could help achieve the desired changes. One OeE employee observed with derision of his own organisation and the political thinking beyond its creation, ‘no-one understood it [ICT] but everyone thought it might be used for change...so you had half-baked ‘techy’ people going around encanting’ (*interview – 1*). The same interviewee was equally caustic about the development of the link between e-government and joined up government at central policy levels; ‘people thought “well IT, wires and stuff, yes? Wires join up don’t they?”’ (*interview – 1*).

Put another way, interviewees mooted that ‘there seemed to be some missing step around “do we understand what kind of organisational change are we trying to achieve as a result of using e-government?”’ (*interview – 1*). Whilst it was recognised by all protagonists that the reforms implied in the joining up emphasis in e-government would be challenging and difficult, some interviewees and other observers believed that the OeE management and their political masters may have overplayed the power of new ICTs in leveraging the necessary changes. There was a sense that this detracted from important goals in e-government; one senior civil servant remarked ‘I think [the OeE] have tended to overplay the importance of getting government departments using technology...as opposed to majoring on what it means in terms of the individual citizen’ (*interview - 21*). Another interviewee commented that the mentality in some government circles was that new information technology was a ‘magic wonder dust’ that could be ‘sprinkled all over government’ to achieve joining up (*interview – 1*).

Regardless of these arguments, the OeE had performed a central role in shaping the e-government strategy and embedding the joining up sentiments within it. Along with the targets themselves, the Office's requirement for departments to complete e-business plans obligated central government organisations to consider e-government issues. These e-business plans were scrutinised and linked into Public Service Agreements, which central departments had to negotiate with the Treasury (NAO,2001/02d,p10). However, the OeE did not have an iron grip over government IT spending, contrasting with the intentions of CCTA policy of the early 1970s. Although such tight budgetary control could perhaps have been a powerful tool to encourage joined up e-government projects that spanned departments, as the CCTA found, such control would have been a difficult and controversial policy to pursue. The threat to use the Treasury to encourage departments to subscribe to the DoTP infrastructure (OeE,2002b,p66) appeared to have had little impact. The OeE, as with the OGC, did not exercise the power to withhold funds or cancel e-government projects.

Whilst *Modernising Government* and the annual reports of the OeE tended to focus on the positive force ICTs could offer in providing seamless service delivery, particularly online, it is not proposed that the OeE and the Cabinet Office assumed that its strategies, measures and tools would be accepted and diffused across the public sector easily. Efforts were made to encourage dialogue, persuasion, communication and collaboration with departments (NAO,2001/02d,p56; Hudson,2001,p523) for instance through e-champion networks and Cabinet committees. Generally, although some of the measures the OeE instigated may have been strongly enforced behind the scenes, for instance e-GIF compliance, many of the measures aimed to encourage joining up in e-government relied on government organisations actively participating. Whilst the GSI and Knowledge Network appeared to be successful in this sense, other OeE measures such as the Government Gateway and DotP appeared to attract less departmental interest. Although these measures, along with the central portal (UK Online succeeded by Directgov) and other OeE initiatives and tools had provided the technical infrastructure and platforms for departments to contribute to central electronic delivery channels and the means for inter-departmental collaboration

through new ICTs, participation by a large volume of government organisations was not guaranteed. In essence, as with the preceding history of government computing presented in the last chapter, IT had remained a concern for autonomous government departments that, in the case of much of the measures and tools introduced by the OeE, needed to see a clear benefit before participating. Despite some powers given to the OeE as a result of concern that the 'pendulum of decentralisation' had swung too far in favour of departments before the late 1990s (PAC,1999/2000a,Q2), persuasion may have remained the Office's primary weapon (Hudson,2001,p523) in encouraging joined up government.

For this persuasion, the OeE had carried forth a system whereby central government departments appointed senior officials to meet together and champion e-government. Through this 'e-champions' mechanism, it was hoped that the sentiments of the central strategy would be instilled in departmental operations. Therefore, the importance of participating fully in central online initiatives such as the UK Online portal, using available technical architecture and developing joined up services through new ICTs would be realised. The e-champions network drew membership from a wide array of central government organisations, including areas relevant to the case studies; appointed champions from the criminal justice system, Department of Health, local government and the Ordnance Survey were a feature of the network. Through the e-champions network, explorative OeE work such as identifying potential new joined up e-government services that fell between the scope of any one department (CITU,2000,p12) could be carried forward, with the e-champions being used to create dialogue. However, although a stated objective, there was little evidence that these new services had developed.

Furthermore, the e-champions mechanism was discontinued in central government in 2004, indicating that there was uncertainty with regards to the value of the network. However communication, dissemination, coordination and dialogue concerning e-government would have also occurred through ministerial channels and Cabinet committees such as MISC 7 (Holliday,2001,p320) and PSX(E). Whilst MISC 7 worked on the issues arising from the general Modernising Government agenda, PSX(E) was driven by the Treasury and focused more on the use of electronic

processes to improve efficiency. Thus, the e-champions network had a more focused role in the specific objective of stimulating and coordinating the OeE-led e-government agenda, in comparison to the ministerial committees. The network was an important channel through which persuasion rather than coercion to participate in the technical infrastructures and web portals offered by the OeE, as well as the general sentiments of the e-government strategy, could be achieved. The OeE had recognised the importance of bilateral discussions (NAO,2001/02d,p56) to stimulate and advise departments on the Office's preferred direction for e-government. However, there were some doubts about how successful this had been considering the levels of departmental involvement in some of the infrastructural tools that were designed to help join up services and the lack of development of collaborative inter-organisational e-government services and tools generally.

Many government organisations that had instigated e-government projects had close contact with the OGC which, through Gateway reviews, advice and guidance packages, were intent on strengthening the project management, efficiency and supplier relationship skills of departments and agencies. The OGC had grown in prominence and it would have been expected that close relations between the OeE and OGC would have assisted the communication and development of the central e-government strategy. However, one thesis interviewee noted that 'the OeE had very bad relations with the OGC' (*interview – 1*), indicating that there could have been very little orchestration between the agendas and operations of the two organisations; a situation that may have been debilitating for the e-government strategy.

Despite some significant work by the OeE, this Chapter concludes that, to borrow from Bellamy (2002,p213) the rhetoric of e-government appeared to have outstripped the achievement, up to summer 2004. Whilst from 1996 in particular the internet and related technologies had brought new possibilities for joining up, both in terms of back office coordination and in presenting a unified front to citizens, the tools and measures of the OeE had not facilitated fully the desired changes to service delivery from its position in the Cabinet Office. On reflection, by 2004 it seemed that what the OeE had supplied in practice, aside from stimulation, strategy and guidance, was a number of infrastructural tools, some of which were adopted on a wider scale than

others. Although the OeE may have been instrumental in putting e-government on the agenda for departments and encouraging dialogue and collaboration through e-Champions networks, it was much more difficult to say that the concept of deeper ICT-mediated joined up government, with the OeE at the hub, had come to fruition.

*The Changing Approach to e-government in 2004: Towards a consensual model for joined up government*

As noted above, in April 2004 the OeE was replaced by a new e-Government Unit in the Cabinet Office; the move signalled a change in the e-government strategy. The initial activities of the e-Government Unit and its head, Ian Watmore, provided some evidence for speculation on the perceived frailties in the OeE and the changes that were likely to ensue. Whilst the e-Government Unit would retain the ultimate mission of the e-government strategy, 'joining up electronic government services around the needs of customers' (as posted on website in summer 2004), its work was to be restricted to Whitehall in contrast to the wider evangelical role of the OeE (Wakefield,2004).

Furthermore, Watmore himself appeared keen to publicly distance the e-Government Unit from the approach of the OeE which, it could be inferred, he felt had at times been overbearing in imposing technologically orientated measures, targets, tools and ideas on departments. Watmore stated that 'it is not practical to completely rebuild government' (Government Computing,2004,p11) and instead wished to engage more with senior departmental officials to move towards a collaborative and consensual 'team culture' across Whitehall with 'buy in' from senior protagonists (Arnott,2004b). He wanted to entrust departmental players with making progress to 'recognise areas where they would do better by working together rather than in individual silos' (*ibid.*) instead of, it is inferred, having solutions and strategies suggested to them from a central position. Watmore's rationale was that 'departments respond better to reasoned argument than central diktats' and preferred to encourage departments to 'develop an agenda for themselves' (*ibid.*). Whilst the e-Government Unit still aimed to help develop holistic tools 'to present one joined-up government service to a citizen regardless of which agencies are involved' (Watmore,2004,p9), the 'pendulum of decentralisation' (PAC,1999/2000a,Q2) did appear to be swinging back towards

greater departmental empowerment, although the e-government strategy never intended that the Cabinet Office would have complete control.

Some interviewees felt that the moves towards a modification in the approach to the central e-government strategy as seen in the e-Government Unit was a reflection of institutional realities and the inability of the centre to steer policy across government convincingly. Thus, as e-government was 'still very much driven by departmental perspectives' with an emphasis on 'making those silos more efficient' (*interview – 21*), the Cabinet Office shifted more towards acknowledging and nurturing that drive. One parliamentary interviewee suggested that activity behind closed doors had led to this acknowledgement:

The perception is that there has been an internal struggle and the departments have won. The model has now shifted towards the strong accountable chief IT officer within the departments...that is the new model and the OeE has been cut down on that basis (*interview – 4*)

Whilst another parliamentary interviewee saw this development as the 'forces of darkness...winning back the power that the *Modernising Government* white paper took away' (*interview – 5*), this thesis takes a more neutral position. Whilst interviewees that were wary of a fixation on the power of new ICTs within the OeE incarnation of the e-government strategy may have favoured an approach more aligned to enable departments to decide how and when to employ new technologies, there were also potential drawbacks. Most clearly, the informatizing potential of ICTs, particularly to create joined up data links, interfaces and unified services to citizens could have been undermined without strong central steering and strategy, perhaps leaving departments more likely to remain content with automating existing operations. Nonetheless, Watmore was clear that he felt that bringing senior players together was the most prudent approach.

The evidence drawn from the case studies bring a refocus on e-government beyond that led by the Cabinet Office. The following two chapters provide the rich qualitative detail that help trace the role of e-government in achieving joined up government within the complex institutional arrangements found in service delivery. Although

both case studies will consider the use of OeE measures and technical architecture in the government organisations and services concerned, the main objective is to judge how the core premise of the e-government strategy was played out on the ground beyond the immediate influence of the OeE.

## **CHAPTER FOUR: CASE STUDY ONE - CRIME MAPPING AND E-GOVERNMENT**

### **4.1 INTRODUCTION**

The *Modernising Government* white paper, subsequent policy documents and the activity of the OeE in particular linked joined up government with the application of new ICTs to service delivery, under the auspices of e-government. The case study phase of the thesis looks at how this notion was played out within the institutions, organisations and technological processes involved in service delivery. This chapter charts the development and application of ICT-mediated Crime Mapping tools, designed to bring about insights into crime prevention through joining up different datasets. It begins by providing organisational, policy and technological context before tracing the development of digital maps, crucial to the evolution of Crime Mapping. It then considers efforts to coordinate geographic data before discussing the roots, facilitators and barriers to multi-agency Crime Mapping. The Chapter finishes with a rich analysis of Crime Mapping in action, to examine the role ICTs were playing in realising joined up government in this case, up to summer 2004.

#### *Geographic Information and e-government*

At a general level geographic information was identified by practitioners and academics as a key element to government operations and public service delivery (Morad,2002,p483-484; Turner/Higgs,2003,p151-152). It had been frequently argued that an estimated 80% of government data could be represented geographically or spatially in some way (Pollard,2000,p186). Furthermore, it had been pointed out that geographical information and supporting technology could play a crucial role in facilitating joined up government, if data and tools could be shared across organisations (Turner/Higgs,2003,p252; Pollard,2000,p185; Morad,2002,p484; *interview - 12*). However, to an extent the OeE and other e-government policymakers had treated the specific issue of geographic data with little importance; it had not been



highlighted as a central plank in the e-government strategy (Pollard,2000,p190; Turner/Higgs,2003,p152). Nonetheless, it was not neglected entirely; during a speech at the September 2002 'geosolutions' conference Andrew Pinder emphasised the importance of geographical data and supporting technology in the e-government era, and cited some links between the OeE and the Ordnance Survey (PITCOM,2002). This message was subsequently re-iterated by Pinder in a number of specialist press articles and press releases. Furthermore, the OeE and its successor, the e-Government Unit were involved in work on technical standards for geographical data, particularly in connection with e-GIF.

However, most of the impetus and strategic lead with geographic information policy in the e-government era had come from the government organisations that had traditionally been concerned with geographic issues. The Ordnance Survey, local authorities and the police held and used significant amounts of geographic data (Morad,2002,p483-484) and had, along with the Office of the Deputy Prime Minister (ODPM) and Home Office, taken a specific interest in developing policies and tools pertaining to such data. Although the activities of these government agencies will be discussed throughout, the key focus is on multi-agency Crime Mapping within Crime and Disorder Reduction Partnerships (CDRPs), local partnership bodies operating across England and Wales which were given a legislative footing from 1998. CDRP initiatives that used Crime Mapping tools often enlisted participation from a number of government partners (e.g. police forces, local authorities, probation, health, education organisations and more), and endeavoured to join up data that had previously been separate (for example crime, housing, education, fire, probation, deprivation, census and gazetteer information) to generate insights into crime and disorder patterns through the use of Geographical Information Systems (GIS). The case study will concentrate on the bringing together and analysis of data for Crime Mapping, rather than the dissemination and use of analysis results in CDRP partner organisations such as the police or local authorities. Although the second area is worthy of further study, the influence over time of analysis derived from Crime

Mapping in CDRP partner organisations was difficult to trace within the confines of this case study.

By the 1990s GIS became an extremely popular tool in many aspects of business and government processes and GIS software increasingly appeared on desktop PCs as a standard application; as one interviewee commented 'GIS is beginning to permeate society' (*interview - 14*). The principles of GIS revolved, unsurprisingly, around the use of data that applied to place and space. GIS enabled storage, representation, manipulation and analysis of geographic data that could be applied to a specific physical location (Bernhardsen,2002,p1). Crucially, GIS provided analytical capabilities that transcended simple map production, and offered sophisticated data manipulation, evaluation and analysis (Maguire,1991,p13), which went beyond that offered by paper maps, for instance pins in wall-maps historically used by police forces. GIS-mediated Crime Mapping tools overlaid socio-economic, crime and other data on digital maps, enabling the representation and analysis of this data in new ways. As a result then, Crime Mapping had a strong informatizing thrust, facilitated by the joining up of geographically expressed data.

However, before returning to multi-agency Crime Mapping in action, the Chapter will first demonstrate the historic technological, organisational and policy developments that led to the emergence of the tool within CDRPs, beginning with the digitization of the base maps of the country. These digital maps were crucial to GIS-mediated Crime Mapping as well as other public sector applications in that they provided the basic geographic template on which further geocoded data could be overlaid.

#### 4.2 THE ORDNANCE SURVEY AND THE JOURNEY TO DIGITIZATION

The idea of applying computer technology to the production of maps emerged during the late-1950s. Through research for an atlas from 1958, cartographer David Bickmore recognised that a computer would enhance the editing, classifying and

checking of data involved in map making (Coppock/Rhind,1991,p23). The general concept of using computing in mapping processes in the public sector was picked up years later in some parliamentary and government circles. According to Coppock and Rhind, there were proposals to develop the use of computers in mapping aimed at the Natural Resources Advisory Committee in 1964, however the committee was terminated soon after. Secondly, a 1972 Department of the Environment publication entitled *General Information Systems for Planning* (GISP) advised local authorities to develop computers to help with geographic concerns (*ibid.*). There was little reaction to GISP however, not least because the proposals were said to be 'far too ambitious and unnecessarily complex' (Chorley/Buxton,1991,p69). Following the lack of reaction, a period of inertia ensued in government on the general application of computing to mapping and geographical issues (Coppock/Rhind,1991,p23).

However, British public sector organisations did begin looking at the applications of early GIS in an urban setting, partially because of the limited scope in the country's natural environment (Martin,1996,p35). For instance the Urban Planning Directorate of the Ministry of Housing and Local Government established a system that utilized pioneering technology, known as LINMAP, to produce digital maps and overlay census data obtained from local authorities (Gaits,1969). The project was one of the first examples of expressing socio-economic data through GIS technology, and introduced the concept of using GIS to convey information other than that related to topographical or architectural information (Martin,1996,p15).

However, it was realised that, to operate with sufficient levels of accuracy, efficiency and effectiveness, early GIS systems of all kinds would benefit greatly from access to a full catalogue of detailed digitized maps, with which to overlay data upon. This realisation brought in the Ordnance Survey, which was formed circa 1791 to map parts of southern England in preparation for the expected invasion by France. From the 19<sup>th</sup> century it became the national mapping agency, responsible for creating and maintaining a master map of the country. Key to the development of GIS in both the

public and private sector was the digitization of the Ordnance Survey's 230,000 base maps; such a task would however be expensive and time-consuming.

Observers argued that a major protagonist in instigating such a process was, again, David Bickmore; in 1967 he persuaded the Natural Environment Research Council to fund an Experimental Cartographic Unit (ECU) at (bizarrely) the Royal College of Art in London. This unit produced digitized maps and addressed GIS issues, but also built links with the Ordnance Survey and gained the interest of key protagonists within the organisation. Coppard and Rhind suggested that, without the work of the ECU, the Ordnance Survey would have begun the process of digitizing maps much later (1991,p33-34). The ECU therefore had acted as a stimulator for the Ordnance Survey, in not a dissimilar fashion to the early role of the NPL in pioneering general government computing development. Like the NPL, the ECU's initial influence ebbed quickly.

The Ordnance Survey had demonstrated an interest in computer technology at early stages. It was involved in the NPL's ACE computer from 1952, and purchased the commercial DEUCE product for the 'production of statistics in fieldwork' (OS,1955/56,p8). It even took responsibility for its own programming in 1956, with programmers cycling between locations with saddlebags stuffed with punched cards for the DEUCE machine (Owen/Pilbeam,1992,p151). Furthermore, by 1956 the Ordnance Survey was also employing IBM equipment (OS,1955/56,p7), and by 1959 it had purchased an ICT (later to be ICL) 'Jerie analogue computer' (OS,1958/59,p13): although, perhaps as a portent to ICL's ultimate failure as Britain's premier government supported computer company, the Ordnance Survey had dropped the 'Jerie' machine by 1963 (OS,1962/63,p5). The organisation diversified its use of information technology during the 1960s, using computers for payroll, technical computation, sales and later for management information (OS,1968/69,p7; Owen/Pilbeam,1992,p151). However, the enormous task of digitizing the maps of Britain, although mooted, had not been attempted at this stage.

### *The Digital Mapping Programme: Faltering steps*

The familiarity in the Ordnance Survey with administrative computing may have been beneficial as the ECU engaged with the organisation about new applications of information technology in its services. In 1966 the ECU and Ordnance Survey began conducting a research project to examine the possibilities of digital mapping, and links between the two organisations existed for a number of years (OS,1966/67,p5; 1968/69,p7). By 1970 the Ordnance Survey had concluded that experiments were 'encouraging for the future, although the accuracy required has not yet been achieved' (OS,1969/70,p9). However, in the same Annual Report, an early recognition for the informatizing potential that digitized mapping could offer was given; it was postulated that there may be greater

potential requirement for large scale maps in digital rather than printed form as a data base to which customers may add other digitized information from their own computer data banks (*ibid.*)

Thus, the importance of digital maps to future applications such as Crime Mapping was predicted within the Ordnance Survey at this early stage. However, the following year the joint experimental project between the ECU and Ordnance Survey was drawn to a close. The conclusion was that digital mapping was 'unlikely, at the present time, to show an economy over current methods' (OS,1970/71,p7). Thus, the old paper-based methods of map making and representation endured, arguably because the directors at the Ordnance Survey felt that efficiency, rather than unproven theories about digital map use in public services, should be the primary incentive to develop the technology.

The efficiency imperative may have become more prominent following the ripples sent through government departments by the Fulton report, and so during the 1970s the Ordnance Survey felt increasing pressure to operate with economic independence; it had even been identified as a prime candidate for 'hiving off'

(Owen/Pilbeam,1992,p148). Whilst the organisation was decidedly unsure of the immediate financial repercussions of digitizing, nonetheless it had managed to produce the first commercially available digitized map (of the British coastline), made available on magnetic tape for sale in 1971, and had plans to produce maps of major roads and larger towns in digitized form (OS,1970/71,p7).

Throughout the 1970s the Ordnance Survey persevered with digital map experiments despite continual fears about costs, magnified by a Department of the Environment report in 1971 that imposed a requirement to recover an increasing proportion of its expenditure (Sowton,1991,p25). Ferranti<sup>16</sup> machines were used in digitization processes, despite teething problems with equipment installation (OS,1972/73,p11). By the mid-1970s, the Ordnance Survey became more convinced of the worth of digitization; hundreds of digital maps were being produced every year at this time (OS,1973/74,p9) and thousands a year by the late-1970s (OS,1977/78,p13). The interest shown in digital mapping by professional bodies, utility providers and local authorities doubtless encouraged the Ordnance Survey to continue its efforts. The Director General at the time, Brian St G Irwin commented after the first digital maps were produced that he believed 'this to be an event of the greatest possible importance in mapping of Great Britain', and he envisaged 'a vast data bank...capable of producing an almost limitless variety of outputs to suit the needs of users' (Owen/Pilbeam,1992,p160). Thus, despite initial tentativeness, the Ordnance Survey put its weight behind what it believed would be a technological revolution in mapping.

This faith was dealt a blow however, as it was discovered that the many expressions of interest by public and private organisations were converted into 'few concrete and substantial proposals' (Sowton,1991,p26) to purchase digital map data. Digital maps had been developed, but had not been used by public sector organisations to the extent envisaged. One obvious inhibitor was that in the 1970s, most potential customers did

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<sup>16</sup> Ferranti merged with English Electric and others to form ICL in 1968.

not have the equipment to use the maps (*ibid.*), a problem that continued for many years; in the late 1980s it was still the case that most organisations had little experience with using GIS (Heywood,1997,p18). Still, the Ordnance Survey was not ignorant of the needs of potential clients as in 1974 a study was conducted to investigate 'the different needs of potential users of OS large-scale digital map data in local authorities, public-undertakings, central government and elsewhere' (Sowton,1991,p27). The Ordnance Survey did in fact instigate a development scheme with key partners (known as the 'Dudley Project') which Sowton suggests represented a 'precursor to GIS' and allowed the Ordnance Survey to tailor its digital data for use outside of the organisation (*ibid.*,p27-28).

As well as this 'hands on' approach to stimulating interest in digital mapping, the Ordnance Survey was receiving external justification for the continuation of the digital mapping despite low levels of interest. The 'Serpell Committee' concluded in 1980 that digital mapping had to be expanded, and that the organisation had to become less inward-looking, more customer-facing and able to look to the future (Owen/Pilbeam,1992,p160). Thus, changes were made to allow more input from map users, enabling the opportunity for progress with more innovative applications such as nascent Crime Mapping projects. In the Ordnance Survey had finally terminated its manual map production line, it had started contracting out digitizing processes to reach full digitization at a faster rate and boasted that its sales for digital data had doubled since the previous year (OS,1984/85,p4-8).

#### *Digital Maps and the Market Approach: Holding back public sector GIS applications*

However, the digital map programme was suffering from conflicting views on its value; on one hand, simple internal efficiency had primacy, and it was noted in the late-1980s that digital mapping was still not reaching the government-set targets for cost-recovery (OS,1986/87,p9; 1987/88,p10). On the other hand, the Ordnance Survey received criticism for 'holding up the growth of the GI market' (Heywood,1997,p18). Thus, the organisation was stuck between two priorities, and

there was confusion as to whether digital mapping was supposed to be making money or improving service delivery.

The Ordnance Survey had an unusual position of being an independently positioned department that placed it apart from other government organisations (Owen/Pilbeam,1992,p148). This coupled with the political climate of the 1980s arguably produced an overemphasis on selling rather than sharing geographical data amongst other public sector organisations (Pollard,2000,p189). Later, the market approach remained to provide problems for government organisations that wished to use Crime Mapping tools, as funding had to be supplied in some form for the Ordnance Survey to release digital mapping data.

The Ordnance Survey became an Executive Agency in 1990, which reinforced the market-based approach to its geographical data (Owen/Pilbeam,1992,p177). In 1995 full digitization was achieved; the project was generally recognised as a commendable achievement, and the quality and accuracy of the maps themselves were unquestionable (Heywood,1997,p19; Pollard,2000,p188). Arguably, the completion of the project may have been achieved earlier without the continual doubts about the economic viability of digitization. Still, many interested public sector bodies were unable to adopt GIS until affordable software, offered by ESRI, Mapinfo and other vendors, became commonly available to operate the digital maps in the late 1990s (Chainey,2001,p97). In 2004 the Ordnance Survey claimed that 80% of its turnover came from electronic data (OS,2004).

By the late 1990s, the Ordnance Survey offered, at a price, sophisticated digital mapping products which had the potential to provide the basis to many GIS applications in public services, including Crime Mapping. However, the cost-recovery based position of the organisation remained problematic; some criticisms were levelled during the 1990s that centred on the costs involved in GIS projects attaining the necessary underpinning map data. Local Authorities and other government



organisations had to invest considerable amounts to purchase digital maps, and evidence suggested that this seriously hindered progress with innovative schemes such as GIS-based Crime Mapping. In 1997 Heywood observed that, whilst high quality digital maps were obtainable, 'availability, accessibility, cost and licensing' had severely restricted their use (p20).

One example of this was at the Metropolitan Police, where moves to replace manual mapping (with floor to ceiling maps mounted on office walls) for road accidents with a GIS system were hindered by the absence of an agreement from the Ordnance Survey to supply digital data to them. Without this 'the cost of supplying map data at that time (1993) would have effectively prevented the system from being viable' (Stoneman,1996,p8.1.2). The Metropolitan Police resorted to exploiting a loophole by using geographic data from local authorities for this particular application, whereas elsewhere in the organisation 'the cost of data supply had stifled demand for GIS' (*ibid.*,p8.1.5).

In 1993 a survey conducted by the CCTA found that 'OS policies were cited by interviewees more often than any other barrier' to GIS development in government (p48), and it was felt that digital maps were simply too expensive. There was a similar story seven years later, where a government survey of 36 public sector organisations found that data licensing issues were the top ranked obstacle to the use of geographic information (IGGI,2000,p6). The survey notes that 'high charges for topographic data levied by the OS is a constant cause for criticism' (*ibid.*).

Still, a solution of sorts was found when Service Level Agreements with the Ordnance Survey were signed jointly by nine central departments and some local authorities in 1999 (after three years of negotiation) to allow cheaper access to digital geographic data (IGGI News,1999,p1-3). However, in general, government departments were regarded as individual customers up until May 2003, when it was announced that a pan-government agreement signed with the ODPM gave 500 departments and

agencies comprehensive access to digital mapping (Kable,2003e). This decision, although no doubt welcomed by government organisations wishing to use GIS in Crime Mapping and other applications, could be considered to have come late considering the evidence above. One interviewee voiced anger, noting that:

Ordnance Survey have only just starting allowing local authorities to use OS maps. As far as joe public is concerned OS is a government department, and they made such a big thing about this deal they struck with OS but it was only last year – this was just too recent. We should have been using OS maps for years (*interview - 10*)

Whilst observers had recognised the potential worth of the creation and dissemination of Ordnance Survey mapping data, the market realities that the organisation felt had proved to be a barrier to sharing with other public sector bodies once the digital corpus had been completed. Before then, the journey to digitization was influenced by David Bickmore, Brian St G Irwin, the ECU and Serpell Committee, but also the position and modus operandi of the Ordnance Survey and the emphasis on mapping data as a commodity within the public sector. However, as agreements facilitated better access to the digital data and GIS software became increasingly available, the basic components for prevalent public sector use of GIS, including in Crime Mapping, appeared to be in place. Yet, the development of public sector GIS applications involved a wider range of actors, organisations and factors than the Ordnance Survey alone. The next section will broaden the focus to consider the creation and role of geographic information guidance organisations, technical standards and geographic data repositories in the shaping of public sector GIS, providing further insight into the institutional backdrop to Crime Mapping.

#### 4.3 THE COORDINATION OF DIGITAL GEOGRAPHIC DATA: FORUMS, STANDARDS AND REPOSITORIES

During the years in which the Ordnance Survey was working on the digitization programme, other actors independent of the organisation were vocal about the perceived potential of increased use of geographical information. In 1983 the House of Lords Select Committee on Science and Technology stressed the importance of developing general GIS systems in the public sector, and noted that applications may well induce or require extensive data interchange between different departments (1983,p54). The idea of using GIS to help map crime was not explicitly identified, whereas more traditional applications, such as planning, geology and transport were acknowledged. The Select Committee's most lasting contribution was the recommendation that a committee be set up to steer GIS in the public sector, with the intention that certain levels of coordination would be required. This led to the establishment of the Chorley Committee, which produced an influential report on *Handling Geographic Information* in 1987 (Chorley,1987).

#### *The Chorley Committee Recommendations: Steering government GIS use*

The Chorley Committee reviewed GIS activity in government as it stood in that year (Heywood,1997) and found some levels of maturation in land and property services, the Manpower Services Commission (Chorley,1987,p22,33) and other areas of the public sector. However, overall the Chorley Report judged that there were disappointing levels of GIS activity in government, commenting that 'many organisations...who might have expected to have adopted Geographic Information Systems, have not yet done so' (*ibid.*,p53). The Chorley Committee saw extraordinary potential in using GIS to overlay different data sets, for instance for crime and fire information; a lasting legacy was the extent to which the report discussed the socio-economic, rather than purely physical geographic applications of GIS (Martin,1996,p15), thus bringing the potential for innovative GIS uses such as Crime Mapping to the fore.

Whilst the report recommended that public sector GIS could draw together data from different sources, it also noted that a number of institutional, procedural and technical

barriers to this approach existed. Inter-working was handicapped by the variety of spatial units and boundaries used by different organisations, by poor data documentation, incompatibility of software and the unwillingness of some protagonists to release data through 'fear of misuse' or the 'narrow attitude' that the data was owned by them (Chorley, 1987, p49,55). The Committee also found that GIS data within local authorities might not be effectively shared amongst the departments of the authority, let alone with other councils (*ibid.*, p54). The solution according to the Committee was that a

central body, independent of Government, is set up to provide a focus and forum for common interest groups in the geographic information area, undertake promotional activities and review progress and submit proposals for developing national strategy (*ibid.*, p118)

The government agreed and the Association for Geographic Information (AGI) was formed on the 18<sup>th</sup> January 1989. The Thatcher government at that time held that the new body should be 'ultimately self supporting' whilst many protagonists in the growing geographic information sector felt that the government should have provided more sustenance for the endeavour (AGI, 1989, p3-5). Still, the AGI provided a forum for debate, discussion, technical standards and research for the GIS community, including government actors (Pollard, 2000, p187). It served as an important independent figure, brokering deals and negotiations between private and public sector representatives.

Several years later (in 1993) the Intra-governmental group on Geographical Information (IGGI) was formed as a direct result of the Chorley Report. In contrast to the AGI, the IGGI was smaller and was established specifically to stimulate interest in GIS in central government, rather than to serve the wider public sector and GIS community as a whole. Still, it is perhaps surprising that the IGGI only emerged six years after the Chorley committee published its report. Nonetheless, as with the AGI,

the IGGI was usually considered in favourable light by Crime Mapping protagonists as a forum for knowledge, advice and discussion.

### *Standards and Repositories: Joining up digital geographic data*

The Chorley report also highlighted the possibility of combining large geographic data sets, produced for instance by the Ordnance Survey, Land Registry and local authorities (Pollard,2000,p188). To this end, the potential benefit of technical standards, applied to geographic data to encourage data sharing through GIS was raised (Morad,2002,p484). Standards would become an important issue; in the 1990s a consortium of central and local government organisations, the Ordnance Survey and the Royal Mail developed the BS7666 standard for the format in which addresses were expressed and stored, as endorsed by the AGI (*ibid.*,p485). The BS7666 complied with e-GIF standards for general data sharing and interoperability across the public sector (NLPG,2004). Also, the technical specifications used by the Ordnance Survey formed a de facto standard for organisations wishing to use its data, which indicated the importance of the organisation to those that required digital maps (Pollard,2000,p188-189). The use of technical standards was seen as beneficial to multi-agency Crime Mapping (*interview – 12,15; Radburn,2002,p1.06*).

The application of standards for geographic information was accompanied by the concept of national geographical data repositories and infrastructures, which could be used by public and private organisations for their own purposes. In particular this concept was applied to data on the properties, land and streets of the country. Although closely related to Ordnance Survey data, property, land and street information was not the exclusive domain of the organisation. Her Majesties Land Registry, the Royal Mail, the Valuations Office and local authorities also generated and kept such data. As a result, there was for instance no complete or compatible list of addresses in Britain (Cross,2004d). Attempts to draw together this geographical information demonstrated the institutional complexities of joining up data from a variety of sources at a national level.

In the early 1990s plans were made for a National Street Gazetteer, which aimed to create a referencing system for any length of road or highway in Britain, complying to the BS7666 standard (NPLG,2004). Local authorities had a statutory responsibility for street naming and numbering and therefore a National Street Gazetteer system required their co-operation (Morad,2002,p485; NPLG,2004). The Ordnance Survey however was the de facto custodian of the National Street Gazetteer project (Morad,2002,p487).

In the late 1990s plans for a National Land and Property Gazetteer (NPLG) were announced, which would form a structured geographical data repository for all land and property in the country. It would draw from local government gazetteers, conform to BS7666 and incorporate aspects of the National Street Gazetteer (Turner/Higgs,2003,p152; Morad,2002,p487). The objective was that the NPLG would be available for use in GIS in all public sector organisations that required it, including criminal justice bodies. In facilitating consistent property and land referencing, the NPLG was identified as a potential important enabler for Crime Mapping (Radburn,2001,para. 3.05), as well as e-government generally (Turner/Higgs,2003,p152).

However, constructing the NPLG was said to be a difficult task due to data inconsistencies and inaccuracies in local gazetteers (Morad,2002,p484). Furthermore, there was controversy associated with the development of the national repository; the Ordnance Survey took up leadership but there were differences of opinion developed between it and other stakeholder organisations on the role of BS7666 and other technical issues (Pollard,2000,p191-192). Although some progress was made with the NPLG, it was clear that a definitive set of address, street, property and land data for use in GIS had not materialised. In 2002 the Acacia programme was established by the Ordnance Survey, Royal Mail, Land Registry and local government representatives as a renewed attempt to create such a repository, building on the

NLPG. The repository was going to comply to BS7666 and feed into Ordnance Survey base maps (AGI,2002). However, by late summer 2004 Acacia was said to be floundering as commercial and intellectual property issues proved to be complex barriers to progress (Cross,2004d).

### *Census Data: Demographic data repositories*

The National Census was identified as another potential enabler for Crime Mapping; census information was used to provide insights into the links between the socio-economic background and crime levels of areas (Radburn,2001,para 1.03; *interview – 12*). Also, census data contributed to other data sets that were important for some Crime Mapping tools used by CDRPs. For instance, the ODPMs Index of Deprivation used census frameworks and data, along with statistical information from health, education, income, crime, unemployment, housing and other domains. A deprivation index was created for England, assigning a score and rank for 32,482 geographic areas of England (ODPM,2004). The Index of Deprivation had been used in Crime Mapping analysis (Chainey,2001,p116) to help understand links between criminality, poverty, homelessness and so on.

The Office for National Statistics, an executive agency created in 1996, collected and published national statistics related to populations, the economy, industry, education, health, demographics and other issues. In particular the National Census, conducted every ten years, provided an important repository of geo-coded demographic data about populations, families, gender, religion, housing and so on, which many organisations used in GIS for various purposes.

However, the census programme was criticised as, despite numerous recommendations (including the Chorley Committee's), it allegedly used unhelpful geographical boundaries in its collection of statistics. Whereas it was suggested that the census adopted postcodes for its design, thus making it considerably easier for census-generated socio-economic data to be used, census-specific enumeration

districts were still preferred in the 1991 collection. These districts were said to 'vary widely in geographical size and shape, population size and density, and social composition' (Martin,1998,p199) and were less amenable to GIS applications. In general, the 1991 census received criticism for a neglect of digital data and GIS considerations (Openshaw,1995). Changes were said to have been made to help the situation (Rees/Martin,2002,p35) and Martin noted that the 2001 census was designed so that it made it 'much easier to relate socio-economic data' based on postcodes with census data (2002,p45).

Although not consistently expressed in central government literature, elsewhere it was recognised that compatible geographic data could help facilitate the joining up that the e-government strategy aspired to (Turner/Higgs,2003,p252; Pollard,2000,p185; Morad,2002,p484). However, progress with standards and particularly national data repositories appeared to be difficult; local government had historically collected and recorded street, land and property data in different ways without knowing that the imperative would be to merge data sets in the future. Similarly other organisations that held geographic data had discrete practices, thus challenging the aspirations of the national data repositories. Furthermore, the Ordnance Survey in particular had a commercial interest in base maps and other geographic data, which evidence suggested had been detrimental to GIS development (IGGI,2000,p6; Heywood,1997,p20; CCTA,1993,p48).

Whilst problems with the national geographic data repositories and the economic costs of base maps acted as enduring barriers, they did not prohibit new uses of geo-coded digital data in the public sector. As discussed in the next section, GIS based tools, including Crime Mapping, did develop in the 1990s. However, similarly to the experience of national data repositories, projects that sought to bring data together from different sources or required partnership working often experienced difficulties.

#### 4.4 THE ROOTS OF MULTI-AGENCY CRIME MAPPING



By the beginning of the 1990s GIS was a tool used in some public sector organisations, particularly those with requirement for or custodianship of geographic data. For example, a comprehensive survey conducted in 1991, five years after the Chorley Report, concluded that one in six local authorities had purchased some kind of GIS software (Campbell/Masser,1992). However, investment in GIS software did not necessarily equate to successful use of the technology as intended. Studies of local government demonstrated that GIS applications strained to get off the ground; Campbell found that after two years or more, only three out of the twelve local council GIS under investigation were fully operational (1994,p314). Nonetheless, some local authorities were successful in the implementation of GIS. For instance, Brent Council had had considerable experience with geographic data, having kept a database of geocoded information for properties and land since the late-1970s, like many other local authorities. The council purchased GIS software in 1987, developing initiatives to use it in urban renewal, schools catchment and transport policies (Allison,1998,p18-22).

During the mid-1990s hospitals and health authorities were also beginning to develop GIS for use in mapping admissions, mortality statistics, GP registrations, diagnosis clusters and general health patterns (Walls/Crawley,1996; Paliwoda,1996). In terms of the criminal justice system, in 1988 the Home Office was involved with Staffordshire Police in a project to develop simple GIS to plot crimes by beat (Ekblom,1988,p27). Ken Pease pointed out that the Home Office Crime Prevention Centre developed the 'Crime Analysis Package' in the late-1980s. Pease himself succeeded 'with massive effort' in plotting crime and disorder data in Liverpool (Pease,2001,p225), which provided some rudimentary insights for the police force. However, despite having a senior police officer assigned to the dissemination of the GIS technology to other government bodies, it transpired that there were no other instances of it being employed; soon after the system 'clunked its way to oblivion' (*ibid.*,p226). The idea

of applying GIS to mapping crime was put on hold somewhat, certainly in terms of Home Office impetus.

The Metropolitan Police were using GIS to pinpoint road traffic accidents from 1994, and to help prepare large-scale public events such as the London Marathon, state visits and New Year's Eve celebrations. Furthermore, progress was being made with basic Crime Mapping initiatives to help tackle burglary and street crime, established circa 1995 (Stoneman,1996,p8.1.3). Stoneman estimated in Autumn 1996 that there were 300 GIS systems in the Metropolitan Police (*ibid.*,p8.1.5), although thesis interviews suggested most police forces across the country were not using GIS beyond rudimentary applications during this period (*interview – 11,12*).

### *The Barriers to Multi-Agency Crime Mapping Development*

Despite difficulties, GIS technology had become a viable option for a variety of public services during the mid-1990s; nonetheless some observers still felt the potential for GIS was being overlooked, particularly in central government. In a speech to mark ten years since the Chorley Report, Lord Chorley argued that GIS development had been hindered by 'the culture of Whitehall, of separate departments who saw themselves as fortresses whose main aim was to repel boarders' (in Heywood,1997,p81). Campbell pointed out that in the mid-1990s, 'active interest in GIS has not yet permeated the often large community service type departments of housing, education and social services' (1994,p313). A CCTA report made a similar point, noting that GIS remained an untapped resource in the mid-1990s and arguing that 'GIS technology is often either not considered or is regarded as not yet practical, and passes by as a lost opportunity' (CCTA,1993,p42).

Furthermore, the distinctive multi-agency, joining up element to GIS, as seen in many CDRP initiatives using Crime Mapping tools, had not developed pervasively by the mid-1990s. This despite the AGI, IGGI, parliamentary bodies, actors from the Ordnance Survey and other observers having recognised during this period the

potential informatizing benefits of sharing geo-coded data between organisations. Widening the focus from infrastructural and data repository projects and technical standards discussed above, similar barriers appeared to exist to the sharing of geographic data between service delivery organisations.

As noted above, the Ordnance Survey operated with a policy of cost recovery, which was criticised for holding back the use of GIS in the public sector, as base maps were expensive to acquire. However, it should also be noted that general government policy during the 1980s and early 1990s arguably made it much more unlikely that geographic information held by departments and government organisations other than the Ordnance Survey would be shared freely in terms of, amongst other tools, GIS applications. Aside from the Data Protection Act, which protected information pertaining to identifiable individuals, there was also a Tradable Information Policy. Following activity by the Prime Minister's Information Technology Advisory panel in 1983, the DTI produced the 'Government-Held Tradable Information' guidelines in 1986. This policy document embodied the view that, considering the vast amount of data collected by departments, including geographical or geographically related information, government should do more to systematically exploit markets by selling information to the private sector. This policy retained a vein of influence for years to come, and seemed to have particular relevance to geographic data, with the government having a virtual monopoly through the Ordnance Survey, local government and some holdings in central departments.

It can be contended that the enduring Tradable Information policy, in its several guises, was conducive to an environment where departments, as a rule, would not share data within the public sector. Many departments 'prefer to treat their dealings with other government bodies as comparable with private sector business, and charge accordingly' (IGGI,2001,p9). Tradable Information policy then, had according to some arguments, contributed to a milieu which had been unlikely to encourage

sharing of geographical information between departments as well as the Ordnance Survey.

During the late 1990s, ten years after the influential Chorley Committee reported that sharing of geographic information had enormous potential in improving public services, the AGI and IGGI were working with departments to encourage the unlocking of geographic data (Heywood,1997,p28). As well as involvement in the development of standards and data repositories by key organisations, the AGI and IGGI were hoping to illicit an understanding of the benefits of geographic data sharing across the public sector. However despite some progress, the two organisations concluded that ‘the opportunity value of sharing geographic information is not understood at senior levels in government’ (quoted in Heywood,1997,p40). In 2000 the IGGI found that there were many barriers to the effective sharing of geographic information, including staff and skills shortages, lack of policy or procedure, insufficient senior management involvement and data inconsistencies (IGGI,2000,p4-7).

Despite the apparent barriers, multi-agency sharing of geographic data did begin to become a common phenomenon in CDRPs close to the millennium. Certainly, technological developments aided this process; affordable desktop GIS software was key, as was the development of middleware technology. Middleware technology was able to ‘clean’ some geographical data, such as addresses that could come in different formats, to facilitate greater compatibility between shared information (*interview – 11*). However, technological advancements were accompanied with a variety of other factors and influences, which made criminal justice and other government institutions more amenable to Crime Mapping tools. In particular, long-term trends in criminological thinking influenced the direction of crime policy, which eventually contributed to the creation of many CDRPs, many of which took on GIS-mediated multi-agency Crime Mapping tools.

