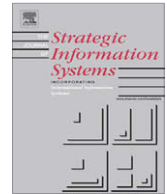




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# Information systems in the public sector: The e-Government enactment framework

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## ABSTRACT

Despite the burgeoning number of studies of public sector information systems, very few scholars have focussed on the relationship between e-Government policies and information systems choice and design. Drawing on Fountain's (2001) technology enactment framework, this paper endeavours to conduct an in-depth investigation of the intricacies characterising the choice and design of new technologies in the context of e-Government reforms. By claiming that technologies are carriers of e-Government reform aims, this study investigates the logics embedded in the design of new technology and extant political interests and values inscribed in e-Government policies. The e-Government enactment framework is proposed as a theoretical and analytical approach to understand and study the complexity of these relationships which shape e-Government policies.

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## 1. Introduction

E-Government projects are intrinsically embedded in combinations of political reforms and organisational changes designed to enact, support and drive a profound transformation in the organisation of the public sector. Research in the field has so far prioritised the study of the effects of information and communication technology (ICT) as a shortcut to increase public sector efficiency and improve internal administration and management capabilities (Andersen, 1999; Chadwick and May, 2003; Dunleavy et al., 2006), thus downplaying the broader impacts e-Government policies can have on public sector organisation and the services it delivers (Cordella, 2007; Dawes, 2009; Fountain, 2001). Danziger and Andersen (2002) on the basis of a substantial analysis of the leading publications in information systems and public administration fields have concluded that the “clearest positive impacts generated by IT on public administration are in the areas of efficiency and productivity of government performance” (p. 617). In line with these findings, e-Government policies have largely conceived the use of ICTs as a further step in the re-organisation of the public sector along the basic principles of efficiency gains and costs savings that have driven many private sector ICT adoptions (Bekkers and Homburg, 2007; Bhen, 1998; Dunleavy et al., 2005; Heeks, 2002; Homburg, 2004; Osborne and Gaebler, 1992).

Much public sector information systems literature draws on private sector frameworks. For example, it is not by accident that when different stages in the e-Government evolution are discussed (Layne and Lee, 2001; UN and ASPA, 2002) the similarities with private sector ICT frameworks are evident. These stages, which build upon Venkatraman's (1994) Business Process Re-engineering (BPR) framework, do in fact mainly discuss the technology-enabled functions and reforms needed to achieve a more efficient and rational way of working for public institutions. As in the case of the private sector (Ciborra, 2000), it seems that a managerial perspective to e-Government is taken to discuss the role of ICT in the re-organisation of

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work activities. ICT is perceived as the main instrument to achieve these goals. The challenge seems to be the definition of the right technology to achieve a pre-defined outcome. Thus a vast literature has been produced to discuss the effects of ICT adoptions at the different government levels (Asgarkhani, 2005; Denziger and Andersen, 2002; Gupta and Jana, 2003; Melitski, 2003; Moon, 2002) and to benchmark countries against indexes of ICT readiness (UN, 2001), as if a better score would lead to more effective e-Government programmes.

Although valuable, this focus on efficiency is limited because it pivots around best practices and universal strategies to successfully implement e-Government programmes neglecting the existing debate about the limitation of the notions of “best practices” (Wagner and Newell, 2004, 2006; Wagner et al., 2006). ICT developments in the public sector should pay more attention to the complexity that is associated with their implementation, rather than focusing on best practices and universal strategies to prescribe how to successfully implement e-Government programmes. Outcomes of public sector reforms have in fact an impact on social and political dimensions that are not accounted for in private sector frameworks (Aberbach and Christensen, 2005; Bozeman and Bretschneider, 1986; Cordella, 2007; Frederickson, 2000; Moore, 1995). By downplaying this difference, e-Government programmes have often referred to private sector ICTs as a further step in the re-organisation of the public sector along the basic principles of efficiency that are governing the private sector (Andersen, 1999; Chadwick and May, 2003; Thong et al., 2000).

A different approach to the problem emerges from the studies that have looked at the socio-technical endeavours taking place around the deployment of ICTs in the public sector in general and public sector organisations in particular (Avgerou and Walsham, 2000; Contini and Lanzara, 2008; Denziger and Andersen, 2002; Fountain, 2001, 2007). In these cases, ICT has been conceptualised within the public sector context and a more specific explanation of the complexity of public sector e-Government projects has been proposed.

By following this train of thought, we endeavour to show how e-Government policies shape the choice and design of ICT projects so that technologies become carriers of the e-Government policies' goals and aims. Moreover, we argue that, these interests carried by technology are enacted by public sector organisations in their daily base actions and routines (Fountain, 2001) so that the outcome of e-Government reforms is shaped by the e-Government policies' aims and goals, the technological characteristics shaped by these policies and the organisational practices which ultimately shape the actual outcomes of the reforms. By so doing, we attempt to fill the gap in the literature identified by Yildiz (2007) who has maintained that “what is also lacking in the treatment of the subject is a more in-depth analysis of the political nature of the e-Government development processes, and a deeper recognition of complex political and institutional environments” (p. 646).

Our conclusions are built on the findings of the study of e-Government reforms in the criminal justice system of England and Wales. Drawing on a revised and extended version of Fountain's (2001) technology enactment framework, what we have defined as the e-Government enactment framework, our in-depth empirical study demonstrates that in its original form the technology enactment framework does not account for the e-Government policy drivers which influence the choice and design of public sector ICTs. These drivers, as our case will show, are indeed an important force that shapes the very conception of ICTs in the public sector and the outcome of e-Government reforms.

The remainder of this paper unfolds in the following fashion: Section 2 reviews the extant literature on e-Government studies and presents the theoretical background upon which our work is grounded. Section 3 shows the methodology in use in this paper and Section 4 discusses the in-depth case study of ICT deployment in the criminal justice system in England and Wales. Section 5, subsequently, analyses the case and presents the e-Government enactment framework. Section 6, discusses the implications emerging from the framework we propose. Section 7, finally, draws the paper to a close with concluding remarks.

## 2. Background

Even if not yet extensively researched, the relation between ICT policies and public sector reform drivers is an important area of study to better understand the factors that steer and shape e-Government projects (Bekkers and Homburg, 2007; Madon et al., 2007). ICT in the public sector has been mainly discussed as a tool to help create new and better service delivery (Bekkers and Zouridis, 1999) by increasing efficiency and transparency, and improving accountability in public administration procedures and management (Dunleavy et al., 2005; Gupta et al., 2008; Heeks, 2002). By making government more accountable and transparent through this process of information rationalisation, e-Government is very often conceived as a powerful instrument to achieve the public administration reforms envisaged by the new public management (NPM) ideology (Barzelay, 2001; Cordella, 2007; Hood, 1991). NPM proposes a project of reforms to redefine managerial and governance practices in the public sector in line with objectives typical of market economics (Osborne and Gaebler, 1992). This radical change in the logic underpinning the organisation and governance of the public sector is associated with a fundamental change in the factors that account for assessing the action of the public administration, not least a shift from effectiveness to efficiency (Pollit and Bouchaert, 2004). The most evident transformation proposed by NPM is to promote a management culture for the public sector that, as in the case of the private sector, becomes results driven, where the managerial efficiency supersedes the need for effectiveness in the delivery of public services (Self, 2000). NPM provides a major set of ideas on which so many current e-Government initiatives are based (Chadwick and May, 2003; Hammer, 1990). ICTs have in fact become one of the most common solutions implemented to standardise work procedures and smoothen information flows, to

