



Research article

Conflicting institutional logics: a national programme for IT in the organisational field of healthcare

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Abstract

This paper reports the findings from a 4-year study on the UK National Health Service on the introduction of a national programme for information technology.¹ This is the largest civil IT programme worldwide at an estimated technical cost of £6.2 billion over a 10-year period. An institutional analysis of our historical and empirical data from six NHS organisations identifies growing fragmentation in the organisational field of healthcare, as past and present institutional logics both fuel and inhibit changes in the governance systems and working practices of healthcare practitioners. This is further complicated by new institutional logics that place the citizen at centre stage of the NPfIT, in a move to promote patient choice and public value.

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Introduction

The UK National Health Service (NHS) was set up in 1948 to offer free healthcare at the point of delivery to all citizens. Since then, the NHS has rarely been out of the public eye as politicians, the media and citizens continue to debate how to allocate the £70 billion annual NHS public spend (Wanless, 2002). The NHS is a highly complex organisation (Mohan, 2002), which serves over 50 million citizens in England. During a period of 1 year, there were 325 million consultations in primary care, 13 million out-patient consultations, almost 5.6 million people were admitted to hospital for planned treatment, nearly 13 million people attended Accident and Emergency (A&E), 4 million emergency hospital admissions, and 617 million prescription items issued (Granger, 2004). Given the scale and scope of the NHS, one of the most significant challenges facing government is how to continue to offer affordable healthcare to all citizens (Pollock, 2005).

Alongside a government agenda of public sector reform, information and communication technology (ICT) is perceived as a critical element in making the NHS more efficient and cost-effective. The annual spend on computer systems, and services by the UK government has doubled since 1999, reaching a figure of around £14 billion, which is the highest in Europe (NAO, 2004). The growing use of

large external IT service providers, and smaller, more specialised firms see much potential in developing skills and capabilities in the healthcare sector. The split between public (in-house) and private (external) markets for IT services now stands at around 55 and 45% respectively.

Yet the history of introducing ICT into the NHS has produced mixed results (NAO, 2004, 2006). From an information intensive organisation with virtually no computers in the 1960s, the NHS now has tens of thousands (Brennan, 2005). One of the first computer systems was the Patient Administration System (PAS) introduced in the 1960s. This was followed by laboratory and radiology systems in the 1970s, and by hospital information support systems and resource management systems in the 1980s. During the 1990s, the NHS developed an IT strategy, which saw the introduction of electronic patient records (EPR) and an electronic record development and implementation programme (ERDIP). Later that decade, the government published the Information for Health document, which suggested that a number of reference sites could be set up to evaluate the development and implementation of electronic health records (EHR).

Against a background of relative under-investment in ICT over three decades, the government pledged in 2002 to

spend around £6.2 billion on a National Programme for Information Technology (NPfIT) to deliver four critical elements (see Figure 1): (1) NHS Care Records Service, (2) Electronic Appointment Booking, (3) Electronic Transmission of Prescriptions, and (4) Electronic Transfer of Digital Images (e.g. X-rays and scans). These IT initiatives are supported by a nationwide IT Infrastructure and Network. The key objective of the NPfIT is, ‘To deliver a 21st century health service that is better for patients, citizens, clinicians and people working in the NHS through the efficient use of information and communication technology’ (Granger, 2004). The NPfIT is now the world’s largest civil IT programme (Connecting for Health, 2004: 33).

As a longitudinal study on the vision and implementation of the NPfIT covering the period between 2001 and 2005, this research analyses data collected from 120 interviews with clinicians, hospital managers, IT suppliers and relevant healthcare agencies and groups. Developing a theoretical framework using concepts from institutional theory, we explain how the highly institutionalised organisational field of healthcare is infused with conflicting institutional logics that both fuel and inhibit the adoption and diffusion of the NPfIT. While government is keen to promote the NPfIT through the funding of an agency – Connecting For Health – which regularly sends out positive statements about progress and targets, other stakeholders are highly critical about the vision, strategy and implementation of the programme. Government attempts to mitigate risk by creating a clearly defined governance system for this unprecedented large-scale IT programme do little to alleviate this problem, as institutional actors compete to effect changes in the material-resource environment and through the belief systems that prevail.

This paper is structured as follows. First we present our theoretical framework that develops ideas from Scott *et al.*’s (2000) comprehensive study on institutional change on US-based healthcare organisations. Next, we present our longitudinal research study on UK-based healthcare organisations that are charged with the adoption and diffusion of the NPfIT. We present case study data that seeks to unveil the

institutional logics that either support or question the rationale and purpose of the NPfIT. Finally, we draw conclusions from our data and offer ideas and directions for future research on healthcare using an institutional analysis.

Theoretical framework

The UK NHS is a highly institutionalised and complex system, which exists and operates both as a material-resource environment and a set of beliefs, rules and ideas (Constantinides and Barrett, 2006). Although these two environmental facets are conceptually distinct, material-resource environments are influenced by the institutional context. The selection of resources and how they are combined and deployed is determined by institutional beliefs and rule systems (Greenwood *et al.*, 2002). The effects of institutional environments on organisational structure and behaviour may be direct and indirect. Institutional environments may endogenously influence organisations through the ‘archetypes they develop for actors, the logics they legitimate, and the governance systems and rules of social action they support’ (Scott *et al.*, 2000: 166).

Exogenous influences on institutional environments are exerted in the form of societal and regulatory pressures that seek to alter the material-resource environment and the value systems. They may be created and modified by governments, organisations and individuals to varying degrees. Exogenous and endogenous influences are equally important in how institutional environments both persist and change over time (Zucker, 1983). To understand the institutional environment of healthcare, it is important to adopt a multi-level analysis that considers how societal, inter-organisational and individual (agency) factors influence, both directly and indirectly, the material-resource environment and the prevailing belief systems.