## *Trends in Criminology and Crime Mapping*

Following the work of Goldstein (1979) and others, preventative or problem-solving policing gained kudos in crime policy. This was where specific and localized crime was addressed rather than a concentration on general reactive policing measures. According to Ekblom, preventative policing was directed towards

particular, local crime problems and involves obtaining detailed information; analysing the information to identify patterns, for example, in time and place in the occurrence of crimes; devising preventive strategies in the light of analysis; putting the measures into practice; and evaluating their impact on crime (1988,p1)

This information intensive approach partially rested on the assumption that 'crimes are not totally random, isolated and unique events, but can be combined into sets sharing common features and showing distinct patterns' (*ibid.*,p4); it lent itself well to the plotting and analysis of crime and other statistics on maps.

The academic roots for this kind of approach could be traced back to the Chicago school of criminological thought, where crime rates were analysed in relation to geography in an attempt to understand underlying patterns (Mawby,1989,p262). Indeed, a classic study of mapping crime was conducted during the early-1940s (Shaw/McKay,1942). The plotting of other data on maps can be traced even further back; John Snow famously mapped cholera cases in the disastrous outbreak in London's Soho in 1854, proving that the disease spread by water rather than air (Richardson,1965). In the digital era, it can be asserted that the movement towards preventative policing, with the emphasis on analysis of local crime trends, lent itself well to the use of GIS. As protagonists searched for tools with which to enable or guide preventative methods of this kind, it is likely that increasingly accessible GIS software became an obvious option, despite the problems and costs associated with obtaining and using digital maps and geo-coded data.

The rise of GIS and Crime Mapping may also be partially attributed to the fact that policing, and indeed CDRPs were primarily organised spatially, with organisations taking responsibility for different areas of the country (rather than, for instance being organised through crime category or victim type). Thus, crime prevention and control were locked into a spatial framework (Pease;2001,p232-33) that placed an intrinsic emphasis on the geography of crime.

Further examination of criminology and crime policy trends provided additional insight into the development of an environment conducive to the distinct multi-agency approach to Crime Mapping. For a number of years the Home Office had been pursuing the potential of a multi-agency approach to crime prevention. According to Hope and Shaw, this approach originated in the mid-1970s when police forces began to try to establish links with other agencies, demonstrating the belief that the 'wicked issue' of crime and disorder straddled a variety government organisations and would benefit from a joined up approach:

Inasmuch as crime within local communities is likely to be sustained by a broad range of factors – in housing, education, recreation, etc. – the agencies and organisations who are in some way responsible for, or capable of, affecting those factors, ought to join in common cause  
(Hope/Shaw,1988,p13)

However, Crawford detected earlier strains of thinking akin to the partnership approach, with some discussion of multi-agency crime prevention in a report from 1965 (Home Office,1965). Following the publication of this report, some ad hoc and informal panels were established, (Crawford,1997,p26-27), with an emerging conviction that 'crime prevention lies beyond the competency of any single agency' (Crawford,2001,p59). According to Crawford, this assumption grew from a shift in criminology; in the face of increasing crime levels and cycles of deprivation during the 1970s, it was felt that faith in the rehabilitation of offenders and a solely reactive approach to policing were both outmoded and erroneous (Crawford,1997,p26-27).

Laycock and Heal pointed out that research during the period indicated that reactive policing had become ineffective, whilst it was emphasised that much crime was casual and could be prevented by blocking opportunity (1989,p317).

### *The Crime Prevention Partnership Approach in Policy and Practice*

Influenced by the movements in criminology, the Home Office took the step of producing an inter-departmental circular on the crime prevention in 1984 (Home Office et al,1984), drawn up after announcements of a collaborative approach to crime by the then Home Secretary, William Whitelaw. During the period, it was recognised that there was scope for crime prevention sentiments to percolate into housing, education, social services, transport policy and other, traditionally discrete areas of public services (Laycock/Heal,1989,p318-321). The Home office implemented the Five Towns Initiative in 1986/87 and the Safer Cities Programme in 1988, both of which looked to increase joined up approaches to crime prevention in specific localities. Although, as Sutton (1999,p29) noted, there were many difficulties and challenges involved in succeeding with the initiatives, the partnership approach gained credence. Patterns in criminology and crime prevention implied a swing away from focus on offenders and criminals (and concentrating on capture and rehabilitation) to offences and crimes (Crawford,1997,p31). The shift towards a preventive and multi-agency approach to crime control logically placed emphasis on geography, making GIS a more pertinent and appealing candidate to assist crime prevention. The Labour Party had also endorsed the partnership approach to crime whilst in opposition (Labour Party,1987; 1994).

In the early 1990s, a second inter-departmental circular (Home Office et al,1990), a Home Office partnership document (Home Office,1990) and the Morgan report (Home Office,1991) all advocated a multi-agency approach to crime prevention. However the first Home Office policy outputs were said to have 'provoked a relatively patchy response across the country' (Liddle/Gelsthorpe,1994a,p1). The Morgan Report recognised as much and, in advocating increased joined up working in

crime prevention, it judged that local authorities would be best placed to coordinate partnership work. Eventually, the Crime and Disorder Act was introduced to embody and coagulate such an approach and to create CDRPs<sup>17</sup>. However, during the mid-1990s and before this Act, the Home Office continued its support for inter-agency work (Liddle/Gelsthorpe,1994b).

As Crime Mapping benefited from input from a variety of data sets, some level of involvement and participation from a number of public sector organisations was seen as useful. Thus, the 1998 Crime and Disorder Act was particularly relevant in that it stipulated a requirement for police, local authorities, fire authorities and local health bodies to form partnerships with a number of other appropriate organisations.

Certainly, statistics suggest that CDRPs quickly became a suitable environment for Crime Mapping to incubate. By 2002, there were 376 such partnerships (AC,2002c,p6) of which 74% were said to be using Crime Mapping as part of their strategies for tackling crime and disorder (Radburn,2002,p40).

CDRPs, which intrinsically brought together organisations involved in crime and related issues, provided a foundation for multi-agency Crime Mapping tools to develop in a partnership environment. Clearly the legislation was instrumental in creating this foundation, whilst the pan-government agreement with the Ordnance Survey (Kable,2003e) provided easier access to base maps. But fuller historic investigation demonstrates that trends in criminology and penology, that filtered through to some Home Office, police and other criminal justice agency policies, helped embed a multi-agency and geographically focused approach to crime prevention, crystallised in CDRPs.

### *Crime and Disorder Reduction Partnerships*

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<sup>17</sup> Although many similar crime and public safety partnerships predated 1998 and were given a statutory footing under the Act henceforth



The Crime and Disorder Act (1998) placed a statutory requirement on the police, local authorities, fire authorities and local health bodies to form partnerships, which could also include probation, Drug Action Teams, voluntary organisations, courts, education bodies, transport authorities and others if appropriate. Once formed CDRPs<sup>18</sup> were charged with conducting an audit of local crime every three years and would then formulate a strategy to tackle crime within the area. In England, the CDRPs were overseen by Regional Crime Reduction Teams and a Regional Crime Director, housed in the Regional Government Offices and accountable to the Home Office.

The Home Office, with the assistance of the Regional Crime Director, would monitor and assess performance as well as allocate some funding and provide guidance to partnerships. Furthermore, Public Service Agreements fixed for the Home Office in conjunction with the Treasury, which in 2002 set targets to reduce vehicle crime by 30% and domestic burglary by 25% (Treasury,2002,p83), broadly informed the activities of the CDRPs. The partnerships could also be tasked by the government to lead on specific strategies; for instance in early 2004 it was announced that, under the Prolific and Other Priority Offenders Strategy, core criminals (responsible for half of all crime) would be subject to enhanced supervision and attention across the criminal justice system. CDRPs were asked to set up and supervise these schemes (Home Office,2004c). However, the local partnerships retained certain levels of autonomy; each CDRP developed a local strategy to tackle the specific nature of crime in the locale (AC,2002c,p29). The partnerships adopted a number of different techniques, approaches and projects to tackle local crime through the membership organisations. Various CDRPs helped install CCTV, improved street lighting, removed graffiti, tackled drug misuse, raised awareness on crime prevention, provided victim support and assisted partners, particularly the police, with crime prevention and detection (*interview – 10,13*).

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<sup>18</sup> Sometimes known as Community Safety Partnerships, particularly in Wales

### *Crime Mapping and CDRPs*

A key procedure in many of the above initiatives was the analysis of crime patterns, to understand when, where, how and why crime and disorder might occur. Such analysis could study for instance incidence, prevalence and concentration of recorded crime, the movement and behaviour of known offenders, the households and areas where crime occurred, the methods of burglary or robbery and the temporal patterns of disorder (Hough/Tilley,1998). Although many CDRPs conducted a variety of crime analyses, the use of GIS software to overlay geo-coded data, drawn from a variety of agencies, was a common strategy.

The philosophy behind the use of Crime Mapping tools by many CDRPs was that, by joining up data from a variety of sources, new insights could be gained to feed into more effective crime detection, prevention and public protection. This was neither the only crime analysis technique employed by CDRPs or exclusive to the partnerships (other public organisations had some interest in the use of GIS to map crime). Crime Mapping was largely a back office pursuit, where CDRPs and partner organisations used GIS technology to feed into wider crime prevention activities. There was less scope for Crime Mapping to interface directly with the public through, for instance, online access to geographical presented crime data. However, the Office for National Statistics had by 2003 offered some geographical expressed crime and safety information through its website, whilst some local authorities, such as Leeds City Council, were providing similar services.

### *The Barriers to Multi-Agency Working in CDRPs*

CDRPs became a cornerstone to multi-agency crime prevention, spurred by Home Office policies and, from 1998, crystallised in legislation. However, it was by no means the case that successful collaborative working was easy to effect once the partnerships had been created. There remained many institutional challenges in operations that traversed organisational boundaries, including Crime Mapping. Firstly, police officers were said to often feel that the joined up approach to crime

prevention held up police work, and partnership participation was seen as a 'soft job' reserved for officers close to retirement (Liddle/Gelsthorpe,1994b,p13). Audit reports found that the prevalent police attitude was that 'partnerships do not prevent crime: They talk about it' and despite considerable efforts much partnership work was 'misdirected and ineffective' (HMIC,1998,p40). Academic scrutiny found that in the crime prevention arena 'multi-agency initiatives can, and do fail; and unintended, and unfortunate consequences often occur' (Sampson et al,1988,p491). Koch found that Home Office activity itself had lacked consistency, a number of committees addressed crime prevention issues had been ephemeral and misdirected (Koch,1998,p41-51).

Interviewees were clear that partnership working entailed much more than merely bringing partners together:

One of the failures has been that in the motion towards joined up government, and I've seen this in the CDRPs, people on high have just presumed that you identify partners, put them together and they'll just engage. You can't just get people in a meeting room and say, 'we are now working as a partnership' – it doesn't work like that (*interview - 13*)

Local Authority involvement in multi-agency crime prevention partnerships was hindered at times; one source provided the observation:

People attend the meetings, but very little comes out from their participation. There is a resistance to corporatism almost – people are parochial (Liddle/Gelsthorpe,1994b,p15)

Or, on the issue of police and probation service collaboration, an interviewee commented from another source:

Because each agency has its own priorities and aims, each is generally suspicious of the other's intentions and the final result they are searching for (from Crawford,1997,p110)

Wider studies pointed to similar problems experienced in sharing data in a partnership environment (e.g. Craglia/Signoretta,2000; 2002; Evans,1997; Nedovic-Budic,2000), an indication of the potential difficulties with multi-agency Crime Mapping.

The rich and complex institutional environment depicted above demonstrates that, over a number of decades, government organisations were being brought together to tackle crime prevention, particularly through CDRPs from 1998. Yet evidence suggested that it was not easy to make a success out of partnership working, which was required at least at some level for CDRPs to obtain the necessary data from partner organisations for use in Crime Mapping, and to feed analysis back to them. Still, multi-agency Crime Mapping did emerge as a significant tool for CDRPs in the late 1990s. Whilst this emergence was stimulated by the availability of affordable GIS and base maps as well as the a predilection towards an interest in the geography of crime in crime policies and strategies, CDRPs had also crucially found ways to access data from the police and a variety of other sources, and to join this data up through GIS-mediated analysis. This issue is discussed in the next section.

#### 4.5 CRIME MAPPING IN ACTION: ACHIEVING JOINING UP THROUGH LOCAL PARTNERSHIPS

Although there had been some examples of Crime Mapping as early as the late 1980s (Pease,2001), it was a partnership in the London Borough of Brent that pioneered the multi-agency approach even before the Crime and Disorder Act; from 1996 a collaboration was formed between the local police force and the local council, aiming to bring together crime and socio-economic data (*interview – 11,12; Allison,1998,p18-22*). The partnership used GIS to generate crime ‘hotspots’ to provide new insights into patterns of offending (Chainey,2001,p103). The project leader commented during interviews:

In the sixth month of the project we began to do analysis on the data – and the police were amazed that we could get so much out of it. We invested in the time and energy so we were able to effectively exchange data between the two organisations and by establishing trust all the cultural barriers went. Some of the results that came out actually changed the way that the police force did policing – and although its hard to say Crime Mapping reduced crime by 35% - they saw it as a part of how policing was becoming much more intelligence led – and crime did reduce by 35%. Other parts of London weren't seeing this decrease (*interview - 12*)

The success influenced the approach of other London boroughs, and multi-agency Crime Mapping was used 'as the starting point' for Hackney's Crime and Disorder Reduction Strategy group (Chainey,2001,p104).

As Crime Mapping progressed to higher levels of sophistication, information not just about crime patterns was offered, but also criminal behaviour, architecture and other socio-economic information that facilitated crime prevention (*ibid.*,p105). In Brent, links between deprivation, social class, housing occupancy, population age and crime were being explored through what was described as 'the innovative cross partner sharing of geographic information'; for instance, GIS was used to examine the relationship between youth offending and habitat (*ibid.*,p110). In Southwark, police data was combined with council noise pollution information using GIS to aid a multi-agency taskforce in tackling the problem (*ibid.*,p115). In Harrow police, ambulance, census, deprivation, educational and other data sets were combined in GIS to help tackle drug-related crime problems (*ibid.*,p116). The Safer Merseyside Partnership had also been somewhat of a pioneer in multi-agency Crime Mapping endeavours, bringing together information from local authorities, police, fire brigade, transport and non-government bodies to provide analysis of crime on public transport and juvenile disturbances (Hirschfield,2001).

From 1998 in particular, Crime Mapping projects sprung up in CDRPs and other local and regional partnership organisations; as noted above, by 2002 74% of the 376

CDRPs were found to be engaged in some form of Crime Mapping (Radburn,2002,p40). The Crime Mapping project in Leeds provided a fairly typical example; it used information from the local police force (recorded crime and reported incidence databases), fire authorities, health organisations, youth offending services, drug action teams, the used needle collection service, abandoned vehicles teams, noise pollution teams and educational bodies (attendance, truancy and expulsion rates data) (*interview – 13*).

Certainly, those involved were positive about the insights into the relationship between crime and other socio-demographic factors that multi-agency Crime Mapping could offer. The reasons given as to the strengths of GIS-mediated Crime Mapping were commensurate with the criminological perspectives on locale-orientated crime prevention and partnerships that had filtered through to crime policies during the decades before the millennium. As Bowers and Hirschfield point out:

The analysis of relations between demography, housing, social conditions and crime and the targeting of crime prevention strategies can be facilitated greatly by information systems capable of handling spatially-referenced crime and incident data and cross-referencing them with contextual information on land-use, infrastructure and demographic and social conditions... This is where GIS-linked applications have the most to offer (Bowers/Hirshfield,1999,p160)

One senior Crime Mapping protagonist, interviewed for the thesis, provided further details on examples of how geo-coded information from multiple agencies could benefit intelligent crime prevention:

Imagine if a car is abandoned burnt out, the police service will not register that car as arson unless the fire service contact them and tell them that. If you plot on a map where the car was stolen and where it was abandoned, then you obtain from probation details of what youths are currently on

their books and are subject to orders and are prolific car thieves and likely to set fire to cars, and plot where they live, you suddenly have a very comprehensive map of who is likely to be stealing what cars and from where, and the make of the car, the age of the car they prefer; you can tie it to an individual offender. You can look at the distances they are inclined to travel and if you know the associates that that individual is involved with, girlfriends or the clubs they like going to...you form a whole jigsaw of car crime (*interview – 12*)

Proponents of Crime Mapping contended that the tool could change and improve crime prevention and policing practice through new insights. For instance, it had been assumed in some areas that most crimes occurred late at night; 'the Westminster partnership believed crime and disorder increased in the early hours and targeted resources accordingly. When crime data was cleansed and mapped this was found to be false' (Radburn,2001,para. 1.04). Further insights were gleaned by combined data sets using GIS:

We could find out what proportion of injuries aren't getting reported to the police, because people will go to A+E but nobody will report it to the police...You can identify what routes are particularly problematic, for instance an underpass near a university. Also, very few women report incidents of domestic violence for fear of retribution, but a lot of women will go to A+E and to doctors, PCTs [*Primary Care Trusts*], for their injuries, and the doctors could provide very useful information about what categories of women are suffering. Without this information you are working in a silo as they like to say, a police silo, and you are totally unaware of what else is impacting and what the true scale of this is and how you might do something about it (*interview –11*)

Additional analysis could be gained by CDRPs combining property data with crime information:

You'd say, looking from a crime point of view, where does most crime occur, where do most victims live? But to delve in and understand that

problem you'd look at other layers. If you have a problem of criminal damage in an area – you use the knowledge that criminal damage is normally connected with alcohol abuse and so you'd look at the licensed premises in the area, map those, and see if there are certain pubs causing the problem. It's about getting behind where the problems come from. Instead of reacting to the criminal damage we can work with those pubs and bars on the problems of people coming out of them when they close  
*(interview - 12)*

By the first few years of the new millennium it was clear that Crime Mapping tools had been deployed in most CDRPs, following the pioneering work in Brent and elsewhere. There was a strong argument for the use of data from multiple agencies in Crime Mapping, to enable GIS-enabled analysis into crime patterns. However, crucially, CDRPs had to be able to access the datasets held by multiple organisations to generate this analysis (Radburn,2001,para. 1.05-1.06). Whilst Ordnance Survey digital maps were considered to be of high quality (Heywood,1997,p19; Pollard,2000,p188), there had been difficulties with the supply of other useful baseline data such as a national repository of land and property addresses, although CDRPs could often use local authorities gazetteer information (*interview – 12*). However, the acquisition and use of partner data, used to overlay on maps and other baseline data, was a further challenge for CDRPs that wished to take advantage of multi-agency Crime Mapping.

### *The Criminal Justice System in the e-government Era: Joining up information at a national level*

Criminal justice policy thinking had, since the mid-1980s, stressed the potential virtue of improving cross-agency information flows, particularly to provide consistent offender case management data (Bellamy/Taylor,1996); this thinking led to the CCCJS programme. As discussed in Chapter One, it was discovered that the institutional information domains of existing criminal justice agencies were in many ways not amenable to the joining up objectives of the CCCJS (*ibid.*); elsewhere over a number of years commentators had criticised the criminal justice system as a whole



for fragmentation and a lack of cohesion and coordination (Moxon,1985; Raine/Willson,1993; Crawford,1997,p56; Auld,2001; NAO,1999; Glidewell,1998; Narey,1997). Following the CCCJS, subsequent attempts to share case management information across criminal justice agencies, such as the Libra project, encountered well documented problems (AC,2002b; NAO,2003). Nonetheless, ministerial pressure to improve information flows across criminal justice agencies (Kable,2003b) secured an enduring focus on the use of ICTs to achieve this.

For instance, a dedicated organisation with ministerial leadership, known as Criminal Justice Information Technology (CJIT) was established to oversee a number of ICT enabled projects to bring together offender related information from across different criminal justice agencies. The broad objective of the CJIT was to help modernise the IT infrastructure of criminal justice agencies, create national systems for managing cases and link case management systems across agencies. Key projects including a Secure eMail service, the aforementioned Libra and a Criminal Justice Exchange; the latter aimed to allow agencies to share offender case files and other relevant information across the criminal justice edifice. Although established some years before in 1997 (PITO,2003), the Police Information Technology Organisation (PITO) worked closely with CJIT in developing a number of related police and criminal justice information projects. For instance, the Criminal Justice Extranet was offered to police forces and other criminal justice agencies as a secure communication channel similar to GSI, with plans for additional functions such as access to the PITO managed Police National Computer (PITO,2004). Some PITO projects fitted into its National Strategy for Police Information Systems (NSPIS), which aimed to offer standard national, integrated IT systems for police forces (*ibid.*).

In early 2004 John Suffolk became director general of CJIT; he was very clear in identifying the work of his organisation as part of the 'joined-up agenda'. However, he was also keen to stress the difficulties in bringing together the different institutions of the criminal justice system (Arnott,2004c). The difficulties within the general

principle of joining up information generated by criminal justice agencies were indicated by the purported inadequacies of the Police National Computer (PNC). The PNC, managed by PITO, held a variety of data sets pertaining to offenders, vehicles and stolen property that police forces and other criminal justice agencies could access and update. Audit scrutiny found wide variation amongst police forces in crime classification and reporting procedures, resulting in criticisms of the accuracy and quality of the data inputted by forces into the PNC, particularly the Phoenix national intelligence component (HMIC,2000; 2002). Practitioners and observers felt that much of the data in the PNC could be inaccurate, untrustworthy and updated infrequently (Criminal Justice Conference,2001,point 115; *interview – 12*; Bichard,2004,p133).

Although providing useful context for the institutional complexities of joining up information across the criminal justice system itself, much of the policy focus on coordination and information flows depicted above rested on offender case management. Although potentially useful for some of the other operations and responsibilities of CDRPs, such as their supervision of Prolific and Other Priority Offender programmes, case management information was less likely to be used in Crime Mapping. The work of the CJIT and PITO largely operated away from the direct concerns of Crime Mapping protagonists, who dealt with data issues at a local level. Still, the institutional differences that appeared to be at the root of problems with criminal justice case management information flows translated to other comparable issues in Crime Mapping.

### *Crime Mapping and Local Data Sources*

Amongst other data sets, Crime Mapping specifically required information from local police force crime incident information systems more commonly than national criminal justice databases such as the Police National Computer. Whilst Bellamy and Taylor observed a general reluctance of criminal justice organisations to share data (1996,p64), similarly CDRP actors found it difficult to acquire and use data

from local partner agencies (*interview – 12*). For instance, individual police forces would normally have 15 to 20 separate IT systems (*interview – 11*), some of which could contain recordings of crime types and locations, telephone calls to police and other intelligence useful for Crime Mapping (*interview – 12,11*). Although CDRPs often experienced difficulties in convincing partner organisations to relinquish data (as discussed below), once acquired information such as that found in local force systems was often of varying accuracy and quality (Radburn,2001,para. 1.05; *interview - 11*). This caused particular problems in the accurate association of crimes with location. Furthermore, the act of comparing and combining crime data with information from other partnership agencies that could have also had significant levels of inaccuracy, as well as divergent conventions and formats for recording data, provided an added dimension for CDRPs to overcome.

As discussed, the strength of Crime Mapping was that it drew information from a variety of data sets and allowed CDRPs and other organisations to compare and analyse information through geographical expression in GIS software. Although seemingly far removed from the work of the OeE, this multi-agency approach still embodied the joining up sentiments of the central e-government strategy. However, it was this multi-agency approach, which brought disparate data sets together under a confluence, which proved to be the most challenging and problematic aspect of Crime Mapping. This was not least because the data sets represented and reflected the institutional and technical idiosyncrasies of the partner organisations that had been brought together under the ambit of CDRPs. It was felt that commonalties in geography itself would to an extent be powerful enough to provide commonalties to the data (*interview – 12*). However it was still very much the case that information collected by police forces, other criminal justices agencies, housing, social services, education, health organisations and so on would have largely been collected for varying purposes, with different levels of detail and accuracy, regarding different clients or subjects, confined to various geographical boundaries and stored in differing formats. A key skill in multi-agency Crime Mapping was the ability to acquire data

from a variety of sources and then overcome any inconsistencies within that data to facilitate useful analysis. How this was achieved represented an important aspect to the findings of the case study.

*Joining Up Through Trust Relationships: Going with the institutional grain*

A strong theme from interviewees was that the emphasis in Crime Mapping was on building trustful relationships with partner organisations. Although the technology involved was clearly crucial, GIS and other applications were seen as supportive facilitators rather than the main focus. Rather than developing ICTs that required modifications in the information processes of participant organisations, the accent was on adopting Crime Mapping activity to the data sets provided and to accept the institutional differences inherent within them. The technology was adapted to the institutions involved, rather than vice-versa.

Crime Mapping protagonists were wary of the need to instil confidence in partner organisations; one commented:

Culture is the key word – I've often said that there have been so many artificial barriers put up - there are comfort zones, and people feel that if they pass their information over it will be scrutinised more. That challenge has to be stood up to (*interview - 11*)

Similarly, a Home Office report argued:

When an external data-sharing project arrives, the line is crossed, warning bells often ring out, and barriers may come down. There are also, of course, competing home grown data sharing solutions where the wheel is reinvented time and time again, expensive projects fail, and political cover-ups dent support for further progress (Radburn,2001,para. 1.05)

Another interviewee noted the difficulties, but also the importance of obtaining the willing participation of protagonists:

The cultural protective attitude of 'this is my data – we can't share this data, it's not going to go out to anyone' - that is an issue but if you give them the resource, if you gave them an extra few bodies in there to demonstrate first of all how their data can be used to solve some of the holistic and corporate problems across the authority – and what that department could gain in terms of direct cost savings, then they will become to get more engaged and the cultural barriers will be removed  
*(interview - 13)*

Another interviewee added to this, suggesting that to overcome barriers it was necessary to identify key individuals:

Once you have contact with the person that manages a data set in each department then it is only two or three minutes work for that person to pop it on a CD and send it to us or email it to us - so it's not difficult once you know who's got the data, it's getting to that point that is difficult  
*(interview – 15)*

The need to develop trust and support with partnership agencies was a recurrent theme in interviews, for instance:

We held a scoping event and invited partners to look at what we are doing, but then we held further events where groups went to see partners in their offices, and got them to show us their computer screens and what they do...we've had quite a positive approach from that and people seemed to suddenly get quite keen with the idea of sharing information  
*(interview - 13)*

The same interviewee provided further evidence:

A survey was done with existing partners, asking what data they kept, and they responded and individual owners were identified. We ran a scoping event to show them examples of Crime Mapping, to try and engage them

a little bit and get them to talk about their data sets because they haven't been doing it in the past (*interview - 13*)

Although ICTs were not the central theme discussed by Crime Mapping interviewees, importance was given to the role of various middleware techniques that could help cleanse and reformat data. One interviewee noted that:

we used middleware software on police systems which automated a lot of the data cleaning processes – as it corrected spelling mistakes and looked at address fields. If we focused on the geographic element and put the data on a map, we could then solve some of the other problems. The focus was on cleaning, standardising abbreviations, sorting out where data was inserted in the wrong field and the software would correct all that (*interview - 11*)

Another Crime Mapping project leader commented on the advantages that such software could lend; when asked how the Crime Mapping project coped with the different data formats he replied:

by building the system around what systems they've got in use – it doesn't take much. We've said partners will provide the data on a CD or a whole range of other ways – we've made it so the system can cope with the quirks of the way that the agencies provide the data to us. We need all the opportunities we can get to get all the information we can (*interview – 11*)

Home Office guidance suggested the potential benefits of cleansing middleware technology in terms of efficiency savings: 'For 1000 records, manual processing took 10 days at £1.04 per record. Infoshare [a software company] automated this to 20 minutes at £0.0034p per record' (Radburn,2001,para. 1.05). The drawing together and cleansing of address-related data in particular was said to benefit from the adoption of the BS7666 standard, used to format relevant information used in Crime Mapping tools (*interview – 12*; Radburn,2002,p1.06).

Despite the advances of middleware, it was not suggested that all data issues had been solved; one interviewee commented on the data sets coming in to him:

some of them are still ridiculously incompatible, or just ridiculously inadequate... There is still the acknowledgement that data is going to come in to us piecemeal, in different formats ... I don't think anyone is kidding themselves that they are going to produce some kind of fantastic middleware that's the equivalent of a babel-fish (*interview – 13*)

Furthermore, some interviewees were aware of weak geo-coding practices in partner organisations, which could lead to inaccuracies in Crime Mapping analysis:

I was looking at crime in Headingley, and I couldn't understand why a particular area in Far Headingley seemed to have a lot of crime even though there was nothing much there except for a hotel, with a sports area attached; it didn't make sense. And it was only by closer examination of the data I discovered that a lot of the crimes in the shops a couple of miles away in Headingley had been given the postcode of this hotel; this postcode only has one delivery point and it is the hotel. Someone for some reason has been putting in the wrong postcode and thinking 'oh it's close enough – it's Headingley', and it displaced these crimes by two or three kilometers (*interview – 13*)

Despite these issues interviewees felt that, once partnerships and GIS applications were in place, success with multi-agency Crime Mapping was by virtue of an emphasis on building relationships with partner organisations and accepting data contributions in any form. Thus, on the ground the evidence suggests that, in the face of long-standing difficulties with partnership working in the criminal justice system, Crime Mapping protagonists concentrated on going with the institutional grain of the partner organisations. Efforts were made to understand the needs and processes of police, local authority departments and other participating agencies, which were not

required to profoundly change business practices to contribute and, ideally, benefit from Crime Mapping.

In the instance of Crime Mapping, the particular incarnation of joining up rested not on the integration of the operations of organisations, or indeed widespread data sharing across multiple agencies; instead data was passed bilaterally through to CDRPs in a variety of formats and Crime Mapping protagonists would adapt and manipulate this data to facilitate analysis. Thus, Crime Mapping processes had a strong pragmatic and organic semblance, with protagonists reacting to and working with the particular needs and capabilities of partner organisations and the local environment. However, central government actors had made some efforts towards standardising, orchestrating and centralising GIS and Crime Mapping tools and processes, as discussed in the penultimate section of the Chapter.

#### 4.6 CRIME MAPPING STANDARDISATION: ATTEMPTS TO ORCHESTRATE CDRP OPERATIONS

Government actors had long identified the potential benefits of providing levels of standardisation to geographic data across the public sector and beyond; latterly this imperative had been associated with the sentiments of joining up, also at the heart of the central e-government strategy. Efforts had been made to provide technical standards such as the BS7666 and data repositories like the NLPG, which, accompanied with base maps from the Ordnance Survey, census data and other baseline information, could provide a standardised set of geographic tools for public sector organisations to utilise in improving the delivery of services in a variety of ways.

As discussed above, these standardisation methods had been a challenge to develop but were nonetheless seen as worthy endeavours. Taking this approach one step further, policymakers also attempted to develop a standard GIS tool for government



agencies to use; a complete package replete with Ordnance Survey base maps, other data sets and analysis tools, available as a web based service. One such general example of this was the 'Maps on Tap' tool, developed from 2001 by the ODPM and therefore operating largely away from direct crime prevention operations.

The objective of Maps on Tap was to provide a useful mechanism available on desktops in wide range of government organisations and to other actors, including the public:

The vision for the Maps on Tap service is that, in the future, policy-makers, analysts and other key users, including the public, will have easy access to high quality information about places via a range of robust and reliable web-based, interactive information services. Licensed users will be able to browse, view, analyse and download a wide range of geographic data, linked to and displayed with up-to-date Ordnance Survey mapping...A service will be provided that allows users to choose related sets of data to be overlaid on a single map (ODPM,2003,p5)

The intention was that all public sector organisations could take advantage of Maps on Tap if desired (*ibid.*,p9); it was conceivable that Crime Mapping protagonists in CDRPs could have utilised the service. However, interviewees suggested that this did not occur, in part because Maps on Tap had been delayed and there were doubts as to the viability of the service (*interview – 15*). Furthermore, there were many other GIS tools incumbent in central, regional and local government organisations with an interest in geographic data by 2001 (*interview – 15*), making investment in a licence for a generic service less attractive.

Nonetheless, in the arena of crime prevention, central government was keen to provide levels of standardisation, orchestration and data exchange for CDRPs and their analyse of crime patterns, including for Crime Mapping tools. The Home Office was working during 2002 towards a 'Partnership Business Model' (PBM) that aimed to help CDRPs improve information data collection procedures, share best practice,

improve analysis and drive up the effectiveness of the partnerships in general (*interview – 11*). As part of this broader mission, the PBM had within it plans for partnership Information Hubs, to act as ‘central data repositories where local partnership data can be stored and manipulated’ (Radburn,2002,p5). The objective was to provide a conduit for ‘information exchange and analysis and problem solving for partnerships. So we are trying to standardise, and get the partnerships much more engaged in actual problem solving’ (*interview – 11*). Although the wider PBM concept and the crime data sharing component was positioned to facilitate the full scope of crime and disorder auditing responsibilities of CDRPs and the PBM had no mandate to coerce CDRPs to participate in the scheme (Radburn,2002,p8), Crime Mapping was also very much seen as part of the Model (*interview – 11*). Therefore, PBM included within it the notion of orchestrating, coordinating and sharing Crime Mapping tools and data in some manner, although it was not clear exactly what form this would take.

However, by 2004 it emerged that the PBM, including any Crime Mapping element, was being ‘scaled back’ as many CDRPs were unable to contribute or exchange data with other partnerships to any meaningful level. Thus, the ‘all singing all dancing’ incarnation of PBM, where crime data could be routinely exchanged and common tools used across CDRPs, was not achievable at that time (*personal correspondence – 11*). Thus, this particular attempt by the Home Office to coordinate the activities of CDRPs, including Crime Mapping, had apparently met with obstacles. This suggested that, although the very essence of CDRP operations involved partnership working with local agencies, attempts to orchestrate and aggregate their work across different CDRP areas were difficult.

#### 4.7 CONCLUSIONS

The logic of the e-government agenda, as expressed by the OeE and other Cabinet Office organisations, reasoned that using ICTs to join up public sector operations

could lead to significant improvements in delivery. Broadly, it is observed that the criminal justice system had embraced the key components of this logic; resources had been put into developing national technological tools to increase flows of offender and crime information across the different agencies of the system. However, although no doubt latterly influenced by the Cabinet Office e-government strategy, policymakers within the criminal justice system already had a long-standing tradition of partnership working with other public sector bodies, particularly in crime prevention policy, where the need for a multi-agency approach had been realised over several decades.

Furthermore, policymakers had also attempted to apply ICTs to the coordination of operations, for instance with the CCCJS, well before the emergence of the e-government strategy. It was likely however, that the institutional barriers shown to be problematic in increasing flows across different information domains in the case of the CCCJS (Bellamy/Taylor,1996) would remain as a significant challenge to the work of the CJIT. As identified by John Suffolk (Arnott,2004c), director general of the CJIT in 2004, criminal justice agencies such as the courts, Crown Prosecution Service, Youth Offending Teams, prisons, probation and 43 autonomous police forces had a range of needs, practices, agendas, data and systems that left contributions to and participation in a national case management system problematic.

This context provides a useful backcloth to the specific case of Crime Mapping, which was nonetheless of a different nature to the high-level e-government policies that were embarked upon through the CJIT. CDRP-based Crime Mapping was largely contained within a local setting and relied on the collection and use of data from both within and beyond criminal justice agencies. The centrality of GIS to Crime Mapping brought in a number of other protagonists; the role of the Ordnance Survey in providing digital maps, often at a significant cost, was crucial. Elsewhere there were stalled attempts to provide national repositories of geographical data that faced institutional barriers, whilst other data providers, such as the Office for National

Statistics, were criticised for a lack of understanding of the needs of the GIS community.

However, spurred on by a longstanding policy emphasis on preventative policing, partnership work and the geography of crime, once established many CDRPs saw the benefits of pursuing multi-agency Crime Mapping, using increasingly affordable GIS software and accessible base maps. In contrast to the emphasis on national technological infrastructures, systems, hubs and portals of various kinds as seen not only seen with back office CJIT projects but also the often front office initiatives of the OeE (for instance Government Gateway, UK Online portal, DoTP), Crime Mapping rested on bilateral relationships with local partners. Interviewees consistently stressed the importance of trust building and understanding partner needs; data was accepted in different formats and, although by no means perfect, middleware was employed to correct errors. This implied that Crime Mapping protagonists were willing to accept and work with the institutional differences and idiosyncrasies of partner organisations, as reflected in the data collected, rather than attempting to change operations and processes to suit Crime Mapping requirements from the outset.

Whilst the extent to which Crime Mapping analysis and recommendations were disseminated and acted upon by partner organisations was less clear, interviewees appeared to enjoy considerable success in accessing and using the desired information in mapping exercises using this approach. It should be noted however that success on this front would not automatically lead to what could be considered a successful CDRP overall or indeed a reduction in crime and disorder levels, nor is it suggested that the partnerships could not be successful without engaging in Crime Mapping.

Interviewees were largely sceptical of the idea of standardisation or extensive data sharing for Crime Mapping across CDRPs because of the local distinctiveness of crime (e.g. *interview - 14,15,28*). The scaling back of the PBM provided some evidence of the potential difficulties with the general idea of joining up some CDRP

operations. However, interviewees were hopeful that standards such as the BS7666 would be the most useful and appropriate method of coordination for geographic data and systems (*interview – 15*), whilst the majority of Crime Mapping operations might best be left to protagonists in individual CDRPs, working with and reacting to the specifics of local crime patterns and engaging with local organisations as appropriate. Although Ordnance Survey base maps were vital and a national data repository for land and property data could have been a welcome convenience, people and processes were emphasised more than technology by interviewees.

Nonetheless it can be concluded that according to the evidence collected for the case study, although understated, ICTs had indeed been successfully employed to help facilitate joined up government in a local setting through Crime Mapping. In the specific case, the role of key actors, operating in a local network of organisations appeared paramount. The Home Office largely provided arms-length support with funding, toolkits, guidance for Crime Mapping and general CDRP activity whilst the AGI and IGGI supplied a forum for discussion and direction; the AGI had a specific Crime and Disorder special interest group. The OeE, was understandably distant from the Crime Mapping community and most interviewees were not aware of the Office, although Andrew Pinder had stressed the importance of geographic information in the e-government era. Still, due to the nature of Crime Mapping, focused on back office operations in a local setting, some of the key tools and measures offered by the Office of the e-Envoy, such as the citizen-focused central web portal and Government Gateway, were not relevant to this particular case.

However, the OeE had also shown an interest in facilitating back office interoperability and had, for instance, been involved in some work on compatibility between general and geographical technical standards, with the BS7666 and e-GIF (NLPG,2004). Whilst e-GIF has been described as ‘mandatory policy framework’ to enable a ‘seamless flow of information across the public sector’ (OeE,2002,p60) it was evidently not the case that, for instance, all partners were able to electronically

transfer data to CDRPs for use in Crime Mapping, using e-GIF standards. Admittedly, e-GIF adoption was an ongoing task (*ibid.*,p61) and it was by no means expected that all public sector organisations would be using the specifications within a short few years of their introduction. Still, Crime Mapping data sharing practices highlighted the size of the task in hand for public sector interoperability in the e-government era.

Doubtless, the rather ad hoc and organic approach to multi-agency data flows that interviewed Crime Mapping protagonists employed carried with it specific drawbacks. For instance the inadequate data collection and geo-coding practices observed by some interviewees in their local partners might have been set to continue without measures to successfully embed standard procedures. Still, this case study demonstrated that, considering the institutional complexities involved not only in the evolution of Crime Mapping but also its use in a multi-agency environment, the approach adopted might be the most favourable in this specific case. Conversely, whilst always likely to be complex and challenging, the national infrastructure, system, hub or portal approach may be more suitable in other cases across the public sector. In the criminal justice system as a whole, policymakers had chosen to develop a number of national technological solutions to the problem of fragmented case management processes, which imply significant levels of interoperation for the agencies involved. Whilst the logic of applying such an approach to criminal justice and elsewhere is not challenged generically by the findings of this case study, Crime Mapping does point to a potential alternative emphasis in the use of ICTs for joining up in certain situations.

With this argument in mind, the thesis will move on to the second case study.

## **CHAPTER FIVE: CASE STUDY TWO - ELECTRONIC CARE RECORDS AND E-GOVERNMENT**

### **5.1 INTRODUCTION**

As with the previous chapter, this case study looks at how the notions of e-government, as expressed in the *Modernising Government* white paper and the activity of the OeE, are played out within the institutions, organisations and technological processes involved in service delivery. It investigates how e-government practices facilitated joined up government in the case of electronic care records. The Chapter begins with providing technological, organisational and policy historical context before delineating the development of the electronic records concept in welfare policy, positioned to facilitate joining up within health care and between health and social care services. The chapter will finish with a rich analysis of the Electronic Care Records programme up to summer 2004.

#### *Welfare Information and e-government*

This case study looks at the movement towards Electronic Care Records (ECR), and away from discrete paper or isolated computer records in health and social care<sup>19</sup> institutions. The ECR project was part of the wider National Programme for IT (NPfIT), supervised by the Department of Health and aimed largely at the modernisation of NHS IT systems in England. The NPfIT had been identified as having the highest cost, risk and ambition, and potentially carrying the greatest benefits of any of the areas of e-government; an influential report published in April 2002 recommended that £13 billion be put into health IT over six years (Wanless,2002), and following this there were indications that this needed to increase considerably (Kable,2002k). As a measure of its magnitude, some sources cited the NPfIT, with ECR at its heart, as being ‘the largest civil IT programme in Europe’ (Collins,2003). Thus, it represented a flagship programme upon which the e-government agenda would be judged.

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<sup>19</sup> Health and social care will be collectively termed ‘welfare’ for the purposes of simplicity for this case study

Whilst the previous case study consisted largely of developments in the back offices of organisations involved in crime prevention, this case study also focuses on changes at the point of service delivery, as ECR was intended to be used in part by health and social care practitioners as they interacted with patients in surgeries, hospitals and offices. Furthermore, whereas Crime Mapping proved to be in the main a locally operated tool, distinct in each CDRP, ECR was a national project aimed at serving the whole welfare edifice.

Welfare services consisted of GP visits, hospital stays, outpatient appointments, pharmacy dispensing, social care and other contact that generated information; since the inception of the welfare state after the Second World War in particular, much of this contact was kept as formal records to help deliver high quality and consistent services to patients. ECR was essentially a way of providing unified electronic records, drawing together health and social care information for a single patient, to be accessed and updated by welfare practitioners across the full range of institutions and organisations. This was clearly a process of ICT-mediated joining up. However, ECR entailed dealing with a vast array of institutional and organisational differences both within the NHS (GP surgeries, hospitals and other health service deliverers) and between NHS and social service bodies. This was reflected in the fact that medical and social service patient data recording systems differed greatly across organisations and in 2002, when NPfIT was initiated, were dominated by paper methods or stand-alone patient databases in GP surgeries and hospital departments.

To achieve its objectives, the ECR project had to change and align the patient data recording procedures and information systems to an extent, which in turn implied alteration of welfare institutions to bring them closer together around the needs of the patient. Closer alignment between welfare institutions had long been an enduring objective of policymakers, well before the application of ICTs to the issue. In particular there had been prolonged concern about a perceived disjoint between health and social care organisations, which led to fragmented and incoherent service delivery for some



patients. The Department of Health, with its responsibilities to both spheres, was best positioned to act upon the concern, but agreed with other observers that interfacing across the purported gap between health and social care would be not unlike scaling the Berlin Wall (DOH,1998a,p97), such were the institutional barriers.

With this in mind, providing an administrative history of the structure of health and social care institutions provides vital context to the institutional environment within which ECR operated. Whereas electronic records aimed to join up patient information, the history demonstrated considerable fragmentation between and within the two spheres of welfare. Many policies and initiatives had been set to improve interfaces between health and social carer before the emergence of ECR and the wider e-government agenda.

## 5.2 JOINING UP WELFARE: STRATEGIES TO SCALE THE BERLIN WALL

It was not until after the First World War that British governments initiated a more concerted humanitarian approach to welfare, partially in response to anti-Poor Law campaigns by reformers such as George Lansbury and Beatrice Webb. This approach culminated in William Beveridge's initial conception of the contemporary welfare state, drawn up during the Second World War (Lowe,1990; Timmins,2001). The *Beveridge Report* (1942) had an objective of 'slaying the five giants' of 'want, disease, ignorance, squalor and idleness' (Hill,1993,p15). It was generally acknowledged that Beveridge managed to crystallise pre-existing ideas about welfare that, albeit in diluted fashion, eventually heavily influenced the trajectory of the National Health Service, social security and pension reforms. Social care was not well recognised in this initial conception of welfare. Social care differed from Social Security, a fundamental aspect of Beveridge's blueprint, which existed to provide pensions and support for the workforce. Instead, social care (often termed 'personal social services') equated to a distinct raft of services for the elderly, disabled, young, mentally ill or vulnerable, including day-care, social work, residential, counselling and advice assistance (Gladstone et al,1995,p162).