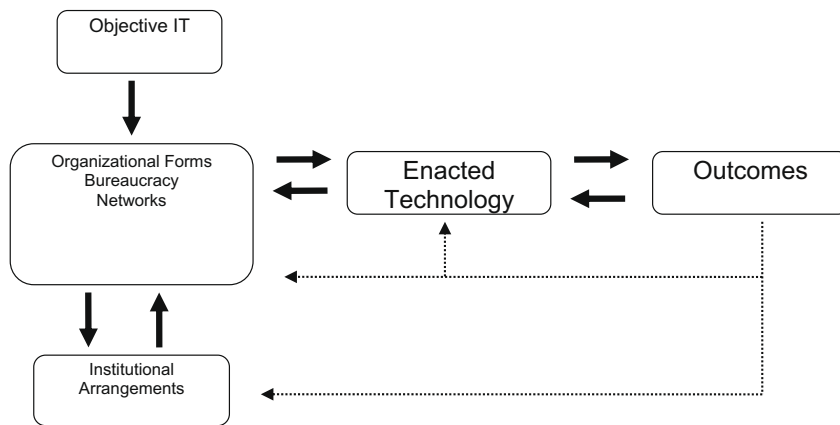


Fig. 1. Fountain's technology enactment framework.

make overall organisational processes more efficient and transparent, leading therefore to the changes prescribed by NPM (Dunleavy et al., 2006; Heeks, 2002).

The e-Government literature has discussed the development of these policies by looking at models of e-Government development which essentially conceived of ICT as an enabler. The evolutionary/revolutionary model for e-Government development proposed by Layne and Lee (2001), for example, identifies four stages of evolution in e-Government. Along the same lines, the United Nations and the American Society for Public Administration (APSA, 2002; UN, 2001) recommend a five stage e-Government development model which both similarly propose that a more advanced ICT development leads to a better and more efficient organisational performance.

An alternative perspective for the study of the effects of technology on public sector reforms comes from those studies that have looked at the social, political and institutional dimensions of e-Government projects (Bozeman and Bretschneider, 1986; Brewer et al., 2006; Dunleavy et al., 2006; Fedorowicz et al., 2007; Fountain, 2001; Gil-Garcia and Pardo, 2005; Irani et al., 2008; Luna-Reyes et al., 2005). Among these studies, in the e-Government literature, the technology enactment framework (Fountain, 2001) is widely recognised as a valuable framework to look at the influence of organisational structures and institutional arrangements (West, 2004; Yildiz, 2007) on ICT implementations in the public sector. The technology enactment framework, drawing from literature on institutional theory, governance and bureaucracy, offers a framework to study the relationships between technology and organisations, and how organisations enact ICT according to their cultural, social and institutional features (Yildiz, 2007). Not without its critics (Bretschneider, 2003; Norris, 2003), the technology enactment framework, building on a broad socio-technical perspective (Luna-Reyes et al., 2005), provides a useful instrument to study the complex process of technological adoption in the public sector. The framework, complements Orlikowski's notion of duality of technology (Orlikowski, 1992) and the broader socio-technical tradition, which considers the inter-relationships between the social, organisational dimension and the material, technological one (Galliers, 2006). In so doing, it adds emphasis on the role public sector organisations (Luna-Reyes et al., 2005) play in shaping public sector ICT implementations. Making a distinction between "objective technology", defined as the array of IT hardware, software, networks, the Internet, etc. and "enacted technology" as the use and perception of technology in a particular setting, the framework allows to study how public sector organisations enact ICT according to their cultural, social and organisational features (Yildiz, 2007). In other words, ICT is perceived, implemented and used in virtue of pre-existing institutional arrangements (socio, cultural, legal, and formal aspects) that grant an aura of stability to extant organisational forms as depicted in Fig. 1:

Fountain's (2001) work accounts for ICT and the impact it has on the "landscape within which rules and structure influence perception and action" (p. 193). Her work reveals the complex set of actions and actors that influence the implementation of ICT in the American public sector. It highlights how political agendas, organisational characteristics (emphasising the role of bureaucratic organisations in the public sector context) and existing arrangements shape the process of ICT implementation. Even though design is mentioned in Fountain's (2001) framework, technology is taken-for-granted and described as a carrier of objective characteristics. This argument is confuted by the findings of our case study. The case of the England and Wales criminal justice reform shows that e-Government reforms shape the choice and design of technology and its characteristics, which are therefore not objective but rather carriers of the aims and goals of that contingent reform.<sup>1</sup> To account for this relationship we propose a more comprehensive framework: the e-Government enactment framework, which explains the complexity surrounding the choice, design and deployment of ICTs within public sector projects. The e-Government enactment framework will be discussed after the presentation of the empirical findings as it builds on the evidence which emerges from the case.

<sup>1</sup> Given the focus of the paper, we do not make a distinction between Commercial Off-the-Shelf (COTS), what we refer as chosen technologies, and in-house designed systems, as our interest is on the technical functionalities which have been selected (chosen or designed) to support the e-Government reform aims. This point will become more clear in the unfolding of the paper.

### 3. Methodology

The case study we present in this paper has been part of a broader European-funded project (AGIS) which looked at different aspects related to the adoption of ICT in the Judiciary.

The Research Institute on Judicial Systems based within the National Research Council at the University of Bologna (Italy) operated as the key project coordinator and several Universities participated in the project including Aarhus University (Denmark), the London School of Economics (England), Nanterre University (France) and Utrecht Law School (Netherlands). The project lasted for 2 years (2005–2007) and endeavoured to describe, study and compare four specific areas of research concerning: (1) the use of ICT in case investigations; (2) the use of ICT for case management; (3) ICT interoperability between public prosecutor's offices, courts, police and prisons; (4) the use of ICT for sharing prosecutorial information between countries. The case here presented looks in the specific at the use of ICT in the mediation of the relationships between police forces and prosecutors in England and Wales.

An in-depth, qualitative case study (Yin, 2003) was chosen because it is well situated to examine the interaction among different contextual variables that define a specific situation using thick description to try to understand the complexity of the phenomenon under investigation. The case study research method is grounded on an empirical inquiry to investigate a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used (Yin, 2003). Case studies are therefore very useful instruments to examine a phenomenon in its natural setting so as to gain a deeper understanding of implicit and explicit social processes (Benbasat et al., 1987).

Single case studies also represent the dominant research approach in the study of ICT in the public sector (Denziger and Andersen, 2002).

As Eisenhardt (1989) notes, cases may be chosen to replicate previous cases or extend emergent theories, or they may be chosen to fill theoretical categories and provide examples of polar types. By selecting our case study, we aim to extend Fountain's (2001) technology enactment framework to show the role of e-Government policies in the design of complex ICTs. In particular, we endeavour to examine wider public sector reforms that partake in the construction of contexts (Pettigrew, 1990) to emphasise the role of technology as a carrier of e-Government policy aims.