Organisational field

The UK healthcare system constitutes an organisational field that comprises a distinct area of institutional environment that includes, ‘key suppliers, resources, and

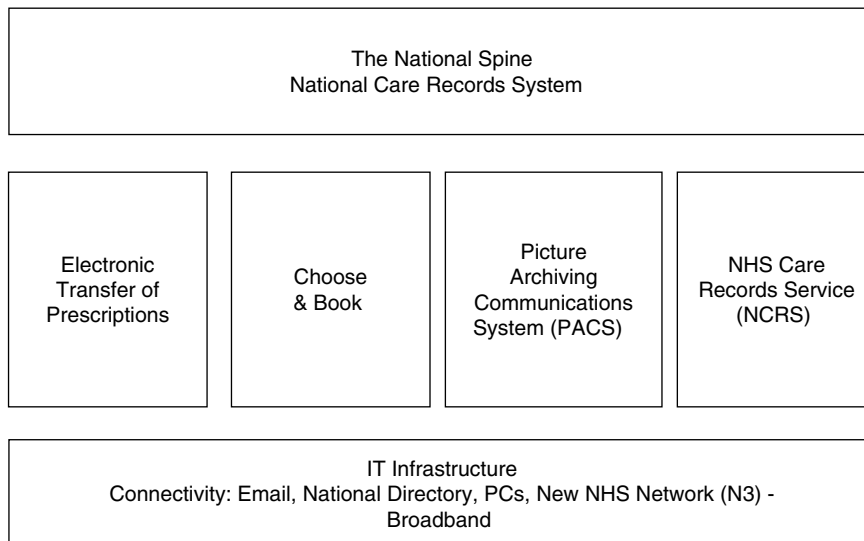


Figure 1 Four components of The National Programme for Information Technology.

product consumers, regulatory agencies, and other organisations that produce similar services or products' (DiMaggio and Powell, 1983: 148). An organisational field may be considered as an independent variable, or a set of contextual factors, or influences that affect organisation structures or processes (Scott, 2001: 137). Organisations within a field become isomorphic over time by virtue of developing similar structural and cultural environments (Zucker, 1977). For example, hospitals develop similar administrative and managerial systems, which are legitimised and regularised externally by government agencies and professional bodies and internally by hospital administrators and clinicians. At one level within the NHS, hospitals have tended to exhibit similar organisational forms by providing standardised services to patients. At another level, wide variations exist in the scale and quality of care for specific medical conditions, the adoption of specific clinical and administrative practices, and the use of information technologies.

Traditionally, the organisational field of healthcare has exhibited similar vertical relationships, where government departments, such as the Department of Health, have worked with other healthcare bodies to establish the rules and norms governing policy, procedure and practice within state-run hospitals. Key players include: (1) the purchasers of healthcare, which involves GPs and patients requesting treatment from NHS hospitals; (2) the intermediaries, such as additional healthcare providers, commercial insurance companies and healthcare plans, (3) governing bodies, such as government departments, regulators and professional associations, and (4) patient organisations and groups.

Field boundaries are not geographical. They are defined by cultural and functional boundaries, which are difficult to delineate. They may also change over time. Yet a common feature or, 'notion of field connotes the existence of a community of organisations that partake of a common meaning system and whose participants interact more frequently and fatefully with one another than with actors outside the field' (Scott, 2001: 207–208).

Institutionalists conceptualise the organisational field as a useful framework for identifying relevant institutional actors and phenomena of interest. While this exercise helps to locate and bound different organisations, an organisational field is not necessarily a stable or persistent environment (Reay and Hinings, 2005). The field of healthcare over the past 50 years has undergone significant changes, both in terms of the material-resource environment and in the beliefs, rules and logics that legitimate practice. This has inevitably led to conflict between different players within the healthcare system. As successive governments have introduced new policies, practices and performance targets, disputes between politicians, medical bodies, clinicians, external firms and patients have intensified. These conflicts are an important dimension to our theorising about healthcare, and more importantly, how institutional change evolves through the legitimisation of new regulatory requirements and rules, as well as new beliefs and values (DiMaggio and Powell, 1991). As additional institutional entrepreneurs or actors enter the field of healthcare, their attempts to shape and reshape the field depends upon their success or otherwise in defining and influencing the institutional logics that prevail.

Institutional logics

The concept of institutional logics is critical to our understanding of the material-resource environment and the value systems within healthcare. Institutional logics are 'sets of "material" practices and symbolic constructions which constitute a field's organising principles and which are available to organisations and individuals to elaborate' (Friedland and Alford, 1991: 248). They 'provide the formal and informal rules of action, interaction, and interpretation that guide and constrain decision makers in accomplishing the organisation's tasks and in obtaining social status, credits, penalties and rewards in the process' (Ocasio, 1997). They are the 'cognitive maps' or the belief systems that are carried by individuals located in an organisational field to embed 'meaning to their activities' (Scott *et al.*, 2000: 20). The healthcare system is infused with institutional logics that embody the organising principles that underpin how field participants carry out their work. Yet the dimensions of systems of logics vary according to 'content, penetration, linkage, and exclusiveness'. It is therefore important to examine the content of institutional logics, by investigating the 'specific belief systems as they are understood and interpreted by field members' (Scott, 2001: 139).

Since the mid-20th century, institutional logics have pervaded the healthcare system with varying degrees of influence (Greenwood and Hinings, 1996; Floyd *et al.*, 2005). By examining their content, for example the distinctive categories, beliefs, and motives created by a specific institutional logic, it becomes possible to understand and explain the nature and types of social relations that exist between organisations and individuals (Friedland and Alford, 1991: 252).

The institutional actors within an organisational field create and diffuse institutional logics. In the healthcare system, institutional actors define and develop the material resource environment, both as consumers and suppliers of healthcare services, but also play an active role in the institutional environment since they possess institutionally defined identities, capacities, rights and responsibilities (Krasner, 1988).

In the UK, healthcare is infused with institutional logics emanating from various sectors across the field. Healthcare is politically contentious where societal level logics created by government are embodied in policies and procedures that cascade down from the environment to organisations. Various stakeholders including clinicians, managers, administrators and patients interpret and re-interpret these logics according to the degree to which they affect changes to the perceived or real material resource environment of the institutional actors. This process is not linear, since new and old logics conflict and collide in a dynamic and changing institutional environment.

Governance systems

Governance systems are a critical element for understanding those 'arrangements which support the regularised control – whether by regimes created by mutual agreement, by legitimate hierarchical authority or by non-legitimate coercive means – of the actors of one set of actors or another' (Scott *et al.*, 2000: 21). The governance system in healthcare is highly organised and comprises public and

private sector organisations employing both regulatory and normative controls over the activities and services conducted within the field. In the UK, three sets of principal players participate in the governance system.

Firstly, governance agencies use their regulatory powers to exercise control over the material-resource environment and the value system. In both the US and UK healthcare arenas, government agencies use their powers to exercise control over professional groups. Secondly, professional groups, especially clinicians, have developed normative frameworks that underpin the cultural-cognitive beliefs, values ideas that govern the conduct of healthcare practice. Historically, the doctor/patient relationship has become highly institutionalised, with the doctor relying on their professional knowledge, expertise and judgement to advice an essentially 'passive' patient about treatment options. Thirdly, and more recently, patients are advised to exercise their rights to participate in healthcare governance systems. This has been encouraged by the UK government in its aim to give patients 'more choice'. A recent example has been where certain drugs have only been available to patients on the grounds of where they live, rather than for medical need. This has occurred because shortfalls in NHS hospital budgets have led some senior executives to refuse drug treatments to patients on the grounds of cost, with the fallout played out in the media as a story about treatment being offered according to a 'post-code lottery' rather than on medical need (Webster, 2002; Pollock, 2005).