The separation between health and social care was a result of the post-war welfare settlement. Part three of the 1948 National Assistance Act required the provision of residential care (home nursing and home help etc) to be placed under the responsibility of local authorities (Lewis,2002,p314), and this introduced an administrative divide between that and health care. Since that time, funding, approaches, cultures and practices had developed separately<sup>20</sup> (*ibid.*). From the 1940s the Ministry of Health attempted to coordinate local health services, took on some national functions (Honigsbaum,1970), and survived until 1968 when it was merged with the Ministry of Social Security to form a hybrid super-department. Before the Second World War the Ministry of Health appeared to have some significant social care responsibilities, but following the creation of the National Health Service (NHS), the vast proportion of its energies was devoted to setting up the organisation. It can be argued that a 'health bias' was embedded into the workings of the Ministry, which continued in its future incarnations as the Department of Health and Social Security (DHSS) and the Department of Health (DOH). The bias contributed to a divide between health and social care operations in public services, with health rooted in the NHS and social care existing separately. However, the divide was not only administrative, but also deeply embedded in the differences in training, objectives, priorities, practices of and public attitudes towards the medical and social care professions (*interview – 21*).

Considering health alone, the creation of the National Health Service did represent an attempt to unify the hospital, medicine, General Practitioner, dental, optical and maternity services which had been developing in a piecemeal manner over the previous hundred years (Allsop,1995,p106). The implementation of the National Health Service Act (1946) was by no means straightforward however, and Nye Bevan had to battle bitterly to put the organisation together (Hill,1993,p34). Despite this and other significant problems the NHS survived and grew under successive governments, and was at least partially responsible for the fact that the nation's health had improved since the late 1940s in every

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<sup>20</sup> Health care was usually free, whilst social care was often means-tested and could incur a charge. Twigg noted the notorious 'health versus social care bath' to point out the difficulties this provided to the patient. A bath for an elderly or infirm patient could be given in the home for free by a nurse, but was paid for if carried out by a home social carer (Twigg,1997).

age group (Allsop,1995,p99). Still, the NHS had experienced increasing turmoil and uncertainty particularly since the 1980s, with several waves of reform. Furthermore, as noted above, it was generally acknowledged that the service had always had a tendency towards fragmentation (*ibid.*,p98-123); unsurprising considering that 1.2 million staff members were spread across hundreds of NHS organisations.

Considering social care alone, such services had had little by way of a comprehensive policy history, and a 1945 report noted that responsibility for social care, in particular for children, was unclearly positioned between education authorities and anachronistic Poor Laws (Hill,1993,p38). Indeed, it was argued that during post-war decades there was barely any coherent social care strategy; instead it was 'patchy and ad hoc' (*ibid.*,p13). Whilst the NHS was receiving the lion's share of resources and attention from the Ministry of Health, social care policy was fragmented across parts of the Ministry, the Home Office and local government (*ibid.*,p39-40), and developed in the main separately to the National Health Service. The period from 1948-1970 had been identified as one of 'administrative fragmentation' for social care (Gladstone et al,1995,p166). However, there was an emerging recognition of 'common identity' between organisationally distinct strands of social care during the early 1960s (*ibid.*,p167), and in 1965 the 'Seebohm Committee' was formed to review the structure of personal social services and discussed some reorganisation. The report, published in 1968, recommended the setting up of unified social service departments at local level (Hill,1993,p81), bringing together many of the disparate strands of social care. Despite an early frosty reception, the proposals were enacted in 1971 following the 1970 Social Services Act, and there was a general feeling of optimism that social care would enjoy an elevated position in public services (Gladstone et al,1995,p167). However, social care was firmly embedded within local authorities, and was isolated from health, despite many observers contending that there were natural links between the two spheres.

The observation that interfaces between health and social care services should be encouraged for the benefits of patient led to a number of policies and strategies over several decades. Running in parallel to these measures however were political patterns,

professional differences and institutional barriers that arguably pulled apart health and social care coordination.

### *Approaches to Joining Up Welfare Services*

In 1962 the Hospital Plan was published by the Ministry of Health, and included a recognition that health and social services could usefully interface more. In the following year, the Ministry published another report that further emphasised the need for collaboration, and there was a movement toward comprehensive plans that dealt with the divide between the two spheres. These plans were said to be unsuccessful and ineffective (Lewis,2002,p314-315). However, according to some commentators it was this paper that was behind the merger to create the DHSS in 1968 (Booth,1981a,p23), brought together at the height of organisational reform that occurred during this period (Theakston,1995a,p83). As with other 'super-departments', the DHSS was, in hindsight, considered to be too unwieldy and complex to be run as a single entity (Hennessy,1989,p424; Fry,1979,p229; Rayner,1994,p51). Besides, as a department that amalgamated health and social security, the organisation did not include much by way of structural scope for bringing social care closer to health. Despite a perceived need to join up some social care and health operations, the DHSS proved not to be the conduit through which such interoperation could occur; health and social security were separated again in 1988.

The Central Policy Review Staff, created in the Cabinet Office by Edward Heath in 1971, as a think-tank style unit and was initially seen as successful and powerful (Theakston,1995a,p113; Pollitt,1984,p105). Although its force soon ebbed, it set up the 'Joint Approach to Social Policy' (JASP) review exercise, which operated for several years from 1972. The JASP initially struggled but a diluted form existing to encourage 'joint thinking' did later make some impression (Blackstone/Plowden,1988,p102-115) before its 'life-support' was cut off in 1977 (*ibid.*,p115). The JASP survived as an ideal however, which promoted closer engagement between health and social care (Hill,1993,p102). To some extent it was

picked up again in 1974 when the NHS was restructured partially to increase the strategic planning of services for groups such as the elderly and the physically or mentally disabled (Allsop,1995,p107).

Although the reforms of the 1970s were said to have essentially failed (*ibid.*,p108), they brought an emphasis on community care in health policy, which had the loose objective of keeping vulnerable people, such as the elderly or disabled, out of institutions and in their existing community (Loader,1998,p228). This approach would be singled out later by the Thatcher government, which looked to reduce pressure on health expenditure with an ageing population (Hills,1993,p138).

Community care placed more emphasis on the social care aspects of welfare, and, at least in principle, encouraged links between health and social service organisations. For example, the community care approach held that the convalescence of an elderly person following a spell in hospital was less traumatic in the familiar environs of the patient's home. To provide the necessary care away from a medical institution entailed coordinated social and health care, whilst discrete provision may have led to a disrupted service and frustration on behalf of the patient.

#### *Joined Up Welfare: Political influences of the 1980s*

The reforms of 1974 were said to have 'opened up new opportunities for closer liaison and greater cooperation' between health and social care (Booth,1981a,p23). The community care approach remained a prominent strain of welfare policy (Evandrou/Falkingham,1998,p194) and some health and social care organisations would create a variety of bilateral links and partnerships.

Another approach during the period was joint planning structures that encouraged certain levels of joining up between the two spheres (for example DHSS,1976). Through the NHS Act (1977), joining up was being promoted to achieve effective community care, and local authorities and health organisations formed joint consultative committees to provide holistic planning (Booth,1981a,p37). However, as with the previous case study, partnership working exposed institutional differences

between the organisations involved. Through an investigation of Calderdale region initiatives, Booth found that such joint committees, although largely populated by individuals aspiring to improve coordination, exposed a cultural, administrative and resources gulf between health and local authorities (Booth,1981a,p41-45; Booth,1981b,p224). Booth concluded that, after a few years the joint committee in Calderdale was 'now stuck in a rut' (1981b,p224). Widening the focus to the country as a whole, the joint planning scheme appeared to be largely unsuccessful (Lewis,2002,p316).

Wider political patterns may also have been working against the policies and strategies to bring health and social care closer together. Following Thatcher's appointment as Prime Minister in 1979, central/local relations were said to have soured. Contact between the Conservative government and the largely Labour-run urban councils became increasingly adversarial (Hill,1993,p142-145). This may have negatively affected the potential for interfacing between central government health organisations and social care departments in local authorities. Thrasher pointed out that central/local relations had 'been typified by a mood of despondency and frustration as efforts to improve the situation have failed, unable to move beyond the most basic of accusations and recriminations' (1981,p455). A further point, borne out by Lewis, was that as funding became tighter, the NHS and local authorities would constantly be at loggerheads about when health responsibilities ended and social care began (particularly in the case of citizens who had frequent hospital visits). There was 'intractable disputes about responsibilities' (Lewis,2002,p316) that would not have helped matters.

By the mid-1980s, Thatcher had embarked upon a more concerted effort to impose her ideologies on the public sector, shifting the emphasis away from the universalism of the post-war consensus and attempting to reduce public spending on welfare. The NHS experienced considerable upheaval following a major review in 1989, the publication of the white paper *Working for Patients* (1989), and the ensuing legislation (the NHS and Community Care Act of 1990). The reforms were intended

to inject vitality into bureaucratic health organisations by ordering Health Authorities to purchase care from the providers (hospitals and other organisations). The providers became independent NHS Trusts, which were essentially in competition with each other to deliver services via the supervising Health Authorities. This 'internal market' was, to say the least, controversial; it was alleged to increase fragmentation and duplication of effort, which detracted from any efficiencies and economies it may have exploited (for more information see Propper et al,2003; Anand/Mcguire,1997; Le Grand et al,1998). It can be argued that the internal market pulled health and social care further apart by turning attention to competition rather than a more traditional model of service delivery, which itself had retained a functional separation between the two spheres.

In 1986 the Audit Commission published a report identifying increased fragmentation of social services and recommended further joint planning between health and social care organisations. During the same period however, social care services moved towards a mixed economy model, with some funding being siphoned away from local authorities towards privately run organisations (such as homes for the elderly), particularly following the 1990 NHS and Community Care Act (Wistow et al,1996). Evandrou and Falkingham added that voluntary and charity organisations as well as private individuals (often close relatives) were acknowledged and promoted as part of the new mixed economy of social care (1998,p199). This, as well as the emergence of private social care, changed the face of social services in Britain, increasing its heterogeneity considerably (Evandrou/Falkingham,1998,p229). A parliamentary report published in the late-1990s noted that the reforms of this period brought into sharper relief the gulf between the two spheres: it noted that 'the number of people affected by co-ordination problems at the interface between health and social care services has increased' (Health Committee,1999,para. 6).

Considering the above evidence, by 1997 it could be argued that there was little scope for systematic coordination between the two spheres, despite the emphasis on community care. Existing institutional and professional differences between health

and social care, coupled with the political patterns under the Conservative government had seemingly made partnership working across the divide difficult. Academic studies support the argument that collaboration between health and social care organisations and professionals had often been problematic (Huntington,1981; Leathard,1994; Owens et al,1995).

### *Renewed Attempts to Join Up in the 1990s*

However, further investigation reveals that during the early 1990s policies and strategies aimed to improve coordination were operating alongside the centrifugal forces mentioned above. For instance, in 1990 the *Caring for People* document advised increased links between two spheres: former Minister Virginia Bottomley's foreword noted that 'there must be close working links between all agencies – social service departments, NHS bodies, housing authorities and associations, voluntary organisations and private sector service providers' (DOH,1990c,foreword). Similarly, in 1994 a multi-agency method was recommended in mental health services (Mental Health Nursing Review Team,1994). Social Services departments also seemed keen to push the partnership approach from their end, as seen in the Social Services Inspectorate document *Partners in Caring*, published in the mid-1990s (SSI,1994/95).

Furthermore, a significant project was embarked upon in 1992 under John Major, called the Health of the Nation; it advocated a partnership approach to general health and welfare, partially to cope with the increased fragmentation caused by the involvement of market forces and private sector actors in welfare. In 1993 the Health of the Nation project published a paper entitled *Working Together for Better Health*, which introduced plans to create 'Health Alliances' between the NHS and local authorities amongst other organisations. A progress report on the Health of the Nation project, *Fit for the Future*, continued this promotion of joining up. Elsewhere, there was an endorsement of inter-working and joining up welfare functions under the Children's Act of 1989; an inter-departmental paper was released in 1991 that supported a multi-agency approach to the protection of children (Home Office et al,1991). In 1996 the Conservative government sustained the joining up theme with



*The National Health: A service with ambition*, which called for a ‘seamless service, working across boundaries’ (p48).

Thus, the Health of the Nation and other initiatives showed a clear ambition, similar to some movements found in crime prevention, to improve coordination, collaboration and interoperation of welfare services for the benefit of citizens. As with the previous case study, thinking within the specific sphere of welfare predated the emergence of Cabinet Office rhetoric on joining up. However, as with previous initiatives, the policy emphasis on working across boundaries appeared difficult to convert to practice. An independent report, commissioned by the Department of Health in 1998 assessed the impact of the Health of the Nation. Using the acronym ‘HOTN’, the report noted that

The HOTN was regarded as a Department of Health initiative which lacked cross-departmental commitment and ownership. At local level, it was seen as principally a health service document and lacked local government ownership (DOH,1998b,p13)

The suggestion in this report was that, whilst the project had attempted to engender a corporate approach to welfare, it had fallen foul of the very pathologies it was attempting, at least in part, to subdue. Social care departments in local authorities felt able to ignore the programme as it was a ‘health service document’ and thus did not concern them. Furthermore, the programme required joining up at high-levels, but failed to generate joint-ownership, and thus was unlikely to procure results at ground level.

A further point was that the 1989-90 reforms, aimed at creating an internal market, were still in motion when the Health of the Nation began. Thus, the report argued that many welfare workers found that it was confusing and incongruent to introduce new strategies when the previous wave of reforms was still incomplete (*ibid.*,p23). Still, the Health of the Nation programme can by no means be discounted, as it was responsible for stimulating some partnership activity. Yet, it was clear, as with partnerships described in case study one, that institutional configurations conflicted

with the reforms; the report found that 'pre-existing structures and challenges heavily influenced the starting point for joint working' and 'the different agendas/drivers and cultures of health services and local government were complicating factors' (*ibid.*,p14).

Following the Conservative election defeat in 1997, the Labour government quickly produced a blueprint for reform in health services. *The New NHS: Modern, Dependable* white paper was published late that year, and despite the fanfare it included some familiar rhetoric. The vision was that the NHS should improve holistic service 'by breaking down organisational barriers and forging links with Local Authorities' (DOH,1997a,p11). The intention was to introduce a statutory obligation for NHS bodies and local authorities to collaborate, not unlike the responsibilities under the Crime and Disorder Act for partnership between police and local councils.

In the report, the Labour government had seized upon the Conservative internal market reforms of welfare as being instrumental in previous failures, noting that because of this approach 'a fragmented NHS has been poorly placed to tackle the crucial issue of better integration across health and social care' (*ibid.*,p13). This distanced the Labour government from some aspects of Tory policy, but nonetheless, there was significant continuity across both administrations during the 1990s in terms of joining up welfare operations. This was continued in 1998, when the green paper *Our Healthier Nation* was produced, which instigated a programme not dissimilar to the Conservative Health of the Nation project which ran from 1992-1997. *Our Healthier Nation* created a scheme to develop partnerships in health and social care, arguing that Health Authorities and Local Authorities were the most vital partners in effective welfare delivery (DOH,1998c,p44). So, familiar recommendations were being forwarded, albeit with a different vocabulary; this paper mentioned 'connected problems require joined up solutions' (*ibid.*,p12). Thus, old concerns were couched in terms of the new 'joined up' argot, perhaps indicating the influence in welfare policy of Cabinet Office thinking during this period.

More than ever before, the message from central government was that health and social care would need significant reform. Frank Dobson, Secretary of State for Health, was calling for the demolition of the 'Berlin Wall' between health and social services in 1997 (DOH,1997b), a phrase that was later repeated by Ministers Alan Milburn and Paul Boateng (DOH,1998e). Similarly, the *Modernising Social Services* white paper stressed joining up between the two spheres from the social care side of the wall (DOH,1998a,p97). In September 1998 another document was released, *Partnership in Action*, which set out further proposals for the facilitation of increased inter-working between the two professions. The paper promised to 'remove barriers to joint working' by pooling budgets, integrating provision, issuing joint guidance and reforming finance procedures (DOH,1998d,p8). Furthermore, the report provided detail on 'Health Action Zones', of which eleven were set up across the country in 1997. These were partnerships between the NHS, local authorities, the voluntary sector and private companies to tackle health inequalities in deprived areas (*ibid.*,p10). This clearly included addressing the perceived gulf between health and social care, and a subsequent report on Health Action Zones indicated that, although the partnerships had a minimal impact on their main objective of reducing health inequality, they had contributed to emerging partnerships, collaborations and networks across the divide (Benzeval,2003,p6).

*Joined Up Welfare in the 1990s and Beyond: New measures and institutional barriers*

Despite problems with organisational differences, the Health Action Zones, as with the precursory Health Alliances, provided a conduit through which collaboration could take place. A further conduit was intermediate care teams (that worked on easing the transfer for patients from hospital to home) and single assessment processes (where older people had their needs assessed once through a multi-agency process, rather than several times to fulfil requirements of different agencies).

Despite the joining up initiatives instigated by the Labour government from 1997, building from previous policies, familiar institutional barriers to increased coordination remained according to some sources. In early 1999, the Health

Committee produced its report on *The Relationship between Health and Social Care*, which drew on input from a vast array of witnesses from both sides of the divide. The report took as a starting point the acknowledgement that ‘for various reasons – historical, professional, administrative and financial – barriers have arisen between these services. These barriers frustrate the goal of ‘seamless’ service provision’ (Health Committee, 1999, para. 1). The committee found that the health and social care gulf had remained, with well placed witnesses commenting that services were still ‘fragmented and piecemeal’ and ‘the professionals themselves cannot sort out whether a person’s problem is a social care problem, a health care problem or maybe an education or a housing problem’ (*ibid.*, para. 12).

The apparent ‘fragmentation, duplication, and gaps in services’ translated to frustration in patients who ‘often have to repeat their story to several different professionals’ and ‘may face several separate assessments which they find exasperating’ (*ibid.*, para. 15). The committee also identified a problem of ‘lack of coterminosity’; health and social care boundaries (i.e. local authority districts and health trust or authority areas) were not coterminous, which created complications in delivering coordinated services (*ibid.*, paras 51-52). As the committee identified, the potential barriers to joint working could be compounded by differences in the physical boundaries of health and social care jurisdictional areas. This was seen as a problem that could be solved however, particularly since the creation of Primary Care Trusts, following the 1999 Health Act. For instance, health responsibilities in one city in northern England were divided between five Primary Care Trusts, each of which controlled a district. As an interviewee noted, the social service department in the same city reorganised itself to follow suit, with the explicit aim of helping partnership working (*interview – 23*). Social care departments in other areas of the country were said to have reorganised operations in the same way.

The Health Committee found that the professional and institutional differences between health and social care were reflected in the different sections of the Department of Health itself; the committee found a ‘tribalism’ that had a ‘detrimental

impact on the health and social services boundary on the ground' (Health Committee,1999,para. 13). Partially to ameliorate this situation, the Department created the Health and Social Care joint unit in 1998 to address the interfaces between the two spheres. Its general success was unknown by 2004, although a prominent responsibility the unit had was to fine local authorities that failed to arrange social care promptly for patients that were ready to leave hospital.

The Health Act of 1999 provided some new scope for inter-working; for instance it introduced new 'flexibilities' in terms of pooled budgets, the capacity to assemble one-stop-shops and to delegate functions where appropriate. Although progress was slow, by 2001 a quarter of councils had told the Department of Health that they intended to use such flexibilities to improve inter-working (SSI,2002,p30). Still, the Health Act was just one of many measures introduced from 1997 to encourage closer working between health and social care.

For instance, the Labour government published another major strategy document in 2000, entitled *The NHS Plan*; it claimed that 'social services and the NHS will come together with new arrangements to pool resources' (DOH,2000a,p12-13). To this end, the new Primary Care Trusts operated similarly to their predecessors (Health Authorities) but had more scope to incorporate the activities of social care (NHS/NHSE,1999). Some Care Trusts were established specifically to join up health and social care from 2001, using a further piece of legislation, the Health and Social Care Act. However, whilst it was intended that 16 such integrated Care Trusts would be operating during 2002, by late 2003 there were only eight (Batty,2003b), with protagonists of failed or delayed Trusts pointing to 'horrendous' logistical, legal and financial problems' (Batty,2003a). In September 2003 a ministerial enquiry was launched by Stephen Ladyman to ascertain why Care Trusts were failing; the enquiry was still ongoing by summer 2004. One interviewee had first hand experience of the difficulties that could emerge as health and social care organisations were put together as partners; 'pooled budgets and the joining together hasn't quite been as joined up as

we would have liked. Once the managers start arguing over who is going to pay for a patient...then we know there's problems' (*interview – 23*).

In 2002 a report was released by the King's Fund, which detected a 'toning down' of the original central government pressure to create Care Trusts (King's Fund,2002,p8). It found serious general barriers to the implementation of health and social care partnerships policies (*ibid.*,p1-2). The report did find that there was substantial support for joined up working from all parties concerned, and the raft of legislation covered in the preceding paragraphs provided means to set up collaborations (*ibid.*,p6). However, the report made a familiar argument:

it cannot be assumed that if inter-agency partnership policies, processes and structures are established, then frontline partnerships between a range of traditionally separate professions will simply fall into place (*ibid.*,p9)

In 2002, the publication *Delivering the NHS Plan*, acknowledged that the 'Berlin Wall' the government had pledged to knock down was still standing (DOH,2002a,p32). Whilst the King's Fund report stressed the willingness of health and social care staff to engage with each other, some interviewees pointed to reluctance for joined up working. A manager from the primary care environment commented at around the same time:

I don't think there is any huge enthusiasm from the people that are running the social services to join up really, that's my opinion. I think there is reluctance there, I think that people's attitude is still very much that they are two separate entities, and there are big bridges to cross to improve that (*interview – 20*)

Whereas a protagonist attempting to instigate joining up from the other side of the divide noted:

This is about a lack of understanding, there's a cultural gap which we are trying to bridge but sometimes I feel that the health side are not doing enough to help that (*interview -27*)

One more neutral interviewee summed up that 'there are just huge differences between the two organisations' (*interview – 22*); achieving closer collaboration would often involve a controversial redistribution of power. One interview drew attention to the feeling that social care organisations had in some ways been 'annexed' by the Department of Health in recent years, and told to fulfil centrally set criteria, particularly in terms of performance management. Thus, 'suddenly they expected us to measure things from a health point of view and to a certain extent that has clouded the perception a little bit' (*interview – 23*). Whilst it was agreed that joined up working was desired, calculating how this could be organised whilst allowing welfare professionals to continue to provide effective services was difficult. Certainly, social care protagonists were concerned that the aforementioned 'health bias' in welfare policy might mean that forms of collaboration and inter-working would be dominated by health concerns.

By 2002, there had already been a significant number of initiatives, schemes, groups and programmes designed to join up health and social care, yet interviewees, as well as other sources including the Department of Health (DOH,2002a,p32), felt that the Berlin Wall was still standing and patients were suffering as a result.

In the same year, a new thrust of reform had emerged that, to a certain extent, superseded previous (and ongoing) modernisation strategies but with a novel focus on ICTs. This was the NHS NPfIT, within which the cornerstone ECR was located. ECR was positioned in part to bridge the gap between health and social care through technological means and was explicitly aimed at joining up services across and within health and social care delivery organisations. Although government had produced computer policies for welfare before 2002 and computing had a long history in health and social care service delivery, never before had IT been positioned so prominently to fulfil such a long standing policy objective, to join up health and social care services. The scale of the proposals was unprecedented.

Before charting the development of the ECR and NPfIT, the case study will provide further context by depicting the history of IT in health and social care service delivery. A clear message from the history of welfare computing was that organisations had largely adopted IT for their own uses and there was unsurprisingly significant variation in practices, investment and scope across the vast welfare edifice. Whilst some observers and policymakers had long recognised the potential virtues of increasing the compatibility of the IT systems in use in GP surgeries and hospitals in particular, arguably little progress was made with policies aimed at introducing levels of coordination.

### 5.3 THE HISTORY OF WELFARE COMPUTING

The most prominent early applications of welfare computing came within the NHS, whilst social care IT apparently remained somewhat undeveloped for some years. It was unsurprising that computer development occurred in a piecemeal fashion in healthcare, considering the nature of the NHS as a loose aggregation of myriad bodies, boards, trusts, consultants and General Practices (Rayner,1994,p18). There had been some individual examples of computing use in healthcare administration as early as 1958, for instance when Jack Rowlandson wrote a programme to automate a nursing payroll system (Bullas,1999,p2). Ministry of Health documentation discussed the potential of computing in the NHS in the early 1960s. The annual report for 1962 provided a small note that ‘several detailed studies of the use of automatic data processing’ were being carried out (MOH,1962,p23), and the following year it was mentioned that these studies had been completed (MOH,1963a,p33). For 1966, the Annual Report noted that ‘the Ministry has set up a Computer Policy and Development Branch. It has been considering and discussing with interested authorities how an increasing use of computers should be encouraged, initiated, developed and co-ordinated’ (MOH,1966,p41). Thus, as with the wider history of government computing, there was an imperative to coordinate the development of IT in the healthcare delivery arena.



In the 1960s the emphasis was on the automation of existing administrative tasks such as payroll (Gowing,1994,p32), as with other areas of the public sector. In 1966, London Hospital had a comprehensive finance computer system (Bullas,1999,p2) and by 1967 there were 11 computers installed in hospitals across the country (DHSS,1967,p64); in the following years computer use for payroll and other clerically related issues proliferated. Yet, although the Computing Policy and Development Branch wanted to 'provide a point for the exchange of views and the co-ordination of activities of all those concerned with computers in the service' (DHSS,1967,p64), conduct 'studies of problems arising from the development of computing services on a national scale' and tackle 'compatibility' issues (DHSS,1968,p68), it seemed unlikely that autonomous NHS organisations would see these concerns as a priority.

In 1968, a NHS Computer Branch was established under Dr Don White, and began an 'Experimental Computer Programme'. Richards noted that little progress was made in the Computer Branch's attempts to find a 'best buy' for hospital computer equipment or in establishing a standard programming language for NHS IT (Richards,2001,p756-757). Not least this was because 'everyone believed that local circumstances and local hardware would be the deciding factor' (*ibid.*,p757).

By 1969 ten out of the 15 English health region bodies had purchased a computer (Bullas,1999,p2), and in 1971 the DHSS did introduce a 'standardisation policy' for regional hospital boards, which appealed for them to use ICL's 1900 equipment (DHSS,1971,p100). In 1974 an annual report claimed that 'further progress' with this standardisation was achieved, with four regions having installed the relevant hardware (DHSS,1974,p97). Although it was not clear if this led to any interoperability or data sharing across the four regions, it did demonstrate that the central department felt it desirable to encourage technological compatibility across some health organisations. The DHSS demonstrated this further by compiling the *Using Computers to Improve Health Services* report in 1972, which recommended 'a continuous rolling 5 year programme of evaluated experiment and development of computer use in the NHS' (DHSS,1972a,p138). Social care IT appeared to have not emerged in the plans of

policymakers during this period as it was largely an issue for individual local authorities to address; it would be several more decades before any central government strategies materialised.

The DHSS did succeed in its objective of stimulating interest in health computing during the early 1970s (*interview – 21*). However, as with the NPL and ECU, the NHS Computer Branch proved to be ephemeral, it was closed in 1976. Whilst most of the focus during the 1960s and 1970s was on automated administrative tasks, there was also the growing notion that computing could directly aid the delivery of medical services. For instance, the NPL itself had a cameo in the development of clinical support IT systems. Dr Chris Evans had by 1970 created a computer that interrogated patients about their symptoms, designed specifically to save consultant time (Yates,1997,p177); in 1977 this had developed into the MICKIE desktop computer (*ibid.*,p179), and some patients were said to prefer it to human interrogation (Benson,1991,p69). Elsewhere, much of the innovation of the period was conducted locally in General Practices and hospitals, rather than by central government. For instance, in 1972 a consultant at Leeds Teaching Hospitals employed the Leeds University computer to compute clinical decision-making support for acute abdominal pain (*interview – 20*).

### *Computerization in Healthcare in the 1980s: The Körner influence*

Despite some central government attempts from the Ministry of Health and DHSS to instigate certain levels of technical standardisation, computing proliferated in a fragmented fashion in welfare organisations across the country in the 1970s. However, amplified attempts to increase coordinated IT use, in health at least, were introduced during the early 1980s with political pressure being placed on NHS organisations to produce more relevant and comparable data, for use in the overall improvement of healthcare service delivery (Gowing,1994,p32). Following a Royal Commission report on the ‘paucity and poor quality of NHS information’ (Edwards,1993,p104), a committee lead by Dame Edith Körner was established and published six reports from 1982 to 1984. The reports, did not recommend a national health or welfare IT system of any sort but advocated the increased use of IT to improve the capturing and use of patient related and

other medical data. Körner was said to have stimulated considerable activity in hospitals that invested heavily in computer systems for a variety of clinical and administrative functions. One version of events was that the Körner committee put IT on the management agenda, particularly in hospitals, with 'Körner Clubs' up and down the country sharing ideas with IT applications (Gowing,1994,p32; Edwards,1993,p105). Through this development, the emphasis in healthcare computing began to shift away from automation and towards informatization, with attempts being made to produce meaningful management information, that could be compared, manipulated and fed up to a central location.

Benson noted that many of the Patient Administration Systems (PAS) in hospitals, which carried basic demographic, administrative and medical details, were installed as a direct result of Körner (Benson,1991,p22). However, it was also argued that a techno-centric fixation on 'implementing Körner' erroneously became the point in itself, and the IT systems were unsuccessful in improving information services for hospitals and doctors (Gowing,1994,p32). During the mid-1980s hospital managers expended resources and energy procuring computer systems to collect data, yet 'in practice the solutions never worked for they took too long to build' (Edwards,1993,p105). Others argued that the Körner reports were unclear; one interviewee commenting that:

Well if you take the Körner reports what I'd say is that the whole thing was an absolute disgrace and we are still suffering the consequences. What was it trying to say? Nobody knows even now – it was embarrassing (*interview – 19*)

Whilst the upshot of Körner was that hospitals and other healthcare organisations began to invest in IT systems, there was unsurprisingly apparently little by way of orchestration across these organisations. Whilst it was the case that health bodies at regional, district and individual hospital level used IT for their own discrete purposes, there was also usually several unrelated IT systems contained within one hospital (Keen,1994a,p17).

This fragmentation of IT within welfare organisations was generally a reflection of the multiplicity of distinct administrative and medical information domains that existed in the

different departments of working hospitals. Yet, the informatization possibilities offered by information technology brought into sharper relief the perceived drawbacks of this situation. Many of the IT systems put in place during the Körner era of the 1980s were still operational at the arrival of the new millennium (Cross,2001,p9) with little change occurring very slowly (Benson,1991,p6). Kalra et al pointed out the difficulties in encountering six 'heterogeneous' computer systems in one department of London's Whittington Hospital, during an attempt to modernise IT provision in the organisation (1999,p66). One Director for Information for a large hospital emphasised the difficulties faced with meeting the requirements of NPfIT considering the historical legacy systems that were in place. He noted that within his hospital in 2004 there were three Patient Administration Systems (PAS), two Accident and Emergency systems, five Theatre systems, over 300 clinical information systems and up to eight 'messy' sets of case notes for each patient (*private seminar – 29*). It was expected that ECR would provide some levels of consistency within and across welfare organisations for patient data yet, as demonstrated here, difficulties would be faced overhauling, replacing or using the many relevant existing IT systems within the planned national infrastructure.

Audit scrutiny was critical of project management skills of NHS organisations for IT initiatives; in 1990 the National Audit Office noted that its own studies (between 1980-86) demonstrated a poor track record with IT (NAO,1990,p3) and the Audit Commission published a report, *Caring Systems*, that provided further criticism (AC,1992). Specific IT projects in NHS organisations were also singled out; for instance the Wessex Regional Health Authority abandoned a project to develop five core computer systems following millions of pounds of expenditure, with the PAC arguing that a series of management errors were made (PAC,1993). The prognosis by the early 1990s was not optimistic, as it was generally considered that:

The history of healthcare computing is not a happy one. Even after 25 years of active development, it is not possible to point at a single operational healthcare system... that provides an adequate role model for the sort of systems which are really needed (Benson,1991,p2)

Still, whilst the state of healthcare IT was receiving considerable attention from policymakers, audit bodies and observers, social care IT remained virtually uncharted territory during the 1970s and 1980s. However, some local authorities had during this period helped social service departments to develop IT systems. One social care employee noted that his council offered some database functionality from its central mainframe, until 1991 when a dedicated programme was brought in to hold client information. He added 'I think it was felt that even when it was delivered it was already a pretty out of date system, with a basic green screen, and it really was just for counting numbers' (*interview – 23*).

### *Towards Joined Up Healthcare Through ICT Infrastructures: The NHSnet*

Spurred by the experiences and criticisms with IT in the NHS in the previous decades, policymakers in the Department of Health felt it prudent to devise a national strategy for healthcare IT in 1990, which was developed over the subsequent years. Although a step further than Körner, the strategy had little conception of developing potential links with social care information systems, despite the enduring emphasis on coordination across the divide in general welfare policy. Concentrating on healthcare, the strategy was an attempt to focus information flows, data provision and service delivery around the needs of the patient rather than the provider (NHSE,1992; Keen,1994a,p22). This citizen-centric approach was redolent of some of the notions underpinning the broader central e-government strategy as expressed in the late 1990s with *Modernising Government* (Cabinet Office,1998/99). However, the strategy was not as pervasive as the NPfIT, which emerged several years later.

A key facet of the Department of Health strategy of the early 1990s was the development of a common infrastructure for information flows across the NHS; the strategy introduced the NHSnet, an email and data exchange system for use across many of the organisations involved in healthcare. The NHSnet took shape between 1993 and 1995 and was 'the first NHS-wide computer network' (Cross,2001,p11), providing a secure intranet across the health sector that predated the central

government GSI system. Using intranet technology before many other public sector organisations, some regard it as a remarkable achievement.

Still, considerable problems were experienced in getting the disparate groups involved in healthcare delivery to participate, for instance the British Medical Association (BMA) initially boycotted the system because of fears about confidentiality and because GPs had to purchase NHSnet services (Treleaven,1998). There were also doubts expressed about the viability of an NHS-wide IT infrastructure, especially considering the fragmented history of welfare computing (Keen,1994a,p16). It was not until 1999 that the NHSnet had its own central messaging service and user-friendly email (Gold,2002). A report published in that year found that ‘GPs do not see NHSnet as reliant, resilient or robust and are now using the Internet to send messages between themselves and to/from clinicians in hospitals’ (Protti,1999,p9), rendering the efforts to implement the dedicated infrastructure somewhat futile. One interviewee who agreed with this verdict remarked:

I mean the NHSnet, why? The NHSnet was a brilliant example, because there was nobody there who really knew what they were doing with it. It’s ridiculous because you don’t need it, the internet is fine but the people at the time decided that they were doing it and that was it (*interview – 20*)

Another interview contributed to this argument, noting that there was a failure to engage with the healthcare practitioner community in the development of NHSnet:

No-one knew what the NHSnet was in ‘94, and they failed to get anyone to go on a journey with them. They failed to get the medical profession to get on board, they should have said ‘what do you want? If you want green we can do green!’...The failure is that almost no technical data is passed over the NHSnet (*interview – 19*)

Despite this evidence, protagonists in the Department of Health still felt that a dedicated communications and data transfer infrastructure was worth aspiring to and planned to replace NHSnet under the aegis of the NPfIT from 2002.

In general, the strategy introduced from 1990, which developed further in subsequent years, received substantial criticism for incoherence (Keen,1994a,p21). The strategy was said to centre on technological issues and neglect the political, organisational and institutional issues implicated in NHS wide reform (*ibid.*,p25). One interviewee described the strategy as;

a complete shambles...they knew absolutely nothing, and that's always been a problem, having someone that knows what it was that they were trying to do as well as the IT side (*interview – 19*)

Nonetheless, although the execution of the strategy was allegedly flawed, its underpinning notion that information technology could be used to informatize the delivery of healthcare around the needs of the patient endured. One policymaker emphasised the importance of this in a thesis interview, noting the continuity not only between Department of Health information technology policy from 1992 with the introduction of NPfIT but also the parallels with the central e-government strategy (*interview – 21*).

During the mid-1990s, although the concept of creating technological links between health and social care was still not being considered at that time (*interview – 21*), projects falling within the ongoing Department of Health IT strategy continued to be implemented in healthcare. Projects entitled 'Hospital Information and Support Systems' (HISS), 'Developing Information Systems for Purchases' and 'Enabling Clinical Systems' were developed. In part these involved a number of pilot initiatives across the country, with the intention of rolling them out nationally. However, these projects were never expanded to a national setting to the extent envisaged, with some commentators arguing that the technology employed was not sufficient for the objectives of the Department (Say,2002; Johnson/Keen,2002,p7).

By the mid-1990s, it was becoming clear that the efforts of the Department of Health to introduce a sense of coherence with IT systems and information across NHS

organisations had yet to come to fruition. The ongoing task was difficult as, particularly in hospitals, patient information was held in separate administrative domains, making the holistic service delivery for the patient difficult. As Keen remarked, the standard scenario for hospitals in the mid-1990s was:

The holding of many separate records – medical, nursing, paramedical and all using different terminology – for the same patient. In any one ward or clinic there are several parallel data collection systems: this must militate against proper co-ordination of services (Keen,1994b,p128)

Despite ongoing developments and an enduring notion that service delivery could be made more coherent for the patient through information technology, funding for hospital IT was said to plummet in the mid-1990s (Benson,2002a,p1088) whilst interest in NHS wide IT strategies appeared to reduce in policymaking circles; as one interviewee argued ‘nothing happened; I know, I was there’ (*interview – 19*).

### *The History of General Practice IT*

Although involved in the strategies described above, General Practice IT had to an extent its own specific history largely separate to the experience in hospitals, other healthcare organisations and social services, which reflected the institutional independence of GPs.

General Practices, along with supporting bodies such as the BMA had traditionally wielded considerable political power in the delivery of healthcare. Keen pointed out that this made the NHS a ‘singular’ organisation, with the strength and leverage located on the periphery (1994a,p17), away from central policy hubs. Unsurprisingly, during the 1970s and 1980s GPs acquired stand-alone IT systems to suit their own clinical and patient administration operations, and many were seen as pioneering for the era (Cross,2001,p11) yet there was little evidence that there was much inclination or opportunity to forge any form of communication, data sharing, compatibility or interoperation between systems. This was despite at least some remonstration for levels of coordination in the procurement and use of General Practice IT; a BMA report from 1980 worried that:



an increasing proliferation of different hardware and software systems is being implemented by GPs. If this were to be continued willy-nilly, a point would be reached when the opportunity to take advantage from any of the obvious benefits of a concerted approach, would be lost beyond recall (Palmer/Rees,1980,p1)

Funding had been made available for investment in IT systems for General Practices since 1982 (Benson,2002a,p1088) and many GPs bought in stand-alone systems from leading suppliers such as EMIS; investment was supported by guidance and stimulation in Department of Health publications (e.g. DOH,1987). Perhaps influenced by the arguments of the BMA and other protagonists, the Department also advocated movement towards integration and compatibility in General Practice software (DOH,1990a), although little seemed to have been achieved. The lack of technical interoperability was seen as a missed opportunity to some interviewees, particularly as citizens moving to a new General Practice would often experience delays in the transfer of their medical records (*interview – 18*).

As many GP IT systems held extensive information on patients (Greenfield,1980,p4-5) it was likely that the ECR programme would have to draw down significant amounts of information from these to populate a national patient record with vital healthcare information. Although patient data was held in isolated systems in different formats and levels of detail, it was considered likely that this data was in a better state than that held in hospitals; one interviewee commented ‘I think hospitals are way behind primary care in terms of IT’ (*interview – 20*). While many hospitals had patient data spread across a variety of PAS and clinical data systems in departments, General Practices were more likely to have a unified computerised information system of sorts (*interview – 22*).

However, as discussed in section 5.6, the General Practice community, with a set of incumbent IT suppliers and varying medical and patient information recording and storage practices, embedded and reflected in GP IT systems, would prove to be a difficult group to bring into the NPfIT fold, to contribute and participate in ECR.

As a Labour government came into power in 1997, the considered opinion was that healthcare IT, in hospitals, GP surgeries and other NHS organisations, was fragmented and unable to support the patient-focused approach to service delivery that was being discussed in Department of Health documents. However, the Department's response, as the central e-government agenda began to emerge from the Cabinet Office, was to reinvigorate plans for a national IT strategy for the NHS. Drawing from the underpinning notions of the patient-focused delivery detectable in strategies from 1990, the refreshed plans contained within them not just the intent to increase commonality and compatibility between different NHS IT systems through technical standards and other measures. The plans also aimed to provide working technological infrastructures to encourage integration and interoperation of the disparate information domains across healthcare and the wider welfare edifice.

Furthermore, the new programme offered to apply technological tools to realise the enduring sentiment that health and social care services should be coordinated seamlessly around the needs of citizens, bringing together two policy streams that had historically largely remained separate. In a sense, under NPfIT and particularly with ECR, ICTs were set to be a key bridge across the health and social care divide, confronting the institutional diversity across welfare discussed in the previous sections. The emergence of the NPfIT and the place of ECR within it are discussed below, firstly in a section discussing the emergence of the concept of a national electronic records system.

#### 5.4 INFORMATION FOR HEALTH: THE EMERGENCE OF THE UNIFIED ELECTRONIC RECORDS CONCEPT IN THE E-GOVERNMENT ERA

As implied above, in 1997 the new Labour government came into power with the intent of reinvigorating what was seen as an ailing National Health Service, although social services received less attention. The strategy documents *New NHS: Modern, Dependable*, *The NHS: A Service with Ambition* and *Our Healthier Nation*

demonstrated the objective of improving the quality of healthcare through a number of measures, although the use of information technology was not discussed to any great extent in the documents.

However, in 1998 the NHS Information Authority (NHSIA) released *Information for Health*, which did set out a comprehensive IT strategy for the NHS. One interview summed up its significance, noting that despite the previous wave of IT policies beginning in 1990, 'it was the first time we ever had a national strategy...before that information management had always been the lowest of the low' (*interview – 20*). However, social care protagonists would have to wait three years for a Department of Health produced equivalent, *Information for Social Care*, which perhaps demonstrated the health bias existent in welfare policy.

The *Information for Health* document began with an admission that 'the use of IT in the NHS has not been a success story' and that 'clinicians working in the NHS came to see data collection not as a help but as a hindrance' (NHSIA,1998,foreword). *Information for Health* located the healthcare IT strategy within the wider e-government agenda; similar to the notions behind *Modernising Government* the argument was that 'access to public services is too often complicated, slow and inconvenient. People often have to contact or visit different departments or agencies, each dealing with separate aspects of the same problem' (*ibid.*,para. 1.8). As with the central e-government vision, IT was promoted as a tool to remedy this situation; the document noted that in 'the information age' the 'new information and communications technologies represent a major vehicle for modernisation' (*ibid.*,paras. 1.5-1.6). Drawing from notions brought to the fore in the previous strategies initiated in 1990, this modernisation aimed to base services around the patient rather than the healthcare provider (*ibid.*,paras. 1.15-1.17).

The document also provided, for the first time, a discussion of plans to introduce electronic health records (EHR) and electronic patient records (EPR) within the NHS. EHR equated to life-long electronic health records whilst EPR were records for an

identifiable episode, such as a spell in hospital. *Information for Health* indicated that policymakers saw the electronic records concept as a crucial element in reforming healthcare delivery to offer convenience and confidence to the patient, improve efficiency and quality and develop a more integrated service (*ibid.*, para 2.4). Coupled with this commitment, there was also a concession that a number of challenges lay ahead in devising and implementing a national electronic records system; existing data inaccuracies, an absence of standards, fragmentation and concerns of patient confidentiality were highlighted as potential barriers (*ibid.*, para. 3.6).