Although the project in question lasted for 2 years, the authors spent approximately 15 months in the field where they interviewed crown prosecutors and police staff at various locations within London and Humberside. The authors conducted two focus groups in Humberside, as well as 20 semi-structured interviews for an average of 2 h each and spent a substantial number of days in the Crown Prosecution Service (CPS) headquarters to observe the unfolding of daily tasks and discuss emerging issues with several practitioners. An exclusive range of carefully-selected practitioners were interviewed and re-interviewed including, among others, members of the compass design authority team, business consultants, borough and duty prosecutors, police officers, as well as heads of business change in charge of the Criminal Justice Information Technology (CJIT) programme. Table 1 outlines our key informants.

The authors' orientation to data collection and analysis was exploratory and iterative as the authors spent a considerable amount of time reviewing background documentation and observing duty prosecutors' interactions with police officers in

**Table 1**  
List of key interviewees.

Role	Date	Duration	Location
Compass CMS design authority team member	24/05/2006	4	CPS headquarters
Business consultant, compass team	24/05/2006	2	CPS headquarters
Borough crown prosecutor	03/07/2006	2	Croydon police station
Duty prosecutors/administrator	10/10/2006	2	Charing cross police station
Compass CMS design authority team member	10/10/2006	2	Charing cross police station
DC (detective constable)	24/10/2006	2	Sutton police station
Crown prosecutor	24/10/2006	2	Sutton police station
CJIT benefits manager	08/12/2006	2	CPS headquarters
Business architect	13/12/2006	2	Police information technology organisation
Head of business change (NSPIS custody and case preparation)	14/12/2006	2	Police information technology organisation
Detective inspector, case worker manager, NSPIS administrator and head of information services (focus group)	22/01/2007	3	Scunthorpe (Humberside)
District crown prosecutor, CPS performance manager			
Detective inspectors (focus group)	22/01/2007	3	Scunthorpe (Humberside)
Compass CMS design authority team member/business consultant	26/03/2007	4	CPS headquarters
Compass CMS design authority team member	13/04/2007	2	Bologna
Business consultant	13/04/2007	2	Bologna
Crown prosecutor	14/04/2007	2	Bologna
Compass CMS design authority team member	12/10/2007	2	Bologna
Crown prosecutor	12/10/2007	2	Bologna
Business consultant	13/10/2007	2	Bologna

various sites. This allowed for some flexibility in data collection as several themes emerged but only a few were examined more deeply as relevant. In particular, the unit of analysis was the role of ICT in mediating the relationships between crown prosecutors and police officers.

Although qualitative and quantitative methods have already been deployed in the study of corporate ICTs (Ciborra, 2000), this case study attempts to interweave data with theory (Kallinikos, 1999) on the assumption that data are never truly “raw” as they are always subjected to editing and transformation either by human beings or their instruments (Bateson, 1972). Spurred by these epistemological and ontological insights, the authors assumed that reality has a non-foundational nature in accordance with the naturalistic paradigm of enquiry (Guba and Lincoln, 1994). Thus, rather than formulating a set of hypotheses to be tested against an objective reality “out there”, this paper relies on such qualitative data collection methods as observations, interviews and focus groups in order to investigate the natural setting where police officers and crown prosecutors operate.

Our conclusions do not aim to provide statistical generalisations, but rather present an in-depth analysis of one e-Government policy. By so doing, we intend to understand better the effects of e-Government policies on the choice, design, and adoption of ICTs and their deployment. Our conclusions can therefore provide useful insights for a better understanding of similar projects in the public sector (Orlikowski and Baroudi, 1991; Yin, 2003) and the implications that these public policies have on governments’ broader political agenda (Moore, 1995).

Far from being biased, this paper’s conclusions were identified a posteriori because “one can argue that a posteriori categories are less likely to be biased by the researcher’s own fantasies, since the categories tend to emerge from, and remain closer to, the data” (Barley, 1990). Thus, what follows is an in-depth account of the role that e-Government reforms play in the choice, design, and deployment of ICTs where the conventional separation between data and analysis is not provided as theory, data and observers (i.e. the authors and their colleagues) are inseparable.

#### 4. The case study

As previously mentioned, our case study looks at the public sector reforms that have shaped the design and implementation of ICT in the process of re-organisation of the England and Wales criminal justice system. The case will look in particular at the e-Government policies and associated ICT deployments that have re-designed the relationships between the Crown Prosecution Service (CPS) and the Police.

The CPS is the government department responsible for prosecuting criminal cases investigated by the police in England and Wales. It was established in 1985 by the Prosecution of Offences Act to separate the prosecution and investigation functions. This Act mandated that investigation activities fall within the police remit and the CPS manages the prosecution of criminal cases. The CPS was created to respond to the publication, in 1970, of an influential report by the British section of the International Commission of Jurists, which argued that it was wrong for the police, who investigated the crimes, to take decisions in relation to prosecutions which require independence and impartiality (Sanders and Young, 2002).

The CPS is a national service with headquarters in London and York. Its Head is the Director of Public Prosecution who reports to the Attorney General, who in turn is accountable to Parliament for the service. The CPS is structured in 42 geographical areas which map onto the 43 police areas (including the two London police districts: the city of London and the Metropolitan police). Every area is assigned to individual chief crown prosecutors who are responsible for the delivery of caseworks (prosecution cases) that are prepared by crown prosecutors working under their jurisdiction. At the local level, crown prosecutors take decisions on cases investigated by the police. Police officers, on the basis of the evidence collected, take charging decisions which will be prosecuted by crown prosecutors.

The separation between prosecution and investigation is clearly defining the ICT policies designed to support the criminal justice system: “Each of the main criminal justice agencies has introduced, or is about to introduce, a system designed for its own needs, and with varying or no ability to communicate or direct its electronically-stored information to other agencies that need it” (Auld, 2001).

The CPS has adopted Compass, a customised case management system, which streamlines prosecutors’ work by prompting them to undertake a pre-defined set of tasks. The task model broadly follows what CPS staff would do during the course of their daily job. When a case file is received from the police, the prosecutor will take care of it. Compass will raise a sequence of tasks in accordance with the code for crown prosecution which sets two general principles underpinning all charging decisions, namely the sufficiency of evidence test and the public interest test. Compass raises a variety of tasks, including, among others, such tasks as: case file registration, case file allocation, case file review which leads to charging decisions. Compass features national templates (i.e. standard pre-formatted documents within the case management system that are populated by the system itself).

The police use different ICT solutions to support their work. The array of systems in use is a mix of solutions provided at national level, such as the Police National Computer, which provides information on people who have committed crimes, the police fingerprints database, and locally developed systems that meet specific needs and work well with existing local hardware and software configurations. To try to integrate better the range of systems in use by different police forces and districts, the NSPIS system has been developed over the last few years. NSPIS allows the police to capture case information electronically and share it with other agencies, reducing administrative costs and burden. By combining custody and case preparation systems, the preparation and submission of case files is streamlined, and police time is freed up for other duties.

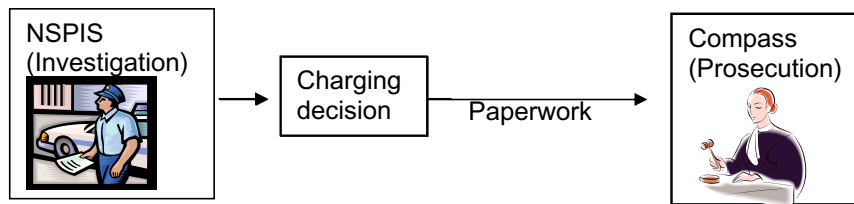


Fig. 2. The separation of investigation and prosecution.