Comparing the US and UK healthcare systems, it is apparent that three distinctive eras cover a period of around 60 years (see Table 1). These governance systems were imbued with distinctive institutional logics.

In the UK and US systems,² an era of professional dominance was evident in that professional bodies supported by government dominated the healthcare arena. The difference between the UK and US was largely the former was characterised by a healthcare system that promised to be freely available to all at the point of delivery. Both healthcare systems, however, were characterised by the relative autonomy and freedom in which clinicians practised. In the second era, each healthcare system witnessed some fundamental shifts. In the UK, the Thatcher government (1979–1990) continuing the policies of a previous conservative government in the early 1970s introduced the ethos of private sector economics and control to govern the healthcare system. This era saw the proliferation of management methods and practices as management consultants and advisors were hired to advise the NHS on a range of matters (Asoh *et al.*, 2005). Management fads and panaceas were adapted in healthcare,

such as 'business process re-engineering' and 'change management' (Willcocks and Currie, 1997; McNulty and Ferlie, 2004).

In comparison, the US from the mid-1960s was characterised by a period of federal involvement, with the introduction of Medicare and Medicaid programmes. This saw an increase in regulation with the dominant logic that emphasised equity of access to services (Scott *et al.*, 2000: 21). More recently, the UK government have built on the era of managerialism and entered a period where market mechanisms serve to fragment the delivery of healthcare still further. This is shown by the increased use of private sector firms that bid for outsourcing contracts with NHS organisations. Similarly in the US, the era of management control and market mechanisms continues, where government policies have shifted toward deregulation and a reliance on market forces.

The concepts of the organisational field, institutional logics and governance systems are central to our understanding of how the healthcare system adopts and adapts to changes in the material-resource environment and the beliefs, rules and ideas which comprise the value system. Although the healthcare system is a highly institutionalised environment, examples from both the UK and US suggest that three relatively distinctive eras are identified in each country. How and why these eras have emerged underpins our investigation into the UK NHS, and facilitates our understanding of the nature and scope of large-scale change programmes, and the extent to which they signal an institutional change within healthcare.

An example of an institutional change is provided by Scott *et al.* (2000: 21) in that, 'hospital managers once trained in schools of hospital administration are replaced by healthcare executives trained in business schools'. The institutional logics and governance systems need to be understood to help explain why changes of this nature have occurred. In our investigation, we apply our theoretical framework to help us understand how a large-scale nationwide technical change programme is adopted and diffused across the healthcare system and, more specifically, the changes in the organisational field, institutional logics and governance systems which support and constrain this initiative.

The research study

Our study on the UK National Health Service began in 2001 at a time of heightened political activity in this sector. As far back as 1998, the Department of Health produced a strategy document which committed the NHS to lifelong

Table 1 Distinctive eras in UK and US healthcare since 1945

<i>United Kingdom</i>	<i>United States of America^a</i>
The era of professional dominance and social inclusion, 1948–1971	The era of professional dominance, 1945–1965
The era of managerialism, 1972–1997	The era of federal involvement, 1966–1982
The era of market mechanisms, 1998–present	The era of management control and market mechanisms, 1983–present

^aThe USA table from Scott *et al.* (2000: 21).

electronic health records, 'for everyone, with around the clock, online access to patient records and information about best clinical practice for all NHS clinicians' (Connecting for Health, 2004). This culminated in the NHS plan in 2000, which outlined a vision of healthcare service designed around the patient and a new delivery system.

By 2001, another report was produced which outlined the information systems needed to deliver the NHS plan and support patient-centred care and services. The following year, the Wanless (2002) was published which offered several key recommendations for IT in the NHS. It was based upon a comparison with improvements in performance and efficiencies gained from new technology identified in other industrial sectors, including healthcare. The report advocated an increase in IT investment, stringent, centrally managed national standards for data and IT, and better management of IT implementation in the NHS, including a national programme. The same year saw the publication of 'Delivering the NHS Plan', which promoted the vision of a service designed around the patient, offering more choice of where and when to access treatment. IT would enable the NHS to fulfil this vision, with electronic records and electronic booking of appointments by 2005 and a wide array of clinical applications and functionality from the electronic records available in all primary care trusts by 2008.

Later in 2002, another report was published – 'Delivering 21st Century IT Support for the NHS – A National Strategic Program' (Department of Health, 2002). Within it contained the plan for the governance system to create a Ministerial Taskforce and recruitment of a director general for the NPfIT. In addition, it set up the Clinical Care Advisory Group, with representatives from many healthcare organisations. The main task for this group was the recommendation to create an NHS Care Record for each patient, with core information held in a national data repository. By October 2002, the NPfIT was launched with the appointment of a Director General of NHS IT. The purpose was to 'procure, develop and implement modern, integrated IT infrastructure and systems for all NHS organisations in England by 2010' (Connecting for Health, 2004).

Since we planned a longitudinal study on the UK healthcare system, it was imperative that a research method was compatible with our objective to identify and understand the institutional environment of healthcare service delivery. More specifically, we were keen to identify and explain the observed changes in the organisational field of healthcare, the institutional logics surrounding the desire for change, and also the governance systems designed to facilitate the introduction of the NPfIT. Three broad research questions were developed: (1) How can we identify and delineate the key organisational groups and individual actors which comprise the organisational field of UK healthcare? (2) What are the defining institutional logics prevailing within and across the NHS in relation to the NPfIT and change programmes more generally? (3) Who are the key players in determining the governance system underpinning the NPfIT?

As an exploratory-descriptive study, we were concerned to interview a variety of individuals working within the organisational field of healthcare. This included,

government ministers and advisors, professional groups within healthcare, NHS clinicians, managers and administrators, and external organisations involved in the NPfIT (e.g. IT service firms).

A literature review of the healthcare arena identified a number of studies on policy issues, yet few which systematically and rigorously examined how change management programmes were adopted and diffused throughout the healthcare sector. Whereas many studies considered the introduction of a change programme, usually involving IT, within a specific organisational setting (Brown, 2001; Doolin, 2004), there were virtually no studies that examined inter-organisational relationships between different constituents in the adoption and diffusion of IT systems (e.g. government agencies, NHS executives, hospital trusts, IT suppliers and patients). Most of the studies were descriptive and lacked an historical dimension (Heathfield *et al.*, 1998). Further, many of the studies on the introduction of medical systems were not supported by a robust theoretical framework, and instead were more narrowly aimed to identify examples of best practice (Guah and Currie, 2005).

