Debate

# Modernising healthcare – is the NPfIT for purpose?

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## Abstract

This paper responds to the findings of the research by Currie and Guah on the introduction of the National Programme for Information Technology through an institutional theory perspective. It considers both the appropriateness and applicability of the method chosen in the light of what is already known about UK healthcare organisations and the complex and changing process that is involved in both the organisation and any research that takes place. This is further confounded by an unstable political environment both nationally and locally and a failure to understand the changing location, role and status of the medical record. Only when this is resolved will a transformational change occur, in line with the new patient-focused government agenda and the external world of technology that must engage with the emotional as well as the rational role that both technology and health play in people's lives.
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## Introducing research

The introduction of the world's largest civil information technology (IT) programme in the UK NHS, known as the National Programme for Information Technology (NPfIT), is part of what began in 1999 as a strategy to modernise government through innovation and the use of IT (Cabinet Office, 1999). This approach has recently been reaffirmed in the Transformational Government – enabled by technology (IT Strategy Project Team, 2005), strategy document that sets this agenda around users, while hoping to increase efficiency.

Research by Currie and Guah (2006) on the roll out of NPfIT is therefore timely and of interest to both providers of healthcare in the UK and beyond (Charette, 2006). This interest will include academics from a variety of disciplines: for example, information management to psychology, sociology to history, or organisational behaviour to anthropology. Publication of research in this area is also important on a number of levels, as factual information about what happens, as an exploration of the relevance of theory, as a description of the impact of context and as analysis and speculation about subsequent developments.

## Governing agendas

The political language of government in policy statements has changed during their time in office from modernisation to transformation, reflecting perhaps an increasing urgency for achievement in particular areas. Ideas that rested on Modernisation also reference a past era of modernism (Bauman, 2006) that itself disconnected the past from the future and was concerned with, among other things, the fitness for purpose of whatever was being designed, be it buildings or technology.

The question that remains, however, is whose purpose is government serving? Why does this now need transforming through a specific focus on users, who are they and what evidence in relation to NPfIT is there that this can be achieved? The work of Currie and Ghua shows that answers to all these questions are somewhat confused, this is because of a failure to think through the aims and objectives of modernisation and how it has been enacted in healthcare (Blackler, 2006).

This problem may be repeated in their transformational strategy particularly in health, not least because it is a top-down approach dominated by political and IT industry perspectives. This domination is verified by the effectiveness of the procurement process by the IT industry expertise of Richard Granger, as set against the weakness of the stakeholder engagement (Jones and Williams, 2006) for both professionals and the public.

Transformational government is more generally in need of effective leadership for both the projects and their associated change process (Jones and Williams, 2006) and

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draws upon the language and ideas deriving from transformational leadership (Bass, 1990) associated with four components: idealised influence, inspirational motivation, intellectual stimulation, and individualised consideration. This leadership theory has been popular in healthcare and elsewhere in government (Alimo-Metcalfe and Alban-Metcalfe, 2005) but has had its critics (Tourish and Pinnington, 2002) because of an interpretation that can enable charismatic leadership of an organisation in a destructive manner, often causing authoritarian forms of organisations that are not appropriate to the inclusive needs of healthcare.

Contextually events are also moving ahead in the UK both politically and organisationally; politically, with the change in leadership of the ruling party and the departure of the Prime Minister Tony Blair; and organisationally, with the sudden and collective departure of many of the top team in the NHS in 2006 such as the former Chief Executive Sir Nigel Crisp and the Director of Human Resources Andrew Foster.

The publication of the report on NPfIT from the National Audit Office in June 2006 further confirms (Comptroller and Auditor General, 2006) the changing political climate for the national NHS IT agenda. Moreover, such official value for money approaches are themselves viewed with concern when they are the subject of delays in publication (Collins, 2006), because this also raises concerns about whose interests are being served. Such concern evidenced by two open letters to the House of Commons Health Select Committee from a group of 23 UK academics published in Computer Weekly on 11 April and 10 October 2006 suggested among other things that concrete objective information is not available to external observers, confirming that this project may be subject to one of the five paradoxes of IT evaluation that 'the greater the spend on I.T. the worse I.T. evaluation became' (Seddon *et al.*, 2001).