NSPIS is automatically linked to the Police National Computer so that every other information about the case and bail details is instantly updated. Whilst most forces use NSPIS, some forces still use different systems. NSPIS aims at providing a unified technological standard to make the interchange of information between and among police forces and districts easier.

Given the separation stated in the 1985 Prosecution of Offences Act, police and crown prosecutor systems, when designed, did not account for the need to communicate with each other as Police and CPS were meant essentially to work independently to produce the paperwork needed to close a case. As noted by a Head of Police Information Services:

Information technology in the criminal justice system has been developed from a very low base. Basic details required by all parties were generally inputted separately by each agency, thus leading to duplication, error and delay. Each system was designed within its own institutional confines with no ability to share electronically-stored information with other agencies. The way paperwork used to flow through the system was largely dictated by the institutional structure of each department and agency.<sup>2</sup>

Schematically, this situation is depicted in Fig. 2.

#### 4.1. The joined-up reform

Since 1997, as part of the new labour modernisation agenda, the programme of reform, often labelled as “joined-up” government, deeply affected the organisation of the criminal justice system (Clarke et al., 2000). The joined-up government programme is grounded on basic NPM principles, such as efficiency and accountability, while it attempts to respond to the failures of decentralisation and departmentalisation initially proposed by NPM (Tom and Per, 2007). The reform tries to improve efficiency and effectiveness of public sector organisations by using private sector managerial drivers to create inter-departmental collaboration to streamline public sector activities. The “joined-up” government agenda is therefore a new step in the NPM agenda for reforms. The programme aims to: build policy coherence across government; eradicate inefficiencies; and design out obsolete structures and practices following managerial practices imported from private sector experiences to improve government productivity (Panel, 2000).

The organisation and performance of the criminal justice system have been at the centre of the political debate around the joined-up government project of reform (McLaughlin et al., 2001). As a consequence, new technological and institutional changes have been designed and implemented to match the goals of the joined-up government agenda. All criminal justice agencies are required to work towards achieving a joined Public Service Agreement to improve the fight against criminality, as well as improving the administration, efficiency and effectiveness of the criminal justice system. To achieve these goals two major actions have been taken by the government: the introduction of statutory charging and the design of the Criminal Justice Exchange (CJE).

#### 4.2. The joined-up criminal justice system

The most significant legislative change introduced in the criminal justice system in recent years is statutory charging. This reform, introduced by the Criminal Justice Act 2003, assigns to the CPS rather than the police the responsibility to determine the charge in all but the most simple and straightforward cases.<sup>3</sup> This change was introduced in response to recommendations made by Lord Justice Auld<sup>4</sup> to create a more efficient prosecution process aimed at ensuring that all charges were raised on the basis of sound evidence so as to become successful convictions. The specific aim of statutory charging may be summarised as follows: the introduction of inter-agency co-operation to rationalise the criminal justice system eliminating at the earliest opportunity hopeless charges which represent a fruitless expenditure of resources by the police and by the CPS. The reform aims at achieving these goals by providing resources to produce more robust prosecution cases and by eliminating unnecessary or unwarranted delays in the period between charge and disposal (Brownlee, 2004).

<sup>2</sup> Head of Police Information Services, Scunthorpe, January 22nd, 2007.

<sup>3</sup> These cases are specifically outlined in the Director of Public Prosecution’s Guidance. The Director’s Guidance is archived at: [http://www.cps.gov.uk/publications/docs/dpp\\_guidance.pdf](http://www.cps.gov.uk/publications/docs/dpp_guidance.pdf).

<sup>4</sup> In his “Review of the Criminal Courts in England and Wales” published in October 2001 Lord Justice Auld recommended “earlier and more influential involvement of the CPS in the process to the point where, in all but minor, routine cases, or when there is a need for a holding charge, it should determine the charge and instantiate the prosecution”.

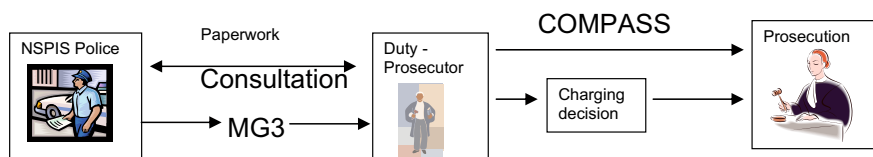


Fig. 3. The consultation process between police officers and duty prosecutors.

In the new system police officers continue to play a key role because they operate as “gatekeepers”. It is the police officer who must first determine whether there is sufficient evidence to detain a person. It is only when a police officer decides that there is sufficient evidence to detain that the statutory charging scheme is brought into effect and the case must be referred to a duty prosecutor (i.e. crown prosecutors working in police stations) for a charging decision to be taken. To facilitate the enforcement of statutory charging, and therefore better coordinate police and crown prosecutors, a new power has been given to the Director of Public Prosecution to issue guidance to police officers as to how detained persons should be dealt with and as to what the police must do to facilitate CPS decision making on charging, this guidance being mandatory not advisory (Iannacci, 2008). As well as formal charging decisions, the Director of Public Prosecution guidance emphasises the importance of early consultations between the police investigators and duty prosecutors. Police officers are required to consult a duty prosecutor as soon as is practicable and after a suspect is detained in custody. During these consultations, the duty prosecutor is expected to identify whether a case is likely to proceed and to advise on lines of enquiry and evidential requirements to raise the charge. Decisions on all charging matters are recorded in writing on an ad hoc form which is called “MG3” (i.e. Manual of Guidance 3) (Brownlee, 2004).

Central to the reform introduced by the Criminal Justice Act 2003 (i.e. statutory charging) is the MG3 form. This form has two sides, one to be filled out by police officers, who have to record all the data that support their request for a charging decision, and one to be completed by the duty prosecutor to make a charging decision on the police request.

Crucially, all charging decisions are based on a review of the evidence in a context where the duty prosecutor and the officer in the case exchange information to take a final decision. If it is expected that the case will proceed to court the prosecutor must be supplied with key evidence, as well as any unused material that might undermine the case and the previous record of the suspect.

This process is summarised in Fig. 3.

To support this new “joined-up” process better, changes had to be introduced in the Criminal Justice ICT architecture. The old, sequential coordination between police and duty prosecutors is reflected in the existing technological architecture which does not support joint working between duty prosecutors and police officers limiting the efficiency gains that can be reaped from statutory charging. Police officers and duty prosecutors, for example, cannot rely on their system, NSPIS and Compass, respectively, to populate the MG3 form automatically:

A big benefit to us (i.e. CPS) would be if NSPIS controls Compass. Because it is a job for me to type in all defendants’ details onto the MG3 form when they are already into the NSPIS police system. If NSPIS could transfer the defendants’ details and a summary of the case to populate the MG3 and then what I would do would be inputting the decision bit. But prosecutors spend a lot of time inputting details onto it which are already there. So NSPIS should interface with Compass.<sup>5</sup>

To overcome the limitation imposed by the separation between investigation and prosecution, and in order to improve service delivery in the criminal justice system, ICT has been envisaged as the solution to cut out duplication, rationalise administrative and decision-making processes and replace complicated reporting structures with clean lines of accountability (CPS, 2006).