A study by Scott *et al.* (2000) study on institutional change within healthcare organisations was particularly insightful. The authors observe that, 'the field of healthcare services...presents a marvellous opportunity to examine an institutional arena undergoing rapid, even "profound" change' (Scott *et al.*, 2000: xvii). This empirical work tracks the changes occurring over half a century in the healthcare delivery system of one metropolitan area, the San Francisco Bay Area. Although this investigation is limited to explaining the developments in a single, large, but geographically limited region, the authors' claim the effects of institutional environments are not restricted to local arenas, but have repercussions for other regions. As an institutional analysis, this study provided a theoretically rich and empirically robust account of the US healthcare system.

Data collection and analysis

Three methods of data collection were adopted. First, the researchers assembled a range of academic, government and industry studies on the healthcare sector. These studies were not restricted to the UK only, but included articles and reports on healthcare services in many countries, regions and locations. This material proved invaluable for understanding some of the societal, economic, political, cultural and technical differences in healthcare nationally and internationally. Second, we attended various trade fairs, conference, workshops and exhibitions on healthcare. Some of these events were focused on general topics (e.g. IT in healthcare, patient services, hospital management and professional best practice), with others more focused upon specific activities (e.g. the NPfIT, presentation of the Wanless Report, IT strategy). These events generated many useful research contacts. Third, we engaged in primary data collection, where 120 interviews were conducted with a range of constituents (e.g. health service professionals and administrators, clinicians, doctors, patients, IT service providers, and politicians). The majority of interviews were with health service professionals (e.g. NHS hospital executives, managers, administrators) engaged in the implementation of the NPfIT.

Our study presents the data from six UK NHS hospitals (see Appendix A). A semi-structured interview schedule was used to enable interviewees to elucidate their answers. This method of data collection was critical for allowing interviewees to raise additional themes, issues and concerns that they felt were important to the research study. The theory-building process develops from recursive cycling among the case data, emerging theory and extant literature (Eisenhardt and Graebner, 2007). Though we began our study from an institutionalist perspective, our aim was not to 'test' theory using a variance model, nor even to add to the vast conceptual literature on institutions. Rather, it was to adopt a process-oriented approach to collect and analyse data to illustrate existing theory. We recognise that a limitation of our research is that we use concepts from institutional theory, but do not seek to develop new ones. However, one purpose of this study is to respond to calls for more empirical research that elucidates institutional concepts, since the vast body of work on institutionalism is conceptually rich, yet empirically impoverished (Hasselbladh and Kallinikos, 2000).

Although our sample of only six organisations was relatively small, our longitudinal focus enabled us to interview informants over a 3-year period. Most of the interviews lasted around 2 h. The interviews at the NHS hospitals were tape-recorded and the tapes were transcribed. Respondents were sent a transcript of the interview to verify it was a true account of what was discussed. Any errors were corrected. Since some of the interview content is politically contentious, the interviewees asked for themselves and their NHS hospitals to retain their anonymity.³

The open-ended and semi-structured interviews were conducted during the first 4 years of the NPfIT project implementation, part of which was the negotiation of contracts to the service providers. Multiple informants were interviewed both within the NHS hospitals and with other constituents. During the first year of interviews, the scope of the study was extended as it was important to elicit data and information from a wider range of respondents engaged in the implementation of the NPfIT. These included, IT service firms bidding for public sector IT contracts and doctors in general practice (external to the NHS hospitals). Respondents from IT service firms offered critical insights into the political and procurement processes within the NHS and public sector more generally. GPs offered useful insights about the communication channels underpinning the NPfIT.

Following the first year of interviews, the researchers evaluated the data and refined the semi-structured interview schedule. It was recognised that given the range of constituents involved in the NPfIT, the questionnaires needed to be more closely targeted to the professional and personal situation of the individual, as generic questions were less meaningful. The comments and insights from respondents were further compared with the policy documents and reports from government sources.

The NPfIT in the UK National Health Service

This section discusses our historical and empirical data collection covering the period of 2001–2005. Using various

literature sources, we convey some of the significant changes, which have occurred in the organisational field of healthcare in the past 60 years. Our empirical data is mainly concerned with the vision and early implementation of the NPfIT in the NHS in England. In 2002, the UK government was at the beginning of implementing the 'world's largest civil IT program' intended to 'deliver 21st century health service through efficient use of information technology' (Connecting for Health, 2004). The challenge of modernising the NHS by using IT as part of the solution poses many challenges as our data from six NHS organisations confirms. Using our theoretical framework to organise our data, we analyse the NPfIT in the context of increasing fragmentation of the organisational field of healthcare, past and present institutional logics, and the governance system. The quotes we use were selected because of the frequency with which similar comments were conveyed by our respondents. They reflect some of the critical issues and concerns about NPfIT that need to be addressed for the programme to gain wider acceptance by healthcare staff.

The organisational field of UK healthcare

Healthcare in the UK is a highly complex organisational field with the NHS providing patient services to around 60 million citizens, free at the point of delivery. The NHS was created in 1948 by a parliamentary act initiated by the Labour government following a national healthcare review after World War II. The current NHS organisation consists of parliament, a secretary of state for health, strategic health authorities, under which NHS trusts, foundation trusts, primary care trusts, care trusts and non-NHS organisations reside. An independent regulator that monitors these organisations reports to parliament.

The past six decades has witnessed the NHS experiencing periods of both stability and change. As a highly institutionalised environment, the NHS has developed a 'public sector ethos' infused with the values of serving the public. Clinicians and healthcare workers have placed these values above issues of finance and cost effectiveness as treatment has been provided based upon medical need rather than ability to pay. Over the years, the NHS has developed many institutionalised mechanisms that make change difficult and often highly controversial, such as the powerful professional bodies that govern the conduct and performance of clinicians. Successive governments have introduced policy documents to modernise the NHS with varying levels of success. One area has been in the use of information and communications technology, as a means to enhance efficiency and performance. Healthcare is an information-rich business with 15% of hospital resources spent on gathering information. Doctors and nurses are estimated to spend up to 25% of their time collecting and using information (Audit Commission, 1995).