Therefore independent academic research taken from a longitudinal study such as the work by Currie and Guah (2006) has added value at this time. Questions that seem immediately pertinent to the snapshot of events described in this research are those articulated by Dawson (1999) as 'what do we know' and 'what can we learn'. In this context the research set out here, as a four-year study, reflects an ever-changing environment in which this necessarily historical perspective (Torfing and Sorensen, 2002), using institutional theory, may provide lessons for the future.

Some of these lessons, in retrospect, may be that other theoretical perspectives are required because of the changing context and content of what is being studied. Furthermore, that we should have already learnt from previous experiences of implementation, and IT implementation in particular, in both public and private sector domains, but as Huxley suggested 'That men do not learn very much from the lessons of history is the most important of all the lessons that history has to teach' (Huxley, 1960).

## Content and context

Whatever has been discovered, or discovered again, by the research we also now know that since completion of the study, two significant policy developments have occurred.

Firstly, following from the publication of the National Audit Report (Comptroller and Auditor General, 2006), the Department of Health in the UK set up a Summary Care Records Taskforce (Department of Health, 2006) to aid introduction of the electronic patient record (EPR) by addressing outstanding issues and concerns focussing on patient and public concerns.

This task force has now reported (Cayton, 2006) and confirms the need for a more sensitive and pragmatic approach to design and implementation. This is indicative of Currie and Guah's conclusion that the outcome of NPfIT as a project is not clear primarily because it is a politically and socially contentious innovation, which engenders a range of interpretations across different social, political, organisational and professional groups. As if to further confirm this, the taskforce chair Harry Cayton Director for Patients and the Public has subsequently been appointed as chair to the new National Information Governance Board to oversee the quality of information governance in the NHS, to offer advice on confidentiality and security of patient information, to monitor the implementation of the NHS Care Record Guarantee and to advise the Secretary of State, signalling further an attempt to move away from the political professional and commercial interests towards the user/patient agenda that is now at the declared heart of policy.

Secondly, following from the academic and industry concerns, the House of Commons Select Committee on Health announced on 22 November that it will hold an Inquiry into NPfIT, and the Chief Executive of the NHS will undertake a review of Connecting for Health including its management of NPfIT.

Besides the conflicting institutional logics described by the research (Currie and Guah, 2006), there is and has been the lack of a shared understanding and agreement on which institutions and whose logics matter as recent developments at policy level demonstrate because, as Brennan (2005) suggests, this is not simply a plan to computerise our medical records, it is a project to transform the way the NHS works. The focus however has been on a set of timetables and cost targets in relation to four distinct developments: of which only one is a product, that is the NHS Care Records, and three are processes critically dependent on the role of the various stakeholders in each process through electronic appointment booking, electronic transmission of prescriptions and IT infrastructure and networks.

The clarity provided by this four-part descriptor of what is important has been seductive to both politicians and patients who have a vested interest in what is happening to this public investment, but such simplicity in assumptions about the relationship between process and output may be in part responsible for problems that now arise. Indeed, if institutional studies and associated theory still only provided an account of how institutions govern action (Lawrence and Suddaby, 2006) through the role of rational formal structures alone, it would not be sufficient to the task of understanding the progress of the implementation of the NPfIT in the NHS. However, if it is indeed more than this, as Currie and Guah using the work of the new institutionalists, suggest it is, institutions are thus the product (intentional or otherwise) of purposive action

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(Jepperson, 1991) as patterns of sequenced interaction supported by specific mechanisms of control.

NPfIT is the latest example of this representing both part of this purposive action and as a new mechanism of control in itself. Institutions, in the view of Jepperson, are also the product of specific actions taken to reproduce, alter and destroy them. The NHS, when seen from this perspective, while enduring as a value within the UK social context, and a brand within its increasingly commercial context, is constantly reframing its policy purpose and thus simultaneously reproducing, altering and destroying institutions within itself not least because where such 'reproductive activity' increases, the question becomes one about the stability of the institution and its purpose as a whole. NPfIT as part of the Connecting for Health project, as it has now become, is also part of this dynamic as well as being prey to its consequences.