A new ICT programme has therefore been undertaken. At the very centre of this programme sits the Criminal Justice Exchange (CJE), a cross-organisational hub which securely routes messages about prosecution cases and individuals from one part of the criminal justice system to the intended recipients (Mitchelhill, 2006), thus working as a routing mechanism which allows for case progression within the criminal justice process in a sequential fashion.

The main idea behind this programme is to take information from the police systems and send it via the CJE to the prosecutors’ system so that prosecutors do not have to enter into their system the information already collected by the police upon which they have to take decisions.

As described by a crown prosecutor, the interaction and interdependencies among these systems can be depicted in this way:

Once the defendant has been charged, the information on the defendant passes from the police systems to the CPS systems through the CJE. This case file information includes information about the defendant, the offence, as well as information about witnesses, victims, exhibits and statements.<sup>6</sup>

<sup>5</sup> District Crown Prosecutor, Scunthorpe, January 22nd, 2007.

<sup>6</sup> Crown prosecutor, Sutton, October 24th, 2006.

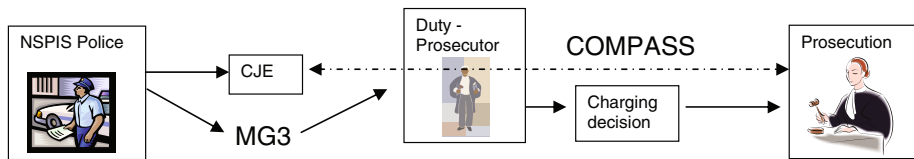


Fig. 4. The sequential exchange of electronic data based on the MG3 form.

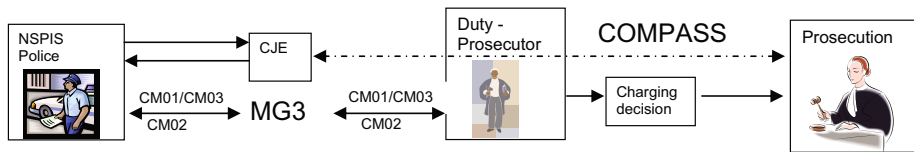


Fig. 5. The reciprocal exchange of electronic data based on the MG3 form.

The way in which the CJE works, even if it routes the information between the criminal justice system agencies, still reflects the separation imposed by the 1985 Prosecution of Offences Act. It allows only for a unidirectional communication flow between the police and the CPS which is indeed expected to work independently from the police. The unidirectional communication between the two systems, made only possible by the CJE, is an outcome of the separation of the police and CPS allowing data exchange only to support a clearly defined sequential interaction among the two institutions but not allowing for reciprocal case file exchanges as envisaged by statutory charging and the “joined-up” criminal justice reform. This sequential exchange is depicted in Fig. 4.

Changes in the communication network that acts as a backbone for the information exchange among the criminal justice system agencies are in progress to achieve integration in the working procedure of police and duty prosecutors.

Different ideas have been circulated to accommodate these institutional changes. The Directors of the police information systems, for example, have envisaged a global data store as a new way of exchanging information based on a service oriented architecture:

If you want my vision of the future, it will be one system where we put information into a global data store, the CPS is adding something into it and so are the courts. If all the criminal justice agencies were to contribute their data to this new global data store, there would be no need for the CJE.<sup>7</sup>

Even if these ideas were not transformed in formal plans and actions, other projects are in the final stage of design to accommodate the emerging needs for collaborations and rationalisation of the overall system, as from the “joined-up” initiative. In particular, new plans have been set out to re-design the CJE from a unidirectional system, where only the police send information to the CPS, to a two-way system where the information is being exchanged from/to the police to/from crown prosecutors to facilitate the preparation of the MG3 form and therefore to increase the efficiency of the overall procedures. This system, designed as a bi-lateral messaging system, mirrors the interdependent process of a police request, consultation, and then a CPS response which is designed in the reform put in place by the Criminal Justice Act in 2003.

The first message, called “charging message one or CM01” is the request from the police to the CPS for a charging decision. When the CPS duty prosecutor receives the request for a charging decision and does the work that is necessary within Compass, he/she can then send a response back to the police using “CM02 or charging message 2” and that, at a very simple level, might just be something that says “charge the defendant or the suspect with the following offence” or “no further action” or “further investigation”. Eventually, when the defendant or suspect is charged with an offence, the final message that the police will send will be “charging message 3 or CM03” which confirms the details of who the suspect is, what the offences the suspect has been charged with are and when the first hearing will take place.<sup>8</sup>

The information on the messages reflects the exchange and collaboration needed to streamline the preparation of the MG3 form. Once the system is implemented – it is expected to be in full operation by mid 2010 – ICT will therefore not only support the creation of the electronic MG3, but will fully enable the iterative process behind it, including provision of management information. The implementation of the two-way messaging system is therefore the last innovation needed to fully achieve the new priority for greater efficiency outlined by the Criminal Justice Act 2003 reform. This two-way messaging system is depicted in Fig. 5.

<sup>7</sup> Head of Business Change, Custody and Case Preparation, London, December 14th, 2006.

<sup>8</sup> Head of Police Information Services, Scunthorpe, January 22nd, 2007.

## 5. Analysis of the case

The technology enactment framework, in Fountain's (2001) version, is a very useful tool to analyse the organisational and institutional forces that shape the enactment of the joined-up reform and therefore the effects that the introduction of new technologies have produced in the criminal justice system. Despite the drive towards statutory charging triggered by the need for a seamless handling of case files by police and prosecutors, pre-existing institutional practices are in fact very recalcitrant to change. Although the Director of Public Prosecutions' Guidance explicitly mandates that duty prosecutors will advise on further steps to be taken including the evidence to be gathered or the statements to be obtained during the investigation, it seems that the encroachment of duty prosecutors in the investigation process has occurred in a very tenuous fashion:

With statutory charging the police now have to take directions from us (i.e. prosecutors) in certain categories of cases. The idea is that they are supposed to be coming to us at an increasingly early stage and looking for guidance as we set an action plan and tell them what evidence to be gathered although they not always do. So in theory, if a case has to go through statutory charging, the prosecutor should be the leader of the investigation. However, in practice the police do not always follow the action plans set out by prosecutors.<sup>9</sup>

This key insight was re-iterated several times at various sites:

I do not think that the police are any longer in charge of the investigation because ultimately they have a decision to make whether they want to do the work or not. All the prosecutors can do is saying "whether you want to get a charge or win this case, you have to do X, Y, or Z" but it is still the police decision whether to put in the resources to do that or not. They still have that choice to put the resources. We cannot say "we insist you take that statement" as it is still the investigator's choice to decide to do that or not. We cannot force them to do things. We do not have this adversarial system where you are fighting over things.<sup>10</sup>

This complex political and organisational setting characterised by conflicts of interest, power struggles and cultural clashes has clearly impinged on the use and perception of ICTs so much so that, to date, the interconnection between the NSPIS systems and Compass has merely translated into electronic mail exchanges with attached case files:

There could be an argument for working with a single case management system which would make communications easier. I spend a great deal of my time reading printouts from the police investigation system to find out what is happening on cases, but have no access to that system myself. Nor can I access NSPIS. The police have no access to Compass. The reality is that we work within our own systems and e-mail or give prints of pages that the other needs when requested, with all the delays that this causes. E-mail, fax and telephone remain our main means of communication.<sup>11</sup>

The resilience of pre-existing institutional practices indeed has produced a situation where the transformation of the CJE has been questioned, in terms of the effects it has had on inter-agency co-operation. This, as previously discussed, can be argued being the outcome of conflicting interests, visions and organisational relations that have shaped the enactment of the CJE in the criminal justice system. The overall outcome of technological adoption has not reaped the expected results as it seems that criminal justice system organisations within England and Wales are all protective of their own turf and that secure communications still rely on electronic mail exchanges. This outcome is in line with Fountain's (2001) argument that information technology in the public sector is framed within complex institutional and organisational settings that deeply shape the implementation of ICT projects.