The decision to develop the NPfIT was politically ambitious and culturally and technically risky. NPfIT would extend the boundaries of the organisational field in healthcare by using a range of external service providers for its development and implementation. NPfIT would have four key components: electronic transfer of prescriptions, Choose & Book to enable GPs and patients to book medical

appointments, a picture archiving system, and the NHS care records service. This is supported by an IT infrastructure to enable connectivity via broadband. Figure 1 outlines the technical framework of the NPfIT. Each of the four main components would be achieved by signing long-term commercial contracts with large IT providers, many of whom have little knowledge and experience of the public sector, or more specifically, healthcare services. This concern was raised by many of our interviewees:

In the past, the NHS was dominated by politicians and clinicians. As long as the clinicians were seen to be responsible and able to do their job, the politicians left them alone. In recent times, the NHS has increasingly brought in people with MBAs to run it, and the use of outside firms for outsourcing contracts has grown. Many of the IT service providers now see an opportunity to make money from NHS contracts, but they operate under a market ethos rather than a public sector ethos. Chief Executive (3).

The history of introducing IT systems into the NHS had led to the proliferation of many disparate clinical and administrative systems. This fragmentation was seen as part of the problem that led to varying performance outlines across NHS organisations. NPfIT would therefore standardise IT delivery as each NHS organisation would adopt the same systems. For example, Choose & Book would enable GPs and other medical staff to book appointments for patients at a time of mutual convenience. This would reduce the problem of thousands of appointments per year being wasted due to patient 'no shows'. The implementation of Choose & Book, however, was particularly problematic, as clinicians were highly critical about being 'left out of the loop' in the critical design stages of the system. One clinician at an NHS county hospital (6) said,

I have worked in the NHS for over twenty years. I have had a lot of experience advising people about the development of radiology systems. The problem with the Choose & Book system is that clinicians feel it has been imposed upon them by government and their IT representatives'. Healthcare has increasingly become a business, but unless you engage the professionals who deliver front-line services, people will not embrace new technology. I have seen some resistance to new technology, not because clinicians are unhappy to change their working practices, but because they resent being told to change what they do without proper consultation.

The proliferation of new entrants into the healthcare organisational field was a consequence of changing government policies over six decades. During the era of professional dominance, healthcare workers, particularly clinicians, enjoyed a level of freedom to define and structure their working practices. This extended to choices about the types of technology adopted and diffused across the NHS. As a new era emerged in the 1970s, which embraced managerialism as a way to enhance efficiency and performance, the healthcare system was increasingly inundated with various managerial fads and panaceas, like

BPR and change management (Willcocks and Currie, 1997). An outcome of these interventions was that isomorphic structures across the NHS were increasingly threatened, as NHS managers were keen to demonstrate 'best practice' examples through the adoption of the latest management ideas. Implicit in this logic was that NHS organisations that had not embraced 'new ideas' ran the risk of being labelled as 'against modernisation' or, at worst, 'failing institutions'.

As we move from an era of managerialism to one which increasingly advocates the use of 'market mechanisms' to regulate and monitor healthcare services, efforts to differentiate NHS organisations still further have been intensified. The political rhetoric surrounding the right of patients to 'choose' between one provider and the next is not likely to be based upon anything more than a crude assessment of the number of 'stars' awarded a primary care trust (PCT), with those holding a low number becoming labelled as offering a less than adequate quality of service to patients. This will further fragment the organisational field of healthcare as the status of individual NHS organisations becomes increasingly differentiated on the basis of current and future evaluation criteria to measure performance. The topic of performance measurement was highly contentious, however, as respondents offering both a clinical and technical perspective believed that the emphasis upon target-setting was carefully designed to absolve politicians from responsibility by accentuating the role and accountability of professional groups. One IT manager (4) stressed,

The successful implementation of NPfIT is presented as the responsibility of NHS managers (as budget-holders), IT firms (as service providers) and clinicians and administrators (as users). The problem is that the vision for NPfIT is a centralized one, designed by politicians with the delivery decentralized to external firms and hospital staff. This fragmentation of roles and responsibilities is confusing, but the politicians have made sure that failure to achieve targets is the responsibility of the professionals and not the politicians.

The NHS was described as a local or regional business, but NPfIT was seen as a top-down, centralised initiative involving many new players in the healthcare marketplace attempting to build new business opportunities in previously unchartered territory. With little knowledge and capabilities of the healthcare market, many firms became confused as they entered this space bringing with them business-focused institutional logics which were not entirely compatible with the prevailing institutional logics within healthcare.

Institutional logics in the NHS: past and present

To achieve the aims and objectives of the NPfIT, a shift in institutional logics is necessary, particularly as large-scale change programmes require 'participants not only to do things differently, (but) to do different things' (Scott *et al.*, 2000: 349). The rhetoric surrounding the NPfIT is developed by politicians to neutralise any negative perceptions or potential outcomes of technical change. In the late 1990s, prior to the NPfIT becoming a reality, the British Prime Minister, claimed that, 'The challenge for the NHS is to

harness the information revolution and use it to benefit patients' (The Prime Minister, Tony Blair, All Our Tomorrows Conference, Earls Court, London, 2 July 1998). A similar call was made more recently by the US President, who claimed that, 'We will make wider use of electronic records and other health information technology, to help control costs and reduce dangerous medical errors' (President George Bush, Annual State of the Union Address, Washington D.C., January 2006).

One identifiable change in institutional logics from the 1970s to the 1990s is the notion that public sector organisations should emulate the policies and practices of the private sector. In the context of IT, this means adopting formal procurement and project management methods and techniques (NAO, 2004). The history of many IT failures is blamed on poor management practice (Cross, 2005); with examples of 'best' and 'worst' practice often attributed to private and public sector organisations respectively. This fuelled an institutional logic that highlighted the need for compulsory competitive tendering (CCT) and 'best value', which expanded the numbers of managers and administrators across the NHS and led to high profile outsourcing contracts in the public sector (Currie, 1996).

As the NPfIT is supported by the managerialist rhetoric of previous decades, the design of systems such as Choose & Book are infused with values and ideas, which espouse 'patient choice' as part of the wider 'choice agenda'. This notion invited sceptical comments from many of our respondents,

The Choose & Book system is premised on government rhetoric which allows the patient to choose the hospital, consultant, date and time of their medical appointment. While this seems very reasonable and reflects modern ideas about the patient's right to choose, most patients are happy to leave this decision to the clinician. The benefit of arranging an appointment at a convenient time is self-evident, but patients rarely have full information about the quality of the hospital or performance of the consultant to make an informed choice. I worry that we may end up with an Egon Ronay approach to choosing hospitals and clinicians' (Clinician, 2).