The discussion of plans for EHR/EPR in *Information for Health* included some inchoate movements towards the notion that social care services could contribute to and benefit from an electronic records system. The document remarked that 'multi-professional and multi-agency care' should be facilitated and that 'information from records held by social care organisations may also contribute to the EHR' (*ibid.*, paras. 2.8, 2.14). Later on the report acknowledged that use of electronic records across both spheres (i.e. ECR rather than just EHR or ERP) was yet to be fully considered; although the issue 'needs to be tackled urgently' (*ibid.*, para. 2.43) and the specifics of how information could be shared through a single infrastructure had yet to be determined (*ibid.*, para. 2.44). Despite these discussions, one interviewee involved in Department of Health IT policymaking during this period acknowledged that 'when we did *Information for Health*, social care concerns were way over the horizon' (*interview – 21*).

Nonetheless, *Information for Health* paved the way for the development of a national ECR programme, which was a radical step in that it attempted, where needed, to incorporate social care information with health records for individual patients.

Without considering the added social care dimension, the concept of a common, IT based infrastructure for medical records across NHS organisations brought with it inherent difficulties because of the historical institutional and technological isolation of healthcare information domains depicted above. However, the concept of converting hand-written medical records to an electronic format, in both discrete and

NHS-wide environments, had been long considered by different actors involved in healthcare IT. A brief excavation of the history of healthcare electronic records will, if considered alongside the wider history of welfare IT (see section 5.2 and 5.3), provide useful insight to the specific objectives and challenges to the implementation of a national electronic records system.

### *The History of Electronic Records*

The medical profession had traditionally kept hand written notes for patients, which since the 1970s was supplemented in some cases, but rarely replaced, by electronic notes. Although performing a vital function in providing comprehensive and personalised care to patients from the cradle to grave, record keeping had often been fragmented and inconsistent across the many welfare organisations that a citizen may have come into contact with during an average lifetime. Particularly for citizens that relocated frequently or had complex and demanding welfare needs, this represented a serious problem. Whilst hospital records often remained locked within paper archives or stand-alone databases in individual departments, General Practices were more likely to be able to utilise the ‘Lloyd-George’ envelope system to share patient records. Although hand written by GPs and often using differing medical codes, this system, used for many decades, ensured that General Practices did have a set format for passing records to fellow practitioners if patients relocated. However, the sharing of patient records amongst General Practices was still cumbersome in the new millennium, as one interviewee noted:

at the moment if a new patient comes and registers then you have to send off a form and write a letter to the previous GP...if they are coming from somewhere like London you can wait months and months for the records to appear...we often get print outs from other GPs systems, that we then retype in to our computers...Of course it would be lots better if we could just send records electronically and you didn't have to do any of this, if you could just press a key and upload somebody's records. But I think that's a long way in the future (*interview – 18*)

Spurred by this limitation, as well as variances in terminology, recording practices and illegibility in GP, nurse and consultant medical notes, the concept of developing electronic patient records in health emerged in the early 1960s, first of all in the United States. The *Journal of the American Medical Association* provided details of a project using punch cards that represented a movement towards electronic records. The project leaders enthused 'any portion of the record can be retrieved immediately if appropriate orders are given to the electronic machine' (Schenthal et al,1960,p10). A year later the same project had begun to use magnetic tapes to store records and aimed to develop 'a magnetic record of a type which could eventually supplant the written record' (Schenthal et al,1961,p270). By 1963 the research group was confident that:

the way is open to regional or national medical records systems which will ensure that, through modern high-speed communications facilities, a person's medical record is made available quickly, although he has moved to a different location or is traveling far from home (Schenthal et al,1963,p101)

Ledley and Lusted discussed the potential for electronic medical records at an even earlier stage in an article published for IEEE in 1960, and in an appearance at a conference at the Rockefeller Institute in New York (Kaplan,1995,p8). Lusted had devised an impressive clinical records system by 1965 (Leavitt,1999,p231). The fact that the system was for laboratory monkeys and not humans does not detract from its pioneering status.

In Britain, perhaps the first mention of electronic patient records in central government policy documents could be found in the 1967 DHSS Annual Report, which noted that:

For some years now, computers have been used in the hospital service for pay-roll and similar accounting work. Latterly there has been a growing interest in the possible use of computers in the clinical area both in hospitals and other parts of the National Health Service. Such computers, it is thought, might hold part or all of the patient's record and be used to facilitate the many activities, from appointments and

bed allocations to laboratory tests and discharge letters, which affect the patient during his stay (DHSS,1967,p63)

Although the influence of any DHSS support is unclear, pioneering work was conducted at Kings College Hospital, following the arrival of an ICL 1905E computer in April 1969. Advancement was made towards a computerised patient medical record, and Richards suggested that the project was 'probably the first in the world' of its kind (2001,p755). The project leader, Professor John Anderson noted at the time that he hoped to achieve the objective of a computerised 'total patient record' that would spread to the whole of the National Health Service (Anderson,1972,p75). Later, there was the Charing Cross Hospital experimental project operating with electronic medical records in the early 1970s. It created 20,000 electronic patient records to support a computerised bed state system (Benson,1991,p24).

Back in GP surgeries, enthusiastic doctors were intent on developing systems for their own needs. In the 1970s John Preece was pioneering electronic patient records in Britain, making them 'the nucleus for all data activities in the practice' (Preece,1983,p124). The first 'paperless practice' was in operation by 1975 in a village near Exeter, using electronic medical records. The protagonist cited the 'unique ability of the computer to search for and marshal information' as a major benefit (Bradshaw-Smith,1976,p1397). Thus, at both service delivery and central policy levels there had been interest and activity in electronic health records, both in terms of a national and organisation-specific system.

There were however, barriers to the development of electronic health records, even for discrete systems. Using computerised records alone, without paper backups was technically illegal right up until 2000, when the Civil Evidence Act made computer documents admissible as evidence in court (Anthony,2000,p6). Furthermore, despite the example of a paperless practice from 1975, interviewees doubted that this was a realistic goal for many General Practices, as despite the ECR programme, paper was likely to remain a component of record keeping and administration for the foreseeable future (*interview – 18*).

Nonetheless, individual systems did develop that included a facility to access and update electronic patient records by multiple NHS organisations. An experiment near Exeter included the sharing of information between the GP and local hospital (Benson,2002a,p1087), indicating that interoperability (at least within the NHS) was both desired and achievable in the mid-1970s, where there was a need. By in large however, the proliferation of electronic medical records continued from the 1970s in isolated pockets, particularly in General Practices.

Still, there were attempts to develop electronic medical record systems at a regional level. One project instigated in 1989 was unusual in that attempted to give citizens an high levels of ownership and control over medical records through using patient-held smart cards. In total 8,500 cards were given out to patients in the Exmouth area in Devon; medical records were contained on the smart cards, which could be used at 13 different General Practices, pharmacies, dental hospitals and A+E rooms (Neame/Benson,1994,p111; Benson,1991,p50). Although considered to be a success (Neame,1997) it was difficult to see any lasting or profound influence on the trajectory of electronic patient records by the smart card project. Similarly, a three year research and development project to assess the potential of electronic records in the mid-1990s (NHSE,1995,p5) seemed to disappear without a trace. By the late 1990s, most GPs used electronic medical records, albeit in isolation and as a supplement to paper records.

Thus, whilst electronic records were a popular and widespread tool, particularly in healthcare, by the time that *Information for Health* was published, there was no precedent for an NHS-wide system, despite some interest by central policymakers. There were some individual examples of innovative programmes to use electronic records across health organisations, to help join up service delivery around the needs of the patient. Yet the necessary levels of data sharing for patients who had moved or had complex needs was based around seemingly inefficient paper records transfer. Prompted by the central e-government strategy and the movement in healthcare policy



to improve the experience of patients in service delivery, it was this situation that was targeted for improvement in *Information for Health*, thus bringing electronic records to the fore of policy formulation.

It was two years after *Information for Health* before anything of significance was attempted in terms of realising electronic records; this was the Electronic Record Development and Implementation Programme (ERDIP), which ran from 2000-2003. Supervised by the NHSIA, the ERDIP involved 19 demonstrator sites that each concentrated on different aspects of the problems and ambitions held for electronic records. The following section will summarise and provide comment on the findings and impact of the ERDIP.

#### 5.5 THE ERDIP AND WELFARE IT POLICY 2000-2003: WORKING TOWARDS A UNIFIED ELECTRONIC RECORDS SYSTEM

Several of the 19 ERDIP pilots were instigated specifically to research and evaluate the potential use of electronic records as a bridge between the health and social care divide. A Cornwall and the Isles of Scilly group conducted one such pilot, finding that technological incompatibilities and a wariness to data sharing in the welfare institutions involved caused obstacles (Heathfield,2003,p9). The team discovered that many health organisations had the inconvenience of using three IT systems at once, and thus new electronic records responsibilities were not taken to kindly; many clinicians reverted back to using dictaphones for the formulation of patient notes (*ibid.*,p13). Cornwall and the Isles of Scilly did have a strong track record with cross-disciplinary working, which was said to have helped with the development of the pilot electronic record system as the conduits for discussion and development were already in place. Still, ultimately the Cornwall project was only able to aim at automating existing data flows (*ibid.*,p9), rather than reengineering systems towards a closer form of integration and shared working between health and social care.

The Tees Health Authority group also experimented with linking health and social care data through electronic records. The project discovered a technical barrier in that the social services department did not have the capabilities to gain access to the NHSnet, which was seen as necessary for joint access and maintenance of electronic records. However, once the technical hurdle had been overcome 'Stockton council then refused to sign up to it' (Owens/Foord,2003,p8). Elsewhere in the ERDIP, NHSNet connection was achieved by some social service departments, yet often at considerable effort; Suffolk County Council endeavoured for 12 months before achieving connectivity (NHSIA,2003a,p4-5), whilst Leeds City Council were still waiting for connection during 2002 after several years (*interview – 25*). The Tees group also directed a complaint at the NHSIA; it argued that there were 'significant gaps in national guidance provision: such guidance is fragmented, and would be of most value if stored, maintained and disseminated in a more pragmatic and accessible way' (Owens/Foord,2003,p5). Whilst this might have been expected of an explorative programme such as the ERDIP, this type of complaint appeared to become more prevalent when aimed at the Department of Health, as the NPfIT and the ECR programme were initiated from 2002, as discussed in the below sections.

South Staffordshire also had a team evaluating similar issues to Tees Health Authority, but ultimately found that the pilot did not have enough accurate data to justify taking it any further. Protagonists found that extracting vital information from GP systems was a significant barrier, not least as there was a 'lack of co-operation by the GP system suppliers' (Smith/Gowing,2003,p2); which was an issue that would re-emerge under the NPfIT, as discussed below.

One interviewee, involved in the evaluation of the South Staffordshire project, argued that the barriers to the particular approach to electronic records taken were more profound than technological compatibility issues. A deeply rooted problem of distinct medical coding practices were reflected in information procedures and welfare record keeping; 'they found that each GP system used different clinical codes, including ones they'd made up themselves, and this was a huge problem' (*interview – 19*). The South

Staffordshire project encountered discrete coding practices in many of the organisations involved, which were reflected in the medical records. It was judged that central government impetus would be needed if a common medical coding system was a necessary facet to a national electronic records system (Smith/Gowing,2003,p2). Also, as with the Tees pilot, it was found that the project lacked guidance and a clear policy lead on a number of issues (*ibid.*,p14-15).

Finally, the Durham and Darlington demonstrator project report noted that significant fragmentation had to be overcome to reach the objectives of the pilot:

Current health records are generated and held in many forms in a wide range of locations by many different types of health and social care agencies and the means for accessing and maintaining this information are cumbersome and fragmentary (Owen/Foord,2002,p6)

Thus, the lessons from the ERDIP were clear; aside from technological issues there were complex and profound differences in the informational practices in use with record keeping, which were a reflection of the institutional separation of different health and social care organisations. Furthermore, although an explorative programme, many participant bodies felt that the NHSIA had provided insufficient guidance and, according to one participant at least, the Information Authority had showed a lack of understanding of the legacy IT systems and procedures that existed in the welfare organisations involved (*ibid.*,p7).

Still, arguably the ERDIP had provided a number of useful indications into the use of electronic records in welfare services. Certainly, the NHSIA itself found cause for optimism in the programme; it claimed that 'significant insight has been gained into the implementation of integrated records across health communities' (NHSIA,2003b). Furthermore, the programme was clearly linked with general NHS and public sector modernisation, as it was noted that 'integrated electronic records solutions is an effective tool for achieving the strategic policy objectives of Modernising Government and the NHS Plan' (*ibid.*). In this way, electronic records were

associated with the central e-government strategy expressed in the *Modernising Government* document.

Despite the broadly positive conclusions of the NHSIA, other sources questioned the value of the ERDIP project as a whole. One interviewee, who was involved in the evaluation of the ERDIP, argued:

With ERDIP they didn't know what they were doing - it was a sort of panic response after nothing happened following *Information for Health*, so they thought they'd better do something a year or so after it. Civil servants panicked – this is genuinely what happened. So there were a couple of things floating along and they picked them out of the garbage can in a panic and one of those was ERDIP. It was expediency that led to it, there was no clear goal, and it was just someone needing to be doing something in that area. It could have been interesting but it was pretty amateurish and it was a missed opportunity. Lots of interesting bits and pieces were done but because there was no overall structure in which it could fit, it was very difficult for anyone to see it as a coherent whole  
(interview – 19)

Another ERDIP evaluator disliked the political involvement in the programme:

It was all political, we were told that the EHR is going to be beneficial, so evaluating the sites was actually quite difficult in a way as there was this huge political command that EHR was good, and that was the starting point. What we had to look at was the problems and the issues and the lessons involved in actually trying to implement it. We weren't actually looking at the basic thing of whether it was good or not (interview – 20)

It was logical to all parties that an electronic records system could greatly aid the delivery of coordinated welfare services at some level. However, there was genuine anxiety about the obstacles facing the incarnations of electronic records piloted under the ERDIP, which the NHSIA may have underestimated according to evidence given by these interviewees.

Nonetheless, the ERDIP was seen as a positive exercise by protagonists from within the Department of Health and it paved the way for the ECR programme. One interviewee from within the Department noted that whilst it was 'fair criticism' that the ERDIP did not fulfil its potential, all the same 'informally I think that people have known that the lessons from ERDIP have been constant with the current programme because it has basically reinforced the proposition that was explained in *Information for Health*, which was that we should have person based electronic records' (interview – 21).

During the period of the ERDIP, there was also interest in electronic records from other welfare organisations. For instance, one interviewee had led a social care electronic record pilot from within a local authority. The pilot aimed initially at holding electronic records for older people across social care and health organisations, particularly with the aim of improving service for those who had had a recent spell in hospital (interview – 25). However, similar problems to those highlighted in ERDIP reports were experienced; attempts to share information across the two spheres met with technological and organisational barriers. One interviewee commented that, despite the promise, the pilot had 'not really brought us into the wide and wonderful world of joined up systems as of yet' (interview – 23).

### *Welfare IT Policy Activity 2000-2003*

During the course of the ERDIP, policymakers produced a number of strategies that worked towards a national, unified approach to electronic records but there was considerable confusion as to the path ahead. First of all however, in January 2001 a strategy document was released by the Department of Health that attempted to draw together the major reforms embodied in *The NHS Plan* (DOH,2000a) and *Information for Health* (NHSIA,1998). *The NHS Plan* was heralded as 'the most fundamental and far-reaching programme of reform in the history of the NHS' (DOH,2000b), yet it failed to fully incorporate the issues raised in *Information for Health* or wider discussions on the role of IT in healthcare. To rectify this, *Building the Information Core – Implementing the NHS Plan* was offered. Whereas *The NHS*

*Plan* stressed a joined up, citizen-centric approach that aimed to cross the health and social care divide, it did little to associate itself with the central e-government strategy setting. *Building the Information Core* consciously attempted to amend this, reiterating that electronic records were an integral part of the reform plans (DOH,2001a,p25-26; Johnson/Keen,2002,p9). However despite a mention of the ERDIP and brief comment on the need to use information from both spheres in electronic records, there was no clear and full account of how electronic records might be implemented or enable joint working across the health and social care divide. Three years earlier, *Information for Health* had mooted the idea of integrated records but the idea appeared to have not developed sufficiently to warrant much coverage in *Building the Information Core*.

*Information for Social Care* was released by the Department of Health in May 2001, three years after *Information for Health* and several months before the Social Care Information Policy Unit was established to manage the social care information agenda (Staton,2002). One interviewee, involved in the document, noted that its launch was a reaction to an ever growing feeling that social care was being left behind in welfare IT policy (*interview – 27*). The foreword of the report made it clear that it was to be seen in tandem with the equivalent health strategy, and that it was to be located in the wider e-government context (DOH,2001b,p2). Despite some previous work by the Social Services Inspectorate, this document was considered to be the first concerted effort to provide social care IT with a strategic policy (Staton,2002).

This perceived delay could be attributable to the continuing lack of recognition of the importance of social care by central government organisations. However, interviewees also pointed out that the institutional position of social services, deeply embedded in autonomous local authorities, made the concept of coordinated IT strategies difficult to realise. Around 2002, there were 150 autonomous local authority social service providers, with enough independence to mean that ‘you can’t dictate to them from the centre’ (*interview – 27*). As *Information for Social Care* was published, social care IT had hitherto been driven by the independent agenda of local councils,

resulting in a variety of capabilities across the social care sphere (*interview – 25*). According to one interviewee, this ‘poor infrastructure’ in social care IT had caused policymakers in the Department of Health to consider integrated electronic care records as particularly problematic (*interview – 27*).

In terms of electronic records, *Information for Social Care* provided further evidence of the haziness that surrounded integrated electronic records policy; it detailed plans to implement Electronic Social Care Records (ESCR) (DOH,2001b,p11), intimating that electronic records would develop separately in the two spheres. The document did note that ‘many of the issues around the proposed ESCR arise in the context of the NHS development of the Electronic Health Record (EHR). Detailed work is required to agree how the ESCR and EHR should inter-relate’ (*ibid.*). Whilst the concept of integration was being considered, it was still the case by 2001 that all parties were uncertain as to the path ahead. Whilst uncertainty and tentativeness was by no means an inherent weakness, it was also the case that electronic records had become a central cog in the e-government modernisation plans of both health and social care spheres, yet the ERDIP had indicated that considerable effort was needed, particularly if a national and integrated programme was to be implemented.

In July 2002 a further update to *The NHS Plan* was provided, entitled *Delivering the NHS Plan* (DOH,2002a). Despite detailed consideration of the need to join up health and social care, IT, e-government and electronic records were barely mentioned. This intimated that these technological issues had not permeated into general health policymaking but had instead remained confined in distinct IT policy streams. However, three months before this document was published, plans for the enormous National Programme for IT (NPfIT) in the NHS in England were announced by Sir John Pattison, then the Director of Research and Development of the Department of Health. Such was the scale of the proposals, it seemed unlikely that e-government issues could be ignored by mainstream welfare policymaking. The NPfIT will be considered in the next section.

## 5.6 THE NPfIT AND ECR: JOINING UP HEALTH AND SOCIAL CARE AT A NATIONAL LEVEL

The essence of the NPfIT was that health IT should be procured and implemented on a national scale, rather than supplying funding and delegating responsibility to individual health authorities, care trusts, hospitals and General Practices, as was often the case previously. Whilst individual organisations would retain some IT capacity to meet their own specific needs, NPfIT would provide an infrastructure through which health information would be coordinated, shared and integrated on a national level where appropriate.

This was set against the grain of other areas of NHS reform, where a policy of ‘shifting the balance of power’ from central government to service deliverers was gaining significant momentum during this period. The argument was that the decentralised model ‘was not delivering what the NHS needed’ in terms of IT policy (Drury/Pattison 2003,p80) and a national approach was a necessary and logical path considering the inadequacy of existing healthcare information systems to meet the new requirements for patient-centred joined up service delivery. Other independent sources agreed that this national approach, although high-risk and unprecedented, was likely to be the only way to successfully implement electronic records across the board (*personal correspondence – 24*). Still, the national approach implied that health and social care institutions would be required to adopt technological, administrative and procedural practices to be able to contribute to and participate in ECR.

NPfIT was to consist of national systems, including integrated health and social care electronic records, a national communication and data exchange network to replace NHSnet, an electronic booking system for hospital patients, a platform for GPs to transfer patient prescriptions to pharmacies and an application to store and transfer medical images such as x-rays. Contracts to deliver these national systems were to be awarded to private IT suppliers; England was to be split into five clusters and contracts were to be awarded for each of these clusters for contractors to implement



the national systems in local settings. The logic with the clusters system was that, as a contractor could perform badly, it would not be solely relied on to deliver the programme; a preferred approach as highlighted particularly by the Public Accounts Committee (PAC,1999/2000b).

The announcement in 2002 of the NPfIT was reported with great alarm and excitement in specialist health IT press. It was argued that ‘the programme set out represents probably the most complex IT project ever to be undertaken in the UK’, and the procurement would have to happen ‘at breakneck speed’ whilst an ‘investment bonanza’ was unavoidable (EHI,2002a).

The first strategic document for the programme was entitled *Delivering 21<sup>st</sup> Century IT*, and was published in June 2002 (DOH,2002b), a few weeks after the announcement. However, interviewees felt that the document itself seemed to have been compiled in a hasty manner, perhaps a reflection of the ‘frenzy of activity, meetings and speculation’ in the Department of Health following the NPfIT announcement (EHI,2002a). One interview certainly was not impressed by the report, commenting that:

Delivering 21<sup>st</sup> Century IT is an appalling document that doesn’t make any sense at all; very difficult to understand...I was told it was just written in an incredible hurry because nothing had happened since *Information for Health* and they needed to say ‘oh no, we are still here’ – so they thought they’d better write something and launch it (*interview – 19*)

Still, *Delivering 21<sup>st</sup> Century IT* did provide details of the management structure for the programme, which included a ministerial taskforce headed initially by former health Minister Lord Hunt, a single Department of Health NPfIT director in Sir John Pattison and a new director for the NPfIT itself. (DOH,2002b,p4). The roles of the Department of Health Information Policy Unit (IPU) and NHS Information Authority (*ibid.*,p18-19) were also clarified. Furthermore, the document provided timetables for

prospective implementation of electronic records and other facets to the programme, and detailed the provision for central funding (Johnson/Keen,2002,p10).

On the subject of the electronic records, the document confirmed their centrality to NPfIT; they were set to provide the infrastructure for other applications such as e-booking and e-prescriptions (DOH,2002b,p12). *Delivering 21<sup>st</sup> Century IT* inferred that integrated ECR were still on the agenda as it suggested that a 'Unified Health Record' with social care information included could be in place by 2008 (DOH,2002b,p6). Despite this assertion, there was little else in the document on how social care IT might be incorporated into the programme. Johnson and Keen argued that the details from the document 'explicitly reverses the stated policy position in *Building the Information Core*, published just 18 months earlier, to develop shared health and social care records' (2002,p10). This appeared to be a major contradiction and an indication of the confusion in high-level policy on this issue; during the same period that *Delivering 21<sup>st</sup> Century IT* document was published, Alan Milburn (the then Health Minister) advocated the importance of integrated health and social care information (*ibid.*).

### *NPfIT: Modernising the NHS*

Despite the apparent contradictions, the NPfIT moved on apace, and as pledged, a director for the programme was appointed in September 2002. The appointment went to Richard Granger, who made an immediate impact when it was revealed that his wage of £250,000 was significantly more than both the NHS chief executive Nigel Crisp, and the then Health Minister, Alan Milburn (Butler,2002a); it made him Britain's most highly paid public servant (Butler,2002b). Naturally this led to criticism, and by the beginning of 2003, the feeling was that Granger had not visibly progressed much as he had 'not divulged how he is going to deliver the plan' (Sarson,2003). The institutional distinctiveness and fragmented patient information practices of NHS organisations, as depicted in the sections above, provided an indication of the likely difficulties Granger faced. However, the programme director

soon received significant praise, at least in terms of his efforts to award thorough and efficient contracts to private suppliers for the different facets of NPfIT.

In December 2002 he met with major IT companies, and was said to have 'read them the riot act' and threatened severe penalties for under-performance in the NPfIT (Cross,2002b). By late February 2003, as details of the colossal procurement process for the National Programme were emerging, Granger had built up a reputation for being ruthless, blunt, aggressive and determined (Cross,2003a). Even the most sceptical of interviewees were impressed by his persona (*interview – 19*).

In March 2003 Lord Hunt resigned over the government's foreign policies, and Sir John Pattison announced that Granger would take over his duties following his imminent retirement. Thus, the NPfIT was without a Minister for several months, and in June 2003 the portfolio was passed to Lord Warner of Brockley for a matter of days before it was handed to John Hutton (Kable,2003f; Kable,2003g). The lack of consistency in ministerial presence could be considered a weakness, particularly with the stated goal of aligning welfare IT policy with the central e-government agenda. Also, the confusion increased Richard Granger's prominence considerably, as he was seen as the only constant presence in the NPfIT. Collins noted that Granger became the 'public face' of the programme whereas Sir John Pattison had 'melted into the background' despite being the official Senior Responsible Owner for the NPfIT<sup>21</sup> (Collins,2003).

By early 2004 Granger had succeeded in securing seven immense contracts with private suppliers for the NPfIT, worth at least £5 billion. Two of these contracts were based upon delivering a national infrastructure, one of which was for the ECR project (awarded to BT Syntegra) whilst the other concerned the e-booking service, which required electronic records to operate. The procurement process was seen as a

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<sup>21</sup> Collins noted that this raised serious accountability issues, as in the OGC Senior Responsible Owner guidelines, those assigned to this position should not leave their post before the project was completed (Collins,2003). By March 2004 Dr Aidan Halligan was appointed to share Senior Responsible Owner duties with Richard Granger. Six months later Halligan left whilst complaining that not enough had been done to ensure the 'buy in' of clinicians with the NPfIT.

monumental achievement from many quarters and soon after contracts also appeared to replace the NHSnet. One interview noted 'he's awarded the contracts in the most difficult circumstances on the planet, pretty much on time, absolutely stunning' (*interview – 19*). As argued by Dunleavy et al (2004), the power of the IT industry may have had an adverse effect on the performance of e-government programmes. The indications here were that government may have wrested greater control with the NPfIT contracts; one interviewee noted 'we have never punched our weight in the market until now' (*interview – 21*). A high-ranking employee of one of the major IT suppliers, who was successful in the procurement campaign, admitted that the process was:

Bloody terrible, the worst 18 months of my life, it was desperate, the hardest thing I've done in my professional career...A process that would normally take three years took one year...There was contestability right up to the end as they didn't tell us we had won until 20 minutes before going to the papers...and even though we got the contract it is still possible for other companies to pitch for various parts of the contract we have won (*private seminar – 28*)

Whilst determination of success with the contract awards may have only become clearer many years after, there was around 2003 a sense of optimism that the NPfIT had the drive to work, and that IT managers in individual health organisations were willing to contribute. One interviewee commented:

In the main they are up for this, they want it to happen – these are people that have been waiting for years and years and have seen little investment in IT. They see this as a unique opportunity and they have to grab it – get IT sorted once and for all...So I think there is something about political will, and a huge driver is that we have a modernising government that want to modernise the healthcare provider. So the political will is there and the money is there (*interview – 22*)

However, the procurement process was conducted under a veil of secrecy during the negotiation period, which left some welfare practitioners, managers and other staff feeling somewhat ostracised.

*Electronic Care Records: Contradiction and ambiguity in plans to join up welfare information*

Whilst the ECR project (referred to up until December 2003 as the ICRS – the Integrated Care Records Service) was an integral part of the NPfIT, it was not clear as to how social care would be incorporated into the strategy, despite some vague commitments towards integration. It was not until the summer of 2002 that a consultation document was released that discussed concrete plans for integrated care record services, and communications from Department of Health policymakers began to clearly disseminate the concept of e-enabled integrated care as a definite goal. Peter Drury, head of the Information Policy Unit in the Department of Health, presented a paper in April 2002 that outlined the vision of integrated care, supported by information systems (Drury,2002,p2). It reiterated the objective that ‘information will be shared across the NHS and ultimately across health and social care’ (*ibid.*,p3).

This was developed further by a NHS Information Authority director, Jeremy Thorp; in a presentation in October 2002 he clarified that electronic records inherently implied the interoperation of health and social care information into a single record (Thorp,2002,p6). The plan was ambitious, and aimed to unify information from disparate welfare organisations contained within primary, acute, mental, pathology and social care (*ibid.*,p8). During an interview in the same month, Thorp provided more indications on the format of electronic records, arguing that the two spheres should not develop electronic records discretely and join them up afterwards (EHI,2002b). Thorp advocated ‘a record service integrated across the care continuum’ where ‘information needs to be available across the whole care process’ (*ibid.*). Here, the suggestion was that the format for electronic records would consist of integration across the full panoply of welfare organisations, and the project would encounter all manner of legacy IT systems, record keeping practices, service procedures, client groups, coding and professional conventions.

Contrasted with the vision for integrated electronic records, early doubts began to arise regarding the viability of the project management for ECR. In 2002 the OGC began to involve itself in the NPfIT facet of electronic records. It applied Gateway Review tests to the project and in November 2002 it was reported that electronic records were to be put on hold. The review was said to have 'major concerns about the management capacity required for the programme and the implementation capabilities underpinning the project' (EHI,2002c). However, ECR was said to have 'sufficient political impetus' behind it to continue, despite the weaknesses the OGC had identified (*ibid.*). Thus the Gateway Review service was very much seen as advice rather than mandatory ordinance.

A few months later it was reported that the Department of Health had taken a decision that, in future, it would decide which projects would be put through the Gateway Review, rather than allowing the OGC autonomy on the matter (EHI,2003c). One explanation offered was that the OGC consented to this on the understanding that the National Audit Office would have unprecedented access to the procurement and implementation stages of NPfIT (*interview – 19*). This perhaps indicated a step-change in the role of auditors in government IT projects. Historically, audit bodies had deemed many IT projects 'disasters' after the fact, but being present during the NPfIT could have equipped the auditors with greater understanding of the pathologies and merits of large government IT initiatives. If insightful enough, the project audit report (which was not due for several years after 2004) could have signalled a permanent change and improvement in the function of audits in government IT.

Following the Gateway Review events, the next few months were said to be typified by 'some furious activity behind the scenes...and a great deal of dust and confusion across the NHS' as the first stages of the NPfIT were developed (EHI,2003a). Also, there was a new sense of uncertainty regarding ECR, as influential figures such as Lord Hunt and Sir John Pattison were said to be 'managing expectations' about the project because it was being 'seriously scaled back' and would look 'pretty thin' in the first years of the NPfIT (*ibid.*). Thus, Thorp's conception of a welfare-wide care

records service suddenly appeared unrealistic, at least for the initial stages of the programme. One observer complained that 'we have actually moved backward on the definition of what [ECR] is over the past year' (*ibid.*). A source involved in NPfIT policymaking noted that Richard Granger in particular had expressed concern that delivering integrated electronic records was too ambitious initially, thus:

With electronic records, the social care side is basically one of timing, its not whether but when, we have to have them together. But the problem is that we can't deal with all the social care things as well as the health at the same time, so we are going to get the health done and then look at social care...but there has been tension and anxiety that it had been pushed too far down the line. But over the last year or so we've been trying to make sure that we accelerate the social care process as much as we can (*interview – 21*)

An interviewee from the social care side had a more cynical view; 'they don't want to be side-tracked from their main policy of health IT' (*interview- 27*). Still, although the vision had reportedly been scaled back considerably due to these concerns, the intention to develop an ECR system that operated across both spheres remained intact.

Whilst the objectives of ECR appeared to be changing, there was still considerable confusion regarding the implementation of electronic records, leaving many welfare practitioners and managers unsure of the road ahead. There were complaints about lack of consistent central guidance for the electronic records strategy (EHI,2003b), echoing the issues raised in the ERDIP reports. This was reflected in the impression interviewees gave of the general modus operandi of the Department of Health for the NPfIT:

even people who by are very prominent and senior don't even know who to contact in the National Programme because it is all so complicated internally...an incredible state of affairs and it makes it a bit like Kremlin watching to be honest (*interview – 19*)

Others argued that certain levels of mystery were understandable. One interviewee noted, 'there were issues particularly up to the end of procurement with secrecy. But

what you have to understand that when you are negotiating with suppliers, confidentiality is absolutely key and there was lots of things around negotiation that should not have got into the public arena' (*interview – 22*). Still, ill feeling seemed to be set in at a local level, with a general conviction that 'communication is atrocious' in the NPfIT (EHI,2003e).

In late summer 2004 the BBC conducted a survey of 500 GP and hospital doctors, 90% were said to be unhappy with levels of communication or consultation for the NPfIT (eGov Monitor,2004). This was just one of a long line of surveys and reports that indicated severe mistrust in the NPfIT on the ground. Whilst the ECR programme was likely to require the participation and impetus of myriad welfare organisations, the danger was that the general unrest with the Department of Health's approach to the NPfIT could have debilitated progress.

In March 2003 Richard Granger announced the creation of the National Design Authority, to devise and control healthcare IT technical standards. Amongst other responsibilities, the Authority helped administer compliance to e-GIF standards, as developed by the OeE. NPfIT included a commitment to use e-GIF to provide the technical means to share data across welfare organisations (DOH,2003c).

However, with the creation of the National Design Authority, it was not clear what the role of the pre-existing NHSIA would be. In April 2004 rumours surfaced that the NHSIA was likely to be terminated and shortly afterwards the organisation, which had existed for five years, was closed. It was also announced that the work of the Department of Health Information Policy Unit was to be absorbed into the sections responsible for the NPfIT (Government IT,2004,p5). Furthermore, the Modernisation Agency, originally involved in the cultural change aspects of the NPfIT, was set to be scrapped according to announcements in March 2004, after only three years in existence (Mulholland,2004). Thus, efforts were being made to streamline IT related healthcare policy into the NPfIT, plausibly to encourage a more consistent and commanding approach.



The long-awaited official specification for the electronic records project was published in May 2003 and updated in August of the same year. Initially, the document, which ran into 500 pages, was not available to the public and wider practitioner community, thickening the perceived cloud of mystery. Still, the introduction restated the intent to bridge the divide: 'an objective of both [ECR] and the NPfIT is to provide an integrated care record for individuals, including non-NHS organisations which provide care, including Social Care' (DOH,2003a,p3).

The document advised that the electronic records project would involve a unique identification number for each patient. This 'NHS number' was devised in 1950 and attributed to each patient as a way of exercising administrative control over medical records, although many health organisations had not used the NHS Number in the way envisaged prior to the NPfIT. The document held that full patient records held in discrete repositories in hospitals, GP practices and other organisations would feed into a 'national spine', which could be accessed by any practitioner or other staff member with appropriate permission. This spine would include demographic data, summarised medical records, allergies, treatments, discharge, referral and clinical correspondence information and a list of current care providers (*ibid.*,p12).

In terms of social care, the document provided indications that ECR still included a firm commitment towards an integrated model despite some previous uncertainty. However the document only provided detail on the logistics of joining up across the two spheres in one of over 90 ECR component 'modules' covered. One interviewee, claimed even this would not have featured if it was not for his and his colleagues remonstrations (*interview – 27*). Within the module, the document stressed that the ECR project should pay particular attention to interfaces between health and social care in terms of mental health, the elderly and children (DOH,2003a,p372). It is noted that different levels of interoperation would be needed in different circumstances. For instance, full access to records and full ECR integration would be needed to improve care for mental health patients, whereas in other circumstances, occasional data

exchange or access to databases across the divide could suffice (*ibid.*,p373-74). Thus, interoperation with ECR could have ranged from fully unified records and shared working, to occasional communication via secure email.

The indications provided in the document could be considered to be a climb-down from a full, seamless approach to ECR that was promoted most clearly by Jeremy Thorp. However, there was a sense that the approach advanced in the document inferred an acknowledgement of the institutional realities involved in welfare delivery and that, as one interviewee put it 'we'll never have one system for everyone' (*interview – 27*). Mental health services were deemed the most appropriate area for integrated patient records across the divide, yet it was also an area where close partnership working had operated for decades. In other joint working scenarios, sights were set on opening up electronic communication channels and permitting periodic data exchange where the need arose. This could be taken as a failure considering the calls for fully integrated welfare information systems, but offering electronic communication across the divide was in reality a radical departure from the previous fragmentation of information provision across the two spheres.

One interviewee, who worked in a General Practice, depicted the typical methods for joined up information flows across the two spheres before the effects of ECR would be felt:

We have a social worker that does one session a week here – and she is often in and out, so we are lucky. But most practices don't have that and therefore social services is much more remote on the whole. What happens is that you would fill in a long form and fax it through to social services and that's the contact most would have with them – I don't think there is any scope for emailing or sharing information electronically (*interview – 18*)

Despite the publication of the specification document published in May 2003, it continued to be the case that the precise path for ECR was unclear. One source close to NPfIT policymaking noted in spring 2004 that 'well what the model will look like

I'm not sure...how it might be structured or where it might sit – and is the local service provider going to manage that record? How will that sit with the social services...it's all very tricky stuff' (*interview – 22*). The ambiguity was reflected in the faith that the practitioner community had in the electronic records programme being a success; a poll in September 2003 found that 92% of respondents believed the targets would not be met (EHI,2003e). Further confusion occurred as the official title for the project, the Integrated Care Records Service (ICRS) was changed to the NHS Care Records Service in December 2003, although the functionality of the project was set to be unchanged (EHI,2003f).

### *Doubts about Joining Up Across the Health and Social Care Divide through Electronic Records*

What was suggested in the specification document was that Electronic Social Care Records projects would run separately to the NPfIT initially, despite Jeremy Thorp's preference for developing integrated electronic records from the outset (EHI,2002b). Major differences in the nature of the technical requirements for respective electronic records were inferred in the specification document, which acknowledged the institutional and professional differences inherent in informational procedures across the two spheres. Whilst the social care records project was set to concentrate on 'document management' (DOH,2003a,p372), reflecting the prose-heavy format of social service case records, electronic health records could be based more on structured data fields, to reflect the concise, code-heavy structure of many healthcare recording processes.

Although not discussed in the document, this fundamental difference could have been set to provide a profound obstacle to a working integrated electronic care records system that could be used to foster and facilitate joint working. Whilst it was likely that a technological infrastructure for shared electronic records should and could be created with adequate investment and resources, it was less clear that practitioners across the health and social care divide would be able to easily interpret and use one another's contributions to a joint patient record. For instance difficulties were likely to

be encountered in deciphering profound, embedded and perhaps irreconcilable differences in syntax, semantics and indeed the very ontology of the two professions reflected in record keeping processes.

Whereas one interviewee close to the NPfIT expressed doubts that these deeper issues were being tackled (*interview – 27*), another stressed that they were being addressed seriously, and indicated that problems could be countered by robust and unified coding procedures (*interview – 21*). However, one observer's elucidation on this point suggested the difficulties might run deeper:

The problems are about meaning of language. GPs put something in on a record that they know nurses and other doctors will understand, so the NHS will understand, but social workers just won't be able to understand the terminology even if they are relatively simple – and people in the health service need shorthand because of time constraints but social care workers won't understand it – so we are not in a position to make a judgment about electronic records but it looks pretty problematic. There is a non-trivial language and concept barrier there (*interview – 19*)

Another interviewee commented:

if a social care worker goes out they are doing a social care assessment - but putting that in the bigger picture, you've got physiotherapists, pediatricians, dieticians, nurses and so on, all of whom would do it differently because they need to know different things. So what they haven't managed to crack is that if you put it together and shake it about what would that mean as a single record? (*interview – 23*)

Thus, interviewees felt that, whilst collaboration between health and social care, might be aided by pooled resources, joint budgets, partnerships and shared records, there was concern that close integration, such as that implied through ECR, could be difficult. Shared electronic records, one interviewee argued, was not something to 'throw together and hope it makes sense' (*interview – 27*). Day to day objectives, procedures, recording processes, needs, expertise, skills, problems and traditions

could be seen as quintessentially dissimilar in the two spheres, despite the obvious need for interfaces for some patients and circumstances. The realisation of these potential obstacles was perhaps reflected in the drawing back from full joining up in the ECR specification documents.

Despite this admission, it was still very much the case that social care protagonists felt that both spheres would benefit from levels of interoperation and data sharing, even if this did stop short of full integration. Officials from the Electronic Social Care Records (ESCR) project within the Department of Health were keen to stress that the two electronic records projects sat side by side. However, social care protagonists were increasingly feeling that, as activity gathered pace, the NPfIT as a whole neglected social care issues. One interviewee close to ESCR policy maintained that 'the National Programme is not really addressing social care issues. If you read all the rhetoric from reports then sure, social care is in there, but in reality it's not high on the priority list' (*interview – 27*). Another social care point of view was that the Department of Health was 'pretty distant, they could be a million miles away really, we just see them as a central department and we are local' (*interview – 23*).

In early 2004 these concerns came to a head when a group of social service directors wrote to the Department of Health to argue 'there is no structure for engaging social care services in the National Programme for IT' (EHI,2004a). One director, David Johnstone, said there was 'little recognition that there is a social care information world and that it is essential for the NPfIT to interface with that world' (*ibid.*). He added that the NPfIT was 'dangerously inward looking and at odds with the principles of integration, modernisation and most important of all being person-centred' (*ibid.*). A big concern was that responsibilities to social care had not been sufficiently written in to the contracts for private IT suppliers. Johnstone questioned whether social services would have any contact with the suppliers, whilst a thesis interviewee noted:

the whole thrust of policy is now going the other way, and that is that there will be a fundamental disconnect between the two sectors...its mainly because the nine contracts that have been awarded in the National Programme don't have any

obligation to social care, it's not in their contract as far as I'm aware. And those contracts run in principle until 2014 – there is just no understanding whatsoever on the dependence of health and social care on one another in the IT policymaking community (*interview – 19*)

Despite these views the Department of Health was still, by 2004, communicating that social care and health information would be integrated in some way through electronic records. Departmental documentation indicated that 'work is underway to jointly define what information is shared' (DOH,2004,p24) between health and social care. This was arguably a similarly inchoate position as that documented in *Information for Health* six years earlier, indicating that policymakers were finding progress difficult.

By summer 2004 progress had certainly been made with the NPfIT and the programme's major facets, following the contractual agreements. The replacement of NHSnet had begun to be made available to healthcare organisations and the first electronic booking for hospital appointments had been made. The first software releases of the electronic records 'national spine' were also made available at this time. Although effectively at pilot stage, with more functions set to be made available after 2004, the progress demonstrated that the delivery of national healthcare IT systems could be a viable option under the correct circumstances. It would take many years to determine the long term success of the NPfIT and by summer 2004 there was still differences in opinion on if and how social care concerns were going to be incorporated into the programme, despite some indications.

#### *Joined up Welfare Outside the NPfIT: Tensions between local and national requirements*

Despite the absence of connections with social care organisations within NPfIT according to some sources, other health and/or social care organisations had begun to develop ICT tools to create informational links between the two spheres at a local level and away from the National Programme. These projects, largely initiated before the NPfIT contracts were signed, followed the traditional historic pattern for IT in welfare services; they were devised to fulfil specific local requirements rather than

to comply with a national infrastructure. Some of these examples were borne directly or indirectly out of the ERDIP and several demonstrated an inclination to develop integrated records or share information independently of the NPfIT.

For instance, a project set up in 2001 in the London borough of Hammersmith and Fulham allowed doctors to electronically view social care information about clients. In May 2003 plans were announced to include in the project all GPs in the borough, as well as the local A+E ward (EHI,2003d); it seemed to be operating outside of the NPfIT. However, it appeared that the Department of Health preferred to terminate local projects that covered similar grounds to the ECR programme. In spring 2003 a number of electronic record projects that were operating independently of the NPfIT were closed by the Department of Health.

In late May 2003 projects in Bristol and the south of England (The Shires project) were closed, and the Department announced that there were to be 'no special cases' operating in competition to the national ECR plans, even though both of these projects were in the advanced stages of procurement (Arnott,2003b). The move prompted claims that 'millions of pounds have been wasted' (*ibid.*) and controversy was caused as, three weeks before the termination, Bristol had announced that it had been given the 'green light' by government to go ahead with its initiative (Arnott,2003a). In parliament, John Hutton contested the financial loss claims by noting 'the national health service is currently procuring an integrated care records service, which will provide, as part of its first phase, the functionality that the Shires EPR would have delivered. The national procurement approach will provide better value for money for taxpayers' (Hansard,2002/03b,col. 416 (W)).