### 5.1. Beyond the technology enactment framework

Our case highlights a more complex picture, however. Information technology is also shaped by the contextual logic which underpins the e-Government reform. What Fountain (2001) would call the objective technologies (i.e. hardware/software configurations and functionalities) have, in our case, been chosen and designed over time to accommodate different aims. The first phase of the digitalisation of the England and Wales criminal justice system is deeply impacted by the 1985 Prosecution of Offences Act which prescribes a neat separation between police activities, investigations, and CPS functions, prosecutions. The designed technologies, Compass and the different police systems, now being integrated in NSPIS, were deeply affected by this Act which enforces the separation of the investigation from the prosecution. "When the Information Systems Strategic Plan was initially published, access to modern technology in the CPS was at an extremely low level – as it was throughout nearly all of criminal justice. What technology there was, was 'buried' deep within each agency – incapable of helping each other join-up" (CPS, 2003). This situation which is an outcome of "the compartmentalization of government business into the "stovepipes" of functional domains has meant that networking has been exploited to extend the vertical reach of systems within functions, rather than to link systems horizontally across government" (Bellamy and Taylor, 1996). Given the separation between the investigative and the prosecutorial functions, ICT was designed and implemented

<sup>9</sup> Duty prosecutor, London, October 10th, 2006.

<sup>10</sup> District Crown Prosecutor, Scunthorpe, January 22nd, 2007.

<sup>11</sup> Borough crown prosecutor, London, July 23rd, 2006.

to streamline the internal processes within the different agencies, without posing much attention to their potential interoperability. According to Bellamy and Taylor (1996) this is the outcome of “constitutional and civil rights issues which effectively prohibit the sharing of information across agencies” but also of the e-Government policy dictated by the NPM paradigm which envisaged the rationalisation of intra-departmental practices as one of the key goals to be achieved to increase public administration efficiency. Accordingly, technology was chosen and designed to meet these specific policy goals, and was enacted to accommodate different organisational paradigms existing in the police and prosecutors’ offices, within these complex and diversified institutional environments. These two aspects have created what the joined-up government policy has identified as a cumbersome situation: an inefficient and ineffective criminal justice system, forgetting somehow that the inefficient and ineffective outcome is a consequence of the overarching priority of the criminal justice system stated by the 1985 Prosecution of Offences Act and the e-Government policy which had been designed to increase intra-departmental efficiency.

The joined-up reform and the associated e-Government policy look at cross-agency collaboration as the solution to the inefficiencies and inefficacy of the criminal justice system relegating to the background the priority of separation between investigation and prosecution.

The second phase of the digitalisation is driven by these different aims, which are deeply reflected into the technologies being chosen and designed. The “joined-up” criminal justice programme, aiming at the reduction of criminal offences, states that this aim will be achieved “by delivering a modern and joined-up criminal justice system that will harness the latest information technology to reduce unnecessary paperwork, speed up processes and improve the criminal justice experience for all (p. 17)” (CJS, 2007). Pivotal in this project is the co-operation between criminal justice agencies on the ground to deliver – not a system operating in isolation – but a joined-up criminal justice service. The introduction of statutory charging and the mandatory co-operation between police and crown prosecutors in the handling of criminal cases is the most evident outcome of the joined-up reform. It is now the duty prosecutor who takes the charging decisions so that all the information on an investigation needs to be exchanged and shared between the police and the prosecutors. To make this co-operation possible the systems in use by the police and the CPS need to communicate. The creation of the Criminal Justice Exchange is the result of this integrated approach to criminal justice. The Criminal Justice Exchange is the electronic heart of the joined-up criminal justice system. It provides the infrastructure through which criminal justice organisations – and partner agencies – can share information, manage cases and work together in a secure and joined-up way (CJS, 2006).

As previously discussed, the joined-up reform is a response to the failure of departmentalisation and a way to better enforce efficiency and accountability in the administration of the criminal justice system. As from this paradigm shift, the modernisation of the criminal justice system is grounded on the elimination of the divisions created by departmentalisation, the lack of interoperability between Compass and NSPIS, and by the design of a new integrated, joined-up information infrastructure. This infrastructure is supposed to enforce the joined-up reform by supporting statutory charging and the iterative process needed to fill the MG3, which formalised charges or dismissal of cases. The design of the bi-directional messaging system is a very important step to join-up the criminal justice system and accomplish the criminal justice reform.

The CJE and the bi-directional messaging system have been designed to support this reform and to enforce the decision to transform the criminal justice organisations into an integrated and interdependent system. The technology has been designed to accomplish this outcome and has partially succeeded, even if, its enactment has encountered enormous hurdles especially on the police side as, for example, stated by one of our interviewees:

One of the major hurdles is who is getting benefits from this transfer of information. But actually the police side is not (getting benefits); the police side is having to produce this information electronically and send it electronically. There is actually more effort on the police side but actually the benefits are on the CPS side. So we had to look holistically at the criminal justice scenario and say that the benefits of the public and the system in general were somewhere downstream (then the police may be losing out).<sup>12</sup>

The recalcitrance to change of pre-existing cognitive, cultural and institutional practices also depends on the fact that police and prosecutors are still measured on the basis of different performance criteria, namely number of charges and convictions, respectively:

We have a mismatch because the police disposals are charges, whereas prosecutors are measured against convictions. That is the problem because you will get police officers who want a case charged because, even if it ultimately fails, they still succeeded because it is a disposal. But that is not what we are measured on. We are measured on how many of the cases that are then charged result in a conviction and until that mismatch is resolved there will be a conflict.<sup>13</sup>

The conflict of interest triggered by different performance criteria coupled with the fact that the police still retain the final decision with regard to the evidence to be gathered, has produced a situation whereby prosecutors are not obtaining their desired results:

They are rolling out a programme at the moment (i.e. the proactive prosecutors’ course), trying to get people to be more robust in their decision making because we are not getting (the) reasonable results that we should be getting with statu-

<sup>12</sup> Detective Inspector, Administration of Justice Unit, Scunthorpe, January 22nd, 2007.

<sup>13</sup> Borough Crown Prosecutor, London October 24th, 2006.