Institutional logics that emphasise patient choice were seen to be at odds with a previous era in healthcare, which placed a high value on professional dominance. Many clinicians perceived their professional freedom had declined over the past two or three decades, as more 'bureaucrats' had entered the NHS bringing with them values and practices from the private sector. This contrasted with the view of many healthcare executives, which tended to think that past eras in healthcare placed professional and clinical freedom above 'more important' matters of cost, efficiency and performance. One Chair of a Healthcare Trust (6) commented,

In the past clinicians would ask to purchase an expensive IT system and I would find out later that it was not being used. A lot of public sector money was wasted so it became very important to develop and impose proper controls for cost control.

While this example suggests that clinicians exercise choice without responsibility for the financial consequences, our data suggests that replacing clinical choice about technology with top-down, government IT initiatives such as the NPfIT produces equally problematic outcomes. This was summed up by one GP (1)

I agree with the general view that IT is an enabler to better clinical and administrative practice, but I am also aware that the way Choose & Book has been introduced has not been altogether successful. The implementation is very late. One reason is that the system has been revised and revised again by politicians. Another is that – for it to be a success – it has to win the hearts and minds of GPs like myself and others, who are expected to use it. GPs operate as autonomous businesses and there is a cost implication of using Choose & Book. Unless GPs buy into the system, the take-up will be poor.

Comments of this nature were not uncommon, and suggested that a vacuum exists between the architects of the NPfIT and the intended user groups. Institutional logics emanating from the era of managerialism that supported the creation of a formal governance structure for large-scale IT programmes, did little to alleviate this problem.

Governance structure for the NPfIT

Up till the mid-1990s, the NHS governance structure for IT was decentralised or division-based, although decisions about organisational-wide IT projects remained centralised at the level of the government and NHS Executive. IT divisions were spread across several regional authorities, with medical functions centrally controlled. This precluded many small IT service firms from gaining a foothold in the NHS, as only their larger counterparts had the political, organisational and technical capacity to deliver large-scale IT work. In the late 1990s, the government increasingly recognised the opportunity to use IT to improve the delivery of service within the NHS. After a series of reviews of NHS IT service delivery, a more integrated and seamless IT organisation was recommended (Department of Health, 2000; Wanless, 2002). An IT Director (4) commented,

If you compare banking and the NHS, IT systems tend to be standardized in banking but non-standardised in the NHS. IT in the NHS has grown from the bottom up, and this is now creating problems for the NPfIT, which is trying to create a uniform approach to IT across the NHS.

The governance structure for the NPfIT operates at three levels with defined reporting lines and links to other groups (see Figure 2). At the top level, governance is provided by the Department of Health (DoH) Departmental Management Board (DMB), chaired by the DoH permanent secretary. This is the senior decision-making body within the DoH and is the NPfIT sponsor. The Senior Responsible Owner (SRO) is the DoH Group Director for Delivery who is a member of the DMB and who chairs the NPfIT Board Executive which is an executive sub-group attended by all SROs for individual programmes and workstreams. On a day-to-day basis, the management of the NPfIT is the

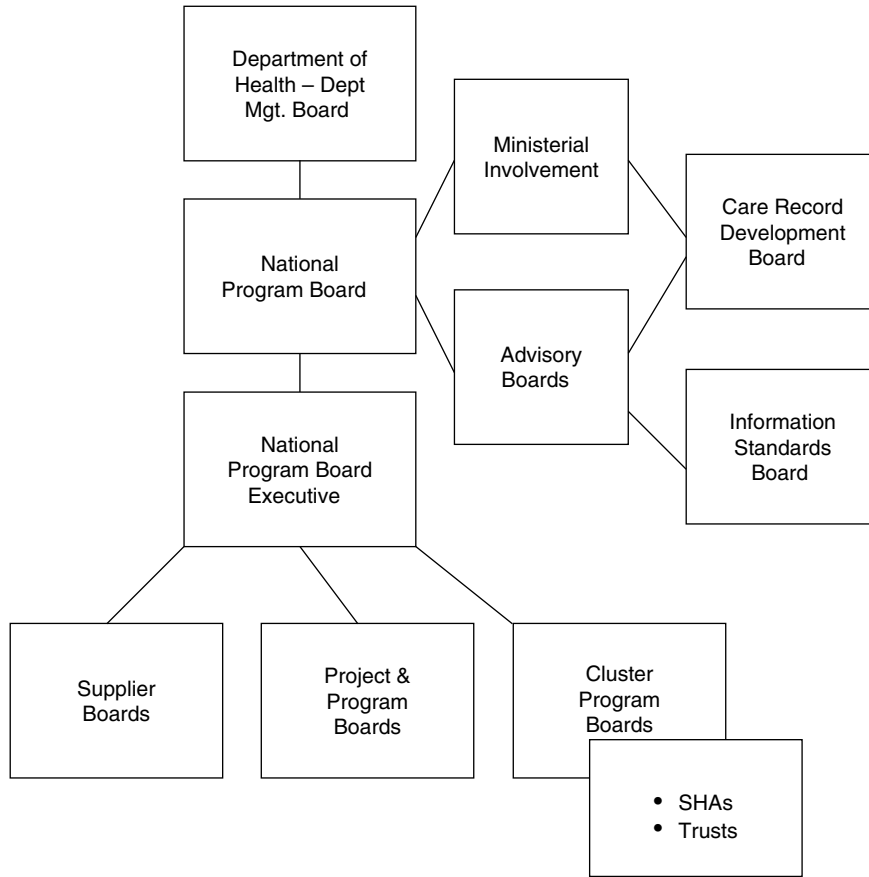


Figure 2 Governance system for The National Programme for Information Technology.

responsibility of the operational management team, chaired by the Chief Operating Officer, who reports to the National Program Board and its Executive, and also chairs the National Supplier Board.

Other agencies involved in auditing and reviewing the NPfIT are part of the programme governance structure. These include HM Treasury, the National Audit Office and the Office of Government Commerce, all of which are represented on the National Program Board. The Cabinet Office Committee, which reviews the ongoing progress of all large-scale IT projects also plays a role.

As a nationwide programme, the NPfIT is structured around regional clusters following consultation with Strategic Health Authorities. After much discussion, England was split into five geographic regions – each cluster comprising between five and seven SHAs – who would work together on the procurement and implementation of NPfIT services at local level. Five Local Service Providers (LSPs) deliver applications at a local level. The LSPs work closely with local NHS IT professionals and are overseen by a Regional Implementation Director (RID) from the NPfIT. The LSPs ensure that existing local systems are compliant with national standards and that data are able to flow between local and national systems. To do this, the NPfIT plans to deliver upgrades or replacements to hardware and software as appropriate and implement core local training for NHS staff. All RIDs lead the implementation process across their individual areas. RIDs manage the

NPfIT support team and the relationship with the supplier, as well as coordinating deployment. A RID is part of the NPfIT team and reports to the National Programme implementation director, but is also responsible to the cluster board for delivery.