One example of these consequences, that demonstrates the contentiousness of such government-led initiatives, is the process by which the technical capability of the NPfIT project has been assessed and reviewed so far. As part of the report of the National Audit Office report, QuinetiQ were commissioned to carry out a process capability study. QuinetiQ have used a model discreet to government in the UK, which has not been subjected to the same external evaluation and academic rigour as other models in the public domain, although the report assures us they do meet the two recently published international standards set out in BS ISO/IEC 15288:2002 and BS ISO/IEC 15504-2:2003.

Such reassurances however must be seen in the context of other literature that is informing their report; for example, in relation to organisational behaviour they cite a 1991 edition of Organisational Behaviour – an introductory text by Hucksynski and Buchanan. This text has, however, been revised and updated a number of times in the last 15 years to incorporate the significantly different world of technology and organisations as they operate in 2006.

It will be important if confidence in the outcome, its process and its costs is to be maintained by both the public and staff (Comptroller and Auditor General, 2006), that a further, more open and academically rigorous processes of evaluation takes place. Currently however, there seems to be a potentially negative correlation developing between the quality of IT evaluation and enhancement in IT performance. Unless this is addressed, it will demonstrate what Seddon et al. suggest is the fourth paradox in IT evaluation (Seddon et al., 2001), which is IT evaluation techniques seem rarely to improve.

## Developing relevant contextual information

It is important that research in this area incorporates (Mark, 2006a) the exploration of a number of issues pertinent to such developments in healthcare, notably:

- behaviour, that is, what people do as well as what they say they do;
- the emergent (but not expected) outcomes;
- the conflicting agendas between different interest groups and

- the poverty in pragmatism that arises when research seeks to establish in the short term what does and does not work, notwithstanding the possible reversal of such outcomes when reviewed over time and/or space.

Comparative research across national boundaries is also only just beginning in relation to EPRs, for example through the IMaGE project (Hinds et al., 2005) that arose from key issues highlighted in the UK eDiaMoND project (www.ediamond.ox.ac.uk) to pool and distribute information on breast cancer treatment, screening and diagnosis. IMaGE seeks to develop a model of UK-based intellectual property ownership for the sharing of digitised medical data in a collaborative computing context. Through such initiatives and their implications internationally they will also prove an important influence in the shaping and reshaping of national agendas in both information management and healthcare.

Further concerns around the development of medical records have been the attempt to outsource abroad the transcription of medical record notes by cash-strapped hospitals (Mulholland, 2006). These hospitals, as Dave Prentis from the trade union UNISON points out, are being targeted aggressively by companies who encourage the use of cheaper labour to undertake this task in places like India and South Africa. They also demonstrate the space–time separation that is a feature of the new modernity (Bauman, 2006). He goes on to say that what could become fatal errors are occurring, for example mistakes over the term 'hypo' and 'hyper' have already been made by overseas staff who were nowhere near the doctor concerned to clarify his dictation.

Hypo refers to a lack (eg hypoglycaemic – low sugar levels), hyper means having too much of something (hyperglycaemic – excessively high sugar levels) – and confusion can have fatal consequences if mistreated. Other errors included writing 'known malignant' instead of 'non-malignant', 'urological' instead of 'neurological' and 'ectomy' (meaning surgical removal) instead of 'octomy' (meaning only an incision).

This outsourcing trend is not confined to the UK, as it is estimated that currently about 10% of US notes are written in this way, usually by trainee doctors rather than by expertly trained medical secretarial staff. Proving responsibility and liability for such errors is difficult enough within the UK over time, when things go wrong such international transfers only confirm further that the fragmentation is extending now over space. Patient information held within medical records is developing in many new ways that may not improve them and such problems may be further exacerbated by EPR keeping. The question for further consideration is therefore who owns the record and what interest do they have in its accuracy?

## Progressing problems

The volume of activity involved in NPfIT is very large indeed, as Currie and Guah point out in their introduction, serving 50 million citizens with 325 million consultations in primary care, 13 million outpatient appointments and 5.6 million inpatient in 1 year. This activity is now being driven by the need to keep pace with the changes and

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developments required to provide safe and effective healthcare in the 21st century as part of the wider government agenda, in which IT plays an integral role.