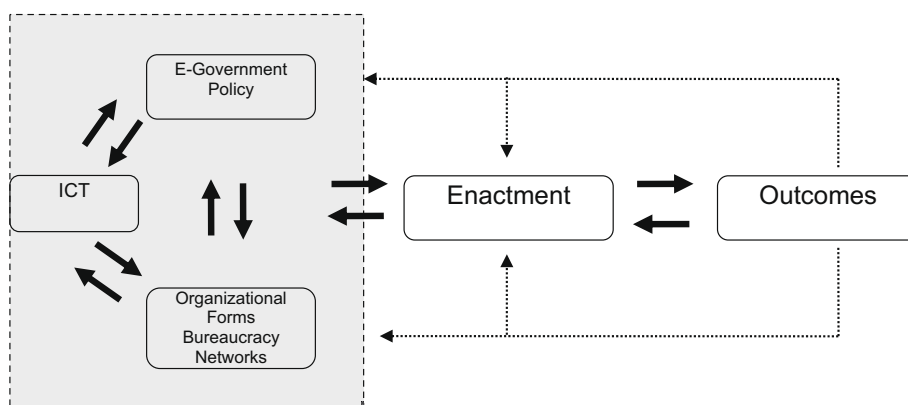


Fig. 6. The e-Government enactment framework.

tory charging. It is not as good as it should be. This does not mean that there is no benefit, but there have not been the good results so far that we were expecting. It is a bit of a cultural shift; the police have their own agenda all the time and possibly people do not always make the best decisions when they should: who are we sending to charging centres? May be we should be sending the more senior practitioners and make people build up more experience before we let them loose.<sup>14</sup>

The technology enactment framework is therefore very useful to analyse the complexities associated with the implementation of technological solutions in public sector organisations. It however does not account for the importance of the e-Government policy intent which shapes the choice and design of the technology. We have shown that two different reforms in the England and Wales criminal justice system have led to different ICT solutions. These solutions, once implemented, have been shaped by the enactment process accompanying technology adoption as well described by Fountain (2001). This enactment process cannot however be completely understood without looking at technology as a carrier of e-Government policy aims. These characteristics are in fact deeply affecting the direction of the changes in the organisation, by, for example, changing the distribution of work among the different agents involved in the tasks, and therefore the reactions they provoke in the adopters.

In the specific, the introduction of the 2003 Criminal Justice Act has changed the overarching priority of the criminal justice system as a whole from the independence of prosecution and investigation functions to the pursuit of efficiency (Fowles, 2006). This change has generated the need for a modification of the procedural organisation of the criminal justice system, which led to the introduction of the duty prosecutor, and profound changes in the architecture of the information systems used by police and CPS. The Criminal Justice Exchange (CJE) and the bi-lateral messaging systems have been designed to enforce, as much as possible, this new way of working. These new technological solutions have resulted in a problem area because they have called for a higher degree of collaboration between police officers and duty prosecutors in the investigation of criminal cases, as dictated by the “joined-up” reform, undermining the neat separation between the prosecution and the investigation function as envisaged by the 1985 Prosecution of Offences Act, to achieve more efficiency in the criminal justice system.

## 5.2. The e-Government enactment framework

The technology enactment framework considers the technological characteristics of e-Government systems as objective and not linked to the policy which has led the choice, design, and adoption of the technology. Our case instead shows a direct link between the technological characteristics of the England and Wales criminal justice system and the e-Government policy intent which has driven their transformation. The e-Government policy which aimed at streamlining intra-agency collaboration led to the design of information systems which did not consider inter-departmental interoperability at first while the joined-up government agenda led to a radical overhaul of the information systems in place pivoting around CJE, thus prioritising inter-departmental interoperability. The technical characteristics of the systems implemented in the two different phases are the result of the different aims of the e-Government policies which have dictated the agenda for the re-organisation of criminal justice in England and Wales.

Given that the choice and design of technology is closely linked to the e-Government policy aims, the enactment of technology is not only affected by pre-existing cognitive, cultural, socio-structural, legal and formal arrangements, as argued by Fountain (2001), but also by the e-Government policy which has been embedded into the technology. This is the reason why we propose the e-Government enactment framework as a more comprehensive framework to explain ICT adoption in the public sector. The enactment of technology enacts the e-Government policy which the technology carries as the two cannot be clearly separated. Below we sketch our e-Government enactment framework (see Fig. 6).

<sup>14</sup> Borough Crown Prosecutor, London, July 3rd 2006.

By adding this dimension, the e-Government enactment framework provides a richer framework to study the complexities of technological adoption in public sector reforms. The technological choices and designs and the characteristics and functionalities of hardware and software configurations are thus part of this policy-making process and deserve to be studied as such. Technology is a carrier of specific and contingent e-Government policy aims that not only last because enacted in social, institutional and organisational practices, but also because embedded in the technological systems themselves and enacted in organisational practices. Obviously, the argument that technological implementations have long-lasting effects is well acquainted in the IS literature (Hanseth, 1996; Hanseth and Monteiro, 1996; Hughes, 1997). However, the long-lasting effect the choice and design of technology can have as a carrier of contingent policy values has yet to be discussed in the e-Government literature.

e-Government is not only the result of social, political, and institutional negotiation, as well described by the original technology enactment framework, but also the outcome of political negotiation embedded in technological stratifications, as it emerges from our case study.

Technological characteristics do therefore impact the outcome of e-Government projects by supporting or not new or different ways of working and coordinating public sector organisation activities. Technological characteristics must therefore be considered as part of the e-Government policies as they affect the outcome of these reforms. As our case shows the joined-up programme of reform and the technology implemented to coordinate the work between police and duty prosecutors has led to a radical transformation of the procedural rules which govern the prosecution of criminal offences so that the principle which prescribes the neat separation between investigation and prosecution has begun to be questioned in practice.

The e-Government enactment framework does therefore directly account for the policies that shape the nature of the technologies implemented. The e-Government enactment framework acknowledges that the outcomes stemming from the enactment of technology are indeterminate, multiple, and unanticipated because influenced by rational, social, and political logics, thus warranting potentially sub-optimal effects. Yet, as our case reveals, technology and its characteristics do affect the outcomes of this enactment process because they are carriers of political interests (Brown and Duguid, 1994) aptly inscribed in the choice and design phase. Thus, the characteristics of technology cannot be considered “objective” and independent from the e-Government policies that influence their design, but deeply embedded and shaped by them in a mutual cycle of co-shaping.

We therefore suggest revising the technology enactment framework by highlighting that technology does not carry objective characteristics but rather the aims and goals of the e-Government policies which shape its choice, design, and adoption. In so doing we propose a more comprehensive enactment framework which does not only discuss how technology is enacted but rather looks at the overall process which enacts e-Government policies. The e-Government enactment framework does therefore take into consideration the technological, organisational and political nature of e-Government policies.

The e-Government enactment framework also shows that e-Government projects are not always the outcome of planned and controlled change management initiatives, as described by many new public management driven programmes. E-Government projects often emerge as the outcome of a complex set of relationships which recursively shape technology, policies and consequently the outcome of e-Government reforms. Shedding light on the relationships which exist between e-Government policies, technological choice and design we provide a deeper recognition of the complex political and institutional environments underpinning e-Government policies (Yildiz, 2007).