The magnitude of the NPfIT suggested the need for a formalised governance structure. Yet interviews with a range of respondents identified serious shortcomings:

The formal structure is intended to clarify roles and responsibilities which is standard practice in any large-scale IT implementation. However, the current structure is not permanent as the government is planning to reduce strategic health authorities to only nine. This will have significant implications to decision-making structures as many chief executives will either be out of a job or moved to another role. It is very difficult to implement IT change when things keep changing. IT Director (4).

Another respondent (Clinician, 6) claimed that,

The interesting thing about the governance structure for NPfIT is that the resources and time assigned to the various projects is relatively fixed. The variable is therefore the quality of what is being produced. The main problem is that there is a wide gap between the centralised policies which determine resources and time

scales, and the decentralised system which is concerned with delivery. We need to close this gap urgently if the project is to deliver.

The ongoing changes in the formal structure of the NHS only exacerbated these problems with two identifiable negative outcomes. First, NHS staff described the situation as ‘change management fatigue’ as they sought to interpret new and revised government policy. Many staff were concerned that structural changes did little to increase efficiency and performance, and instead contributed to low morale. Second, structural changes produced confusion and contradictions, as NHS staff struggled to interpret new institutional logics against existing institutional logics. For example, a Director of ICT at one hospital said (6),

In the past, the hospital was owned by the state. Now that we are part of the private finance initiative (PFI), the buildings are privately owned. If someone wants a new socket in their wall, I can no longer go and fit one in. I have to ask the leaseholders of the building to do this, and the cost is five times as much. This changes relationships within the organisation as everyone is either a provider or purchaser in this internal market.

The move from a less formal governance structure to one that emphasised market mechanisms through the continuation of policies that set up the ‘internal market’ was not interpreted by NHS staff as a positive outcome. Rather, NHS staff described their working practices as imbued with the values of service and compassion. To undertake roles and tasks on the basis of cost and efficiency criteria were against these core values. The Director of ICT (6) continued his point,

The internal market which started in the 1990s was more about reducing waste and increasing operational efficiency. But now, we have moved towards an external market, where even the buildings and other capital equipment is owned by private firms. The current delays in the NPfIT, such as Choose & Book, reflect all the problems of dealing with contractors and sub-contractors. I am not sure that we have become more efficient in this new regime. Personally, I think that NHS staff did a lot of things in the past for which they were never properly rewarded. Nowadays, if the private firms mess up, they still seem to get paid.

Discussion and conclusion

This paper has considered the development and early implementation of a large-scale IT-enabled change pro-

gramme throughout the NHS in England. Using institutional concepts to interpret our data, we consider the changing organisational field of healthcare, the prevailing institutional logics and the governance systems that both encourage and facilitate organisational and technical change.

We argue that the NPfIT, which is the largest civil IT programme worldwide must be understood in the wider, socio-political and inter-organisational environment, rather than simply as an IT initiative designed to change clinical and administrative working practices. As our historical and empirical data show, the NHS has undergone significant changes since its launch in 1948 (Webster, 2002), which can be divided into three eras (see Table 2). Each era is infused with institutional logics that have circulated across the field of healthcare, helping to shape governance systems. These institutional logics emanate from politicians, clinicians, healthcare bodies, NHS managers, and patients, and more recently from private sector firms keen to win commercial contracts to help ‘modernise’ the service.

Our data suggest that, contrary to the tendency in the institutional theory literature to promote process models that are linear (Tolbert and Zucker, 1996), the NPfIT was not moving from one stage to another, since its progress was thwarted by non-linear institutional logics that were in constant conflict. Interview data suggested that conflicting forces in the interpretation, legitimisation and mobilisation were threatening the survival of the NPfIT, as the innovation was failing to become institutionalised in a healthcare system that exemplified a political battlefield (Scott *et al.*, 2000).

Our findings highlight the increasingly complex organisational field that comprises the healthcare environment. Such complexity employs what is now described as a ‘kaleidoscopic workforce’ with about one quarter of primary care delivered by agency staff (Gray, 2006) with only the patient seen as a constant within the NHS. Like other initiatives within healthcare, the NPfIT is designed and implemented by more than one bureaucracy, which suggests that delineating roles and responsibilities becomes increasingly difficult.

Against a backdrop of continuous change in the NHS, the NPfIT is currently halfway through its planned implementation. It is too early to predict whether the NPfIT will achieve its overall aims and objectives, but our findings suggest that while the government and media have narrowly focused upon its technical deliverables, a significant challenge is to win the hearts and minds of those who are expected to adopt the various technologies of the NPfIT.

As a large-scale IT programme, the NPfIT is consistently missing the original performance targets (Hendy *et al.*, 2005; NAO, 2006). While this is not unusual for IT-enabled projects, the NPfIT is not simply about installing new

Table 2 Institutional logics from three eras of UK healthcare

Institutional logics	Era of professional dominance, 1948–1971	Era of managerialism, 1972–1997	Era of market mechanisms, 1998–
	Public sector ethos	Private sector ethos	Patient-centred ethos
	Professionalism	Performance	Patient choice
	Self-regulation	Government regulation	Public value

hardware and software, but requires a significant change in the working practices of clinicians and administrators. Politicians describe the initiative as a knowledge-based programme, where information sharing is a fundamental outcome measure. However, our findings suggest that such a goal is naïve as professional groups such as clinicians and IT firms perceive knowledge as something to be protected and secured, not available for public or competitor consumption.

The current delays and shortcomings of systems such as Choose & Book are not merely confined to technical blips, but extend to poor communication between those who seek to impose this system and the various user groups it is intended to serve. A simple solution is to increase communication between the stakeholders in the form of additional workshops to fuel dialogue about the delivery and implementation of the various aspects of the NPfIT. An increase in 'user engagement' is currently being advocated and implemented by Connecting for Health (NAO, 2006). But our informants illustrate a more fundamental and intransigent problem. We conceptualise this as conflicting institutional logics.