However, what is described as the challenge of affordable healthcare, which Currie and Guah suggest this investment must support, is of itself a statement of only one set of institutional logics that have bedevilled the NHS since its inception, and play an increasingly important role in the current implementation, not least because of the changing financial climate for UK healthcare in general and NPfIT in particular.

Affordability is itself a loaded term suggesting that the unaffordable is unsustainable. This language itself arises from a range of commercial and political interests, which see themselves disadvantaged by the NHS, and continue as Pollack (2005) shows to reinterpret and often misrepresent its economic and social effectiveness. Indeed, the NHS is historically no more daunting financially, in relative terms now, than at its formation (Wanless, 2002; Webster, 2002); yet, what is affordable depends on whose institutional logics are at work, and whose interests are being served. Notwithstanding the need to understand the changing nature of demand (Mark et al., 2000) and its interpretation by patients, professionals and policy advisors alike, the issue is further compounded by the different but related context of clinical activity that is an essential part of the process of NHS care.

Within the clinical domain the development and institutionalisation of IT has followed a very different trajectory, particularly within the centres of clinical excellence like the teaching hospitals, highlighting the conflicting institutional logics at work between and within healthcare organisations. Developments such as MRI scanning (Mayor, 2003) are examples of the UK's world class leading-edge utilisation of technology. Such developments however throw a negative comparative light on the failure to grow, at the same speed, the information management systems and processes required for the patient as they traverse the organisations over time and now through space (with the NPfIT objective of providing access to individual records anywhere in the UK for patients and professionals). These disparities may also have enabled both the maintenance of boundaries and hierarchies within the institution to the benefit of some and may have facilitated the construction of 'cultural dopes' (Hirsch and Lounsbury, 1997) among others such as patients and some professional groups.

## Governance and finance

The critical part played by governance systems in the institutional context of healthcare within recent years is evidenced by the growth of both organisational and professional developments, for example through the development of clinical and research governance strategies (Nicholls et al., 2000; Howarth and Kneafsey, 2005) within NHS organisations. Both have their own internal institutional logics and are part of the strategy, as Currie and Guah suggest, to exercise control over the professional groups. However, there is a failure to acknowledge the behavioural impact of such changes in policy. The consequent recursive nature of structure and the action of

agents that results from this, as set out by Giddens' (1984) structuration theory, can provide further insight, as Scott (2005) acknowledges, showing through this interactive and recursive model a replacement for former more determinist approaches. Giddens' approach according to Scott (2005) provides a more balanced conception of the relation between freedom and order. Structuration theory thus also provides further perspectives on the process of the interplay between parts in ways that institutional theory has yet to fully resolve. This change is achieved through what Giddens (1984) describes as the instantiation of the new context through the process of agents enacting and thus continually reinforcing or reproducing these new structures that both enable and constrain them and underpins much of the behaviour rather than declared policy of government. This failure to reflect on the behavioural consequences of this process is in part the reason why a review is now required.

Added to this are the subsequent changes to organisational structures and policy purpose, with the move towards a patient-centred approach (Department of Health, 2004). Combined with the former, but now perhaps contradictory agendas, this has had detrimental effects on both the organisational structure and its agents. It is furthermore expressing the tension between distributed and centralised power that changes over the lifecycle of governments, but is often justified with a *post hoc* rationality (Weik, 1995) that attempts to provide some coherence and rational purpose to actions. For example, the rapid reshaping and renaming of healthcare organisations, as part of what Jepperson (Jepperson, 1991) analyses as the institutional need to reproduce, alter and destroy themselves, mean that organisational lifecycles are extraordinarily truncated and often distinguished only by their instability (Mark, 2006a), as demonstrated by the scraping of the Modernisation Agency in the NHS in 2005, following the Gershon review of public sector efficiency (Gershon, 2004). The modernisation agency was meant to be responsible for helping local trusts deliver the change management agenda associated with the NPfIT (Jones and Williams, 2006).