## 6. The e-Government enactment framework: preliminary implications

Compass and NSPIS were designed to rationalise the departmental activities within police and CPS. Their design was driven by the drivers of departmentalisation and procedural rationalisation prescribed by the NPM ideology. The CJE and the bi-lateral messaging system have instead been designed to accomplish the prescriptions of the “joined-up” government initiative which sees in cross-agency interoperability the solution to efficiency loss derived by departmentalisation. All these systems are therefore carriers of the NPM prescriptions that search for efficiency and rationalisation, procedural transparency and accountability in the public sector by introducing ICTs (Andersen, 1999). The reform inspired by these drivers has however had more profound impacts than efficiency. The first phase of the reform, the one inspired by departmentalisation has informed the design of information systems which did not consider the problem of interoperability and that as a consequence did not support it. The enactment of this e-Government policy has reinforced the independence of the action of the Police in the investigation and of the CPS in the prosecution but also made cumbersome the exchange of information between the police and the CPS with the obvious efficiency loss. This first phase of the reform has therefore streamlined and increased the efficiency of the intra-departmental communication flow within the Police and the CPS but did not positively affect the overall efficiency of the English and Welsh criminal justice system. As it did not consider inter-departmental interoperability this e-Government reform led to a reinforcement of the separation of the role of the Police in the investigation and of the CPS in the prosecution as mandated by the 1985 Prosecution of Offences Act. The second phase, the one driven by the joined-up vision which enforced the importance of inter-departmental interoperability has led to the design of the CJE and of the upcoming bi-directional communication system which facilitates the collaboration between the CPS and the Police. This e-Government policy, and the system designed upon it, has enforced inter-departmental interoperability increasing the efficiency of the English and Welsh criminal justice system by providing more efficient coordination between

the police and the CPS in the investigation and prosecution of crimes. However, the enactment of this e-Government policy has had a more complex effect than the one planned by the joined-up NPM rationalisation policy. Rather than only improving the efficiency of the interaction between the police and the CPS the new systems have been used in a way as to undermine the neat separation of functions between police and prosecution. This change was not prescribed by the joined-up policy, which introduced the duty prosecutor, it is the result of the functionalities offered by the technological design and the way in which the use of the system has been enacted. The encroachment of duty prosecutors in police investigations by means of early charging decisions supported by the CJE and the MG3 form has deeply blurred the separation between investigation and prosecution and produced a situation whereby it is no longer clear who is in control of the investigation. This outcome was not planned in the joined-up reform, but is the result of the enactment of the technology this reform has introduced in the English and Welsh criminal justice system. The way in which technologies are enacted in the public sector does not therefore only shape the way in which organisations use their information systems and leverage their potentials (Fountain, 2001) but also profoundly impacts the outcome of the e-Government reforms which design these information systems; in our case they enact a process which is undermining the functional separation of investigation and prosecution of crimes in England and Wales.

The outcomes of e-Government policies are therefore a combination of political, social and technological components that shape in a recursive interaction their outcome. To study, and more importantly, to deploy these policies is therefore a complex and multidisciplinary challenge that requires a political, technological, organisational, and social understanding of their complexity.

The results of our case have therefore several implications for e-Government research. In what follows we discuss two crucial and inter-connected points. First, the fact that technology can be a carrier of e-Government aims in a context where e-Government policies are shifting and transient may imply that the technology chosen and designed by e-Government reforms may have a long-term impact that outlives the very aims that have initially informed the reform. In our case, Compass and NSPIS have been designed to reflect the political goals of departmentalisation. Once the political discourse changed and the joined-up government agenda became dominant, it was hard to change the characteristics of the two systems. This was even more complicated because organisational practices were enacted upon these two technologies, making them more recalcitrant to change (Fountain, 2001).

Similarly, the CJE had been designed and implemented to make Compass and NSPIS work together. The CJE however could not provide the reciprocal task flow that was needed to achieve the reform brought about by statutory charging so as to fulfil the aims of the joined-up agenda. This was mainly due to the characteristics of Compass and NSPIS which enforced the separation between investigation and prosecution. The design of the bi-lateral messaging system aims at partially overcoming these limitations even if NSPIS and Compass will still act in the background. With the introduction of the new bi-lateral messaging system it is hoped that this technology will facilitate the achievement of the prescriptions of statutory charging and that, therefore, the joined-up collaboration between police and CPS will be more effective. This new design is however embedded in a technological milieu where Compass and NSPIS will still have long-lasting effects.

Second, these long-lasting effects are part of the forces which are “capable of triggering dynamics whose unintended and unanticipated consequences may nevertheless follow a contextual logic” (Barley, 1986) so that create a legacy which is part of the e-Government architecture and therefore of the policies which are associated with it. The argument that technologies do influence organisational structures is well acquainted in the literature. There is however a very important aspect which needs particular attention in the study of e-Government. There is in fact a relevant difference between private sector and public sector organisational changes triggered by information systems deployment which has not yet been fully addressed by e-Government research. Changes in the organisation of the public sector can change the nature of the services provided by public administrations and therefore have profound effects on the enforcement of the fundamental principles that govern the action of democratic States (Chapman, 1991; Cordella, 2007; Cordella and Willcocks, 2010; du Gay, 1994). The choice and design of information systems in the public sector requires therefore a higher degree of attention because its effects go beyond the rationalisation of public organisation procedures as the rhetoric of progress, modernisation, transformative ICTs, and new public management have shaped in the public debate over the last 20 years. ICT in the public sector is part of a policy-making process, as described by the e-Government enactment framework, and not only a resource to rationalise or outsource outmoded bureaucratic organisations.

We therefore suggest that e-Government policies, similarly to information system strategies, once implemented might “question the taken-for-granted assumptions on which the business strategy (...or e-Government policy..) was based” (p. 229) (Galliers, 1999).

## 7. Conclusions

The e-Government literature has mainly drawn on private sector, managerial models that essentially conceive of technology as an enabler, thus downplaying the role played by the organisational context where public sector ICTs are embedded. Even if e-Government research has mainly built on frameworks which downplay this context, there are good examples of contributions which have not followed this path. Danziger et al. (1982) have for example discussed the role of information systems in the organisational politics of American local governments. Their study looks at the impact of information technology on the distribution of power among organisational groups such as politicians, administrators, financial experts and

urban planners. In so doing they have discussed how information systems reinforce prevailing structures of control and prevailing biases within the government questioning therefore the impact of information systems on public sector organisation and outcomes. This approach to the study of ICT impacts on public sector organisation is however still not at the centre of the research interest in the field. Research on e-Government, as discussed in the literature reviews proposed by Yildiz (2007), Heeks and Bailur (2007), and Danziger and Andersen (2002), shows that the vision which “considers IT merely one more resource, albeit a powerful and protean one, in the arsenal of politics-as usual” (p. 593) (Denziger and Andersen, 2002) is still dominant and that the main focus of research in the field is still concerned with managerial and economic aspects. The e-Government enactment framework we propose in this paper builds on the IS research tradition which studies ICTs and the social and organisational settings in which they are embedded as relationships of mutual shaping (Bijker and Law, 1994; Orlikowski and Baroudi, 1991; Sawyer and Rosenbaum, 2000). In so doing it better accounts for the different forces which shape e-Government policies by shedding light on the mutual cycle of reinforcement which shapes e-Government policies and ICTs.

We therefore suggest that the design of technology is infused with shifting political logics and that technology should be conceived of as a carrier of long-lasting interests that are often outlived by those visions and values inscribed in extant e-Government policies. Little wonder that the choice and design of technology is often fraught with tensions deriving from the mismatch between long-lasting values inscribed in pre-existing technologies and transient values reflecting ad hoc e-Government policy initiatives.

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