A month earlier, a project to link up electronic patient health records in twelve trusts in Birmingham and the Black Country was cancelled six months into its procurement process because it stood outside of the NPfIT (BJHC&IM,2003). Elsewhere, electronic records projects such as that found in Bradford were seen as highly successful in fulfilling a local service need, despite operating outside the National

Programme; it was suggested that pressure had been put on those involved to abandon local projects to make way for the NPfIT (*interview – 19*). One interviewee was concerned that the ECR programme, as a national system, might not be able to fully capture the needs of practitioners working at the point of delivery:

there is an almost total disconnect between government policy and activity on the ground, and that is the root of the problem in policy or political terms. There is also a complete disconnect between any serious thinking about the role of any given information system and the mindset of the people that implement it... The people who are really thinking about these things seriously and the people charged with implementing it who have the money to purchase systems, well it's a massive disconnect... it's people doing informal joining up that are keeping the system on the road, it's not because it is based on policy but because they know they can do their jobs better by talking to each other (*interview – 19*)

Certainly the impact of a sizeable and wide reaching initiative such as NPfIT and ECR within it was expected to create upheaval and change in the myriad organisations and institutions it touched. In a sense, the NPfIT was explicitly introduced to overhaul existing healthcare IT systems in favour of an integrated model, to encourage joined up working within the NHS and with social care organisations. However, the unprecedented move towards a national solution, with ECR as a key facet, had also exposed a tension; observers felt that there was some considerable currency in using ICTs to aid experienced local welfare protagonists to deliver services in partnership, according to the needs of communities. Whilst, it was argued, the introduction of any IT system should have accounted for this element, the fear was that a national electronic records system might not be capable of capturing and nurturing this quality, whereas a decentralised approach, where local welfare organisations chose how best to employ information technology, might have been best suited to improving services. Such a model would however have been less likely to be able to offer the advantages of a national infrastructure, where electronic records could be accessed regardless of location.



This tension was also played out in the relationship between General Practice and the NPfIT. As stated above, the standalone systems held in GP surgeries across the country were likely to be crucial in terms of populating and using ECR. However at the time of the emergence of the NPfIT, the General Practice community already had an incumbent set of IT suppliers and contracts, whilst to an extent the discrete operations of the Practices were embedded and reflected in the existing IT systems. From 2002 there was some controversy about whether General Practices were willing or should be forced to adopt and adapt to ECR. Later it had emerged that EMIS, a major supplier of GP systems with 50% of the market, had announced that it was not willing to take part in the NPfIT or the ECR programme. This sparked off considerable panic in the healthcare community as expressed through the specialist press; it seemed that, remarkably, the potential repercussions of this was that either half of GPs practices would be unable to take part in the ECR plans, thus rendering the programme as a whole somewhat redundant, or EMIS systems would have to be thrown out and an alternative supplier used (EHI,2004c). Andrew Lansley, then shadow health spokesman for the Conservative Party, was quoted as saying:

I've been speaking to GP practices, and they've invested their own money and they've got their own systems, and they really don't know whether their systems are going to have to be thrown out of the door (*ibid.*)

This dispute threatened to derail the ECR programme before it was able to get off the ground, with one interviewee predicting 'mayhem' (*interview – 20*).

During the same period the Department of Health appeared to have made movements towards a long-term change to the landscape of General Practice IT, by making alterations to the General Medical Contract. This contract, a periodically renegotiated agreement between General Practitioners and the government to set GP salaries was voted upon in 2003 and introduced afresh in April 2004, bringing in a range of new features. Despite eagerness by the BMA and General Practices to retain some levels of autonomy and choice, the contract passed direct responsibility for the purchase and maintenance of GP IT systems up to supervising Primary Care Trusts

(DOH,2003b,p29-32). Central to this was that Primary Care Trusts would be in a better position to bring GP IT systems into line with a national ECR programme (EHI,2003g). Interviews suggested that while some practices were 'suspicious' about the new arrangement, many felt that it was likely to be a positive step (*interview – 22*). Nonetheless, the General Practice community remained determined to retain levels of control with IT systems and by summer 2004 it was still not clear how the NPfIT would deal with the integration of GP IT into national systems.

Thus, General Practice represented another arena in which a tension between the pervasive requirements of a national IT programme, designed to join up healthcare information (and potentially include social care information) and the entrenched and specific processes, needs and practices of local organisations and the communities they served, was played out. For ECR to succeed the NPfIT was likely to not only need to engage and stimulate individual welfare organisations and partnerships and access patient data but also to dispose of or modify existing electronic or paper-based record systems in favour of a national system. Evidence suggests that this balance represented a substantial challenge to the objectives of ECR and the NPfIT as a whole.

## 5.7 CONCLUSIONS

Particularly since the *Modernising Government* white paper, Cabinet Office organisations such as the OeE had promoted an approach to e-government that reasoned that new ICTs could be used to join up public service delivery, thus improving the experience of citizens. As with the arena of criminal justice, broadly it can be observed that welfare policymakers had adopted this approach; the key component of the NPfIT, particularly with the ECR facet, was that NHS organisations should be able to share patient and other data through national electronic infrastructures, to provide a more coordinated, efficient and effective service. Similarly, although it was more difficult to see a clear and consistent commitment, this approach to e-government had also been applied to linking health and social care operations through a shared electronic record.

As with criminal justice, the welfare arena had had a long tradition of partnership and joint working across organisations. In part, this was crystallised in the paper-based sharing mechanism intrinsic to the 'Lloyd-George' envelope system in General Practice. However, generally the idea of national electronic records was borne out of the inadequacy of paper based data sharing mechanisms and the fragmented nature of patient information systems in NHS organisations. It was reasoned that a shared electronic record would help the NHS join up operations around the patient through, for instance, specific health episodes. For instance a serious accident might have taken a patient through emergency ambulance responses, a hospital stay, occupational therapy, hospital outpatient visits, physiotherapy, pharmacy services and follow up GP contact. There were obvious benefits for joined up, seamless care if a single patient record could be accessed and maintained during and beyond this episode. Furthermore, policymakers and observers alike had long recognised that, in many cases, citizen welfare needs would not sit within the confines of either health or social care, but would traverse the two spheres. As a result, there had been a long standing emphasis on joint working across the 'Berlin Wall'; considering this emphasis it was unsurprising that eventually plans for a joint electronic record for use across the two spheres would be acted upon. New technological solutions had been applied to old policy challenges under the aegis of e-government.

In both the criminal justice system and welfare services, client information was the lifeblood of some key operations; whether pertaining to offenders, victims, patients or social care cases, this data was crucial to effective delivery. However, in both arenas information had been kept within distinct domains, in a manner that reflected the discrete nature of the processes and procedures of the institutions which generated, acted upon and stored this data. In the 1980s, under the CCCJS, central policymakers attempted to improve coordination across institutionally distinct arms of the criminal justice system, in part by increasing information flows and interoperability across organisational boundaries. The CCCJS and subsequent initiatives met with difficulties and by 2004 the renewed efforts to modernise criminal justice IT and share case management files more effectively between organisations were well underway, as discussed in the previous

chapter. Despite activities under the NHS Computer Branch, Körner reports and the NHSnet initiative in previous decades, the NPfIT of 2002, with ECR at its heart, was arguably the first attempt to instil comparable levels of informational coordination in the welfare sphere.

However, in comparison to the CCCJS, NPfIT could also be considered a significant step further; with ECR, the Programme carried in it the intention to provide a single national electronic record for every NHS patient, whereas CCCJS rested more on establishing technical standards for data sharing at least up to the mid-1990s (Bellamy/Taylor, 1996, p6-7). Nonetheless, in both cases highly institutionalised arrangements, replete with many distinct information domains reflected in information systems, proved to be challenging. As Bellamy and Taylor noted, the different institutions involved in the CCCJS contained actors, politicians, managers, practitioners, consultants and IT suppliers, with different assumptions and needs regarding the specifications of new IT systems (*ibid.*, p13). Arguably, evidence comparable to this observation was found in this case study. A useful illustrative example was, particularly across the health and social care divide, the argument that institutional and professional differences were reflected as deeply as the coding and semantics of patient data recording processes. Equally, Bellamy and Taylor found that differing 'semantic sensibilities' across criminal justice professions provided a barrier to meaningful data sharing (*ibid.*, p8).

ECR was, however, much less comparable with the format of Crime Mapping itself; unlike the national electronic record programme, Crime Mapping tools tended to be used in the decentralised local partnership environments of CDRPs. In contrast, ECR was a programme embarked upon from a central position, with the intent to gain the participation in a single infrastructure of myriad NHS and social care organisations across England. In this sense, NPfIT and ECR appeared closer to the philosophies behind the central e-government strategy as promoted and developed by the OeE. Just as the OeE put resources into providing central infrastructures, standards and hubs such as the GSI, Government Gateway, UK Online portal, DotP, e-GIF and the pan-government toolbar to help realise joined up e-government, the Department of Health opted to pursue a national

solution for welfare organisations to feed into. Conversely, although Crime Mapping worked from standardised Ordnance Survey base maps and potentially utilised (e-GIF compliant) BS7666 address standards, the tool was used in a different model to ECR.

Although ECR appeared more aligned with the activities of the OeE than Crime Mapping and there was an acknowledgement amongst policymakers that NPfIT had parallels with the central e-government strategy (*interview – 21*), the OeE was ostensibly not heavily involved in the Programme. It was the Department of Health that, understandably, was at the helm with the task of implementing the enormous NPfIT, in conjunction with suppliers. Although general stimulation and discussions were likely to have occurred at a high level between the OeE and NPfIT policymakers, interviewees felt that there was little in terms of guidance that the Office could offer with ECR (*interview – 19,20*). Still, behind the scenes the NPfIT and the ECR had at their heart a commitment to use e-GIF standards, launched by the OeE, as the technical basis for interoperability (DOH,2003c). Away from the NPfIT, the Department of Health was in early 2004 the only government organisation to join the OeE Delivering on the Promise (DotP) website management service (OeE,2004).

Despite some attempts to coordinate and standardise CDRP activities, for instance under the PBM, the dominant application for Crime Mapping was within discrete partnerships, where bilateral data sharing fulfilled local needs but did not usually feed into other Crime Mapping initiatives or standardised central hubs, infrastructures or repositories. The ECR programme aimed to provide a national infrastructure for patient data to be deposited into. Within the NPfIT model, there was apparently no room for local initiatives such as those found in Bristol, Birmingham, Bradford and elsewhere.

Because of the specific requirements of welfare, as judged by Department of Health (Drury/Pattison 2003,p80; Hansard,2002/03b,col. 416 (W); Arnott,2003b), the decision was made to take the high-investment route towards a national infrastructure for electronic records, as discussed in section 5.6. This decision, although unprecedented and unanimously identified as difficult to implement, is certainly not seen as unequivocally

erroneous by this thesis. High levels of investment, new ICT products and an apparent uncompromising approach to contractual negotiations arguably provided the NPfIT with a greater chance of success. Furthermore, although there was some confusion, the specification document did suggest the approach to incorporating social care information into ECR would not necessarily be monolithic; for some patients practitioners from both spheres would contribute to a single record whilst in other cases occasional communications would suffice (DOH,2003a,p372-374). However, it was still the case that evidence suggested that the welfare practitioner community felt ostracised as a result of the opaqueness associated with the first years of the Programme (EHI,2003b; 2000e; *interview – 19*). This ostracism was particularly felt in the social care community, which sensed a systemic failure to facilitate participation of its sphere in the NPfIT (EHI,2004a; *interview – 27*).

As seen in Chapter Four, the virtue of the small-scale format of many Crime Mapping initiatives was that it allowed protagonists to meet and react to the idiosyncratic informational requirements and traits of individual partners, and to focus on building trust and understanding between groups. In Crime Mapping, joining up, although a clear part of the objectives, was positioned modestly, with the technology seemingly playing a secondary role in comparison to the emphasis on people and processes. In this sense, Crime Mapping tools appeared to be positioned to help CDRPs go with the institutional grain of the partners it engaged with. These partners were not asked to change operations or informational procedures, at least not in a radical sense, to participate in Crime Mapping. As a result, some of the perceived weaknesses and incompatibilities in data collection, storage and other processes could remain unchallenged beyond the ‘cleaning’ functions of middleware technology. Indications from progress with the PBM for instance were that the development any kind of national Crime Mapping system was unlikely and potentially unnecessary.

Conversely, the NPfIT and ECR had been designed, in a sense, to go against the institutional grain of the government organisations and professional communities involved; to challenge, reform and fundamentally improve welfare services to meet the

needs of individual patients, using new ICT applications. As a result of the national infrastructure approach, the Department of Health had a prominent role in the development and implementation of the electronic record, whereas the Home Office appeared to largely have a more distant role with Crime Mapping uses. The remit of the Department of Health included cancelling smaller projects that were deemed to be duplicating the work of the NPfIT. These smaller projects were likely to be closer to the dominant Crime Mapping model, where protagonists on the ground reacted to the specific needs and idiosyncrasies of participating organisations. Whilst undoubtedly local level electronic care records initiatives could have facilitated joining up on a small scale, they would not have provided the benefits of a national system desired by Department of Health policymakers, where patients could experience seamless deliver regardless of their location.

The Department of Health and health ministers had chosen a different path, still being trodden by the summer of 2004, which aimed to achieve joining up on a grander scale than implied in the application of Crime Mapping tools, particularly within the health sphere. Whilst this thesis does not conclude that the objectives of the NPfIT and ECR will not be reached, it does point to the complexity of historic institutional factors that made coordinated information flows and service delivery within and across the two spheres problematic.

## **CHAPTER SIX: CONCLUSION**

### **6.1 INTRODUCTION**

As stated in Chapter One, the broad objective of the thesis was to investigate the role of e-government in facilitating joined up government in the UK, as articulated in central strategy and embodied in particular in the work of the Office of the e-Envoy. Although business and management literature recognised and promoted ICT-mediated seamless delivery as the zenith of e-government in its 'stages models' (e.g. Accenture,2002; Deloitte and Touche,2000), there was a lack of critical assessment of this notion in academic public administration literature; considerations of joined up government often failed to address the role of e-government. This thesis bridges the gap, building from the work of a vanguard of scholars who discussed the role of institutions in the adoption of ICT in public service delivery. In particular, the historical depth offered in the thesis chapters demonstrates the complex evolution of ICT applications within an intricate institutional landscape; to be fully understood, the role of e-government in achieving joined up government has to be placed within this context.

This chapter draws together the findings of Chapters Two, Three, Four and Five to help answer the question of how e-government contributed to joined up government.

In Chapter Two, it was found that, whilst the automation perspective remained dominant during the post-war decades as computers were installed to satisfy departmental objectives, a lesser voice more attuned to coordination and informatization had existed since the 1950s. To an extent this notion led to the creation of the CCTA, an agency that attempted to instil coordination in the procurement and use of IT systems. Although the work of the CCTA appeared not to be wholly successful and gradually its prominence and power was whittled away, the notions of coordination and informatization were enshrined within it. However, the institutional configuration of government appeared unconducive to interdepartmental IT coordination (Margetts,1996,p74); one factor was that departments often chose to manage IT operations without the impetus of an external body (Margetts,1999,p62-



63; CCTA,1984,p15), much to the dismay of some CCTA personnel (*personal correspondence – 6*). Whilst departments preferred not or were unable to collaborate much with IT issues, whether it be procurement, joint systems, data sharing or other initiatives, the centre of government had struggled to reach desired levels of general coordination (Macintosh,1977,p546; Hennessy,1989,p301; Greenwood et al,2002,p64; Hogwood/Peters,1985,p40). Although in some ways the managerialist agenda that emerged in the 1980s highlighted the potential of information technologies, it also increased the complexity of public service delivery, for instance through the creation of executive agencies and the introduction of new private sector actors. New demarcations, organisations, networks, information domains and relationships developed, which some scholars sought to understand under the ‘governance’ concept. Despite these complications, the notion of IT coordination remained and in the late 1990s was revitalised through the creation of the CITU and the emergence of the e-government agenda, just as the internet took hold in the UK.

In Chapter Three, it was demonstrated that the enduring notions of coordination and informatization were subsumed into the e-government agenda, through its alignment with the notion of joined up government. As expressed in *government.direct*, *Modernising Government* and the work of the OeE, new ICTs and particularly the internet were applied to delivering public services seamlessly across government organisations. Considering the potential improvement in the quality and efficiency of service delivery and the perceived impact of new ICTs around the end of the last millennium in business and society at large, through creating and enabling new information flows (Castells,1996; 2001), this notion was both rational and legitimate. The OeE strived during the early years of the new millennium to realise the effective exploitation of new ICTs through e-government, as laid down by the e-envoy and his ministerial supervisors.

As well as providing strategy, guidance, targets and direction for departments, the OeE led the development of a variety of infrastructural tools and portals. Chapter Three argues that whilst the GSI, Knowledge Network and e-GIF for instance could be considered to have had a considerable impact, many of the front office tools intended to present unified web services to citizens (the UK Online portal, Life Episodes, DotP and the pan-government toolbar) seemed less successful. Despite the

intentions of the UK Online programme to integrate government websites (OeE,2001a,p54) there was, under the OeE's own admission, considerable fragmentation; over 3000 government websites were in operation in 2003 (OeE,2003,p30), with little drawing them together.

This situation indicated that public service institutions felt primarily obligated to present online information and transactional services in their own terms and to fulfil their own requirements and those of their client group's needs rather than participating wholeheartedly in the centralised, orchestrated concept promoted from the Cabinet Office. Whilst essentially embracing the internet as an effective tool to interact with citizens and business, government organisations had in the main adopted the web to suit distinct needs and objectives rather than adhering to the concept of a single portal. In this important case, the logic that the technology should be employed to create a unified government web presence had not won out in public service institutions. Whilst the use of a central web portal may have initially aimed to mask fragmentation rather than transform and align services, the circumstances still provided useful indications of the progress with the application of the central government notion of e-government. The NAO (e.g. 1999/2000) and other audit and parliamentary bodies concurred that departments had tended to pursue their own objectives with internet-based services and criticised the management of many departmental IT projects (e.g. PAC,1999/2000a; 1999/2000b; 1999/2000c; 2001/02c).

The OeE had also intended to identify and help develop new cross-departmental e-government services (CITU,2000,p12; OeE,2002b,p46) as part of the effort to break down barriers and drive deeper joining up between the back offices of government organisations (OeE,2002b,p45). It was difficult to see this deeper incarnation of e-government having taken shape by the time the OeE was replaced by the e-Government Unit in 2004. A key mechanism for measuring departmental electronic service delivery, the overarching targets, did little to take into account or encourage joining up as they were largely applied to individual departmental operations (Walsh,2001; Naylor,2004). Furthermore, the NAO (2001/02d,p10) and other observers (Kable,2003) argued that the targets ultimately failed to take into account the users, who had not engaged with government through new ICTs to the extent

envisaged; for instance 8% of internet users claimed to have transacted with government online in 2003 (OeE,2003,p29).

Despite these apparent shortcomings, the OeE publicly adopted an optimistic approach to the progress of the e-government agenda (OeE,2000; 2001a; 2002b; 2003). Whilst many departments evidently had little involvement in some OeE activities, the language and rhetoric used by the Office suggested transformation, compulsion, inevitability and the power of new technologies in joining up. Whilst the OeE itself was never intended or able to be an omnipotent force able to compel, the annual reports for instance did at times appear to appoint irresistible powers of transformation to the technologies in question.

Although policymakers wished to take steps to ensure that the 'pendulum of decentralisation' swung back towards central steering (PAC,1999/2000a,Q2) in the e-government era, the desired levels of coordination were difficult to effect within the existing configuration. For instance, despite the stated intention to use the Treasury to encourage departments to subscribe to the DotP (OeE,2002b,p66), the tool did not appear to catch on. Whilst persuasion and advice may have been a crucial tactic in the work of the OeE, a mechanism through which this could be achieved, the e-champions network, was discontinued by central government in 2004. The positive stimulating role, vision, measures and tools offered by the OeE should not be underestimated; e-GIF may well have provided the technical basis for much departmental e-government activity and collaborations (including in criminal justice and welfare), GSI was adopted wholesale by many government organisations, whilst the overarching targets did provide important early stimulation (NAO,1999/2000a,p58) despite criticism later. Regardless of problems and challenges the government had taken advantage of the internet's capacity to reach out to citizens, providing informational and some transactional services online, yet this had largely been delivered from a fragmented, departmental footing.

This thesis does not argue that new technological innovations, which may have often carried risk with them, should not have been a feature of IT policymaking in UK government. As seen in Chapter Four, the digitisation process of base maps embarked upon by the Ordnance Survey over several decades had been riddled with doubt and

criticism yet emerged as a useful informatizing tool for public and private sector actors, including those involved in Crime Mapping. However, the argument that the central e-government strategy, promoted by Labour government ministers and embodied in the work of the OeE, had overstated the role of new information technologies in the facilitation of joined up government still had credence. This thesis points to institutional factors that acted as a foil to the perceived power attributed to ICTs in the e-government strategy.

The clear emphasis on cross-departmental joining up in the e-government strategy was bound to create challenges as it implied changes to the practices and processes of government organisations, whether through requiring departments to use the same technical infrastructures, to share data, develop web services in partnership, contribute to central portals, adhere to technical standards and so on. Also, under the government's own admission, legacy IT systems had not been implemented with compatibility in mind during the post-war decades (Cabinet Office, 1998/99, p46). Furthermore, as demonstrated in Chapter Two, the experiences of the CCTA, albeit under different circumstances, attested to long standing difficulties in encouraging orchestration across departments in a number of IT policy related issues. Thus, it was not a surprise that Chapter Three concludes that the activities of the OeE were a 'curate's egg'; whilst some infrastructural tools appeared to become popular with departments, others were under used or disappeared whilst many departments continued to adopt internet and other new technologies to suit discrete objectives.

Thus, through focusing on the issue of ICT-mediated joining up, Chapters Two and Three clearly demonstrate the continuity of the notion of coordination in the post-war era, made more visible through the e-government and wider *Modernising Government* agenda from 1999. However, the findings of the two chapters also allow the thesis to speculate that, despite the seemingly powerful logic of joined up delivery through electronic tools, institutional factors tended to lead to ambiguous outcomes in the implementation of central IT policy across government. The findings infer that, in accordance with previous scholarly work (Bellamy/Taylor, 1998a, p168-170; Margetts, 1999, p178-179), institutions were likely to mould and shape information technology towards their own narrow needs and objectives, with variable success. Whereas central IT policy, particularly in the e-government era, placed emphasis on

high levels of informatization, coordination and joining up, the institutions tasked with service delivery would find it difficult to emulate this notion to the letter, at least in the short term.

The indications were that the e-Government Unit, which replaced the OeE in spring 2004, represented a change of approach in the e-government strategy, although the objective was still to attain joining up. The head of the new unit stated that a more consensual approach, seeking departmental buy in, would be encouraged (Arnott,2004b; Watmore,2004). In discussing the need to avoid 'central diktats' in e-government (Arnott,2004b), Watmore inferred that he felt that there had been a tendency for the OeE to be overbearing in putting forward measures, targets and tools to departments; a similar criticism was levelled at the CCTA in the 1980s (CCTA,1984,p15; *personal correspondence* – 6). Arguably, the 'pendulum of decentralisation' (PAC,1999/2000a,Q2) had swung back towards departments under the e-Government Unit. Some interviewees felt that the change in approach was a reflection of institutional realities and the difficulties the centre had in steering policy across government (*interview* – 4,5). Despite some successes under the OeE, the shift could be taken as an acknowledgement that joining up through e-government could make further progress if developed more on departmental terms. The role of the e-Government Unit was more explicitly focused on providing support for departments to develop their own agenda for e-government (Arnott,2004b); in a sense this appeared more likely to go with the institutional grain rather than against it.

#### *Lessons from Case Study One: Taking into account institutions in e-government*

Whilst Chapters Two and Three provided support for the broad institutionalist arguments put forward to explain how the premise of e-government would be played out in practice, it is Chapters Four and Five that deliver substantial evidence and allow refinement of this argument. This conclusion will draw out the key points of these case study chapters before moving on to offer more general analysis.

Chapter Four demonstrates that, on the surface, the criminal justice system as a whole had, through the CJIT programme for instance, adopted the notions of the *Modernising Government* agenda in terms of an emphasis on inter-organisational electronic information flows and other forms of ICT-mediated coordination. The

policy history of the Chapter indicates however that, particularly in terms of crime prevention, an emphasis on multi-agency approaches had existed for several decades before the emergence of the e-government agenda. Not only that, but the CCCJS had been an attempt to bring information technology to bear on coordination between criminal justice agencies, particularly with case management, from the mid-1980s. Thus, the Chapter illustrates the context from which the criminal justice system embraced the notions underpinning the e-government agenda. Furthermore, considering the evidence amassed (e.g. *interview – 13*; Sutton,1996; Liddle/Gelsthorpe,1994a; 1994b; Crawford,1997; HMIC,1998; Sampson et al,1998; Bellamy/Taylor,1996), the Chapter demonstrates the apparent barriers to forms of coordination around criminal justice or crime prevention issues. John Suffolk, director general of the CJIT in 2004, was aware of the difficulties in bringing the different institutions of the criminal justice system together through information technology (Arnott,2004c).

These observations provide a useful backcloth to the specifics of Crime Mapping, despite activities largely being confined to local settings away from the high-level policies surrounding the CJIT. The full picture indicates that the emergence of Crime Mapping was the result of a long term and complex interplay of large government institutions, parliamentary committees, GIS software providers, small government units, legislation, market sensibilities, political patterns and an emphasis on multi-agency crime prevention and the geography of crime borne out of trends in criminology. This eventual emergence rested more on the interplay between the actors, organisations and institutions involved than the irresistible force of the technologies. Interviewees tended to play down the role of ICTs in successful Crime Mapping.

Certainly, ICTs and digital data sets were still very much an integral part of Crime Mapping but were often enmeshed in the organisations and institutions involved over time. For instance, base maps provided by the Ordnance Survey were produced as a result of a tortuous thirty-year digitization process but only became an accessible tool for many public sector organisations after the 2003 pan-government agreement. In part, Crime Mapping developed as a result of affordable GIS software (Chainey,2001), which most CDRPs had access to. Yet CDRPs also had instilled

within in them an interest in the geography of crime and the benefits of a partnership approach to crime prevention, which arguably led to a propensity to use GIS technology in multi-agency Crime Mapping. The benefits of the historical elements of the Chapter are that the evolution of the use of technologies in Crime Mapping is demonstrated to a full extent; in this case, a more comprehensive understanding of the role of e-government in joining up, which takes into account the institutional complexities, is delivered.

The deeper analysis offered also uncovered how the day to day modus operandi of CDRP Crime Mapping, whilst very much within the realms of ICT-mediated joined up government, included a strong emphasis on relationships, trust building and acceptance of different data formats. This approach could be taken as an acknowledgement of not only the array of factors that led to the creation of Crime Mapping initiatives but also of the institutional complexity of the multi-agency environment that stretched beyond the criminal justice system to local authorities, the NHS and other spheres. Protagonists were willing to go with the institutional grain in their approach to joining up; to accept variance in processes and data rather than, for instance attempting to align partner organisations with a Crime Mapping technical infrastructure. One element of the technology was employed in particular to facilitate this approach; middleware helped to deal with the inconsistencies in data recording across partners (*interview – 11, 13*).

It can certainly be argued that this picture contrasted somewhat with incarnations of e-government which placed emphasis on the creation of national infrastructures, standards or portals that government organisations were asked to channel activity through a central point. Although there was clear merit in both approaches under appropriate conditions and it is by no means argued that the two could not co-exist, the differences between them provide insights into the question of how ICTs facilitated joining up in e-government practices.

Whilst the use of standardised Ordnance Survey data, interest in national land, property and street repositories, and the application of BS7666 demonstrated some propensity towards infrastructural, standardised and systemic tools in Crime Mapping, the crucial element of gathering partner data for geo-coded analysis took a more ad

hoc and organic format. Still, with this crucial element aimed at harvesting insights into crime detection and prevention through the geo-coding of previously uncomparated data from a variety of organisations, Crime Mapping had a strong informatizing and joining up thrust. Yet, despite some involvement in technical geographical standards, the OeE appeared distant from the CDRP Crime Mapping community. Although, with the back office focus of Crime Mapping, it was unlikely that the citizen-focused OeE tools (e.g. UK online portal) would be of any relevance, it was notable that e-GIF was evidently not in use in many CDRP partner organisations to facilitate data sharing up to 2004.

The Home Office, the department ultimately responsible for CDRPs, had in other service delivery areas instigated a national technological infrastructure approach under the aegis of e-government; projects under the CJIT were aimed to provide joined up case management in the criminal justice system. For Crime Mapping, there had also been attempts to provide some form of standardisation to CDRP activities, by creating central data repositories and other tools for use across partnerships, under the PBM (Radburn,2002,p5; *interview – 11*). However, this attempt was scaled back in 2004, with the Home Office appearing content for CDRPs to continue to develop Crime Mapping tools on a local basis, although the relative autonomy of the partnerships may have left the Department with little choice in this matter.

#### *Lessons from Case Study Two: Taking into account institutions in e-government*

Similarly to the policy history findings of Chapter Four, Chapter Five demonstrated that the adoption of the notions underpinning the e-government agenda, most clearly under NPfIT, should be considered in light of a long term concern for coordination and partnerships, particularly to help bridge the ‘Berlin Wall’ between health and social care (e.g. Hill,1993,p102; Booth,1981a,p23; DOH,1990c; 1998c; Health Committee,1999). However, unlike the criminal justice system with the CCCJS, there had previously been no concerted central effort to orchestrate information flows across the NHS and out to social care organisations using ICTs, with the exception of NHSnet and other smaller initiatives. Nonetheless, comparable institutional factors, which could provide profound barriers to the seamless provision of public services across organisations and were reflected in IT systems, were to be found in both criminal justice and welfare spheres.



The ECR programme, central to the wider NPfIT, was however a significant step further than CCCJS and offered a fundamentally different incarnation of e-government to the key elements of the dominant format for Crime Mapping. By planning to provide a single national electronic record for every NHS patient, which could include social care information, ECR appeared closer to the activities and underlying rhetoric of the OeE, as manifested in infrastructural tools. Whilst ECR was geared specifically to join up welfare patient data through a single system, OeE tools were more generic, for instance enabling online transactional services at a single point; nonetheless, there were similarities in the offering of technological infrastructures in both. The OeE itself was not, however, ostensibly directly involved heavily in NPfIT, although it was significant that e-GIF formed the technical basis for interoperability in the ECR programme.

Although high risk, the national, centralised approach had clear and rational motives (Drury/Pattison 2003,p80; Hansard,2002/03b,col. 416 (W); Arnott,2003b) and up to summer 2004 the ECR was by no means considered to be an unambiguous failure. Yet, it was the case that some local electronic health or welfare patient information initiatives had been cancelled by the Department of Health, whilst many practitioners, particularly from the social care sphere, felt ostracised and badly treated as a result of the ECR programme. Some policy sources did appear to suggest that ECR would not incorporate social care information in an all-encompassing, monolithic sense, and flexibility was to be retained depending on the needs of the patient (DOH,2003a,p372-274). Nonetheless, ECR was seen as a threat and disruption to many of the existing professional and administrative informational practices across welfare; in a sense it went against the institutional grain.

It is not argued that large-scale systems such as ECR, where the compliance of many organisations was required, intrinsically lost the close quarter trust and relationship building virtues that Crime Mapping protagonists valued. However, the indications from some interviewees (e.g. *interview – 19,27*), surveys and other evidence (see eGov Monitor,2004; EHI,2003e; 2003b; 2004c) suggested that this element had been somewhat overlooked. Clearly, NPfIT policymakers had taken hard decisions that would challenge welfare organisations, practitioners and administrators. In part, the

sheer scale and complexity of the welfare institutional environment (as reflected in fragmented patient databases) and in particular the disjoint between health and social care practices made it necessary for the Department of Health to take a strong lead, once the decision had been made to implement national electronic records. Whilst consultation and dialogue was likely to be occurring at some levels, acrimony and unrest were distinctly apparent, particularly around flashpoints such as the incumbent General Practice IT suppliers and the inclusion of social care information in the programme.

Arguably, levels of acerbity should have been expected with any large-scale reforms likely to affect and challenge a high volume of government organisations, regardless of the prominence of IT. However, the thesis speculates that part of the perceived problem may have been that, under the general aegis of e-government, the Department of Health's policymakers and ministers had overstated the ability of new ICTs to drive the desired changes for a joined up electronic patient records system, within the fragmented institutional landscape found in welfare. Human and organisational factors, pointing to the need to engage and involve welfare service delivery organisations in the design and implementation of ECR, may have been undermined somewhat as a result. Something similar had been seen before when, in the decade before the arrival of NPfIT, the Department built the NHSnet, a secure email and intranet system for use across the NHS (Cross,2001); interviewees and other sources argued, with the benefit of hindsight, that the system was cumbersome, under used and unnecessary (*interview – 19,20*; Protti,1999; Keen,1994a). Part of this perceived failure may have been the result of a lack of consultation and collaboration with health practitioner communities; policymakers had confidence in the technology to provide the desired facility without the need to heavily involve those who would use the system (*interview - 19,20*).

In the e-government era, policymakers were certainly confident that the movement towards electronic records was wise (NHSIA,1998,para. 2.4) whilst simultaneously acknowledging challenges and barriers. However, as noted in Chapter Five, some interviewees felt that fundamental questions were left unanswered in the build up to the ECR programme. This point was drawn out in particular during interviewee discussions of a joint electronic health and social care record. Although some

policymakers, particularly Jeremy Thorp, had advocated a fully integrated welfare record system (Thorp,2002,p6; EHI,2002b), some interviewees wondered if this was realistic, not least due to deep professional and institutional differences as reflected in the data recording, coding and semantics of information systems across the divide (*interview – 19,23,27*).

For some time policy documents were not clear on the exact format for ECR. Yet, in 2003 the ECR specification document did confirm a commitment to some interfaces with social care information but universal, fully integrated records did not appear to be high on the agenda (DOH,2003a,p373-74). This apparent dilution of the original vision for unified electronic records may have been due to a growing realisation that, even if a shared infrastructure was successfully created, it was not assured that practitioners across the divide would be willing or able to routinely share data and use a unified patient information source effectively. Essentially, whilst the Department of Health had put significant resources into the creation of a national electronic care record system, interviewees had doubts that joined up welfare service delivery would germinate from it. Arguably however, the apparent dilution of the ECR concept, which implied different levels of data sharing depending on the needs of the patient, was a positive recognition of the institutional realities of the welfare sector (*interview – 27*). The change in emphasis suggested that, particularly across the health and social care divide, ECR could be positioned to facilitate and support patient data sharing should the need arise, rather than driving it through a monolithic electronic records system. Still, particularly within health, ECR was very much positioned as a national infrastructure, set to challenge practitioner communities and reconfigure the historical demarcations between patient information domains. There was evidently no place for smaller, local electronic records projects under the Department of Health's concept of ECR.

The approach taken with electronic records was by no means inherently erroneous and policymakers within the NPfIT would not have taken the decision to implement a national electronic records system lightly. New information and communication technologies did indeed offer new possibilities that, under the general policy emphasis on e-government in many parts of the public sector around the beginning of the millennium, the Department of Health had justifiably sought to exploit to facilitate

joining up. Yet the benefit of the historical elements of the case study has been to demonstrate the institutional fragmentation of welfare, which seemed to remain uncondusive to collaborative working, despite long term policy efforts to bridge the divide. Professional and organisational differences, reflected and embedded in the use of IT to record and store patient data, indicated the enormity of the task to introduce a national patient record system into this environment. The institutional landscape of welfare, as depicted in the case study, should be juxtaposed with the powers that new technologies could offer, to provide a better understanding of the role of e-government in facilitating joining up in this particular case.

Broadly, through focusing on the issue of ICT-mediated joining up, the case studies provide rich detail that supports the use of the institutionalist argument in facilitating understanding of how the e-government agenda was played out in practice. In doing so, the thesis provides much needed critical analysis of the central e-government strategy, analysis which acts as a foil to dominant 'stages model' perspectives that were represented in business and management literature. The evidence suggests that in the e-government era, just as previously, ICTs tended to be moulded and shaped to reflect the institutions in which they were placed. Through time, government organisations seemed unable or unwilling to participate fully in some of the various efforts to join up service operations through information technologies; the lack of progression with the ultimate objectives for government online through OeE's central portal was one of the indications that this might be set to continue in the e-government era. The point of departure between the findings of the two case studies, whereby Crime Mapping tended to follow a localised format whilst ECR was being rolled out nationally, provides a useful manifestation of different approaches taken to e-government. Both had encountered the institutional landscapes of their respective policy fields but had developed different methods to instil ICT-mediated joining up within them. Whilst ECR challenged the epistemic communities and institutions of welfare, Crime Mapping tended to go with the institutional grain.

## 6.2 RECOMMENDING A BALANCED APPROACH TO E-GOVERNMENT: THE BENEFITS OF A HISTORICAL UNDERSTANDING OF INSTITUTIONS

The thesis has investigated how e-government was positioned to facilitate joined up government in different settings; Through research into the history of government IT, the central e-government strategy and the case studies, this thesis has investigated e-government and has tested the premise that ICTs were the key enabler for joined up government. Through a rich historical analysis over a substantial period, the thesis has provided deeper understanding of progress with ICT-mediated joining up in the e-government era, which had been missing from some scholarly work. It has shown that the development of ICT applications in government has been intertwined, through a complex set of processes, with institutions. Within the criminal justice and crime prevention spheres and within the welfare arena there was, over time, a complex interplay of organisations, actors and information systems, containing within them different professional and administrative values, representing different client groups and operating with discrete legislative and procedural frameworks. Here, drawing from institutional perspectives, the thesis demonstrates that, in each case, the complex procedures, rules, routines and traditions contained within the institutions in question, developed and embedded over time, were very much in evidence. Whilst providing stability and order (March/Olsen,1984), these complex institutions meant that ICT-mediated joined up policies in public service delivery organisations were liable to meet with obstacles, adoption was unlikely to occur rapidly and outcomes would vary across institutions. The functions, status and traits of ICTs in public service institutions must be understood in these terms when researching e-government.

The thesis has built on observations from institutional perspectives on the importance of researching historical developments in institutions (Pierson,2000; Pierson/Skocpol,2002), and has brought these to bear on contemporary e-government. The thesis has demonstrated that, crucial to understanding ICT-mediated joining up in the case studies in particular is an exploration into key historical patterns, including technological developments and policy trends, which explain and contextualise e-government.

The importance in the empirical research of institutions traced through time indicates that there could be considerable benefits in public administration scholars incorporating elements of historical institutionalism into e-government research. As discussed in Chapter One, the power of institutions had certainly been recognised as a

crucial factor in understanding the relationship between information technology and government by key scholars (e.g. Bellamy/Taylor,1998a,p157-158,168-170), just as it had been accepted as important in wider political science (March/Olsen,1984; Hall/Taylor,1996). Yet the further research carried out for this thesis demonstrates in particular the benefits of delving deeper into historical institutional developments. This approach, in keeping with scholarly work that explicitly drew from historical institutionalism (Pierson/Skocpol,2002,p706), has been able to look at the way institutions have related to one another over time; this was particularly apt for the study of joining up. For instance, the description of the relationship over time between health and social care spheres, as well as the long-standing policy emphasis on creating partnerships and commonalities between them, provided useful insight into the difficulties in creating a useable joint electronic patient record, under the auspices of e-government.

Not only has the thesis been able to intimate that institutions had not been susceptible to change but also that the development of ICT systems, reflecting the institutions in which they were bound, could constrain innovation and joining up. Margetts noted that, in the case of computerisation in the Benefits Agency in the 1990s, the existing computer systems inhibited the movement towards the 'whole person' concept (1999,p179). Similarly, the thesis shows that information systems and recording practices discretely constructed in, for instance GP surgeries, hospitals and police forces, provided challenges to the objectives for ECR and Crime Mapping. To an extent, to borrow from another strand of historical institutionalist thinking (e.g. Hacker,1998; Pierson,2000), the information technology itself contributed to 'path dependence'; institutional traits and boundaries were crystallised in information systems, which made a change of path, in this case towards ICT-mediated joining up, difficult to effect. These insights also help develop the debate between technological determinism and the social shaping of technology; as Bellamy and Taylor effectively argue, whilst ICTs were not shaped at will by government organisations, their influence must be understood in terms of specific institutional settings, where change tends to be incremental and evolutionary (1998a,p152). The historical depth offered by the thesis demonstrates how this rings true in the case of e-government, regardless of the power attributed to new ICTs.

The thesis has demonstrated that 'history matters' in e-government; understanding of long term institutional developments brings much needed critical insight to juxtapose with the dominant 'stages model' and general assumptions about the power of new technologies. The use of notions of historical institutionalism does not lead to arguments that significant change cannot happen in well established institutions (Orren/Showronek,1994; Thelen/Steinmo,1992), rather it is more likely to occur through the convergence of a number of factors, beyond the influences of technology. This point chimes well with the findings of the thesis; for instance the use of Crime Mapping in multi-agency environments was likely to have been the result of a variety of factors that shaped the institutions in question (e.g. patterns in criminology, base map licensing, legislation etc) rather than the power of ICTs alone.

Certainly, the historical approach to e-government research would benefit from further theoretical and empirical explorations. In particular, it would be useful to conduct additional case study research, for instance in alternative service delivery realms such as transport, local government, taxation, education and other areas of health, social care and criminal justice, to further assess the role of e-government in joining up and the benefits or otherwise of a deep, historical appreciation of institutional factors. It is not suggested that this appreciation explains all but that it might provide an avenue of focus for scholarly attention to e-government, to respond to the dominant 'stages model'. Although this model did have some sense of history in that it detailed a modernist progression of e-government towards seamless delivery, this was largely restricted to a shorter period of development through internet related technologies, and thus was devoid of a fuller sense of the historical relationship between ICTs and government institutions.

In terms of this thesis, armed with these insights into the intertwining of ICTs and institutions across service delivery organisations, it can be seen that e-government, which carried with it in some incarnations the imperative to adopt new ICT applications and processes to achieve joining up on a grand scale, would not be enacted easily in many cases. Despite the perceived power of the internet and other new ICTs, government institutions and organisations were able to resist, or objected to alignment with, for instance, some central infrastructural tools and portals. Arguably, smaller, localised initiatives, such as those involving Crime Mapping tools,

had shown that, by engaging with partner organisations, it was possible to achieve some joining up objectives by going with the institutional grain.

Still, there were clear and significant benefits in approaches that sought to develop large-scale electronic infrastructural tools and systems to bring together the operations of government organisations. Yet, there was a danger that the requirements and traits of complex institutions could be underplayed in this format, whereas smaller, local-level initiatives such as those observed in the first case study were seen to embrace institutional idiosyncrasies. Whilst this thesis does not advise that policymakers had a stark binary choice between localised e-government projects and high investment, national infrastructure endeavours such as ECR, it does recommend that close attention be paid to what is appropriate and feasible within the context of the institutional environments in question, when designing e-government applications.

It is not the intention to suggest that ambitious and innovative ICT-mediated reforms should never have been embarked upon or that e-government projects and programmes that placed a great emphasis on technology were doomed to failure. Nonetheless, whilst ICTs had long been associated with the transformation of service delivery, the possibility of changes occurring incrementally and organically should be recognised alongside the appliance of technology in attempting more visible and immediate transformations.