In 2003 the NHS Confederation estimated that the costs of managing these changes introduced by IT will be least as much as delivering the IT itself. Furthermore, in December 2003 the British Computer Societies Health Informatics Committee also estimated the costs of critical business and other changes as being four to eight times the cost of procuring systems. While this responsibility for local organisational delivery has transferred in name to others, much of the organisational knowledge and memory associated with it has been dispersed or lost. This is part of a wider problem for the NHS where a number of organisational indicators have demonstrated these dysfunctions (Mark, 2006a) such as:

- a reduction in organisational citizenship behaviour in part because of the breaking of the psychological contract (Coyle-Shapiro et al., 2004);
- an increase in what Caddy (2001) has described as 'Orphan Knowledge', that is knowledge forgotten, separated or isolated within the organisation because of the dislocation of both individuals and organisations.

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This was demonstrated in the Chief Medical officers report entitled 'An Organisation with a Memory' that looked at the level of preventable accidents (Expert Group on Learning from Adverse Events in the NHS, 2000);

- an increase in stress and symptoms of burnout in staff working within healthcare leading to dysfunction at all levels (Williams *et al.*, 1998);
- the loss of what Goffman (1959) calls the 'display rules' and Hochschild (1983) has more recently developed as the 'feeling rules' of the organisation, where shared understandings of behaviour enable the organisation to operate effectively.

Connecting for Health may have a virtual policy purpose for the future, to make such instabilities less problematic, through a technology infrastructure that makes organisational boundaries open; however, where such boundaries cross between public and private sector providers of anything from buildings, IT, to delivering services, things may become more rather than less complex. An example of this is embedded within the research by Currie and Guah who quote a Director of ICT thus:

> 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 organization as everyone is either a provider or purchaser in this internal market.

Expenditure has risen significantly, during the period of the study the costs had doubled to £14 billion. More recently, in an interview with the *Financial Times* (Timmins, 2006) the Minister responsible, Lord Warner, has confirmed such costs only represent the national contracts for the systems' basic infrastructure and software applications, and when training staff, buying PCs and upgrading and assimilating existing systems over the decade-long programme are included, the figure was £20 billion; however, such cost inflation is common across similar systems in other parts of the world (Charette, 2006).

This confirms the political simplification that has been at the heart of the costings and targets that is now being deconstructed as part of what Lawrence and Suddaby (Lawrence and Suddaby, 2006) describe as the creation and dismantling of the mythology (around NPfIT) that skilled actors, such as politicians, can manipulate during processes of institutional stasis and change. However, institutional theory still lacks a detailed understanding of precisely how such mythologies are communicated to and appropriated by such actors and may provide the mask of safety for these inherently risky political adventures (Jones and Williams, 2006). Further evidence from this interview shows the Minister continuing to dismantle the mythology by stating that the extra money did not mean the programme would cost more than expected, but instead reflected the full expense of switching existing IT spending from outdated systems to the new ones. He goes on to point out that the delays to the electronic care record, which mean it may not be in place until early 2008, come in part because of delays in providing the software, which is being developed by companies who have, as Roy describes it, been vested (Roy, 1981) with rights to supply, what Currie and Guah suggest is, 45% of the market share so far for the programme. The vesting of rights in this way is therefore shown, as Lawrence and Suddaby (2006) suggest, to be not only about the breaking up of state monopolies to create new actors and new field dynamics, but also enables blame to be distributed away from government as part of Jepperson's (1991) purposive action to create patterns of sequenced interaction supported by specific mechanisms of control.

The introduction of EPRs was for a long time bedevilled by policy, professional and ethical issues that often failed to remain faithful to patients' interests (Rector *et al.*, 1991), and this dispute remains problematic for the current programme as acknowledged by the Minister (Timmins, 2006). He admits that the record's introduction was stalled by the fierce and unresolved dispute within the medical profession over what should be included on the national medical record, and how patients' data should be added (Watson and Halamka, 2006). This dispute with those representing both patient and citizens interests in the collection and storage of data will be monitored in health by the new governance committee to be chaired by Harry Cayton, Director for Patients and the Public. However, the Transformational government agenda that traverses government and private sector organisations will continue to demonstrate the conflicting institutional logics that can derail such programmes.