In an era of increased 'marketisation', privatisation and commercialisation (Pollock, 2005), one of the significant challenges facing the NPfIT is to reconcile competing institutional logics emanating within an organisational field which has become increasingly fragmented over time. Past logics espousing the virtues of the public sector ethos, professionalism and self-regulation, continue to collide with a private sector ethos, which is sanctioned by government policy and regulation to enhance performance and efficiency within the NHS. But this conflict continues to pose problems as clinicians reconcile competing interests among NHS managers and patients. More recent logics have compounded the problem, as the concept of the internal market has been externalised and now encompasses a new vision for 'patient choice' to enhance the 'public value' of government controlled services (Moore, 1995).

Against these changes, defining the aims and objectives of the NPfIT has become increasingly difficult, as conflicting and contradictory logics circulate within the organisational field of healthcare. This is continuously played out in the media as the high cost of the NPfIT is often discussed in the context of a zero-sum game, in that scarce resources could be spent on 'more pressing public needs' such as treatment and drugs, rather than technology. The growing accent upon nurturing a 'patient centred ethos', where citizens play an active role in choosing and managing their own healthcare needs (including access to their own on-line patient records), will serve to generate new logics about the role and purpose of technology.

The success of Choose & Book, for example, will depend not only on the clinicians' and administrators' assessment of its effectiveness, but also on the patients' viewpoint. This may be counter-productive as public criticism of Choose & Book (and other facets of the NPfIT) destabilises its further implementation and enhancement (Medix, 2006). This may occur if its purpose becomes tainted by past institutional logics, which contradict prevailing ones that emphasise public value as an end in itself. A serious problem will emerge if past and present logics conspire to negate the

aims and objectives of the NPfIT, through a public consensus (communicated via the popular press) which concludes that expenditure on technology is a lesser priority than money spent on direct treatment, such as new drugs. This may coincide with clinicians emphasising past logics, which highlight the benefits of professional autonomy and choice in place of crude performance-based target setting.

There is some evidence to suggest that conflicting institutional logics about how money should be spent across the NHS is already destabilising the steady progression of the NPfIT, as shortfalls in NHS budgets lead chief executives to move money from one 'priority' to the next. The ongoing development and implementation of the NPfIT will therefore depend upon sustaining the political will to push through large-scale IT-enabled change throughout the NHS in England. However, growing fragmentation of the healthcare organisational field, as new entrants in the form of private firms and healthcare consumers exert their influence, will only increase conflict and confusion, as reaching a consensus among stakeholders will not be possible. This will have serious implications for the NPfIT, as the pledge to introduce a centrally designed set of systems may end up being decided increasingly at local level, as NHS organisations attempt to balance their IT needs against many others. Partial implementation of the NPfIT across the NHS will lead to increased fragmentation and negative publicity about performance outcomes. The situation is further complicated as the NPfIT has not won cross-party support from the various political parties. A new administration is therefore likely to alter the aims and objectives of the NPfIT, not for reasons of efficiency and performance, but for political points scoring.

This research study has addressed a range of broad questions in relation to the NPfIT. Using an institutional analysis, we recognise our research has many limitations that are generic to this theoretical perspective. Two important limitations are given here. First, our study adopts broad concepts of organisational field, institutional logics and governance systems. Institutional theory has been criticised for developing concepts that are vague and amorphous (Hasselbladh and Kallinikos, 2000). Across our sample NHS organisations, variations existed in the dominant institutional logics and governance systems suggesting a departure from institutional isomorphism. These organisations espoused a variety of conflicting priorities and policies in regard to government policy about the NPfIT. NHS organisations facing budgetary constraints were less likely to invest funds to implement the NPfIT than others with fewer financial constraints. Since we did not compare and contrast the case organisations, we are unable to elucidate the reasons for this variation. Future research may therefore seek to identify reasons for the variations in the material-resource environment and the value systems between healthcare organisations.

Second, another limitation of adopting an institutional theory perspective is the absence of 'agency' in the interpretation of our data. While much of the IS literature adopts a rational-choice perspective by emphasising the role of the 'technical champion', institutional theory is often criticised for underplaying or even ignoring agency as

a precursor in institutional stability and change. We recognise that although we convey the values, comments and opinions of various respondents, we do not seek to measure or evaluate their direct or indirect role and influence in the NPfIT at their organisation. Further research may seek to explore the perceived or actual role of 'technical champions' or 'change agents' in delivering large-scale IT programmes, to provide a comparative analysis of organisational outcomes. This will become increasingly relevant with the further fragmentation of healthcare as performance outcomes in healthcare delivery become more differentiated. As institutionalists concede that agency is underplayed in much of the literature, recent work incorporates the notion of institutional entrepreneurs in environmental and organisational change (Dejean *et al.*, 2004).

Despite these valid criticisms of institutional theory, we argue that the NPfIT is more fruitfully examined through a multi-level analysis that combines the material resource environment with the values, beliefs and ideas of institutional actors in organisations across the healthcare field. Unlike many studies that focus on IT implementation in a single organisation, our research suggests that an understanding of large-scale government supported IT change is only possible by considering the influence of regulatory, normative and cultural-cognitive factors. This study has shown that NPfIT is a politically and socially contentious innovation that engenders a range of interpretations across different institutional groups. These differences occur as past institutional logics collide with new ones. In conclusion, the future status and progression of the NPfIT will therefore reflect a variety of institutional logics with the outcome that the innovation will either become adopted and diffused throughout the organisational field of healthcare, or become discredited and abandoned (Swanson and Ramiller, 1997; Currie, 2004).

Notes

- 1 NPfIT is the programme of work. Connecting for Health is the government agency charged with the delivery of the NPfIT. This agency replaces the NHS Information Authority.
- 2 We recognise that comparisons between the UK and USA are problematic given the different socio-political and economic conditions that prevail. However, our aim here is to illustrate that healthcare systems in both nations are subject to regulative, normative and cultural-cognitive influences that may serve to change organisational fields and institutional logics over time.
- 3 The NPfIT is regularly featured in the computer trade press, with many articles critical of various aspects of the change programme. See: www.computerweekly.co.uk.

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Appendix A

See Table A.1.

Table A.1 Six NHS organisations

NpflT cluster	1 Local health community (Midlands)	2 General hospital (South England)	3 Primary care trust (North of England)	4 NHS foundation trust (Midlands)	5 Primary care trust (North of England)	6 County hospital (SW England)
Org. type	PCT	PCT	PCT	Foundation Trust	PCT	PCT
Number of interviews ^a	22	20	24	23	18	13
Number of staff	> 5000	> 7500	> 2000	> 5000	> 2000	> 2000
Population served	1,500,000	500,000	146,000	553,000	91,000	200,000
Star rating	***	***	**	***	*	**

^aAll respondents were interviewed at least twice, with some respondents being interviewed 3–4 times.