This argument does not mean to imply that existing institutions, and the norms, routines and rules that guide and define them, do not need to be confronted, particularly if they obstruct efficient and effective public services. Yet, whilst the procedures, operations and cultures of the institutions of government did need to be challenged and modified as part of the ongoing mission to improve service delivery, electronic tools were unlikely to be able to drive change without many other measures being put in place. Still, the small-scale, localised approaches as seen with Crime Mapping were less likely to capture some of the perceived benefits of other incarnations of e-government; for instance, inadequate data collection by CDRP partner organisations was reported by some interviewees (*interview – 13*). This may have been set to continue, in the absence of a motive to improve systems and procedures. Conversely, one effect of the ECR programme may have been to improve



and standardise the collection of patient data across welfare. Whilst providing little challenge to the processes of partner organisations was lauded as a notable asset by Crime Mapping protagonists, this may also have been a long term drawback. The thesis argues that, although risks and benefits could be associated with each, there were likely to be many routes to ICT-mediated joined up government, as a reflection of the multitude of institutions found in service delivery organisations.

### *Final Remarks: The future of e-government in the UK*

These findings on the role of ICTs in facilitating joining up do help the thesis provide some consideration into the future of e-government.

Up to 2004, it had been observed that the OeE had not ostensibly been able to instigate the holistic and deep levels of back office joining up that it had alluded to (e.g. OeE,2002b,p45-46), despite some notable successes. The case studies provide some allusions to the engrained levels of institutional complexity in service delivery areas, indicating the difficulties the OeE would have had in bringing multiple government organisations and services together into a single, seamless model. Commensurately, the OeE had not heavily involved itself in the main thrusts of infrastructural e-government in welfare and criminal justice (NPfIT and CJIT), which were led by the central departments concerned.

As an acknowledgement of this landscape, there was a shift towards a departmental model for e-government as the OeE wound down; one official encapsulated the feeling with 'the best and most realistic thing that we can do is provide departments with the guidance to work best within themselves' (*interview – 8*). Early indications were that, building on the important stimulation the OeE had injected, the e-Government Unit was set to provide a balanced approach, which juxtaposed the power of ICTs with the power of government institutions. The approach was that government departments could collaborate to forge joining up through e-government, where appropriate using central infrastructural tools such as the Government Gateway, Directgov or common technical standards, and continue to develop their own specialized uses of ICTs. The OGC was set to continue to provide procurement and project management support, whilst audit and parliamentary bodies would bring government organisations to account for investments made. Although evidence from

the thesis suggests that the full breadth of government online may never be offered solely through a single portal, the consensual approach may have also helped draw together some web services, if departments saw the need to collaborate.

Although the centre of government had attempted to bring the 'pendulum of decentralisation' back towards central steering, the reality was that departments had taken the lead with much electronic service delivery during the OeE era; although some of the OeE infrastructural tools (e.g. GSI, e-GIF) were utilised, the overarching 100% target was taken on board and both departments contributed something to the central web portal, the Home Office and Department of Health were for instance able to steer the more visible strands of e-government within their own domains (i.e. NPfIT and CJIT) with relative autonomy, although this was no guarantee of success.

Arguably then, little had changed in the dynamics between the centre of government and departments in the e-government era and, under the e-Government Unit, this had seemed set to continue, but arguably with a new consensual emphasis. Despite the alleged zeal with which the OeE and ministerial figures had attempted to disseminate strategies, targets and infrastructural tools, which according to some interviewees exposed an overemphasis on the power of new information technologies, departments had largely driven e-government just as they had taken the lead with IT in previous decades. Historically, the CCTA struggled to instil coordination on its own terms and, in the e-government era, the OeE had to an extent experienced a similar situation, despite the perceived qualities offered by new technologies.

Although the OeE was never orientated towards wresting huge amounts of power away from departments, and guidance and advice had always been an important part of the intentions of the Office, some of the rhetoric, tools and measures meted out had suggested that closer alignment between service delivery spheres was expected to have developed under e-government. In this sense, the ambitious mission that the OeE was charged with, to instil ICT-mediated joining up, had not been realised although there were some successes.

Perhaps then, central organisations such as the OeE and e-Government Unit were best suited to concentrate on providing infrastructural tools and standards that departments

could tailor to their own needs if required. Whilst persuasive tactics could be employed, ultimately it appeared that departments would not use those tools which did not offer the desired capabilities or features, in accordance with the institutional landscape within which they operated. Thus, whilst for instance DotP appeared up to 2004 to have limited value to some departments, the GSI had merit for many government organisations and was widely used, particularly for email (Coates,2004). The change of approach under the e-Government Unit, whereby forums would be provided for senior departmental players to come to their own bilateral or multilateral decisions regarding where and how ICT-mediated joining up could occur, may have been the most prudent tactic considering the evidence presented in the thesis. Whilst central government clearly had an ongoing role in developing strategies and tools to encourage joining up where appropriate, it was more likely that useful impetus would be generated if the perceived power of new ICTs was not used as a starting point. The shift under the e-Government Unit could have represented a new level of maturity in this, where ICTs were not viewed as ‘magic wonder dust’ to bring forth joining up (*interview – 1*), but as a facilitator in wider processes of service delivery.

However, although a consensual departmental model may have been a welcome ingredient to e-government, as the case studies demonstrate it was not that the Department of Health or Home Office were able to lead e-government within their own domains with total command and control. The ECR programme was met with significant opposition from the practitioner communities and networks involved whilst the apparent scaling back of the PBM indicated that Crime Mapping was to be left to the jurisdiction of individual CDRPs, despite the desire to provide some levels of standardisation by some Home Office officials. The case studies demonstrate that, within the domains of the lead departments involved, there was still institutional fragmentation across and within welfare and criminal justice communities and organisations, as reflected in differing information systems.

Nonetheless, the Home Office and Department of Health would arguably still have appeared best placed to lead and oversee e-government activity within their domains, choosing whether to reach out to other departments, where and when to implement national systems or, if appropriate, permit regional, local or organisational autonomy with ICT-mediated operations. The e-Government Unit, along with other central

organisations such as the OGC, could also contribute to a mature and flexible approach to e-government, for instance by offering guidance and tools in appropriate circumstances.

Despite the new capabilities offered by the internet and other new technologies, it was not the case that e-government would sweep away all that stood before it, to produce an entirely new model for service delivery in a digital age. Instead, the institutions of government had often adapted new ICTs, in keeping with a historical pattern. As a result, e-government strategy needed to acknowledge and seek to understand service delivery institutions. In some cases, a localised approach could remain the optimal model; CDRPs had managed to bring together data from a variety of institutions and organisations within and beyond the criminal justice system (including the police, local government and health bodies) at an operational level, which might not have been possible under a national, infrastructural data sharing method. Thus, a mixed model to ICT-mediated joining up could have been the most appropriate way forward, which, although less likely to attain the more ambitious objectives of seamless, holistic service delivery, could provide significant improvements.

Up to summer 2004, evidence suggested that government had yet to fully realise the improvements that e-government could offer but there were signs that a consensual, mixed model could emerge, that may have represented a more mature approach to the exploitation of ICTs in service delivery. What this thesis has demonstrated in particular is that policymakers and scholars alike should take on a historical view of institutions in developing and designing e-government; to look to the past to inform the future.

## **ANNEX ONE - METHODOLOGICAL DETAIL**

This Annex relates full details of the methodical parameters and approaches taken, embellishing on the details given in section 1.6.

The decision was made to study e-government in the UK as the e-government strategy that emerged there in the late 1990s was high profile and accompanied by significant investment by the government. The emphasis and interest in achieving joining up through e-government amongst policymaker circles and wider modernisation plans, set against the historic functional separation of service delivery organisations, made the UK an ideal selection to carry out the research. In this thesis, a delineation is made for much of the research at 1996, the year when the government published *government.direct* just as the internet had begun to reach the attention of the public at large, although other parts of the thesis considers the post-war period before 1996. The thesis considers events up to summer 2004, when the empirical phase of the research was concluded.

The thesis utilises a case study based approach to produce empirical data to accompany historical and policy literature based research. The two case studies are found in Chapters Four and Five; scholarly and some policy context for this research is found in Chapter One, whilst conclusions, using case study and other research set against the themes discussed in the first chapter, are found in Chapter Six.

To provide a fuller understanding of the policy and institutional histories involved in government computing, the decision was made to investigate the notion of ICT-mediated joining up across time, to discover more of the historic use of computers in public service delivery and patterns of central government activity and policy on the issue. This is presented in Chapter Two, and helps contextualise e-government by depicting previous IT policies and developments, across the post-war period up to 1996. Evidence presented in the chapter shows that the perceived benefits of the coordination of computer systems across government organisations and the use of IT to help integrate service delivery had frequently been recognised during the post-war period. At several points, government units had been given the responsibility of IT coordination across departments; the story of these units is a key subject of the

chapter as it helps demonstrate the institutional factors and difficulties associated with this responsibility. Chapter Two is intended to build from the rich details offered by Bellamy, Taylor and Margetts in particular, for the experiences with the computerisation of parts of the criminal justice system and social security, by panning out to the wider patterns of IT policy through the post-war period. cursory investigations revealed that there was very little academic commentary on historical government IT activity and IT in service delivery, particularly before the late 1980s. Margetts (1999) and Bellamy and Taylor (1998a) have provided brief historical overviews whilst elsewhere, GM Lamb (1973) provided some interesting detail, whereas Jon Agar's publication (2003) provided the most comprehensive exploration into the British government's use of mechanical and electronic apparatus over the last hundred years. Other academic sources were sparse particularly for the decades immediately after the Second World War; thus Chapter Two represents original work which draws primarily from official parliamentary and government documents from the late 1940s onwards, supplemented where possible with thesis interview sources.

The approach to the collection of material for Chapter Two was primarily to conduct library searches in public sector official document volumes. Using indexes, research initially focussed on identifying early discussions on the application of computing to public service delivery in government, from the 1940s onwards. From early work in the National Physical Laboratory, documented activity burgeoned into departmental and central government as well as parliament. By following through original references but remaining attentive to new sources, the library-based research provided a substantial body of evidence on the historic landscape of government computing and enabled a focus on IT policy over the decades. The historic narrative demonstrates the parallels between the underlying objectives of e-government strategy and previous thinking about IT in service delivery. It sketches the institutional landscape within which e-government strategies, projects and tools operate, thus providing the necessary backcloth for the remainder of the thesis.

Chapter Three narrates the progress of the central e-government strategy introduced in Chapter One. It takes the publication of *government.direct* as the commencement of the e-government era in the UK, as this paper brought ICTs to the forefront of central government service delivery reform for the first time (Bellamy/Taylor,1998b,p1). The

appearance of the green paper also coincided with a time when the internet had begun to grow rapidly in terms of popularity, access and attention (see for example Anderson/Tracey,2002,p144). Chapter Three provides an exploration into the activities of the Office of the e-Envoy in particular, as this was the unit charged with steering e-government from the Cabinet Office, in parallel with previous IT policy organisations depicted in Chapter Two. As well as leading on policy issues, the Office of the e-Envoy also instigated and managed a number of internet portals and other technical infrastructure tools, which it was expected would channel joining up e-government transactions and interactions between departments and citizens. Not only then did the Office develop policies and strategies for joining up through e-government, it also created the tools and measures through which a significant portion of this was to be realised. The development of these tools will also be covered in Chapter Three. Furthermore, the chapter includes passages on the development and implementation of e-government projects and tools across government organisations, set beside the emergence of the central strategy and the endeavours of the Office of the e-Envoy, and to provide indications of the state of play in departments and service sectors that did not feature in the case studies. Building from Chapter Two, Chapter Three provides rich detail on the central e-government strategy that was constructed around *government.direct* and *Modernising Government*.

The chapter uses official and parliamentary documents, audit scrutiny and thesis interviews as well as academic commentary where possible, for instance Holliday (2001), Bellamy and Taylor (1998b), Bellamy (1999; 2002), Organ (2003), Hudson (2001) and others. Although there was overall relatively little in terms of scholarly work to help profile the Office of the e-Envoy, central steering mechanisms and the e-government strategy, library and web searches indicated a plethora of Cabinet Office, parliamentary and audit documentation, readily available online or in library collections. All Office of the e-Envoy public documents were accessed, supplemented by other Cabinet Office material (for instance that produced by the then Performance and Innovation Unit). Usefully, the National Audit Office, supported by the Public Accounts Committee and other parliamentary committees, was also taking an interest in activities associated with the e-government strategy and related departmental activity. Audit and parliamentary reports helped provide a balanced profile and added critical appraisals of the public documents available from the Cabinet Office.

Constant monitoring of departmental, audit, parliamentary and specialist press websites ensured that newly released documents could be accessed promptly. Attempts were made to gain access to any internal documents generated by the Office of the e-Envoy in particular through contact with interviewees; although little was forthcoming here the volume and balance of documentation accessed, supplemented by interview work, still provided for a comprehensive profile.

In passages that sketch the development of e-government projects in departments, audit and specialist press sources were used extensively, supplemented by official documents and thesis interviews to a lesser extent. However, as the intention in these particular passages was to provide brief accounts to support other areas of the thesis, rather than rich empirical detail, this was judged to be sufficient. Specialist press coverage during the period under question was often pre-dominantly negative towards the performance of e-government projects and initiatives. Although positive coverage was present, any bias towards sceptical press coverage in Chapter Three in particular serves to demonstrate the general perceptions of e-government performance across departments rather than an intrinsic prejudice in the thesis.

Chapters Two and Three recount the history of government IT and profile the e-government strategy; the evidence and detail in both aid the empirical case studies found in Chapters Four and Five. This thesis agrees with Yin, in that the case study approach is most appropriate when asking 'how' and 'why' research questions (2003,p5-8). Case Studies are usefully applied when needing to understand complex social phenomena, to retain a fuller understanding of real-life events and to take account of a variety of evidence (*ibid.*,p2,8). The case study approach was most appropriate to uncover the complex and long-standing processes expected with the mixture of actors, organisations, policies, technologies and institutions involved in e-government. The case studies were able to expose the way in which information flows, crucial to joining up, were enmeshed in the government organisations and institutions that surrounded them. Although essentially explorative, the case studies were augmented by the scholarly heritage charted in Chapter One, which acknowledged the power of institutions in use of ICTs in government.



Further methodological decisions needed to be made in terms of the number of case studies to be researched. A fully representative sample may have required up to ten rich case studies, covering a variety of departments and public service delivery areas, including housing, law and order, crime, benefits, tax collection, health, social services, education, transport and so on. Time, resources and the constraints of the thesis format indicated that a high number of detailed case studies could not be attempted, particularly as the objective of the thesis was to delve deeply into e-government practice. It was judged that attempting up to ten short vignette type studies would not uncover the richness and detail involved in e-government implementation within the institutional environment in question, which was so integral to the thesis objectives. With this in mind, a two case study approach was deemed to be more appropriate, giving enough scope and space to research and unpack e-government processes in the chosen fields adequately. As discussed some supplementary evidence on the applications of e-government in service areas away from those chosen for case study are found in Chapter Three.

Case study selection was based upon a number of different yet related criteria. The overarching basis for selection was that the case studies should research a field that would represent an identifiable e-government programme or tool that ostensibly appeared to embody central e-government strategy, and aimed to use ICTs in joining up in some way. By picking service delivery areas that had been seen as high profile, high budget, complex and problematic, the case studies were likely to provide important indications of the ability of e-government to facilitate joined up government. Additionally, it was seen as appropriate to search for e-government programmes or tools operating within service delivery areas that tackled problems that had been earmarked as intractable or 'wicked' issues in the past. Using the discussions found in Section 1.4 in Chapter One, the cases in question needed to involve coordination, collaboration, partnerships or integration in traditionally distinct service organisations or sectors. Through careful case study selection, the thesis was able to provide an assessment not only of e-government policy and implementation in two specific areas, but of the feasibility of the ideas underpinning central strategy enshrined in *Modernising Government* and elsewhere.

Cursory investigations indicated that, firstly Crime Mapping tools in Crime and Disorder Reduction Partnerships (CDRPs) and, secondly combined health and social care patient Electronic Care Records (ECR) were suitable candidates for research. Both Crime Mapping tools and the ECR programme were found in policy fields that were traditionally high profile, high budget and problematic; respectively crime and health and social care. Both had as their basis joining up elements, as they aimed to pull together different organisations and professions, to share data across borders and to integrate or coordinate service delivery in some way. Furthermore, the case studies were largely institutionally distinct from each other, as crime and welfare have traditionally been discrete policy fields. This was beneficial on a number of levels; firstly, it allowed the construction of distinct historical sections of the case study chapters, which portray the rich institutional complexities involved in the development of Crime Mapping techniques and the ECR programme. These complement the historical narrative of government IT policy found in Chapter Two, and help understanding of the deeply-rooted institutional intricacies involved in achieving the joined up sentiments expressed in the central e-government strategy across organisations and service fields.

Secondly, the thesis benefited from the examination of e-government in two distinct fields through providing two bodies of evidence with which to examine implementation. The case studies were chosen as being analytically similar, in terms of the joined up nature of Crime Mapping and ECR, but institutionally distinct in terms of policy field and the development of IT use within each area. As described in the case studies themselves, the two incarnations of joined up e-government had some striking dissimilarities, pointed out and discussed in Chapters Four and Five as well as the concluding chapter. Specifically, whilst Crime Mapping was largely played out in distinct local settings, ECR was positioned as a national e-government programme.

The primary objective was not to produce rigorous and systematic comparisons between the two cases but to explore the role of e-government in joined up government in the institutional settings of both; as expected comparative observations did, however, germinate and are related in thesis conclusions.

Research methods were paralleled in each case study to provide consistency. Initial exploration indicated the suitability of Crime Mapping and ECR and research first centred on compiling a detailed organisational, institutional and technological history of Crime Mapping tool and the ECR programme, framed in the context of the institutions and organisations involved. This historical work complemented and built from the research already conducted into the wider history of government IT in the post-war period (presented in Chapter Two). Information was gathered for historical elements primarily from official departmental documents and parliamentary or parliamentary committee publications, and available academic material was used secondarily, whilst interview material proved useful occasionally. Efforts were made to search the origins of the technological basis for Crime Mapping and ECR, and to trace policy interest, often across several different government or parliamentary organisations and bodies over many decades. Challenges were met when the trail went 'cold', but systematic research, often using key word searches in indexes or contents pages, always led to a recovery of the scent, to build a comprehensive yet concise picture. During historical research, the theme of the multi-agency or partnership approach and various policy attempts to join up service delivery in different ways emerged as a motif. This was elucidated fully as it contributed to an understanding of the institutional context to the e-government applications studied.

The case study histories are presented, in edited form, at the beginning of each case study chapter to provide the necessary contextual understanding of Crime Mapping and ECR. Following the completion of the historical elements, an in depth exploration of contemporary government, audit and parliamentary documents was embarked upon, both online and offline, complemented by continual monitoring and searching of government IT press, most notably Government Computing or Kable and the eGov Monitor news service. As with related research conducted in Chapter Three, departmental documentation was in abundance, but supplemented by audit and parliamentary committee reports to provide balance. Here, the data gathering exercise, in part informed by the sources used in the historical section of research, produced a basis for understanding Crime Mapping and ECR. However, interview work was needed to meet the thesis objectives of the 'why and how' of e-government and provides a major source of evidence in the case studies. The review of government, audit, parliamentary and press information was highly effective in facilitating the

targeting of suitable candidates for contact, as many online publications featured contact details of key protagonists involved in the policies and programmes contained within the case studies. In both instances, a key protagonist was approached and interviewed, and asked for contact details of further suitable candidates for interviews. This iterative approach was adopted in further interviews and, coupled with information gleaned from documents and websites, it enabled interviews to be conducted with a broad representative sample.

The sample model was based upon interviewing representatives of the entire length of what could be termed the 'policy chain'<sup>22</sup> for methodological purposes, to provide the richness required to uncover the institutional and organisational dynamics underpinning the developments in the cases under scrutiny. Therefore firstly, for the case studies, several high level policymakers were met with, who had a strategic role in Crime Mapping and ECR and were expected to have interfaces with the central e-government strategy. Secondly, research and advice helped target a selection of meso-level protagonists, who had responsibilities and relationships both with policymakers and actors closer to the operational level where the projects and tools were being implemented. Thirdly, several of those actors close to 'street level', where e-government projects were run and tools used (for instance Crime Mapping project workers in CDRPs or health and social service practitioners involved in ECR) were interviewed. To provide further balance, interviews were conducted with actors who had been identified as important observers, who operated outside of the policy chain. Thus, several parliamentarians and academics, who had 'hands on' experience (often having being involved in audit processes) were used to provide a fresh perspective on the case studies and wider e-government issues. For symmetry, it was ensured that, as far as possible, parity was achieved in terms of the number of actors interviewed in each position of the policy chain in both case studies.

The majority of material found in Chapter Three draws from government, parliamentary and audit documentation; however interviews were also sought with key players within the Cabinet Office and particularly the Office of the e-Envoy.

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<sup>22</sup> Although it is acknowledged that such a linear, neat sequence of actors, from policy inception to practice on the ground, did not exist in simplistic form in reality. The term is used here only to induce methodological clarity.

Several interviews were conducted with those involved in Cabinet Office e-government strategy. Furthermore, interviewed parliamentary figures and other observers provided a fresh perspective on the activities of the Office of the e-Envoy and the e-government strategy.

Questioning was based around a semi-structured technique, using questions targeting a number of areas and tailored towards the individual in each case but always returning to the key theme of e-government and its role in joining up. Interviews conducted with policymakers aimed to elicit information, insights and opinions at a strategic level, to gather evidence, determine drivers and direction, and detect emergent patterns and themes both in terms of e-government policy within the Cabinet Office and case study areas. Interviewees were probed to understand if and how the connection between e-government and joined up government was being approached and realised at policy level. This question was addressed specifically regarding the Office of the e-Envoy for Chapter Three (building from the explorations of Chapter Two) and regarding policy in the case study service delivery areas in Chapters Four and Five.

Interviews conducted at the meso-level followed a similar theme but differed slightly in that they were aimed more at gaining insight into the conversion of policy into practice within the case study arenas. Here, interviews were aimed at gathering insights into the role of e-government in facilitating joining up from protagonists placed close to both policymakers and 'street-level', in the middle of the chain. Meso-level interviews were particularly useful in that they provided useful material on the problems, challenges and implications of varying perspectives and objectives found at high-level policymaking in comparison to the 'coal face' of the applications considered in the case studies. Interviews with protagonists on the ground centred on views and perspectives on the project or tool under consideration in a narrow focus, in an attempt to understand the resources, mentality, background, horizons, objectives, organisational and institutional culture and routines of those practitioners, professionals and communities involved. Following this, the interview would be broadened to establish interviewees' thoughts, experiences and judgements on wider departmental and central e-government strategies and the role of e-government in joining up. This semi-structured approach facilitated lines of questioning and

discussions that were conducive to the richly qualitative empirical observations sought, illuminating the organisational and informational dynamics of e-government.

At all interview levels, questions were asked of each individual to ascertain their views on activity in other areas of the policy chain, complimented by interviews with parliamentarians and academics with a more independent viewpoint. Lines of questioning were thematic but flexible, allowing unexpected recurrent points and observations, which are part and parcel to explorative work, to be built into later interviews or, in the cases of some interviewees, revisited in follow up correspondence or meetings. For instance, a recurrent theme found in interviews with protagonists away from the Cabinet Office was an absence or awareness or denial of relevance of e-government strategy emanating from the Office of the e-Envoy. This issue was successfully unpacked in subsequent interview work once it had been identified as a common theme; the method of recording, then immediately transcribing and analysed interviews following completion was a vital part of this process.

However, because of the explorative, inductive nature of the research, it was judged that formal analyse techniques such as various content analysis procedures, would not be suitable for this study. Instead, interviews following the strategic framework of the policy chain explained above but remained flexible yet thematic in the line of questions and discussion contained in each interview. In many cases initial interviews could be supplemented with emailed questions or further meetings and in some cases relationships were built up over time following the first interview. Thus, a longitudinal understanding could be gleaned to an extent, as projects, tools, programmes and policy developments under scrutiny for case studies or the evaluation of central e-government strategy could be monitored over time through correspondence with interviewees. This longitudinal monitoring was also aided by regular scrutiny of press coverage, government press releases and other grey literature published during research.

Quotes found within this thesis are used primarily as concise representations of views, comments and themes conveyed by interviewees during interviews. They were chosen as encapsulations of general themes detected within individual and groups of

interviews. Where contradictory views appeared between interviewees, attempts were made to depict these differences. To retain anonymity, a numbering system was used in the text to attribute quotes to interviewees; see Annex Two for an explanatory note.

## **ANNEX TWO: INTERVIEWEE NUMBERING AND DETAILS**

**NB:** The sequential numbering here corresponds with the number attributed to each interviewee in the thesis chapters

- 1) A Cabinet Office policymaker who worked on e-government policy.
- 2) A Cabinet Office policymaker who worked on e-government policy.
- 3) A Cabinet Office policymaker who worked on e-government policy and tools.
- 4) An MP who had an interest in e-government and worked on a number of parliamentary committees involved in IT policy.
- 5) An MP who had interest in e-government particularly through a parliamentary group.
- 6) A civil servant who had thirty years of experience in central government IT policy.
- 7) A senior advisor who worked in a parliamentary organisation designed to inform parliamentarians on, amongst other issues, IT policy and e-government.
- 8) A civil servant who worked on cross-government IT project management advice.
- 9) An MP who had been involved in the formulation of e-government policies.
- 10) A civil servant who led a Crime Mapping initiative.
- 11) A civil servant involved in Home Office strategy for CDRPs and Crime Mapping. Previously worked on the development and use of Crime Mapping tools at local level.
- 12) An academic previously involved in the development and use of Crime Mapping tools before moving into criminology and Crime Mapping consultancy.
- 13) An operational member of a Crime Mapping team, involved in gathering partner data for analysis.
- 14) An academic involved in the development of GIS tools.
- 15) A civil servant who led a Crime Mapping initiative and other uses of GIS.
- 16) An academic who had close links with government on the uses of Ordnance Survey and census data in GIS.
- 17) A protagonist within an independent association dealing with geographic technology issues.



- 18) A GP practice manager involved in electronic record implementation issues.
- 19) An ex-civil servant who worked on central welfare IT policy and was subsequently involved in auditing electronic records pilots.
- 20) An academic who acted as a consultant and auditor for electronic records projects.
- 21) A Department of Health e-government policymaker working on electronic care records.
- 22) A civil servant involved in the implementation of the NPfIT.
- 23) A social care information manager involved in electronic care record issues.
- 24) A consultant specializing in healthcare IT.
- 25) A social care electronic records project manager.
- 26) An academic who acted as consultant for electronic records.
- 27) A social care policymaker involved in the development of electronic care records.
- 28) A consultant who worked with government on GIS issues.

## BIBLIOGRAPHY

1. 6, P (2004) 'Joined Up Government in the Western World in Comparative Perspective: A Preliminary Literature Review and Exploration' in *Journal of Public Administration Research and Theory* 14,1
2. 6, P (1997) *Holistic Government* – London:Demos
3. Accenture (2002) *eGovernment Leadership – Realizing the Vision* – London:Accenture
4. Agar, J (2003) *The Government Machine: A Revolutionary History of the Computer* – Cambridge/London:MIT
5. AGI (1989) *AGI Yearbook London* - London/New York:Taylor Francis
6. AGI (2002) *Agreement on Acacia Programme for a Single National Infrastructure of Definitive Addresses with Related Data and Mapping* – Address Geography Special Interest Group announcement 31 October 2002
7. Agre, P and Rotenburg, M (1997) *Technology and privacy: the new landscape* – Massachusetts:MIT
8. Allison, J (1998) *GIS in practice* - London:Royal Town Planning Institute
9. Allsop, J (1995) 'Health: from seamless service to patchwork quilt' in *British Social Welfare - past, present and future* edited by David Gladstone – London:UCL
10. Anand, P and McGuire, A (eds) (1997) *Changes in health care : reflections on the NHS internal market* - Basingstoke:Macmillan Business
11. Anderson J (1972) 'The use of medical records' in *Privacy, Computers and You* edited by B.Rowe – Manchester:NCC
12. Anderson, K (1999) 'Reengineering Public Sector Organisations Using Information Technology' in R.Heeks (ed) *Reinventing Government in the Information Age* – London:Routledge
13. Anderson, B and Tracey, K (2002) 'Digital Living: The Impact (or Otherwise) of the Internet on Everyday British Life' in B.Wellman and C.Haythornthwaite (eds) *The Internet in Everyday Life* – Oxford:Blackwell
14. Angell, I (2000) *The New Barbarian Manifesto: How to Survive the Information Age* – London:Kogan Page

15. Anthony, S (2000) 'Going Paperless' in *Casebook* by the Medical Protection Society, No. 16, winter 2000/2001
16. Arnott, S (2003a) 'Green light for Bristol EPR initiative' in *vnunet.com* news, 7<sup>th</sup> May 2003
17. Arnott, S (2003b) 'Two more NHS projects closed' in *vnunet.com* news, 28<sup>th</sup> May 2003
18. Arnott, S (2004a) 'Cabinet Office Cancels £83m True North Project' in *vnunet.com* news 29<sup>th</sup> June 2004
19. Arnott, S (2004b) 'Interview: Head of egovernment Ian Watmore' in *Computer Active Magazine*, 7<sup>th</sup> October 2004
20. Arnott, S (2004c) 'Creating a Joined-Up Agenda for the Criminal Justice System' in *Computing*, 23<sup>rd</sup> June 2004
21. Audit Commission (1986) *Making a Reality of Community Care* - London:HMSO
22. Audit Commission (1992) *Caring Systems* – London:HMSO
23. Audit Commission (2002a) *Message Beyond the Medium – Improving Local Government Services Through E-government* - London:HMSO
24. Audit Commission (2002b) *Route to Justice* - London:HMSO
25. Audit Commission (2002c) *Community Safety Partnerships* – London:AC
26. Auld, R (2001) *Review of Criminal Courts of England and Wales* - London:HMSO
27. Bain, P and Taylor, P (2000) 'Entrapped by the 'Electronic Panopticon'? Worker Resistance in the Call Centre' in *New Technology, Work and Employment* 15,1
28. Baker, K (1993) *The Turbulent Years: My Life in Politics* - London:Faber and Faber
29. Ball, K (2003) 'Categorizing the Workers: Electronic Surveillance and Social Ordering in the Call Center' in David Lyon (ed) *Surveillance as Social Sorting* – London:Routledge

30. Ball, K. and F, Webster (eds.) (2003) *The Intensification of Surveillance: Crime, Terrorism and Warfare in the Information Age*. London:Pluto Press.
31. Ballard, M (2004) 'Head of egovernment outlines culture shift' in *Computer Active Magazine*, 8<sup>th</sup> September 2004
32. Barrett, S (2004) 'Implementation Studies: Time for a Revival? Personal Reflections on 20 Years of Implementation Studies' in *Public Administration*,vol. 82,no.2,p249-262
33. Barrett, S and Fudge, C (eds) (1981) *Policy and action: essays on the implementation of public policy* - London:Methuen
34. Batty, D (2003a) 'Crossing borders' in *the Guardian*, 26th March 2003
35. Batty, D (2003b) 'Care trusts to go under the microscope' in *the Guardian*, 25th September 2003
36. Becker, T and Slaton, C (2000) *The Future of Teledemocracy* – Westport:Praeger
37. Bekkers, V (1998) 'Wiring Public Organisations and Changing Organizational Jurisdictions' in I. Snellen and W. van der Donk (eds) *Public Administration in an Information Age* – Amsterdam:IOS press
38. Bellamy, C (1996) 'Transforming social security benefits administration for the twenty-first century: towards one-stop services and the client group principle' in *Public Administration*, vol.74,no. 2,p159-179
39. Bellamy, C (1998a) *Thoughts From the UK*, paper presented to the Institute of Public Administration Australia National Conference, Hobart 25-27 November 1998
40. Bellamy, C (1998b) 'ICTs and Governance: Beyond Policy Networks? The case of the Criminal Justice System' in I. Snellen and W. van der Donk (eds) *Public Administration in an Information Age* – Amsterdam:IOS press
41. Bellamy, C (1999a) 'Joining up Government in the UK: Towards Public Services for an Information Age' in *Australian Journal of Public Administration* 58, 3
42. Bellamy, C (1999b) *Networking Government: approaches, obstacles and issues*, paper presented to Workshop on One Stop Shops in Public Administration, Bremen, Germany, October 1999

43. Bellamy, C (2002) 'From Automation to Knowledge Management: Modernising British Government with ICTs' in *International Review of Administrative Sciences*, vol 68, no2, p213-230
44. Bellamy, C (2003) 'Studying e-Government: Ten Years On', paper prepared for the E-governance Panel at the *Annual Conference of the Political Studies Association*, University of Leicester, April 2003
45. Bellamy, C and Petrie, A (1999) *Modernising English Government with ICTs: The case of the CJS*, paper presented at EGPA meeting, Cape Sounion, November 1999
46. Bellamy, C and Raab, C (1999) 'Wiring up the Deckchairs' in *Parliamentary Affairs*, 52,3
47. Bellamy, C and Taylor, J (1992) 'Informatisation and New Public Management. An Alternative Agenda for Public Administration' in *Public Policy and Administration* 7,29-41
48. Bellamy, C and Taylor, JA (1994) 'Introduction: Exploiting IT in Public Administration – Towards the Information Polity' in *Public Administration*, vol 72, Spring, p1-12
49. Bellamy, C and Taylor, J (1996) 'New Information and Communications Technologies and Institutional Change; the case of the UK Criminal Justice System' in *International Journal of Public Sector Management* 9,4,51-69
50. Bellamy, C and Taylor, JA (1998a) *Governing in the Information Age - Buckingham/Philadelphia: Open University Press*
51. Bellamy, C and Taylor, J (1998b) 'Understanding *government.direct*' in *Information Infrastructure and Policy* 6
52. Beniger, J (1986) *The Control Revolution - Cambridge: Harvard University Press*
53. Beniger, J (1991) 'The Information Society and Global Science' in C. Dunlop and R.Kling (eds) *Computerization and Controversy: Value Conflicts and Social Choices* (London: Academic Press)
54. Benjamin, P (1999) 'Community Development and Democratisation Through Information Technology: Building the New South Africa' in R.Heeks (ed) *Reinventing Government in the Information Age – London: Routledge*
55. Benn, T (1972) 'Technology and Society' in *Privacy, Computers and You* edited by B.Rowe – Manchester: NCC

56. Benn, T (1988) *Office Without Power: diaries 1968-1972* - London:Hutchinson
57. Bennett, C (1997) 'Convergence revisited: Toward a global policy for the protection of personal data?' in *Technology and Privacy: The New Landscape* edited by Philip - Agre and Marc Rotenburg – Cambridge: MIT Press
58. Benson, T (1991) *Medical Informatics* - Harlow:Longman
59. Benson, T (2002a) 'Why general practitioners use computers and hospital doctors do not - Part 1: incentives' in *British Medical Journal*,vol. 325,p1086-9
60. Benson, T (2002b) 'Why general practitioners use computers and hospital doctors do not—Part 2: Scalability' in *British Medical Journal*,vol. 325,p1090-1093
61. Benzeval, M (2003) *The Final Report of the Tackling Inequalities in Health Module* – London:Queen Mary College
62. Bernard, AJ (1958) 'The First Year With a Business Computer' in *The Computer Journal*, vol. 1
63. Bernhardsen, T (2002) *Geographic Information Systems: An Introduction* - New York:John Wiley
64. Beveridge, W (1942) *Social Insurance and Allied Services* (cmd. 6404) – London:HMSO
65. Bichard, M (2004) *The Bichard Inquiry Report* (HC 653) - London:HMSO
66. Bishop, S (1999) 'Outsourcing and Government Information Technology Strategy: Relevance of External Consultant Models in Barbados' in R.Heeks (ed) *Reinventing Government in the Information Age* – London:Routledge
67. Blackstone, T and Plowden, W (1988) *Inside the Think Tank* – London:Heinemann
68. Blair, T (1996) *New Britain: my vision of a young country* - London:Fourth Estate
69. Blair, T (1999) 'Why the internet years are vital' in *the Guardian*, 25th October 1999

70. Blincoe, R (2002) 'E-envoy hopes for "miracle" by 2005' in *vmunet news*, 16<sup>th</sup> December 2002
71. Blumer, J and Coleman, S (2001) *Realising Democracy Online: A Civic Commons in Cyberspace* - London:IPPR
72. Booth, T (1981a) 'Collaboration Between the Health and Social Services – Part One: A Case Study of Joint Care Planning' in *Policy and Politics*, vol. 9, no 1, p23-49
73. Booth, T (1981b) 'Collaboration Between the Health and Social Services – Part Two: A Case Study of Joint Finance' in *Policy and Politics*, vol. 9 no 2, p205-226
74. Bosely, S (2000) 'Click Here For Treatment' in *the Guardian*, 24th March 2000
75. Bowden, BV (ed) (1953) *Faster than Thought* - London:Sir Isaac Pitman and Sons
76. Bowers, K and Hirshfield, A (1999) 'Exploring Links Between Crime and Disadvantage in North West England: an analysis using geographical information systems' in *International Journal of Geographical Information Science*, vol. 13 no. 2, p159-184
77. Bowers, K and Hirschfield, A (2001) 'Introduction' in *Mapping and Analysing Crime Data – Lessons From Research and Practice* edited by Alex Hirschfield and Kate Bowers - London/New York:Taylor and Francis
78. Bowker, J and Star, L (1999) *Sorting Things Out: Classification and its Consequences* - Massachusetts:MIT
79. Bradshaw-Smith, J (1976) 'The Use of Computers in General Practice' in *British Medical Journal* vol.1, p1395-1397
80. Bridges, E (1957) 'Haldane and the Machinery of Government' in *Public Administration*, vol. 35, p254-265
81. British Journal of Healthcare Computing and Information Management (2003) 'Blackberd Baked' in *News*, July 2003
82. Brown, D (1997) *Cybertrends: Chaos, Power and Accountability in the Information Age* – London:Viking
83. Budge, I (1996) *The New Challenge of Direct Democracy* - Oxford:Polity Press

84. Bullas, S (1999) 'Historical Perspectives' poster presentation at *HC1999 – Healthcare Computing Conference*, Harrogate, March 1999
85. Burch, M and Holliday, I (1996) *The British Cabinet System* - Hemel Hempstead:Harvester/Wheatsheaf
86. Burnham, D (1983) *The Rise of the Computer State* – London: Weidenfeld & Nicholson
87. Burnham, J and Jones, GW (2000) 'The Evolving British Prime Minister's Office' in *Transforming British Government* edited by Rod Rhodes – Basingstoke:Macmillan
88. Butcher, T (1995) 'A New Civil Service? The Next Step Agencies' in *Governing the UK in the 1990s* edited by Robert Pyper and Lyton Robins - Basingstoke:Macmillan
89. Butler, P (2002a) 'NHS appoints £250,000 IT Supremo' in *the Guardian*, 5<sup>th</sup> September 2002
90. Butler, P (2002b) 'A health service in need of rich rewards' in *the Guardian*, 25<sup>th</sup> September 2002
91. Butler P (2003) 'Livingstone judged most influential figure in Britain's public services' in *the Guardian*, 10<sup>th</sup> September 2003
92. Byrne, T (2000) *Local Government in Britain* – London:Penguin
93. Cabinet Office (1998/99) *Modernising Government* (cm. 4310) London:HMSO
94. Cabinet Office (1999) *press release* (CAB 71/99), 30th March 1999
95. Cabinet Office (1999/2000) *Modernising Government in Action: Realising the Benefits of Y2K* (cm. 4703) - London:HMSO
96. Cabinet Office (2003) *press release* (CAB 067/03), 15<sup>th</sup> December 2003
97. Cain, P (1999) 'Automating Personnel Records for Improved Management of Human Resources: the Experience of Three African Governments' in R.Heeks (ed) *Reinventing Government in the Information Age* – London:Routledge
98. Caines, D (2001) 'People Behave as They are Measured' in *the Source*, 16th June 2001



99. Cairncross, F (1998) *The Death of Distance: How the Communications Revolution will Change our Lives* - London: Orion Business Books
100. Caminer, D, Aris, J, Herman, P and Land, F (1996) *User Driven Innovation – The World's First Business Computer* - London/New York:McGraw-Hill
101. Campbell, H (1994) 'How Effective are GIS in practice? A case study of British Local Government' in *International Journal of Geographical Information Systems*,vol. 8,no. 3,p309-325
102. Campbell, H and Masser, I (1992) 'GIS in Local Government: some findings from Great Britain' in *International Journal of Geographical Information Systems*,no. 6,p529-546
103. Cannon, G (1989) *The NHS: a short history: a personal perspective* – Keele:Mercia
104. Carruthers, S and Smith, S (1996) 'Telematics in the UK – A View' in *Ethos* newsletter,issue 2,September 1996
105. Carter, N, Klein, R and Day, P (1992) *How Organisations Measure Success* – London/New York:Routledge
106. Castells, M (1996) *The Rise of a Networked Society* – Oxford:Blackwell
107. Castells, M (2001) *The Internet Galaxy: Reflections on the Internet, Business and Society* – Oxford:Oxford University Press
108. Castells, M (2002) 'Series Editor's Preface: The Internet and the Network Society' in B.Wellman and C.Haythornthwaite (eds) *The Internet in Everyday Life* – Oxford:Blackwell
109. Catteral, P and Brady, C (2000) 'The Development and Role of Cabinet Committees in Britain' in *Transforming British Government* edited by Rod Rhodes - Basingstoke:Macmillan
110. CCTA (1984) *IT Series Number 8* - London:HMSO
111. CCTA (1993) *Geographic Information Systems in Government Realizing the Opportunities* - London:HMSO
112. CCTA (1994a) *An Introduction to Geographic Information Systems* – London:HMSO

113. CCTA (1994b) *BPR in the Public Sector* - London:HMSO
114. CCTA (1994c) *Information Superhighways: Opportunities for Public Sector Applications* - London:CCTA
115. CCTA (1995) *Report on Information Superhighways* - Norwich:CCTA
116. CCTA News (1982) *News Section*,no. 16
117. CCTA News (1983a) *News Section*,November issue
118. CCTA News (1983b) *News Section*,December issue
119. CCTA News (1985) *News Section*,no. 48
120. Centre for Management and Policy Studies (1999) *Professional Policy-Making for the 21<sup>st</sup> Century* - London:CMPS
121. Centre for Management and Policy Studies (2001) *Better Policy-Making for the 21<sup>st</sup> Century* – London:CMPS
122. Chainey, S (2001) ‘Combating Crime Through Partnership’ in *Mapping and Analysing Crime Data – Lessons From Research and Practice* edited by Alex Hirschfield and Kate Bowers – London:Taylor and Francis
123. Chandler, J (1996a) *Local Government Today* – Manchester/New York:Manchester University Press
124. Chandler, J (ed) (1996b) *The Citizen’s Charter* – Aldershot:Dartmouth
125. Chapman, R (1983) ‘The Rise and Fall of the Civil Service Department’ in *Policy and Politics*,vol. 11
126. Chapman, R (1992) ‘The End of the Civil Service?’ in *Teaching Public Administration*,Autumn,no. 2,p1-5
127. Chapman, R (1997) *The Treasury in Public Policy Making* - London/New York:Routledge
128. Chorley, R (1987) *Handling Geographic Information – Report of the Committee of Enquiry* (Department of the Environment) - London:HMSO
129. Chorley, R and Buxton, R (1991) ‘The Government Setting Of GIS In The United Kingdom’ in *Geographical Information Systems: Principles And Applications* edited by David J Maguire, Michael F Goodchild and David W Rhind,vol. 1 - Harlow:Longman Scientific & Technical

130. CITU (1996/97) *Government.direct* (cm. 3438) - London:HMSO
131. CITU (2000) *e-government: A strategic framework for public services in the Information Age* - London:CITU
132. Clark, T (2002) 'New Labour's Big Idea: Joined-up Government' in *Social Policy and Society* 1:2 107-117
133. Cm. 1523 (1991) *Health of the Nation: a consultative document for health in England* (Green Paper) - London:HMSO
134. Cm. 1986 (1992) *Health of the Nation: a strategy for health in England* (White Paper) - London:HMSO
135. Cm. 3425 (1996) *The National Health: A service with ambition* - London HMSO
136. Cm. 3818 (1997/98) *Your Right to Know – The Government's Proposals for a Freedom of Information Act* - London:HMSO
137. Cmnd. 6404 (1942) *Social insurance and Allied Services* - London:HMSO
138. Cmnd. 1604 (1962) *A Hospital Plan for England and Wales* - London:HMSO
139. Cmnd. 1973 (1963) *Health and Welfare: the Development of Community Care* - London:HMSO
140. Cmnd. 4505 (1970) *The Reorganisation of Central Government* - London:HMSO
141. Cmnd. 9058 (1983/84) *Financial Management in Government Departments* – London:HMSO
142. Cmnd. 1599 (1990/91) *The Citizen's Charter* - London/HMSO
143. Coates, D and Lawyer, P (2000) *New Labour in Power* - Manchester/New York:Manchester University Press
144. Coates, R (2004) 'Government gets £40m intranet' in *Silicon News* 5<sup>th</sup> February 2004
145. Cochrane, A (1993) *Whatever Happened to Local Government?* – Buckingham:Open University Press