Originally it was proposed that the summary record would include major diagnoses, operations and recent tests, as well as current medications and allergies. It was also proposed that patient data would be added on an 'opt out' model, implying that consent to have the basic data added would be assumed, but with patients retaining the right to opt out, this is now replaced by government acceptance of the Taskforce recommendations (Cayton, 2006) that envisages that the process for creating summary care records – which will initially contain a small but important amount of patient information: current medications and allergies and adverse reactions – will follow from:

- A robust public information programme in the early adopter sites that will inform patients they have a defined and realistic period of time to review their proposed summary record by viewing it on HealthSpace or by asking to see a printed copy provided by their GP should they wish to.
- Patients would be invited to correct or amend their record and offer explicit consent for their record to be shared or to opt out of sharing, should they wish to.
- After a realistic period, it would be assumed that those patients who have chosen not to view their summary care record are giving implied consent for it to be shared in appropriate settings.

The taskforce also noted that there may be people who do not want their summary care record to be shared or uploaded and how this might be achieved will be considered by an advisory group drawn from patient,

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clinical and managerial stakeholders. It will oversee the future development of the summary care record.

The taskforce also noted that until it is possible to 'seal off' parts of the record it should only include non-sensitive information, and handling any sensitive information should be agreed with patients. The taskforce agreed that in time as the system matured, the content of the record should become more complete.

The British Medical Association family doctors' committee had rejected the earlier proposals from government, saying patients' consent should be sought even before their medications are added to the summary record, while at the same time many hospital doctors favoured a much richer summary record, thus demonstrating the conflicting logics even within the medical profession. Much of this have now been resolved by the report of the Taskforce that was published, but the question remains how much does this matter to the rest of the programme? More interestingly, in October 2006, it was announced that NHS Direct the national health help line had consolidated all its five million patient records into one single database and upgraded its call centres across the UK to create a 'virtual contact centre'. The move was designed to make sure that patient enquiries can be easily handled anywhere, regardless of their origin, in much the same way that the EPR will. So which institutions and whose logics are in control here, and what is the relationship between them from the patients' perspective?

The EPR is only one quarter of the activity set out in the national programme for IT (NPfIT) in 2002. The remaining three being about improving process rather than data capture, through investment in electronic booking, prescription transmission and infrastructure and networks. This division is important in terms of external appearances as a modernised and transforming organisation (Cabinet Office, 1999; IT Strategy Project Team, 2005). In this sense, problems may be more with those associated with institutional entrepreneurship (DiMaggio, 1988), particularly when considering the role and development of NHS Direct in parallel with NPfIT. Institutional entrepreneurship is important because it focuses attention on how new institutions arise and the manner in which interested actors work to influence their institutional contexts through such strategies as technical and market leadership, lobbying for regulatory change, and discursive action, and shifting the focus of institutional research towards the effects of actors and agency (Lawrence and Suddaby, 2006). This compares with the narrower conceptualising found in theoretical statements of institutional theory, which have delineated key sets of concepts and relationships that tie institutional structures and logics to organisational forms and conduct that seem very relevant to the introduction and implementation of NPfIT, but which may oversimplify the world of practice.

This shift is increasingly important in healthcare organisation in the UK and Europe where the rise of entrepreneurialism as a solution to health provision dilemmas is yet to be fully understood (Saltman et al., 2002); of particular concern in these developments is the impact of corruption and the potential lessons that must be learnt from deregulation of public utilities. The role of actors in the transformation of existing institutions and fields is important within institutional research where the ability of actors, particularly those with some key strategic resources or other forms of power, like IS systems development or professional roles, will have significant impacts on the evolution of institutions and fields in healthcare (Greenwood et al., 2002).

## Interesting times?

The basic question that is posed by political economy and is critical to an understanding of UK healthcare remains: whose interests are being served and why? This is as much about the absence of power because of destabilised environments and the loss of knowledge as it is about who has power as Currie and Guah suggest it is. Power is not a stable resource as it moves between actants be they politicians, the NHS, suppliers and the public depending on such dynamics as electoral and contractual timetables and obligations. There is also the question of intentionality in terms of the political future of the NHS, tempered by the espoused institutional and policy level aversion to risk and centralising tendencies of the state. So the construction of a policy framework plus the appointment of someone who is meant to provide firm control and leadership to head up this agenda, Richard Granger, as Director of these developments in the NHS, has been made on the assumption that he can transform the situation, given his track record of successful implementation elsewhere. However, this approach, while giving direction, is essentially centrist, but runs contrary to the decentralised nature of healthcare provision based, for example, on General Practice and the operational independence, which had led to the proliferation of disparate systems.