146. Coleman, S (2004) 'Connecting Parliament to the Public via the Internet' in *Information, Communication and Society* 7,1
147. Coleman, S and Gotze, J (2001) *Bowling Together: Online Public Engagement for Policy Deliberation* – London:Hansard Society
148. Collins, T (2003) 'Head of the NHS National Programme for IT confirms he will retire before the completion of the project' in *Computer Weekly*, 2<sup>nd</sup> December 2003
149. Coopey, R (1991) 'The White Heat of Scientific Revolution' in *Contemporary Record*,vol. 5,no. 1
150. Coppock, JT and Rhind, D (1991) 'The History of GIS' in *Geographical Information Systems: Principles And Applications* edited by David J Maguire, Michael F Goodchild and David W Rhind,vol. 1 - Harlow:Longman Scientific & Technical
151. Coyle, D (1997) *The Weightless World: Strategies for Managing in the Digital Economy* - Oxford:Capstone
152. Craglia, M and Signoretta, P (2000) 'From Global to Local: the Development of Local Geographic Information Strategies in the UK' in *Environment and Planning B*,vol. 27,no.5,p777–88
153. Craglia, M and Signoretta, P (2002) 'Joined-up Government in Practice: A Case Study of Children's Needs in Sheffield' in *Local Government Studies*,vol. 28,no. 1,p59-76
154. Crawford, A (1997) *The Local Governance of Crime* - Oxford:Clarendon
155. Crawford, A (2001) 'Joined Up But Fragmented' in *Crime Disorder and Community Safety* edited by Roger Matthews and John Pitts – London/New York: Routledge
156. Criminal Justice Conference (2001) *Information Sharing to Reduce Crime and Disorder* at Millennium Conference Centre, London, 10<sup>th</sup> September 2001
157. Croarken, M (1990) *Early Scientific Computing in Britain* – Oxford:Clarendon
158. Cross, M (1999) 'The People's Plug' in *the Guardian*, 25th March 1999
159. Cross, M (2001) *Managing e-health: the NHS and the Internet* – London:EMAP

160. Cross, M (2002a) 'Putting IT in the Dock', in *the Guardian*, 4th July 2002
161. Cross, M (2002b) 'This may hurt a little' in *the Guardian*, 12<sup>th</sup> December 2002
162. Cross, M (2003a) 'Rule with a rod of iron' in *the Guardian*, 27<sup>th</sup> February 2003
163. Cross, M (2003b) 'Direct to your Destination' in *the Guardian*, 4<sup>th</sup> April 2003
164. Cross, M (2004a) 'Is the Party Over?' in *Government IT*, April 2004
165. Cross, M (2004b) 'Man with a Mission' in *the Guardian*, 3<sup>rd</sup> June 2004
166. Cross, M (2004c) 'State Play Hard Ball' in *the Guardian*, 1<sup>st</sup> July 2004
167. Cross, M (2004d) 'Road to Nowhere?' in *the Guardian* 16<sup>th</sup> September 2004
168. Cross, M (2004e) 'Confidence in e-Government Soars' in *the Guardian* 28<sup>th</sup> January 2004
169. Crossman, R (1975) *Diaries of a Cabinet Minister*, vol. 1 - London: Cape
170. CSD (1978) *Longer Term Review of Administrative Computing* – London: HMSO
171. CSD/CCA (1983) *Code of Practice for the use of Computer Consultants and Software Houses by Government Departments* – London: HMSO
172. Cuddy, I (2003) 'e-Envoys Office Loses Bearings with Project True North' in *the Register*, 24th June 2003
173. Curtis, P (2002) 'The CRB explained' in *the Guardian*, 23rd August 2002
174. Daalder, H (1964) *Cabinet Reform in Britain 1914-1963* – Oxford: Oxford University Press
175. Dandeker, C (1990) *Surveillance, Power and Modernity: Bureaucracy and Discipline from 1700 to the Present Day* – Cambridge: Polity
176. Davenport, TH (1993) *Process innovation: Re-engineering work through information technology* – Boston: Harvard Business School Press

177. Deloitte and Touche (2000) *At the Dawn of e-Government* – New York:Deloitte and Touche
178. Denny, C (2004) ‘Old Customs Excised by Merger’ in *the Guardian*, 17th March 2004
179. Department of Constitutional Affairs (2003) *Privacy and Data sharing: the way forward for public services: an update on progress* – London:HMSO
180. Department of Health (1987) *Promoting Better Health* (White Paper) - London:HMSO
181. Department of Health (1989) *Working for Patients* - London:HMSO
182. Department of Health (1990a) *Information for GPs on Practice Computer Systems* - London:HMSO
183. Department of Health (1990b) *Framework for Information Systems: The Next Steps* – London:HMSO
184. Department of Health (1990c) *Caring for People – Community Care in the Next Decade and Beyond* – London:HMSO
185. Department of Health (1993) *Working Together for Better Health* by The Health of the Nation – London:HMSO
186. Department of Health (1995) *Fit for the Future: progress report* – London:HMSO
187. Department of Health (1997a) *The New NHS – Modern and Dependable* (cm. 3807) – London:HMSO
188. Department of Health (1997b) *Government to Provide an Extra £300 Million for Health and Social Care* (press release:97/274) – available at [www.dh.gov.uk](http://www.dh.gov.uk)
189. Department of Health (1998a) *Modernising Social Services* (cmd. 4169) – London:HMSO
190. Department of Health (1998b) *The Health of the Nation: a Policy Assessed* (University of Leeds) – London:DOH
191. Department of Health (1998c) *Our Healthier Nation* – London:HMSO
192. Department of Health (1998d) *Partnership in Action* - London:HMSO

193. Department of Health (1998e) *New Plans to Bridge Gulf Between Health and Social Care* (press release:98/381) – London:HMSO
194. Department of Health (2000a) *The NHS Plan* (cm. 4818-1) – London:HMSO
195. Department of Health (2000b) *NHS Plan Sets Out Radical Programme Of Reform* (press release:2000/0455)
196. Department of Health (2001a) *Building the Information Core – Implementing the NHS Plan* – London:DOH
197. Department of Health (2001b) *Information for Social Care* – London:DOH
198. Department of Health (2002a) *Delivering the NHS Plan* - London:DOH
199. Department of Health (2002b) *Delivering 21st century IT support for the NHS: national strategic programme* - London:DOH
200. Department of Health (2003a) *Integrated Care Records Service Part I – National Services Output Based Specification version 2* (restricted access) – London:DOH
201. Department of Health (2003b) *Investing in General Practice – The New General Medical Services Contract* – London:DOH
202. Department of Health (2003c) *The e-GIF and the NHS – a Policy Statement* – London:DOH
203. Department of Health (2004) *Defining the Electronic Social Care Record* - London:DOH
204. Department of Health and the NHS Executive (1999) *Primary Care Trusts Establishing Better Services* - London:HMSO
205. DHSS (1967) *Annual Report* (cmd. 3702) – London:HMSO
206. DHSS (1968) *Annual Report* (cmd. 4100) – London:HMSO
207. DHSS (1969) *Annual Report* (cmd. 4462) – London:HMSO
208. DHSS (1970) *Annual Report* (cmd. 3767) – London: HMSO
209. DHSS (1971) *Annual Report* (cmd. 5019) – London:HMSO

210. DHSS (1972a) *Annual Report* (cmd. 5352) – London:HMSO
211. DHSS (1972b) *Using Computers to Improve Health Services* – London:DHSS
212. DHSS (1973) *Annual Report* (cmd. 3071) – London:HMSO
213. DHSS (1974) *Annual Report* (cmd. 6150) – London:HMSO
214. DHSS (1975) *Annual Report* (cmd. 3129) – London:HMSO
215. DHSS (1976) *The NHS Planning System* – London:DHSS
216. DHSS (1979) *Annual Report* (cmd. 7394) – London:HMSO
217. DHSS (1986) *A National Strategic Framework for Information Management in the Hospital and Community Health Services* - London:DHSS
218. Dizard, W (1982) *The Coming Information Age: An Overview of Technology, Economics and Politics* – New York:Longman
219. Downs, A (1967) *Inside Bureaucracy* – Boston:Little Brown
220. Drury, P (2002) ‘Presenting the Challenge’ – presentation given at 2<sup>nd</sup> *National PRIMIS conference*, 23rd April 2002 - available to [www.nhsia.nhs.uk](http://www.nhsia.nhs.uk)
221. Drury, P and Pattison, J (2003) ‘Developments in Direction and Delivery of IM&T for the National Health Service in England’ in *Connected Health* edited by Kevin Dean – London:Cisco Systems
222. Dunleavy, P (1991) *Democracy, Bureaucracy and Public Choice* - New York/London:Harvester-Wheatsheaf
223. Dunleavy, P, Margetts, H, Bastow, S and Tinkler, J (2004) ‘Government IT Performance and the Power of the IT Industry: A Cross-National Analysis’ paper to *Annual Meeting of American Political Science Association*, Chicago 1<sup>st</sup>-5<sup>th</sup> September 2004
224. DWP (2003) ‘Housing Benefit and Council Tax Benefit pilot to trial a more streamlined service for customers’ (press release) available at [www.dwp.gov.uk](http://www.dwp.gov.uk)
225. Dyer, C (2002) ‘Justice at the click of a mouse’ in *the Guardian*, 4th February 2002



226. Edgerton, D (1996) 'The 'White Heat' Revisited: The British Government and Technology in the 1960s' in *20<sup>th</sup> Century British History*, vol. 7, no. 1
227. Education and Skills Committee (2001/02) *Individual Learning Accounts* (HC 561-I) - London:HMSO
228. Edwards, B (1993) *The National Health Service 1946-1992: a Managers Tale* – London:Nuffield Provincial Hospitals Trust
229. eGov Weekly Monitor (2002a) *Newsletter*, no. 45, 19th August 2002
230. eGov Weekly Monitor (2002b) *Newsletter*, no. 46, 27th August 2002
231. eGov Weekly Monitor (2002c) *Newsletter*, no. 47, 2nd September 2002
232. eGov Weekly Monitor (2002d) *Newsletter*, no. 48, 9th September 2002
233. eGov Weekly Monitor (2002e) *Newsletter*, no. 49, 16th September 2002
234. eGov Weekly Monitor (2002f) *Newsletter*, no. 51, 30th September 2002
235. eGov Weekly Monitor (2004) *Newsletter*, no. 146, 25th October 2004
236. E-Health Insider (2002a) 'DH Preparing £5 Billion IT Strategy' in *E-Health Insider*, 30th May 2002
237. E-Health Insider (2002b) 'Combined Government Gateway Review Due for IT Programme' in *E-Health Insider*, 10th October 2002
238. E-Health Insider (2002c) 'Gateway Review Recommends ICRS be put on Hold' in *E-Health Insider*, 7th November 2002
239. E-Health Insider (2003a) 'First Anniversary for the National IT Programme' in *E-Health Insider*, 20th March 2003
240. E-Health Insider (2003b) 'The National IT Programme: Readers have their say 2' in *E-Health Insider*, 30th April 2003
241. E-Health Insider (2003c) 'NHS to Introduce Own Gateway Reviews' in *E-Health Insider*, 14th May 2003
242. E-Health Insider (2003d) 'Hammersmith and Fulham Integrate Care Electronically' in *E-Health Insider*, 22nd May 2003
243. E-Health Insider (2003e) 'ICRS Targets Won't be Reached' in *E-Health Insider*, 11th September 2003

244. E-Health Insider (2003f) 'Farewell ICRS, hello NHS Care Record Service' in *E-Health Insider*, 2nd December 2003
245. E-Health Insider (2003g) 'GPC Chair Pledges Practices Will Retain Choice' in *E-Health Insider*, 19<sup>th</sup> June 2003
246. E-Health Insider (2004a) 'NPfIT failing to engage with social care providers' in *E-Health Insider*, 2nd February 2004
247. E-Health Insider (2004b) 'Granger terminates EDS's NHSmail contract' in *E-Health Insider*, 8th March 2004
248. E-Health Insider (2004c) 'Uncertainty shrouds EMIS negotiations' in *E-Health Insider*, 18th March 2004
249. Edge, D (1995) 'The Social Shaping of Technology' in Heap et al (Eds) *Information Technology and Society* – London:Sage
250. Elmore, R (1980) 'Backward Mapping: Implementation Research and Policy Decisions' in *Studying Implementation* edited by W.Williams - New York:Chatham House
251. Ekblom, P (1988) *Getting the Best out of Crime Analysis* (Crime Prevention Unit Paper 10) – London:Home Office
252. Ekblom, P and Howes, D and Law, H (1994) 'Scoping, Scoring and Modelling: Linking Measures of Crime Prevention Action to Measures of Outcome in a Large, Multi-Site Evaluation Using a GIS and Multilevel Modelling' – paper presented by the Home Office to the *GIS Research UK conference*, Leicester, 1994
253. Ekblom, P and Pease, K (1995) 'Evaluating Crime Prevention' in *Crime and Justice*, no. 19
254. Evandrou, M and Falkingham, J (1998) 'The Personal Social Services' in *The State of Welfare – The Economics of Social Spending* edited by Howard Glennerster and John Hills - Oxford:Oxford University Press
255. Evans, J (1997) 'Infrastructures for Sharing Geographic Information: lessons from the Great Lakes and Columbia River' in *Geographic Information Research: Bridging the Atlantic* edited by M.Craglia and H.Couclelis - London/New York:Taylor Francis

256. Exworthy, M and Powell, M (2004) 'Big Windows and Little Windows: Implementation in the "Congested State"' in *Public Administration*, vol. 82, no. 2, p263-281
257. Foster, CD and Plowden, FJ (1996) *The State Under Stress* – Buckingham: Open University Press
258. Foucault, M. (1975) *Discipline and Punish: The Birth of the Prison* translation by A. Sheridan (1976) as - Harmondsworth: Penguin
259. Fountain, J (2001) *Building the Virtual State – Information Technology and Virtual Change* – Washington: Brookings Institution Press
260. Freeman, R (1996) comments from 'Government Computing' (March, 1996) quoted in *Ethos* newsletter, no. 2, September 1996, p4
261. Frissen, P (1992) 'Informatization in Public Administration' in *International Review of Administrative Sciences* 58
262. Frissen, P (1994) 'The Virtual Reality of Informatization in Public Administration' in *Informatization and the Public Sector* 3, 3-4
263. Frissen, P (1998) 'Public Administration in Cyberspace: A Postmodern Perspective' in I. Snellen and W. van der Donk (eds) *Public Administration in an Information Age* – Amsterdam: IOS press
264. Fry, G (1979) *The Growth of Government* – London: Frank Cass
265. Fry, G (1993) *Reforming the Civil Service* – Edinburgh: Edinburgh University Press
266. Fry, G (1995) *Policy and Management in the British Civil Service* – London: Prentice Hall
267. Fulton Committee (1968) *The Civil Service* (cmd. 3638) - London: HMSO
268. G7 (1995) *Ministerial Conferences on the Global Information Society* - Luxembourg: Office of Official Publications
269. Gaits, GM (1969) 'Thematic Mapping by Computer' in *The Cartographic Journal*, vol. 6, no. 1
270. Gandy, O (1993) *The Panoptic Sort* – Boulder: Westview

271. Gershon, P (2004) *Releasing Resources to the Front Line: Independent Review of Public Sector Efficiency* – London:HMSO
272. Gibbs, G (2001) ‘ICL name joins computer history’ in *the Guardian*, 22nd June 2001
273. Gibson, O (2002) ‘Blair’s £6bn broadband promise’ in *the Guardian*, 19<sup>th</sup> November 2002
274. Gladstone, D, Parker, R, Sainsbury, S and Means, R (1995) ‘Individual Welfare: locating care in the mixed economy’ in *British Social Welfare - past, present and future* edited by David Gladstone – London:UCL
275. Glidewell, I (1998) *Review of the Crown Prosecution Service* (cmd no. 3960) - London:HMSO
276. Gold, S (2002) ‘The digital dilemma of the NHS’ in *the Guardian*, 8<sup>th</sup> October 2002
277. Goldstein, H (1979) ‘Improving Policing: a problem-oriented approach’ in *Crime and Delinquency*, no. 25, p236-258
278. Government Computing (2004) ‘Definitely Not Pinder’ in *Government Computing*, 4<sup>th</sup> October 2004
279. Government IT (2004) ‘NHSIA future in the balance’ in *Government IT*, April 2004
280. Gowing, W (1994) ‘Operational Systems’ in *Information Management in Health Services* edited by Justin Keen – Buckingham/Philadelphia:Open University Press
281. Graham, S and Marvin, S (2001) *Splintering Urbanism: Networked Infrastructures, Technological Mobilities, and the Urban Condition* - London:Routledge
282. Graham, S. and D. Wood (2003) Digitising surveillance: categorisation, space, inequality in *Critical Social Policy*, 23(2)
283. Greenaway, J, Smith, S and Street, J (1992) *Deciding Factors in British Politics: a case studies approach* - London:Routledge
284. Greener, I (2002a) ‘Theorizing Path-Dependency: How Does History Come to Matter in Organisations?’ in *Management Decision*, vol. 40, no. 6

285. Greener, I (2002b) 'Understanding NHS Reform: The Policy-Transfer, Social Learning and Path-Dependency Perspectives' in *Governance*, vol. 15, no.2
286. Greenfield, T (1980) *Computers and Health 1980* (inaugural lecture) – presented at Queens University Belfast
287. Greenwood, J, Wilson, D and Pyper, R (2002) *New Public Administration in Britain* – London/New York:Routledge
288. Griffiths, R (1983) *NHS Management Enquiry* (the Griffiths Report) – London:DHSS
289. Gunn, L (1978) 'Why is Implementation so difficult' in *Management Services in Government*, November 2004
290. Hacker, J (1998) 'The Historical Logic of National Health Insurance: Structure and Sequence in the Development of British, Canadian, and US Medical Policy' in *Studies in American Political Development*, 12, Spring
291. Hague, B and Loader, B (1999) *Digital Democracy: Discourse and Decision Making in the Information Age* – London:Routledge
292. Haldane, RB (1931) *Richard Burton Haldane: an Autobiography* - London:Hodder and Stoughton
293. Hall, P (1976) *Reforming the Welfare: the politics of change in the personal social services* - London:Heinemann
294. Hall, P and Taylor, C (1996) 'Political Science and the Three New Institutionalisms' paper to *MPIFG Scientific Advisory Board* May 9<sup>th</sup>, 1996
295. Hammer, M and Champy, J (1993) *Reengineering the Corporation – A Manifesto for Business Revolution* - London:Nicholas Brealey
296. Hanf, K and Scharpf, F (eds) (1978) *Interorganizational policy making : limits to coordination and central control* - London/Beverly Hills:Sage Publications
297. Hansard (1963/64) *House of Commons Debates* – cols. 205 (W), 23/04/64
298. Hansard (1964/65a) *House of Commons Debates* – cols. 209-210 (W), 02/03/65
299. Hansard (1964/65b) *House of Commons Debates* – cols. 924-927, 01/03/65

300. Hansard (1994/95a) *House of Commons Debates*, col. 53(W), 20/02/95
301. Hansard (1994/95b) *House of Commons Debates*, col. 340(W), 21/11/94
302. Hansard (1994/95c) *House of Commons Debates*, col. 241, 07/03/95
303. Hansard (1994/95d) *House of Commons Debates*, col. 248, 07/03/95
304. Hansard (1995/96a) *House of Commons Debates*, col. 859, 08/11/95
305. Hansard (1995/96b) *House of Commons Debates*, col. 750, 31/01/96
306. Hansard (1996/97) *House of Commons Debates*, col. 625, 03/03/97
307. Hansard (1997/98a) *House of Commons Debates*, col. 239-40(W),  
19/11/97
308. Hansard (1997/98b) *House of Commons Debates*, col. 499-500, 29/01/98
309. Hansard (1997/98c) *House of Commons Debates*, col. 1201, 18/03/98
310. Hansard (1997/98d) *House of Commons Debates*, col. 133-138, 06/04/98
311. Hansard (1997/98e) *House of Commons Debates*, col. 1063, 10/06/98
312. Hansard (1998/99) *House of Commons Debates*, col. 217, 25/1/98
313. Hansard (1999/2000) *House of Commons Debates*, cols. 285-300,  
09/12/99
314. Hansard (2000/01a) *House of Commons Debates*, col. 485(W), 09/01/01
315. Hansard (2000/01b) *House of Commons Debates*, col. 327-328, 17/01/01
316. Hansard (2000/01c) *House of Commons Debates*, col. 328, 17/01/01
317. Hansard (2000/01d) *House of Commons Debates*, col. 330, 17/01/01
318. Hansard (2000/01e) *House of Commons Debates*, col. 781, 29/03/01
319. Hansard (2000/01f) *House of Commons Debates*, col. 782, 29/03/01
320. Hansard (2001/02a) *House of Commons Debates*, col. 568(W), 11/07/01
321. Hansard (2001/02b) *House of Commons Debates*, col. 898(W), 28/11/01

322. Hansard (2001/02c) *House of Commons Debates*, col. 383(W), 13/02/02
323. Hansard (2001/02d) *House of Commons Debates*, cols. 1033-1062, 28/06/02
324. Hansard (2002/03a) *House of Commons Debates*, cols. 315(W), 16/01/03
325. Hansard (2002/03b) *House of Commons Debates*, col 416 (W), 16/07/03
326. Harper, G, Williamson, I, Clark, G and See, L (2002) *Family Origins: Developing Groups of Crime and Disorder Reduction Partnerships and Police Basic Command Units for Comparative Purposes* - London:HMSO
327. Health Committee (1999) *The Relationship Between Health and Social Care*, 1<sup>st</sup> report – London:HMSO
328. Heathfield, H (2003) *Cornwall PEG: Workshop Report Building Blocks for the ICRS* - IT Perspectives Ltd
329. Heeks, R and Davies, A (1999) 'Different Approaches to Information Age Reform' in R.Heeks (ed) *Reinventing Government in the Information Age* – London:Routledge
330. Hencke, D (2000) 'Doomed benefit card cost £800m' in *the Guardian*, 18th August 2000
331. Hencke, D and Hall, S (2004) 'Voluntary scheme is prelude to compulsion' in *the Guardian*, 21<sup>st</sup> December 2004
332. Hendry, J (1989) *Innovating for Failure – Government Policy and the Early British Computer Industry* – Cambridge/London:MIT
333. Hennessy, P (1989) *Whitehall* – London:Secker & Warburg
334. Hennessy, P (1999) 'Tony's Bane' in *the Guardian*, 9th July 1999
335. Her Majesties Government (1998) *Crime and Disorder Act* - London:HMSO
336. Heywood, I (1997) *Beyond Chorley – Current Geographic Information Issues* – London:AGI
337. Heywood, I, Cornelius, S and Carver, S (1998) *An Introduction to Geographical Information Systems* – Harlow:Prentice Hall

338. Higgingbottom, P (2002) *Poor Laws* available at <http://users.ox.ac.uk/~peter/workhouse/>
339. Hill, M (1993) *The Welfare State in Britain – A Political History since 1945* – Aldershot:Edward Elgar
340. Hill, K and Hughes, J (1998) *Cyberpolitics: Citizen Activism in the Age of the Internet* – Lanham:Rowman and Littlefield
341. Hirschfield, A (2001) 'Decision support in crime prevention' in *Mapping and Analysing Crime Data – Lessons From Research and Practice* edited by Alex Hirschfield and Kate Bowers - London:Taylor Francis
342. Hjern, B and Porter, D (1981) 'Implementation Studies: A New Unit of Administrative Analysis' in *Organization Studies* no. 2,p211-227
343. HMIC (1995) *Information Technology Provision – Metropolitan Police Service* - London:HMSO
344. HMIC (1998) *Beating Crime: HMIC Thematic Inspection Report* – London:HMSO
345. HMIC (2000) *On the Record* – London:HMIC
346. HMIC (2002) *Police National Computer Data Quality and Timeliness - Second Report* - London:HMSO
347. Hodges, A (1983) *Alan Turing: the Enigma* – London:Burnett Books
348. Hogwood, B and Peters, BG (1985) *The Pathology of Public Policy* - Oxford:Clarendon Press
349. Holliday, I (2001) 'Steering the British State in the Information Age', *Government and Opposition*,vol 36,no 3,summer 2001
350. Holmes, D (2001) *e.gov: e-business strategies for Government* - London:Nicholas Brealey
351. Home Office (1965) *Report of the Committee on the Prevention and Detection of Crime* - London:Home Office
352. Home Office (1990) *Partnership in Crime Prevention* (Home Office Circular 44/1990) - London:Home Office



353. Home Office (1991) *Safer Communities: The Local Delivery of Crime Prevention through the Partnership Approach* (The Morgan Report) - London: Home Office
354. Home Office (2004a) 'David Blunkett: National ID Card Scheme is the Key to the UK's Future' (press release:159/2004) – available at [www.homeoffice.gov.uk](http://www.homeoffice.gov.uk)
355. Home Office (2004b) *Identity Cards: The Government Reply to the Fourth Report from the Home Affairs Committee* (HC 130) – London:HMSO
356. Home Office (2004c) *Prolific and Other Priority Offender Strategy – Initial Guidance* July 2004 – London:Home Office
357. Home Office, Department of Education and Science, Department of Environment, Department of Health and Social Security, and Welsh Office (1984) *Crime Prevention* (Home Office Circular 8/1984) - London:Home Office
358. Home Office, Department of Education and Science, Department of Employment, Department of the Environment, Department of Health, Department of Social Security, Department of Trade and Industry, Department of Transport, and Welsh Office (1990) *Crime Prevention: The Success of the Partnership Approach* – London:Home Office
359. Home Office, Department of Health, Department of Education and Science and Welsh Office (1991) *Working Together – Under the Children's Act 1989* - London:HMSO
360. Honigsbaum, F (1970) *The struggle for the Ministry of Health: 1914-1919* - London:Bell
361. Hood, C (1976) *The Limits of Administration* – London:John Wiley
362. Hood, C (1991) 'A Public Management for all seasons' in *Public Administration*,vol. 69,no. 1,p3-19
363. Hood, C (1994) *Explaining Economic Policy Reversals* (Milton Keynes: Open University)
364. Hood, C (1995) 'Contemporary Public Management: a New Global Paradigm?' in *Public Policy and Administration*,vol. 10, no. 2,p104-117
365. Hood, C and Dunsire, A (1981) *Bureaumerics: The Quantitative Comparison of British Central Government Agencies* - Farnborough:Gower

366. Hope, T and Shaw, M (1998) 'Community Approaches to Reducing Crime' in *Communities and Crime Reduction* edited by Tim Hope and Margaret Shaw (Home Office Research and Planning Unit) – London:Home Office
367. Hough, M (1985) 'Managing with Less Technology: The Impact of Information Technology on Police Management' in *Policing Today* edited by Kevin Heal, Roger Tarling and John Burrows (Home Office Research and Planning Unit) – London:Home Office
368. Hough, M and Tilley, N (1998) *Auditing Crime and Disorder: Guidance for Local Partnerships – Crime Detection and Prevention Series 91* – London:Home Office
369. House of Lords Select Committee on Science and Technology (1983) *Remote Sensing and Digital Mapping* (cmd. 127) – London:HMSO
370. House of Lords Select Committee on Science and Technology (1996) *Information Society* (HL Paper 77) – London:HMSO
371. Hudson, J (2001) 'Digitising the Structures of Government: the UK's Information Age Government Agenda' in *Policy and Politics* 30,4
372. Huntington, J (1981) *Social Workers and the General Medical Practice* – London:Allen and Unwin
373. Huxley, A (1932) *Brave New World* – London: Chatto and Windus
374. IGGI (2000) *Obstacles to the Use of Geographic Information in Government* - London:HMSO
375. IGGI (2001) *Principles and Practice of Sharing and Trading Government Information* - London:HMSO
376. IGGI News (1999) *Pan-Government Agreement with Ordnance Survey*, September 1999,p1-3
377. Information Infrastructure Workforce (1993) *Agenda for Action - Information Infrastructure Workforce* - US government publication
378. Inman, P (2002) 'Online tax return service shut' in *the Guardian*, 31st May 2002
379. Interactive Bureau (2002) *First Report into Key Government Web Sites* - London:Interactive Bureau

380. Interactive Bureau (2003) *Second Report into Key Government Web Sites* - London:Interactive Bureau
381. Islam,F (2001) 'Can IT be made to compute?' in *the Guardian*, 18th February 2001
382. iSociety (2003) *SmartGov – Renewing Electronic Government for Improved Service Delivery* – London:Work Foundation
383. Jeffery, S (2001) 'Cradle to Grave website fails to deliver' in *the Guardian*, 19th February 2001
384. Johnson, L and Keen, J (2002) *Evaluation Of Tees ERDIP Programme - Final Report* (November 2002) – Leeds:University of Leeds
385. Jordan, G (1994) *The British Administrative System* - London/New York: Routledge
386. Kable (2000a) 'Blair names e-Envoy' in *Kable*, 31st January 2000
387. Kable (2000b) 'Ex-Revenue man becomes interim e-envoy' in *Kable*, 17th October 2000
388. Kable (2000c) 'Gateway to nowhere?' in *Kable*, 18th October 2000
389. Kable (2000d) 'Safe Choice for E-Envoy?' in *Kable*, 1st December 2000
390. Kable (2000e) 'Sun shines on e-Envoys's office' in *Kable*, 5th December 2000
391. Kable (2000f) 'Two thirds out of the mire' in *Kable*, 29th December 2000
392. Kable (2001a) 'Knowledge Network is top of the projects' in *Kable*, 7th February 2001
393. Kable (2001b) 'Five Steps to Project Heaven' in *Kable*, 20th February 2001
394. Kable (2001c) 'e-Envoy had gone native, say MPs' in *Kable*, 23rd March 2001
395. Kable (2001d) 'E-Government in campaign purdah' in *Kable*, 9th May 2001
396. Kable (2001e) 'Who's who in the new Government' in *Kable*, 12th June 2001

397. Kable (2001f) 'Macdonald to deliver e-government' in *Kable*, 11th July 2001
398. Kable (2001g) 'UK online talks continue' in *Kable*, 30th August 2001
399. Kable (2001h) 'A day to remember' in *Kable*, 12th September 2001
400. Kable (2001i) 'UK Online – on the line' in *Kable*, 21st September 2001
401. Kable (2001j) 'As I was saying before I was interrupted' in *Kable*, 16th October 2001
402. Kable (2001k) 'Whitehall taps outside knowledge' in *Kable*, 12th December 2001
403. Kable (2002a) 'People's panel set to be scrapped' in *Kable*, 9th January 2002
404. Kable (2002b) 'Fall out' in *Kable*, 21st January 2002
405. Kable (2002c) 'Contractor to pay for census failure' in *Kable*, 24th January 2002
406. Kable (2002d) 'IT error net 15 million for the Inland Revenue' in *Kable*, 14th February 2002
407. Kable (2002e) 'Joined up government's fragmented face' in *Kable*, 15th February 2002
408. Kable (2002f) 'Stuck at the Gates' in *Kable*, 22nd February 2002
409. Kable (2002g) 'OGC wants more talk' in *Kable*, 28th February 2002
410. Kable (2002h) '1901- late again' in *Kable*, 22nd April 2002
411. Kable (2002i) 'Up for the e-Government Accolades' in *Kable*, 29th April 2002
412. Kable (2002j) 'One Stop for local services' in *Kable*, 16th May 2002
413. Kable (2002k) 'NHS IT spend could double' in *Kable*, 7th June 2002
414. Kable (2002l) 'Turnbull plans Whitehall shake-up' in *Kable*, 23rd June 2002

415. Kable (2002m) 'Red Faces at E-Envoy Office' in *Kable*, 22nd July 2002
416. Kable (2002n) 'MPs raise Nirs2 alert' in *Kable*, 8th August 2002
417. Kable (2002o) 'They're my children not yours' in *Kable*, 16th August  
2002
418. Kable (2002p) 'One pay day for Whitehall' in *Kable*, 20th August 2002
419. Kable (2002q) 'Criminal Records in Crisis' in *Kable*, 23rd August 2002
420. Kable (2002r) 'The dawning of Acacia' in *Kable*, 16th September 2002
421. Kable (2002s) 'Helmet, truncheon, laptop' in *Kable*, 18th September 2002
422. Kable (2002t) 'In sickness and in health' in *Kable*, 19th September 2002
423. Kable (2002u) 'E-targets under scrutiny' in *Kable*, 1st October 2002
424. Kable (2002v) 'To £1 billion and Beyond' in *Kable*, 15<sup>th</sup> October 2002
425. Kable (2002w) 'Revenue's computer's pensions blunder', 4<sup>th</sup> November  
2002
426. Kable (2002x) 'Magistrates' IT in pieces' in *Kable*, 12 December 2002
427. Kable (2003a) 'online tax fever' in *Kable*, 10<sup>th</sup> February 2003
428. Kable (2003b) 'Criminal Records gets overhaul' in *Kable*, 3<sup>rd</sup> March 2003
429. Kable (2003c) 'Turnbull defends e-envoy' in *Kable*, 14<sup>th</sup> March 2003
430. Kable (2003d) 'Gunning for £5bn' in *Kable*, 10<sup>th</sup> April 2003
431. Kable (2003e) 'Move to join up government' in *Kable*, 15th May 2003
432. Kable (2003f) 'NHS IT get Warner' in *Kable*, 16th June 2003
433. Kable (2003g) 'When the Music Stops...' in *Kable*, 20th June 2003
434. Kable (2003h) 'Falconer Looks to IT' in *Kable*, 1st July 2003
435. Kable (2003i) 'Revenue faces up to failures' in *Kable*, 3<sup>rd</sup> July 2003
436. Kable (2003j) 'ILAs put to rest' in *Kable*, 8<sup>th</sup> July 2003

437. Kable (2003k) 'private finance IT abandoned' in *Kable*, 15<sup>th</sup> July 2003
438. Kable (2003l) 'Targets 'should be scrapped'' in *Kable*, 17<sup>th</sup> July 2003
439. Kable (2003m) 'Customs Counts the cost' in *Kable*, 15<sup>th</sup> August 2003
440. Kable (2003n) 'Forum Plans Against IT failure' in *Kable*, 31<sup>st</sup> October 2003
441. Kable (2004) 'Criminal Justice and Beyond' in *Kable*, 10<sup>th</sup> May 2004
442. Kable research (2002) *UK public sector OT overview 2002* – London:Kable
443. Kabledirect (2001) *Outsourcing 01/02* – London:Kable
444. Kafka, F (1925) *The Trial* – London:Pan Books
445. Kalra, D, Austin, A, Ingram, D, Patterson, D, Ferrera, F, Sotille, P, Grimson, W and Solomon, D (1999) 'The Synex Project' in *Healthcare Computing Conference Proceeding*, Harrogate, March 23-25 - Weybridge:British Computer Society
446. Kaplan, B (1995) 'The Computer Prescription: Medical Computing, Public Policy and Views of History' in *Science, Technology and Human Values*, vol. 20, no. 1
447. Kavanagh, D and Richards, D (2000a) 'Departmentalism and Joined-Up Government: Back to the Future?' in *Parliamentary Affairs*, vol. 54, no. 1
448. Kavanagh, D and Richards, D (2000b) 'Can Joined-Up Government be a Reality? A Case Study of the British Labour Government 1997-2000' - paper presented at *the Australian Political Studies Association 2000 Conference*, Canberra, 4-6 October 2000
449. Kavanagh, D (2001) 'New Labour, New Millennium, New Premiership' in *The Blair Effect* edited by Anthony Seldon - London:Little Brown and Company
450. Keen, J (1994a) 'Information Policy in the National Health Service' in *Information Management in Health Services* edited by Justin Keen - Buckingham/Philadelphia:Open University Press
451. Keen, J (1994b) 'The Politics of Information' in *Information Management in Health Services* edited by Justin Keen - Buckingham/Philadelphia:Open University Press

452. Keohane, R and Nye, J (1998) 'Power and Interdependence in the Information Age' in *Foreign Affairs* 77,5
453. Kickert, W, Klijn, K, Koppenjan, J (1992) *Managing Complex Networks: Strategies for the Public Sector* – London:Sage
454. Killian, W and Wind, M (1998) 'Changes in Interorganizational Coordination and Cooperation' in I. Snellen and W. van der Donk (eds) *Public Administration in an Information Age* – Amsterdam:IOS press
455. King, G (1958) *The Ministry of Pension and National Insurance* – London:Oxford University Press
456. King's Fund (2002) *Partnerships Under Pressure* (author Penny Banks) – London:King's Fund
457. Kingston, P (2002) 'Systems Abuse' in *the Guardian*, 22nd January 2002
458. Koch, B (1998) *The Politics of Crime Prevention* – Aldershot:Ashgate:
459. Labour Party (1987) *Protecting our People: Labour's Police on Crime Prevention* - London:Labour Party
460. Labour Party (1994) *Partners Against Crime* - London:Labour Party
461. Labour Party (1995) *Communicating Britain's Future* - London:Labour Party
462. Lamb, GM (1973) *Computer in the Public Service* - London:Allen and Unwin
463. Laming, W (2003) *The Victoria Climbié Inquiry* – London:HMSO
464. Laudon, K (1977) *Communication Technology and Democratic Participation* – New York:Praeger
465. Lawton, A and Rose, A (1999) *Public Services Management* – Harlow:Prentice Hall
466. Laycock, G and Heal, K (1989) 'Crime Prevention: the British Experience' in *The Geography of Crime* edited by David Evans and David Herbert - New York/London:Routledge
467. Leadbeater, C (1999) *Living on Thin Air: The New Economy* – London:Viking

468. Le Grand, J, Mays, N and Mulligan, J (eds) (1998) *Learning from the NHS internal market: a review of the evidence* - London: King's Fund
469. Leathard, A (eds) (1994) *Going inter-professional: working together for health and welfare* - London: Routledge
470. Leavitt, M (1999) 'Electronic Medical Records (EMR)' in *Healthcare Information Systems* edited by Phillip Davidson - London: Auerbach
471. Ledley, R and Lusted, L (1960) 'The use of electronic computers in medical data processing' in *IEEE Transactions in Medical Electronics*, vol. 7, no. 31
472. Left, S (2001) 'Government computer system failure', in *the Guardian*, 15th February 2001
473. Lessig, L (1999) *Code and Other Laws of Cyberspace* – New York: Basic Books
474. Lettice, J (2004) 'ID card backlash: is the poll tax effect kicking in?' in *the Register*, 19<sup>th</sup> May 2004
475. Lewis, J (2002) 'The Boundary Between Health and Social Care for Older People' in *Understanding care, welfare and the community* edited by Bill Bytheway, Vivien Bacigalupo, Joanna Bornat, Julia Johnson and Susan Spurr - London/New York: Routledge
476. Liddle, AM and Gelsthorpe, LR (1994a) *Inter Agency Crime Prevention: Organising Local Delivery* (Crime Prevention Unit series paper no. 52) – London: Home Office
477. Liddle, AM and Gelsthorpe, LR (1994b) *Crime Prevention and Inter-Agency Co-operation* (Crime Prevention Unit series paper no. 53) – London: Home Office
478. Liepietz, A (1987) *Mirages and Miracles: The Crisis of Global Fordism* - London: Verso
479. Ling, T (2002) 'Delivering Joined Up Government In the UK: Dimensions, Issues and Problems' in *Public Administration*, vol. 80, no. 4
480. Lipsky, M (1980) *Street-level bureaucracy: dilemmas of the individual in public services* - New York: Russell Sage Foundation



481. Loader, B (1998) 'Welfare Direct – Informatics and the emergence of self-service welfare' in *Postmodernity and the Fragmentation of Welfare* edited John Carter - London/New York:Routledge
482. Longford, G (2002) *Net Gain? E-Government in Canada, the U.S and the U.K: Dilemmas of Public Service, Citizenship and Democracy in the Digital Age* – presented to the International Studies Association 43<sup>rd</sup> Annual Internet Convention, March 2002
483. Lowndes, V (1996) 'Varieties of New Institutionalism: A Critical Appraisal' in *Public Administration*, 74
484. Lowe, R (1999) *The Welfare State in Britain Since 1945* – Basingstoke:Macmillan
485. Lyon, D (1988) *The Information Society; Issues and Illusions* – Cambridge:Polity
486. Lyon, D (1994) *The Electronic Eye: The Rise of the Surveillance Society* - Cambridge:Polity Press
487. Lyon, D (2001) *Surveillance Society: Monitoring Everyday Life* – Philadelphia:Open University
488. Lyon, D (ed) (2003) *Surveillance as Social Sorting* – London:Routledge
489. Mackintosh, JP (1977) *The British Cabinet* (3rd Edition) – London:Stevens and Sons
490. MacLeod, D (2001) 'Course Learning Accounts Suspended' in *the Guardian*, 24th October 2001
491. Macpherson, G (ed) (1998) *Our NHS:a celebration of 50 years* London:BMJ
492. Maguire, DJ (1991) 'An Overview And Definition of GIS' in *Geographical Information Systems: Principles And Applications*,vol. 1 edited by David J Maguire, Michael F Goodchild and David W Rhind – Harlow:Longman Scientific & Technical
493. Maguire, K and Hencke, D (2001) 'Straw to Scrap £118 million computer' in *the Guardian*, 11th January 2001
494. Mandelson, P and Liddell, R (1996) *The Blair Revolution: Can New Labour Deliver?* – London:Faber and Faber

495. March, J and Olsen, J (1984) 'The New Institutionalism: Organizational Factors in Political Life' in *American Political Science Review*, 78,3
496. Margetts, H (1991) 'The Computerization of Social Security: The Way Forward or a Step Backwards' in *Public Administration*, 69
497. Margetts, H (1996) 'Implications for Democracy of Computerisation in Government' in *Reinventing Democracy* edited by Paul Hirst and Sunil Khilnani - Oxford:Blackwell
498. Margetts, H (1999) *Information Technology in Government – Britain and America* - London/New York:Routledge
499. Margetts, H and Willcocks, L (1993) 'Information Technology in Public Services: Disaster Faster?' in *Public Money and Management* 6,2
500. Margetts, H and Yared, H (2003) *Incentivization of e-Government* report to accompany NAO report 'Transforming the Performance of HM Customs and Excise through Electronic Service Delivery' – London:HMSO
501. Martin, D (1996) *Geographic Information Systems – Socioeconomic Implications* - London:Routledge
502. Martin, D (1998) 'Census Geography in 2001: designed by and for GIS?' in *Innovations in GIS 5* edited by Steve Carver - London:Taylor/Francis
503. Martin, D (2002) 'Output Areas for 2001' in *The Census Data System* edited by Phil Rees, David Martin and Paul Williamson - Chichester:John Wiley
504. Mather, A (2002) *Web log entry 3<sup>rd</sup> September 2002* – available at [www.diverdiver.com/egovblog.html](http://www.diverdiver.com/egovblog.html)
505. Matheson, S (1984) 'Computerisation of the Pay As You Earn System' in *The Computer Revolution in Public Administration* edited by DC Pitt and BC Smith - Brighton:Wheatsheaf
506. Mathieson, SA (2003) 'Fewer, Clearer, Better' in *the Guardian*, 8<sup>th</sup> October 2003
507. Mawby, RI (1989) 'Policing and the Criminal Area' in *The Geography of Crime* edited by David Evans and David Herbert - New York/London:Routledge
508. May, C (2002) *The Information Society – a sceptical view* - Oxford:Polity
509. McCahill, M (2001) *The Surveillance Web: The Rise of Visual Surveillance in an English City* - Devon:Willan Press.