Rationalising this into the five types of EPR, which the NHS executive initially said needed to be built first, was a good start recognising difference. It addressed the separate needs of the professions and organisations in healthcare in mental health, acute hospital care, GP primary care, community services and primary care, but not necessarily the needs of the patients themselves. In this sense, the UK experience is contrary to the current US experience that informs both the research by Currie and Guah and IT and UK government policy. In the US laws vary from state to state, so standardisation is not possible; however, it may be of future interest in the UK as Scotland and Wales increasingly make their own decisions, and the diversity of public and private interests in healthcare grow constructing a very different landscape of healthcare.

This too is the reason why basing the research, as Currie and Guah did, on the work done in healthcare by Scott et al. (2000) in San Francisco may have less comparative relevance to the current UK environment but perhaps not to its future. The cultural and historical imperatives are however different, notwithstanding the insightful conclusions drawn from that work that have informed this UK study.

For example – in the state of California the health record is the physical property of the healthcare provider/facility but patients have a right to:

(a) Review and/or have a copy of that record – in the UK this is true with the exception of those parts that involve

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a third party or if the doctor feels it will cause the patient psychological harm.

(b) Ask to have the medical record corrected – in the UK the patient can ask to have their opinion as to accuracy inserted but neither patient nor doctor can alter the notes.

(c) Not have medical information disclosed to others unless they direct the provider to do so or unless the law authorises or compels it – in the UK this applies, but only a judge or the force of law for example under the notifiable diseases legislation can make disclosure a requirement without the patient's permission.

Furthermore, the institutional logics that informed the developments in the UK paid attention to those institutions constructed for policy purposes only. They did not look to organisations or networks for patients, nor did they look at those provided by, for and to professions. The latter groups in particular display a longevity far more important and significant to organisational change than the organisations in which they operate, and for that reason alone gain credibility notwithstanding their role and purpose as professional practitioners.

Indeed, the stabilising aspects of the policy purpose of the NHS, together with the role of professional organisations, provide evidence of what Scott (2001) describes as the issue of institutional persistence, to which little attention has been paid and for which little evidence is agreed upon. Destabilising healthcare organisations by constantly changing them is a function of both political action and finding an access point to intervene in the far more significant institutions of professional practice. The purpose in healthcare is, as Suddaby et al. (Lawrence and Suddaby, 2006) suggest, to simultaneously create, maintain and disrupt the institution, to redefine the allocation of material resources or social and political capital needed to create new institutional structures and practices, through advocacy and defining and vesting in specific people and roles and constructing identities.

Such identities are not only difficult to impose on well-established professional groups such as doctors but also may not be appropriate from a professional or patient perspective if it is the alternative interests of technology alone, which people believe are being served. Many of the other activities described by Suddaby et al. are both cognitive and affective in their process and intent and represent a closer examination of institutional work. Indeed, unlike rule-based work that underpins so much in the information management field and which depends on some actor to enforce compliance, normative work, they suggest, relies on cultural and moral force, which is embedded in communities of practice. It is this failure to recognise the differences that are implied both ontologically and epistemologically, in theory and practice, that may be at the heart of the current impasse in the UK (Mark, 2006a).

## Innovating practice

Innovation is, as The Minnesota longitudinal studies of technology found (Van de Ven et al., 1999), neither sequential nor orderly, but is best characterised as a nonlinear dynamic system. The system consists of a cycle of divergent and convergent activities that may be repeated over time and at different organisational levels. This divergent–convergent cycle is found to be the underlying dynamic that explains the development of corporate cultures for innovation, and while resource investments and organisational structure enable this innovation cycle, external institutional rules and internal focus provide the boundaries, but the critical lesson remains to 'go with the flow', because as Hinings (2006) says in relation to healthcare, the problems arise because of a mismatch between the design of the change and what is actually required to facilitate innovation through a terrain that is highly uncertain, loosely coupled and riddled with unanticipated consequences.