510. McIntosh, N (2001) 'Sir Humphrey gets Wired' in *the Guardian*, 8th February 2001
511. McNay, L (1994) *Foucault: A Critical Introduction* - Cambridge: Polity
512. Mental Health Nursing Review Team (1994) *Working in Partnership: collaborative approach to care* – London:HMSO
513. Metcalf, L and Richards, S (1987) 'Evolving Public Management Cultures' in *Managing Public Organisations* edited by Jan Kooiman and Kjell A Eliassen – London:Sage
514. Miller, S (2001) 'Government's internet project 'doomed to fail'' in *the Guardian*, 4th June 2001
515. Miller, S (2002) 'Police Failing to Stop Crooks Being Jurors' in *the Guardian*, 1st May 2002
516. Milmo, D (2001) 'Government Appoints new e-Envoy' in *the Guardian*, 31st January 2001
517. Ministry of Health (1962) *Annual Report* (cmd. 2062) – London:HMSO
518. Ministry of Health (1963a) *Annual Report* (cmd. 2688) – London:HMSO
519. Ministry of Health (1963b) *Health and Welfare – The development of Community Care* (cmnd. 1973) – London:HMSO
520. Ministry of Health (1966) *Annual Report* (cmd. 3326) - London:HMSO
521. Ministry of Pensions (1950) *Report for 1944-1949* (cmnd. 7955)
522. Moon, J, Richardson, J and Smart, P (1986) 'Government Policy for the Development and Acquisition of Information Technology: The Role of the Department of Trade and Industry' in *Policy Change in Government: three cases studies* edited by N Deakin - London:RIPA
523. Moore, S (2000) 'UK Online' in *Public Service Monthly*, November 2000
524. Morad, M (2002) 'British Standard 7666 as a Framework for Geocoding Land and Property Information in the UK' in *Computers, Environment and Urban Systems* 26
525. Morgan, G and Rae, D (2004) 'Budget 2004: Revenue and Customs to merge' in *vnunet.com news*, 17<sup>th</sup> March 2004

526. Morris, D (2001) 'Direct Democracy and the Internet' in *Loyola of Los Angeles Law Review*, vol. 34
527. Moxon, D (ed) (1985) *Managing Criminal Justice: A Collection of Papers* – London:HMSO
528. MPNI (1959) *Annual Report* (cmd. 1137) – London:HMSO
529. MPNI (1960) *Annual Report* (cmd. 1764) – London:HMSO
530. MPNI (1961) *Annual Report* (cmd. 1764) – London:HMSO
531. MPNI (1964) *Annual Report* (cmd. 2686) – London:HMSO
532. MPNI (1965) *Annual Report* – London:HMSO
533. MPNI (1966) *Annual Report* – London:HMSO
534. Muid, C (1992) 'New Public Management and Informatization; a Natural Combination?' in *Public Policy and Administration*, 7
535. Muid, C (1994) 'Information Systems and New Public Management - A view from the centre' in *Public Administration*, vol 72, Spring, p95-112
536. Mulgan, G (2002) 'Joined Up government - past, present and future', article for the Young Foundation - London:Young Foundation
537. Mulholland, H (2004) 'Reid to Axe NHS Reform Agency' in *the Guardian*, 11th March 2004
538. NAO (1983/84) *Administrative Computing in Government Departments* (HC 259) - London:HMSO
539. NAO (1989) *Department of Social Security: Operational Strategy* (HC 111) - London:HMSO
540. NAO (1990) *Managing Computer Projects in the NHS* - London:HMSO
541. NAO (1997/98) *The Contributions Agency: The Contract to Develop and Operate the Replacement National Insurance Recording System* (HC 12) - London:HMSO
542. NAO (1999) *Criminal Justice: Working Together* (HC 29) - London:HMSO

543. NAO (1999/2000a) *Government on the Web* (HC 87) - London:HMSO
544. NAO (1999/2000b) *The Cancellation of the Benefits Payment Card Project* (HC 857) - London:HMSO
545. NAO (1999/2000c) *The Passport Delays of Summer 1999* (HC 812) - London:HMSO
546. NAO (2000/01) *The Implementation of the National Probation Service Information Systems Strategy* (HC 401) - London:HMSO
547. NAO (2001/02a) *Better Public Services Through e-government* (HC 704) - London:HMSO
548. NAO (2001/02b) Helen Margetts and Patrick Dunleavy's supporting academic article for *Better Public Services Through e-government* (HC 704-III) - London:HMSO
549. NAO (2001/02c) *e-Revenue* (HC 492) - London:HMSO
550. NAO (2001/02d) *Government on the Web II* (HC 764) - London:HMSO
551. NAO (2001/02e) *Joining Up to Improve Public Services* (HC 383) – London:HMSO
552. NAO (2002/03) *Unlocking the Past: The 1901 Online Census* (HC 1259) – London:HMSO
553. NAO (2003) *New IT systems for Magistrates Court: the Libra project* (HC 327) - London:HMSO
554. NAO (2003/04) *Criminal Records Bureau: Delivering Safer Recruitment* (HC 266) – London:HMSO
555. Narey, M (1997) *Review of the Delay in the Criminal Justice System* - London:Home Office
556. National Health Service (2002) *Delivering the NHS Plan* (cm. 5503) - London:HMSO
557. National Health Service/Department Of Health (2002) *Delivering the NHS Plan – Next steps on investment – Next steps on reform* (cm. 5503) – London:HMSO
558. National Land and Property Gazetteer (2004) *NLPG Welcomes Acacia Report* – press release 8<sup>th</sup> January 2004

559. National Performance Review (1993) *From Red Tape to Results: Creating a Government That Works Better and Costs Less* - US government publication
560. Naylor, S (2004) comments in 'It's about more than targets' Roundtable discussion in the *Financial Times* 4<sup>th</sup> February 2004
561. Neame, R (1997) 'Smart cards - the key to trustworthy health information systems' in the *British Medical Journal*, vol. 314
562. Neame, R and Benson, T (1994) *Health Care Computing* - London/New York:Longman
563. Nedovic-Budic, Z and Pinto, J (2000) 'Information Sharing in an Interorganizational GIS Environment' in *Environment and Planning B*, vol. 27,no. 3,p455-74
564. Negroponte, N (1995) *Being Digital* - New York:Vintage
565. NHS Executive (1992) *IM&T Strategy Overview* - London:Department of Health
566. NHS Executive (IMG group) (1995) *Implementing the Infrastructure For Information Management and Technology in the NHS* - London:Department of Health
567. NHSIA (1998) *Information for Health* - London:HMSO
568. NHSIA (2003a) *Lessons Learnt Topic Summary: No. 5 Social Care* - available at [www.nhsia.nhs.uk](http://www.nhsia.nhs.uk)
569. NHSIA (2003b) 'ERDIP: Striding forward with electronic records' in *Inform*,no. 12, March/April 2003 (NHS Information Authority News)
570. Nixon, P (2000) 'Whitehall On-line: Joined-up Government' in *Re-invigorating Democracy* edited by G.Gibson and S.Ward - Aldershot:Ashgate
571. Nora, S and Minc, A (1980) *The Computerization of Society* - Cambridge:MIT Press
572. Norris, C and Armstrong, G (1999) *The Maximum Surveillance Society* - Oxford:Berg
573. NPL (1948/49) *Annual Report* (in cmd. 8045) - London:HMSO
574. NPL (1951/52) *Annual Report* (in cmd. 8773) - London:HMSO

575. NPL (1952/53) *Annual Report* (in cmd. 9083)– London:HMSO
576. NPL (1953/54) *Annual Report* (in cmd. 9386) – London:HMSO
577. NPL (1954/55) *Annual Report* (in cmd. 9690) – London:HMSO
578. NPL (1955) *Annual Report* (published independently) – London:HMSO
579. NPL (1958) *Annual Report* (published independently) – London:HMSO
580. NPL (1959) *Annual Report* (published independently) – London:HMSO
581. NPL/DSIR (1956) *Wage Accounting by Electronic Computer* – London:HMSO
582. OECD (2003) *The e-Government Imperative* – Paris:OECD
583. Office of Central Information (1998) *Our Information Age* - London:HMSO
584. Office of Public Service and Science (1993) *Open Government* (cm. 2290) - London:HMSO
585. Office of Public Service and Science (1994a) *The Civil Service – Continuity and Change* (cmdnd 2627) – London:HMSO
586. Office of Public Service and Science (1994b) *Code of Practice on Access to Government Information* (updated in 1997) - London:HMSO
587. Office of Public Service and Science (1995) *The Civil Service: Taking Forward Continuity and Change* (cmdnd 2748) – London:HMSO
588. Office of Technology Assessment (1993) *Making Government Work: Electronic Delivery of Federal Services* - US government publication
589. Office of the Deputy Prime Minister (2002) *The National Strategy for Local e-government* – London:HMSO
590. Office of the Deputy Prime Minister (2003) *Maps On Tap – Statement Of Service Requirements* – London:ODPM
591. Office of the Deputy Prime Minister (2004) *The English Indices of Deprivation 2004: Summary* – London:ODPM
592. Office of the e-Envoy (2000) *First Annual Report* - London:OeE

593. Office of the e-Envoy (2001a) *Second Annual Report* - London:OeE
594. Office of the e-Envoy (2001b) *Trust Charter for Electronic Service Delivery* - London:HMSO
595. Office of the e-Envoy (2001c) *Trust Services Framework* - London:OeE
596. Office of the e-Envoy (2001d) *E-Services Development Framework* - London:OeE
597. Office of the e-Envoy (2001e) *Security Framework* - London:OeE
598. Office of the e-Envoy (2001f) *Registration & Authentication Framework* - London:OeE
599. Office of the e-Envoy (2001g) *Confidentiality Framework* - London:OeE
600. Office of the e-Envoy (2001h) *Business Services Framework* - London:OeE
601. Office of the e-Envoy (2001i) *Network Defences Framework* - London:OeE
602. Office of the e-Envoy (2001j) *Assurance Framework* - London:OeE
603. Office of the e-Envoy (2001k) *Security Architecture* - London:OeE
604. Office of the e-Envoy (2001l) *Disposition Of Comments On Security Framework Documents* - London:OeE
605. Office of the e-Envoy (2001m) *E-Policy Principles: A policymakers guide to the internet* - London:OeE
606. Office of the e-Envoy (2001n) *ukonline.gov.uk – Overview* - London:HMSO
607. Office of the e-Envoy (2001o) *Summer 2001 – Electronic Service Delivery Report* – London:OeE
608. Office of the e-Envoy (2002a) *e-government interoperability framework version 4* - London:HMSO
609. Office of the e-Envoy (2002b) *Third Annual Report* – London:HMSO
610. Office of the e-Envoy (2003) *Fourth Annual Report* - London:HMSO



611. Office of the e-Envoy (2004a) *Government Gateway and DotP – Service Delivery Executive Report – March 2004* – London:OeE
612. Office of the e-Envoy (2004b) *Electronic Service Delivery (ESD): Quarter 2 2004* – London:OeE
613. Office of the e-Envoy/CITU (2000) *Successful IT: Modernising Government in Action* (The McCartney Report)- London:OeE
614. Office of Government Commerce (2003) *Increasing Competition and Improving Long-Term Capacity Planning in the Government Market Place* – London:HMSO
615. Office of National Statistics (2004a) ‘News: Quarterly Internet Access’ – available at [www.statistics.gov.uk](http://www.statistics.gov.uk)
616. Office of National Statistics (2004b) ‘Living in Britain: A Summary of Changes Over Time’ from General Household Survey – available at [www.statistics.gov.uk](http://www.statistics.gov.uk)
617. Office of the Vice President (1993) *Reengineering Through Information Technology* - US government publication
618. O’Harrow, R (2004) *No Place to Hide* – New York:Free Press
619. OMCS (1988) *Service to the Public* – London:HMSO
620. Openshaw, S (1995) ‘The Future of the Census’ in *Census User’s Handbook* edited by Stan Openshaw – Cambridge:GeoInformation International
621. Ordnance Survey (1955/56) *Annual Report* – London:HMSO
622. Ordnance Survey (1958/59) *Annual Report* – London:HMSO
623. Ordnance Survey (1962/63) *Annual Report* – London:HMSO
624. Ordnance Survey (1966/67) *Annual Report* – London:HMSO
625. Ordnance Survey (1968/69) *Annual Report* – London:HMSO
626. Ordnance Survey (1969/70) *Annual Report* – London:HMSO
627. Ordnance Survey (1970/71) *Annual Report* – London:HMSO
628. Ordnance Survey (1972/73) *Annual Report* – London:HMSO

629. Ordnance Survey (1973/74) *Annual Report* – London:HMSO
630. Ordnance Survey (1977/78) *Annual Report* – London:HMSO
631. Ordnance Survey (1981/82) *Annual Report* – London:HMSO
632. Ordnance Survey (1983/84) *Annual Report* – London:HMSO
633. Ordnance Survey (1984/85) *Annual Report* – London:HMSO
634. Ordnance Survey (1986/87) *Annual Report* – London:HMSO
635. Ordnance Survey (1987/88) *Annual Report* – London:HMSO
636. Ordnance Survey (2004) ‘History’ – available at website
637. Organ, J (2003) ‘The Coordination of e-Government in Historical Context’ in *Public Policy and Administration*,vol. 18,no. 2
638. Orren, K and Skowronek, S (1994) ‘Beyond the Iconography of Order; Notes for a ‘New’ Institutionalism’ in L.Dodd and C.Jillson (eds) *Dynamics of American Politics* – Boulder:Westview
639. Orwell, G (1949) *Nineteen Eighty Four* – London:Penguin
640. Osborne, D and Gaebler, T (1992) *Reinventing Government* - New York/London:Plume
641. O’Toole, L (1997) ‘Treating Networks Seriously: Practical and Research-based Agendas in Public Administration’ in *Public Administration Review*,vol. 57,no. 1,p 45-52
642. O’Toole, L (2000) ‘Research on Policy Administration: Assessment and Prospects’ in *Journal of Public Administration Research and Theory*,vol. 9,no. 4,p505-526
643. Owen, T and Pilbeam, E (1992) *Ordnance Survey: Map Makers to Britain Since 1791* - London:HMSO
644. Owens, N and Foord, R (2002) *National ERDIP Evaluation of the Durham & Darlington Demonstrator Project* – available at [www.nhsia.nhs.uk](http://www.nhsia.nhs.uk)
645. Owens, N, Foord, F (2003) *NHS Information Authority ERDIP N2 Core National Evaluation – Tees (report sections 1 – 3)* – London:PA Consulting Group

646. Owens, P, Carrier, J and Horder, J (eds) (1995) *Interprofessional issues in community and primary health care* - Basingstoke:Macmillan
647. PAC (1978/79) *Repayment of Administrative Computers* (HC 329-I) - London:HMSO
648. PAC (1979/80) *Procurement of Government Computers* (HC 463) - London:HMSO
649. PAC (1983/84) *Management and Control of the Development of Administrative Computers in Government Departments*, vol. 1 (HC 361) - London:HMSO
650. PAC (1984) *Administrative Computing in Government Departments: Review of the CCTA* – Minutes of Evidence 28/03 – London:HMSO
651. PAC (1991/92) *Ministry of Defence: Support Information Technology* (HC 96) – London:HMSO
652. PAC (1993) *Wessex Regional Health Authority Regional Information Systems Plan* (Sixty-third report) - London:HMSO
653. PAC (1993/94a) *The Proper Conduct of Government Business* (HC 154) - London:HMSO
654. PAC (1993/94b) *The Department of Employment: Field System* (HC 153) – London:HMSO
655. PAC (1996/97) *Northern Ireland Vehicle System Replacement Project* (HC 11-v) – London:HMSO
656. PAC (1997/98) *Contract to Develop and Update the Replacement National Insurance Recording System* (HC 472) - London:HMSO
657. PAC (1998/99a) *Delays to the New National Insurance Recording System* (HC 182) - London:HMSO
658. PAC (1998/99b) *The Immigration and Nationality Directorate Casework Programme* (HC 277) - London:HMSO
659. PAC (1999/2000a) *Government on the Web* (HC 331) - London:HMSO
660. PAC (1999/2000b) *Improving the Delivery of Government IT Projects* – (HC 65) London:HMSO

661. PAC (1999/2000c) *The Passport Delays of Summer 1999* (HC 208) - London:HMSO
662. PAC (2000/01) *The Cancellation of the Benefits Payment Card Project* (HC 282) - London:HMSO
663. PAC (2001/02a) *E-Revenue* (HC 707) - London:HMSO
664. PAC (2001/02b) *Fraud and Error in Income Support* (HC 295) - London:HMSO
665. PAC (2001/02c) *Improving Public Services Through e-Government* (HC 845) - London:HMSO
666. PAC (2001/02d) *Nirs2:Contract Extension* (HC 423) - London:HMSO
667. PAC (2001/02e) *The Implementation of the National Probation Service Information Systems Strategy* (HC 357) - London:HMSO
668. PAC (2001/02f) *Progress In Achieving Government On The Web* (HC 936) – London:HMSO
669. PAC (2001/02g) *The Cancellation of the Benefits Payment Card Project* (HC 358) - London:HMSO
670. PAC (2002/03) *New IT systems for Magistrates' Courts: the Libra project* (HC 434) – London:HMSO
671. PAC (2003) *Transforming the Performance of HM Customs and Excise Through Electronic Service Delivery* (uncorrected evidence) (HC 138-i) London:HMSO
672. Paliwoda, S (1996) 'The Development and use of a GIS in the NHS' in the *AGI 1996 Conference Proceedings*, Birmingham
673. Palmer, P and Rees, C (1980) *Computing in general practice* - London:Scicon Consultancy International
674. Parrott, R and Stutz, FP (1991) 'Urban GIS Applications' in *Geographical Information Systems: Principles And Applications, vol. 1* edited by David J Maguire, Michael F Goodchild and David W Rhind - Harlow:Longman Scientific & Technical
675. Pease, K (2001) 'What to do about it? Lets turn off our minds and GIS' in *Mapping and Analysing Crime Data – Lessons From Research and Practice* edited by Lex Hirschfield and Kate Bowers - London/New York:Taylor Francis

676. Perez, C (1983) 'Structural Change and the Assimilation of New Technologies in the Economic and Social System' in *Futures* 15,4
677. Personal Statistics Branch (2001) *Civil Service Statistics 2001* – London:Cabinet Office
678. Petrie, A, Brewer, N and Bellamy, C (1999) *One-Stop Government in England and Wales* (national report) - Nottingham:Nottingham Trent University
679. Pickles, J (1995) *Ground Truth, the Social Implications of Geographic Information Systems* – New York/London:Guilford Press
680. Pierson, P (2000) 'Increasing Returns, Path Dependence, and the Study of Politics' in *American Political Science Review*, vol. 94, no. 2
681. Pierson, P and Skocpol, T (2002) 'Historical Institutionalism in Contemporary Political Science' in I.Katznelson and H.Milner *Political Science: State of the Discipline* – New York:Norton
682. Pinder, A (2001a) *The e-government challenge* - available at [www.idea.gov.uk](http://www.idea.gov.uk)
683. Pinder, A (2001b) 'Pinder on the need for an e-Envoy', interview with *epolitix*, 19 February 2001 - available at [www.epolitix.com](http://www.epolitix.com)
684. Pinder, A (2001c) *Making the connection* - available at [www.epolitix.com](http://www.epolitix.com)
685. PITCOM (2002) 'Ministries Embrace Joined Up Geographic Information Systems' – in *PITCOM News* 1<sup>st</sup> November 2002
686. PITO (2003) *Forward Plan 2003-2008* - London:HMSO
687. PITO (2004) *PITO in Profile* - London:PITO
688. Pitt, DC and Smith, BC (1981) *Government Departments – an organizational perspective* - London:Routledge and Kegan Paul
689. PIU (1999) *e-commerce@its.best.uk* - London:HMSO
690. PIU (2000a) *Wiring It Up* - London:HMSO
691. PIU (2000b) *E-gov: Electronic Government Services for the 21<sup>st</sup> Century* - London:HMSO
692. PIU (2000c) *Adding it up* - London: PIU

693. PIU (2002) *Privacy and Data Sharing: The Way Forward For Public Services* – London:PIU
694. Plowden, W (1994) *Ministers and Mandarins* – London:IPPR
695. Pollard, P (2000) 'Geographical Information Services: A UK Perspective on the Development of Interorganisational Information Services' in *Information Infrastructure and Policy*, 6
696. Pollitt, C (1984) *Manipulating the machine : changing the face of ministerial departments, 1960-83* – London:Allen and Unwin
697. Pollitt, C (2003) 'Joined Up Government: a Survey' in *Political Studies Review*, vol.1, no. 1
698. Ponting, C (1986) *Whitehall: Tragedy and Farce* – London:Sphere Books
699. Porat, M (1978) 'Global Implication of the Information Society' in *Journal of Communication* 28,1
700. Powell, M (2000) 'New Labour's Third Way in British Social Policy: a New and Distinct Approach?' in *Critical Social Policy*, vol. 20, no. 1
701. Power, M (1994) *The Audit Explosion* - White Dove Press:London
702. Preece, J (1983) *The Use of Computers in General Practice* – Edinburgh/London:Churchman Livingstone
703. Prime Minister's Information Technology Advisory Panel (1983) *Making a Business of Information* - London:HMSO
704. Privacy International (2004) 'Privacy International Announces Winners of 6th Annual Big Brother Awards' (press release) available at [www.privacyinternational.org](http://www.privacyinternational.org)
705. Propper, C, Burgess, S and Gossage, D (2003) *Competition and quality:evidence from the NHS internal market, 1991-1999* - Bristol:University of Bristol
706. Protti, D (1999) *An Assessment Of The State Of Readiness And A Suggested Approach To Evaluating Information For Health: An Information Strategy For The Modern NHS (1998 - 2005)* – London:DOH
707. Public Administration Committee (1999/2000a) *Innovations in Citizen Participation in Government* (HC 79-v) - London:HMSO

708. Public Administration Committee (1999/2000b) *Making Government Work* (HC 94) - London:HMSO
709. Public Administration Committee (1999/2000c) *The Modernising Government Initiative* (HC 40) - London:HMSO
710. Public Administration Committee (2001/02) *Government Information and Communication* (HC 303-iii) – London:HMSO
711. Public and Commercial Services Union (2002) *Fresh Approach Aims to End Government IT Disasters* (press release) – available at [www.psc.org.uk](http://www.psc.org.uk)
712. Public Service Committee (1997/98) *Report* (HL 55) – London:HMSO
713. Pyatt, E (1983) *The National Physical Laboratory* – Bristol:Adam Hilger
714. Pyper, R (1991) *The Evolving Civil Service* – London:Longman
715. Raab, C (2001) 'Electronic Service Delivery in the UK: Proaction and Privacy Protection' in *Designing e-government: on the crossroads of technological innovation and institutional change* edited by J.Prins – Hague:Kluwer Law
716. Raab, C and Bennett, C (2003) *Governance of Privacy: Policy Instruments in Global Perspective* – Aldershot:Ashgate
717. Raab, C, Taylor, J, Bellamy, C, Dutton, W and Peltu, M (1996) 'Innovation in Public Service Delivery' in *Information and Communications Technologies: visions and realities* edited by WH Dutton, J Blumler, N Garnham, R Mansell, J Cornford and M Peltu - Oxford:Oxford University Press
718. Radburn, S (2001) *Data Exchange and Crime Mapping* – London:Home Office
719. Radburn, S (2002) *Survey of Public Sector IT Infrastructure* - London:Home Office
720. Radcliffe, J (1991) *The Reorganization of British Central Government* - Aldershot:Dartmouth:
721. Raine, JW and Willson, M (1993) *Managing Criminal Justice* - London:Harvester Wheatsheaf
722. Rayner, B (1994) *History of Department of Health* - London:DOH

723. Rayner, J (2002) 'Experts find fault with new 1901 census website' in *the Guardian*, 6th January 2002
724. Redfearn, P (1960) 'Experience in Using a DEUCE Computer for the Family Expenditure Survey of Great Britain' in *The Computer Journal*, vol. 2, no. 3
725. Rees, P and Martin, D (2002) 'The Debate About Census Geography' in *The Census Data System* edited by Phil Rees, David Martin and Paul Williamson – Chichester: John Wiley
726. Rhodes, RAW (1988) *Beyond Westminster and Whitehall* – London/Sydney: Unwin Hyman
727. Rhodes, RAW (1994) 'The Hollowing out of the state' in *Political Quarterly*, vol. 65, p131-151
728. Rhodes, RAW (1997) *Understanding Governance* - Buckingham: Open University Press
729. Rhodes, RAW (2000a) 'Conclusion: Interpreting British Government: the Governance Narrative' in *Transforming British Government* edited by Rod Rhodes - Basingstoke: Macmillan
730. Rhodes, RAW (2000b) *Transforming British Government* - Basingstoke: Macmillan Press
731. Rhodes, RAW (2000c) 'The Governance Narrative: Key Findings and Lessons from the ESRC Whitehall Programme' in *Public Administration*, vol. 78, no. 2
732. Rhodes, R (2000d) 'New Labour's Civil Service: Summing-up Joining up' in *Political Quarterly* vol. 71:2
733. Richards, B (2001) 'The Early Days of Health Computing in the UK' in *MEDINFO 8* edited by V. Patel et al - Amsterdam: IOS Press
734. Richards, D and Smith, MJ (2001) 'New Labour, the Constitution and Reforming the State' in *New Labour in Government* edited by Steve Ludlam and Martin J Smith - Basingstoke: McMillan Press
735. Richards, S (2001) 'Four Types of Joined Up Government and the Problem of Accountability' in *Joining Up to Improve Public Services (HC 383)* by the NAO – London: HMSO



736. Richardson, BW (1965) *Snow On Cholera: Being a Reprint of Two Papers* - New York:Hafner
737. Riddell, P (2001) 'Blair as Prime Minister' – in *The Blair Effect* edited by Anthony Seldon – London:Little Brown and Company
738. Rivett, G (1998) *From cradle to grave:fifty years of the NHS* – London:King's Fund
739. Roseveare, H (1969) *The Treasury, The Evolution of a British Institution* - London:Allen Lane
740. Royal Commission on the National Health Service (1980) *Report of the Royal Commission on the National Health Service* (Cmnd. 7519) - London:HMSO
741. Rule, J (1973) *Private Lives and Public Surveillance* – London:Allen Lane
742. Salazar, A (1999) 'Evaluating Information Systems for Decentralisation: Health Management Reform in Ecuador' in R.Heeks (ed) *Reinventing Government in the Information Age* – London:Routledge
743. Salza, S and Mecella, M (2001) 'The Italian Approach to e-Government' in *Designing e-government: on the crossroads of technological innovation and institutional change* edited by J.Prins – Hague:Kluwer Law
744. Sampson, A, Stubbs, A, Smith, D, Pearson, G and Blagg, H (1988) 'Crime, Localities and the Multi-agency Approach' in *British Journal of Criminology*,vol. 28,no. 4
745. Sarson, R (2000) 'Did Whitehall Try to Scupper the E-Envoy?' in *the Source*, 14th September 2000
746. Sarson, R (2003) 'What one patient wants from the NHS IT Tsar' in *the Source*, 7<sup>th</sup> January 2003
747. Say, M (2002) 'More I, less T for Healthcare' in *Government Computing*, September 2002
748. Say, M (2004) 'Let's Bang Heads Together' in *Government Computing*, June 2004
749. Schenthal, J, Sweeney, J, Nettleton, W (1960) 'Clinical Application of Electronic Data Processing Apparatus: I – New Concepts in Clinical Use of the Electronic Digital Computer' in *Journal of the American Medical Association*, vol. 173

750. Schenthal, J, Sweeney, J, Nettleton, W (1961) 'Clinical Application of Electronic Data Processing Apparatus: II – New Methodology in Clinical Record Storage' in *Journal of the American Medical Association*, vol. 178
751. Schenthal, J, Sweeney, J, Nettleton, W, Yoder, R (1963) 'Clinical Application of Electronic Data Processing Apparatus: III – System for Processing Medical Records' in *Journal of the American Medical Association*, vol. 259
752. Schofield, J and Sausman, C (2004) 'Symposium on Implementing Public Policy: Learning from Theory and Practice: Introduction' in *Public Administration*, vol. 82, no. 2, p235-248
753. Seebohm Committee (1968) *Report of the Committee on Local Authority and Allied Personal Social Services* (cmd. 3703) - London:HMSO
754. Seldon, A (1995) 'The Cabinet Office and Coordination, 1979-1987' in *Prime Minister, Cabinet and Core Executive* edited by Patrick Dunleavy and Rod Rhodes - Basingstoke:Macmillan
755. Select Committee on Science & Technology (1996/97) *Information Society: Agenda for Action in the UK* (HL paper 77) - London:HMSO
756. Self, P (1972) *Administrative Theories and Politics : An Inquiry into the Structure and Processes of Modern Government* – London:Allen and Unwin
757. Shaw, CR and McKay, HD (1942) *Juvenile Delinquency and Urban Areas* - Chicago:Chicago University Press
758. Silcock, R (2000) 'What is E-Government?' in *Parliamentary Affairs*, vol. 54, no. 1
759. Simmons, JRM (1962) *LEO and the Managers* - London:Macdonald
760. Slack, J (1984) 'The Information Revolution as Ideology' in *Media Culture and Society*, 6
761. Slater, L (1960) 'Problems of the Introduction of Large Scale Data Processing into the Royal Army Pay Corps' in *The Computer Journal*, vol. 3, no. 2
762. Smart, V (2001) 'The Shambles of e-Whitehall' in *the Guardian*, 16th August 2001
763. Smellie, KB (1950) *A Hundred Years of English Government* – London:Gerald Duckworth and Co

764. Smith, I and Gowing, W (2003) *Developing a Pan-community Electronic Patient Record* (Final Report) – London:SECTA
765. Smith, MJ (2000) Prime Ministers, Ministers and Civil Servants in the Core Executive in *Transforming British Government* edited by RAW Rhodes – Basingstoke:Macmillan
766. Smith, MJ, Marsh, D and Richards, D (1995) ‘Central Government Departments and the Policy Process’ in *Prime Minister, Cabinet and Core Executive* edited by Patrick Dunleavy and Rod Rhodes - Basingstoke:Macmillan
767. Smith, MJ, Richards, D, Marsh, D (2001) ‘The Changing Role of Central Government Departments’ in *Transforming British Government, vol.2* edited by Rod Rhodes - Basingstoke:Macmillan
768. Snellen, I (1994) ‘ICT: A Revolutionizing Force in Public Administration?’ in *Informatization and the Public Sector* 3,3/4
769. Social Exclusion Unit (2001) *A New Commitment to Neighborhood Renewal* Cabinet Office document – London:HMSO
770. Social Services Inspectorate (1994/95) *Partners in Caring* (4th Annual Report) - London:HMSO
771. Social Services Inspectorate (1999) *Of Primary Importance* (8th Report) – London:DOH
772. Social Services Inspectorate (2002) *Modern Social Services: a Commitment to Reform* (11th Annual Report) – London:DOH
773. Sowton, M (1991) ‘Development of GIS-related Activities at the Ordnance Survey’ in *Geographical Information Systems: Principles And Applications*, vol. 2 edited by David J Maguire, Michael F Goodchild and David W Rhind – Harlow:Longman Scientific & Technical
774. Staton, R (2002) ‘Delivering 21st Century IT: The Social Care Agenda’ in *British Journal of Healthcare Computing and Information Management*, vol, 19,no. 9
775. Stoker, G (1990) ‘Government Beyond Whitehall’ in *Developments in British Politics* 3 edited by Patrick Dunleavy – London:Macmillan
776. Stoker, G (1991) *The Politics of Local Government* – London:Macmillan
777. Stoneman, P (1996) ‘Geographic Information Systems in the Metropolitan Police Service’ in the *AGI 1996 Conference Proceedings*, Birmingham

778. Strassman, P (1997) *The Squandered Computer: Evaluating the Business Alignment of Information Technologies* - New Canaan:IEP
779. Subcommittee of Science and Technology (1969/70) *The UK Computer Industry*, vol. 1 (HC 137) – London:HMSO
780. Subcommittee of Science and Technology (1970/71) *The Prospects for the UK Computer Industry in the 1970s* (HC 621) – London:HMSO
781. Subcommittee of Science and Technology (1971/72) *Reply by the Department of Trade and Industry to the report 'The Prospects for the UK Computer Industry in the 1970s'* (HC 473) – London:HMSO
782. Subcommittee of Science and Technology (1974) *UK Computer Industry Sub-Committee: Minutes of Evidence* (HC 199) – London:HMSO
783. Sutton, M (1996) *Implementing Crime Prevention Schemes in a Multi-Agency Setting: Aspects of Process in the Safer Cities Programme* (Home Office Research Study 160) - London:Home Office
784. Tapscott, D (1998) *Growing up Digital: The Rise of the Net Generation* – New York:McGraw Hill
785. Taylor, J (1992) 'Information Networking in Government' in *International Review of Administrative Sciences*, 69,375-389
786. Taylor, J (1995) 'Don't Obliterate, Informate! BPR for the Information Age' in *New Technology, Work and Employment*, 10
787. Taylor, J (1998) 'Informatization as X-Ray: What is Public Administration for the Information Age?' in I. Snellen and W. van der Donk (eds) *Public Administration in an Information Age* – Amsterdam:IOS press
788. Taylor, J and Lips, M (2004) 'Theory and Practice in Public Administration and e-Government: Searching for Analytical Depth in an Information Polity' paper for *Study Group on ICTs in Public Administration, EGPA*, Ljubljana, September 2004
789. Taylor, J and Williams, H (1990) 'Themes and Issues in an Information Polity' in *Journal of Information Technology* 5, 151-160
790. Taylor, J and Williams, H (1991) 'Public Administration and the Information Polity' *Public Administration* 69;171-190

791. Taylor, J, Snellen, I and Zuurmond, S (eds) (1997) *Beyond BPR in Public Administration – Institutional Transformation in an Information Age* – Amsterdam:IOS
792. Taylor Nelson Sofres (2001) *Government Online: an international perspective* – available at [www.tnsolfres.com](http://www.tnsolfres.com)
793. Tempest, M (2003) ‘Beckett orders ‘bonfire of the vanities’’ in *the Guardian*, 13th January 2003
794. Thelen, K and Steinmo, S (1992) ‘Historical Institutionalism in Comparative Politics’ in K.Thelen and S.Steinmo (eds) *Historical Institutionalism in Comparative Politics: State, Society, and Economy* – New York:Cambridge
795. Theakston, K (1987) *Junior Ministers in British Government* - Oxford/Cambridge:Blackwell
796. Theakston, K (1995a) *The Civil Service since 1945* – Oxford/Cambridge USA:Blackwell
797. Theakston, K (1995b) ‘Ministers and Civil Servants’ in *Governing the UK in the 1990s* edited by Robert Pyper and Lynton Robins – New York:St Martin’s Press
798. Theakston, K (1998) ‘New Labour, New Whitehall’ in *Public Policy and Administration*,vol. 13,no. 1
799. Thorby, R and Benjamin, B (1962) ‘The Application of the Electronic Computer to the 1961 Population Census’ in *The Computer Journal*,vol. 5,no. 3
800. Thorp, J (2002) *Integrated Care Records Service* – presentation available at [www.nhsia.nhs.uk](http://www.nhsia.nhs.uk)
801. Thrasher, M (1981) ‘The Concept of a Central-Local Government Partnership: Issues Obscured by Ideas’ in *Policy and Politics*,vol. 9,no. 4
802. Timmins, N (2001) *The Five Giants: a Biography of the Welfare State* - London:Harper Collins
803. Toffler, A (1970) *Future Shock* - New York: Bantam Books
804. Toffler, A (1980) *The Third Wave* - New York: Bantam Books
805. Toffler, A (1990) *Power Shift* - New York: Bantam Books

806. Trade and Industry Committee (1987/88) *Information Technology* (HC 315) - London:HMSO
807. Trade and Industry Committee (1994/95) *Broadband Communications* (HC 171) - London:HMSO
808. Trade and Industry Committee (1998/99a) *Electronic Commerce* (HC 648) - London:HMSO
809. Trade and Industry Committee (1998/99b) *The Horizon Project* (HC 530) - London:HMSO
810. Trade and Industry Committee (2000/01) *UK Online Reviewed: The first annual report of the E-minister and E-Envoy* (HC 66) - London:HMSO
811. Travis, A (1999) 'Computer 'collapse' leaves visa HQ in chaos' in *the Guardian*, 18th March 1999
812. Treasury (1991) *Competing for Quality* (cm. 1730) – London:HMSO
813. Treasury (2000) *2002 Public Service Agreements* – London:HMSO
814. Treasury (2002) *Opportunity and Security for All: Investing in an Enterprising, Fairer Britain* – London:Treasury
815. Treleaven, M (1998) 'NHSnet – is it good for GPs?' in *Healthcare Computing 1998 Conference Proceeding*, Harrogate, March 23-25 - Weybridge:British Computer Society
816. Turner, P and Higgs, G (2003) 'The Use and Management of Geographic Information in Local e-Government in the UK' in *Information Polity* 8
817. Twigg, J (1997) 'Deconstructing the 'Social Bath': Helping with Bathing at Home for Older and Disabled People' in *Journal of Social Policy*, vol. 26, no. 2
818. United Nations Division for Public Economic and Public Administration (2002) *Benchmarking E-government: A Global Perspective* – New York:UNDPEPA
819. Upton, R (2004) 'Taxing Times are History' in *the Guardian*, 25th February 2004
820. Vig, N (1968) *Science and Technology in British Politics* - Oxford/London:Pergamon Press

821. Wajcman, J and Mackenzie, D (1999) 'Introductory Essay; the Social Shaping of Technology' in Wajcman and Mackenzie (eds) *The Social Shaping of Technology* 2<sup>nd</sup> edition – Maidenhead: Open University Press
822. Wakefield, J (2004) 'Whitehall Shifts Digital Priorities' available at *BBC News Online*, 18<sup>th</sup> October 2004
823. Walker, D (2002a) 'At the Centre of the Centre' in *the Guardian* – 15th February 2002
824. Walker, D (2002b) 'Huge Empire that Became Bed of Nails' in *the Guardian*, 26th February 2002
825. Walls, P and Crawley, R (1996) 'GIS Methods for Linking Health and Population Data – getting a consistent geography' in the *AGI 1996 Conference Proceedings*, Birmingham
826. Walsh, M (2001) 'Will 'e-government' provide joined up government' in *Public Service Review – Central Government* Spring 2001
827. Walters, J (2002) 'Air Traffic Computer Glitches Identified about Ten years ago' in *the Observer*, 26th May 2002
828. Wanless, D (2002) *Securing Our Future Health: Taking a Long-Term View* (HM Treasury) - London:HMSO
829. Ward, L (2002) 'Online tax returns doomed, MPs warn' in *the Guardian*, 29th August 2002
830. Ward, S and Gibson, R (2003) 'Online and On-Message? Candidate Websites in the 2001 General Election' in *British Journal of Politics and International Relations* 5,2
831. Ward, S, Gibson, R and Paul Nixon (eds) (2003) *Net Gain? Political Parties and the Internet* – London:Routledge
832. Ward, S, Gibson, R and Rommele, S (eds) (2004) *Electronic Democracy: Mobilisation and Participation Online* – London:Routledge
833. Ward, S and Gibson, R (eds) (2001) *Reinvigorating Democracy? British Politics and the Internet* – Aldershot:Ashgate
834. Warner, M and Stone, M (1970) *The Databank Society* – London: George Allen & Unwin
835. Watmore, I (2004) 'Change Agent' in *Government IT*, October 2004

836. Watt, N (1999) 'Ministers drop £1.5 billion Benefit Swipe Cards' in *the Guardian*, 25th May 1999
837. Webster, F (2002) 'The Information Society Revisited' in L.Lievrouw and S.Livingstone (eds) *The Handbook of New Media* – London:Sage
838. Wellman, B and Haythornthwaite, C (eds) (2002) *The Internet in Everyday Life* – Oxford:Blackwell
839. Westin, A (1972) 'Some Forecasts based on US experience' in *Privacy, Computers and You* edited by B.Rowe – Manchester:NCC
840. Whitaker, R (1999) *The End of Privacy* - New York: New Press
841. White, M (1995) 'Blair wants 'to make UK young again'' in *the Guardian*, 1st October 1995
842. Wildavsky, A and Pressman, J (1973) *Implementation : how great expectations in Washington are dashed in Oakland : or, Why it's amazing that Federal programs work at all, this being a saga of the Economic Development Administration as told by two sympathetic observers who seek to build morals on a foundation of ruined hopes* - Berkeley:University of California Press
843. Willcocks, L (1994) 'Managing Information Systems in UK Public Administration: Issues and Prospects' in *Public Administration*,vol 72, Spring,p13-32
844. Willcocks, L and Margetts, H (1993) 'Information Technology in Public Services: Disaster Faster?' in *Public Money and Management*,vol. 13, no. 2
845. Willson, FMG (1968) *The Organisation of British Central Government* (edited by DN Chester) 2<sup>nd</sup> edition – London:George Allen and Unwin
846. Wilson, D and Game, C (1998) *Local Government in the United Kingdom* – London:Macmillan
847. Wilson, H (1971) *The Labour Government 1964-1970 A Personal Record* – London:Wiedenfeld + Nicolson and Michael Joseph
848. Windley, PF, Kay, LR, Rowland, A (1960) 'Data Processing in University Administration' in *The Computer Journal*,vol. 3,no. 1
849. Winner, L (1999) 'Do artefacts have politics?' in Wajcman and Mackenzie (eds) *The Social Shaping of Technology* 2<sup>nd</sup> edition – Maidenhead: Open University Press



850. Wintour, P (1994) 'Blair Plans National Information Grid' in *the Guardian*, 28th November 1994
851. Wistow, G, Knapp, M, Hardy, B, Forder, J, Kandall, J and Manning, R (eds) (1996) *Social Care Markets: Progress and Prospects* - Buckingham:Open University Press
852. Wyatt, S (1998) *Technology's Arrow* - Maastricht:Universitaire Pers Maastricht
853. Yates, D (1997) *Turing's Legacy - A History of computing at the National Physical Laboratory 1945-1995* - London:Science Museum
854. Yin, R (2003) *Case Study Research: Design and Methods* (Third Edition) - Thousand Oaks:Sage
855. Zamyatin, Y (1920) *We* - translation by Bernard Guerney - London:Cape
856. Zifcak, S (1994) *New Managerialism- Administrative Reform in Whitehall and Canberra* - Buckingham/Philadelphia:Open University Press
857. Zuurmond, A (1998) 'From Bureaucracy to Infocracy: Are Democratic Institutions Lagging Behind?' in I. Snellen and W. van der Donk (eds) *Public Administration in an Information Age* - Amsterdam:IOS press

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- 2) Audit Commission - [www.audit-commission.gov.uk](http://www.audit-commission.gov.uk)
- 3) Crime Reduction - [www.crimereduction.gov.uk](http://www.crimereduction.gov.uk)
- 4) Department of Health – [www.dh.gov.uk](http://www.dh.gov.uk)
- 5) Directgov – [www.directgov.gov.uk](http://www.directgov.gov.uk)
- 6) E-government unit – [www.e-government.cabinetoffice.gov.uk](http://www.e-government.cabinetoffice.gov.uk)
- 7) E-Health Insider (EHI) - [www.e-health-media.com](http://www.e-health-media.com)
- 8) Home Office – [www.homeoffice.gov.uk](http://www.homeoffice.gov.uk)
- 9) Kable - [www.kablenet.com](http://www.kablenet.com)
- 10) National Audit Office - [www.nao.gov.uk](http://www.nao.gov.uk)
- 11) NHSIA - [www.nhsia.nhs.uk](http://www.nhsia.nhs.uk)
- 12) ODPM's local e-government website – [www.localegov.gov.uk](http://www.localegov.gov.uk)
- 13) Office of the e-Envoy - [www.e-envoy.gov.uk](http://www.e-envoy.gov.uk)
- 14) Ordnance Survey - [www.ordnancesurvey.co.uk/oswebsite/aboutus/whatwedo](http://www.ordnancesurvey.co.uk/oswebsite/aboutus/whatwedo)
- 15) Police portal – [www.police.uk](http://www.police.uk)
- 16) UK Online portal - [www.ukonline.gov.uk](http://www.ukonline.gov.uk)