Pragmatism can also inform the scope and structure of developments as EPR developments in the Lombardy Region of Italy demonstrate, building as they do on this notion of institutional persistence, in the context of a national culture more attuned to fragmented localised groups and communities. In Lombardy, an innovative integration project using the Ensemble platform and based in Vimercate Hospital near Milan was implemented in just three months. The project, led by Lombardy Informatica, is responsible for the Regional Service card programme with a wider remit than health that utilises existing IT resources. As the CIO Giovanni Delgrossi, a winner of the Intersystems DEVCON Ensemble Innovator Awards 2006, says:

> It avoids the 'rip and replace' solution by pulling and consolidating patient data from existing systems in all of its member hospitals and clinics. It also reads medical information from smart cards that have been issued to each citizen, and from a central data repository for the Lombardy region' (http://www.intersystems.com/devcon 2006/innovator.html, accessed 31 July 2006).

Member hospitals are able to continue using the applications they already have in place, for example two are based on Oracle, one uses applications that were developed internally with Caché and one uses Caché-based packaged applications from the InterSystems' partner Trak Health. The difference is that now, all these varied applications 'talk'. By 2006, smart cards had been distributed to approximately 9 million citizens, 2500 pharmacies and 145,000 healthcare organisations. In addition, because the Regional Service Card programme complies with decisions made in 2003 by the European Commission, there is the potential of extending the programme across all of Italy, and even to the pan-European level. The next steps will be to implement 'Totems', which will allow citizens to plan and schedule ambulatory visits for themselves, and provide their doctors with complete medical records, including information gathered from every hospital in which they were treated. The objective is to improve the quality of treatment, while also improving the overall efficiency of healthcare delivery, which while distributed between agencies is also owned by the patient through the service card.

The current lack of work on understanding what can be maintained from existing systems in the UK NHS results

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from inertia and a fear of failure in the existing complexities of healthcare computing, far easier to describe a simple super structure. However, as Huxley (1960) reminded us, the search for success is found as much within knowledge of failure as a review of alternative successes. What the Italian example provides is also a reminder that it should not be the technologists, professions and institutions who should be at the heart of the solution but the self-interest of the individual patient within their cultural context. The problem of the motivation and discourse in NPfIT is a centralist approach to an individualist issue.

In this sense it is not radical enough, although the recent contextual change in policy (Department of Health, 2004) that puts the patient at the heart of healthcare does provide an opportunity to look again at the issue. Furthermore, a reconsideration of the patient journey in UK healthcare (Mark, 2006b) shows that responses to EPRs will involve the interplay between rational and emotional process. As the cognitive theorists suggest (Frijda, 1988), patients act on the basis of physical responses and the use of past experience to understand the present and much depends on their individual attitude to risk especially if, as Lupton suggests, risky behaviour increases in response to the intensification of control and predictability of modern life (Lupton, 1999).

Sorting these factors is complicated by both the patient and organisational perspectives and the utilisation of emotions for instrumental purposes that take place within the wider society (Mark *et al.*, 2000). The legislative changes required to allow patients greater ownership of the medical record in whatever format could be converted into any form of personal technology to enable the transfer of data by patients (or not) between different providers. So, for example, given the extent of ownership of mobile phone technology in the UK (Wright, 2006) currently running at 80% and the emotional significance attached to that technology by individual owners, this provides an obvious portal through which to access notes however and wherever they might be stored. In this context, research methods to understand what happens would also need to be reconsidered and the use of Actor Network Theory (ANT) (Blackler, 1999) that is a combined theory and method that looks at micro interactions of human and non-human actants, including technologies, would become more appropriate. The emphasis changes because what ANT illuminates is that not all actors behave in the same way, or if they do, for the same reasons.

## Concluding concerns

Currently in the UK, the institutions and professions of healthcare have both the expertise and the information about individual patients, therefore the interests are weighted against the patient and this is being reinforced by the construction of NPfIT through what Dale (Dale, 2001) describes as the objectified disembodiment rather than the embodied subjectivity (Dale, 2001) of patient experience. The instantiation (Giddens, 1984) of IT through NpfIT, and whatever follows or develops from it, must incorporate both elements if it is to succeed as a valid, reliable and trusted tool of the patient and the NHS community.

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