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National health IT infrastructure through the media lens



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Available online 27 July 2013

KEYWORDS

NPfIT;
Cynefin;
Health information systems

Abstract

This paper describes a retrospective study of the big budget National Programme for IT (NPfIT) in the UK. The project is seen through the lens of the national newspapers and analysed via the Cynefin model. A set of success factors in health information system (IS) initiatives are derived from the literature, 584 newspaper stories drawn from the period October 2002, when the NPfIT programme began, until the end of 2012, are analysed using a multi method approach to identify gaps between real information systems issues and reporting. Results suggest that gaps between media reporting and success factors are captured by the less tangible (complex and chaotic) aspects of the Cynefin framework. Further, newspaper articles skirted around many human aspects of system development that were prominent in the IS literature such as of change management and user acceptance. The most commonly reported domain moved from known to chaotic as the project progressed.
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Introduction

Lifelong online electronic health records (EHRs) are becoming a priority for the governments of most industrialised nations. Governments perceive that they can benefit in terms of informed policy development, improved resource allocation and identification of the causes and risk factors in disease. Such systems also provide more data for epidemiological research and disease monitoring. Understanding the impact of policy decisions in this environment is critical. It is valuable to policy makers to be able to identify those situations which demand action, and those to which a more appropriate response is *recourse to heuristics*—i.e. in some cases approaches more akin to rule of thumb or best practice can be used.

National health infrastructures are rich and complex human systems. If they are implemented correctly, many benefits are passed on to the patient; centralisation reduces the risk of lost records, assists in emergency treatment and allows informed prescribing among clinicians, and there is the capacity for patients to have greater control over their own health information. Such systems have come under criticism from researchers [1,2] because they can be used to deliver identifiable information on individuals to third parties. These researchers posit that putting health information of virtually the entire population online; to be accessed by numerous health professionals, bureaucrats and researchers inevitably compromises privacy. Another practical point is that there is no easy migration plan when a centralised top down approach is taken with many legacy systems becoming obsolete when they do not meet national standards [3].

We explore how government decision making is reflected in the print media with regard to such records using the Cynefin framework [4]. We focus on a particular instance of such a record system the UKs National Programme for IT (NPfIT).

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The project was launched in 2002, and terminated in its existing form in September 2011. In order to capture commentary immediately post retirement of the NPfIT we extend our frame to include 2012.

Cynefin is becoming an accepted approach in knowledge management. In particular it contributes to an understanding of “how people perceive and make sense of situations in order to make decisions”. It differs from other management approaches in that it provides some guidance on how to use stories and storytelling in organisations. Stories in this context are received rather than told, thus we assert that viewing Newspaper “stories” is quite consistent with the Cynefin approach. Given the large sample frame, Leximancer, which has the ability to analyse large unstructured bodies of text [5] is an appropriate tool. It also provides tool for formal objective analysis. It compensates for human biases and has the potential to find patterns in data that humans would not.

This paper explores two research questions and one methodological one. The research questions are:

- Did the print media take and evaluative or other role in the evolution of the NPfIT?
- How did it match existing critical success factors from the literature?
- The methodological question is: can the Cynefin framework assist in identifying complexity in health information systems projects?

Analysis of newspaper stories has been used in health studies to track public opinion with respect to specific health issues such as mental health [6-9] obesity [10,11] and anti-smoking campaigns [12,13]. In a similar context to the current study Collins [14] examined the newsprint effect on public attitudes to health policy in Canada. The news media can act as informer, agenda setter, framer or persuader, but Collins et al. caution around the limitations of such data i.e. it is prone to sensationalism due to its dual mandate to tell news stories and to sell papers. We acknowledge these limitations but maintain that it is worth exploring the wealth of data contained within the sample.

The paper proceeds as follows. First the NPfIT is briefly described. Second, prior academic work relating to national health infrastructures is summarised to produce a set of candidate themes for the analysis. These themes are compared to themes derived using Leximancer from the corpus or narratives selected. In Section 4 the use of the Cynefin framework as a sense making tool is described. The methodology used in this study is described in Section 5 and the paper concludes with results and discussion.

The national programme for information technology

Until the mid 1990s governance of the UK National Health System was decentralised, although IT was spread across several regional authorities the management of medical functions was centrally controlled. In the mid 1990s the government saw the opportunity to use Information Technology (IT) to improve the delivery of service [15]. The NPfIT came into existence in 2002 via a government mandate to maintain and manage electronic

patient care records centrally. It was an initiative of the Department of Health agency connecting for Health (CFH) which was created for the purpose of delivering the programme. The NPfIT absorbed staff, and work streams, from the national health information authority which had been abolished. The plan was for the project to take 10 years to complete and cost £6.2 billion pounds.

The NPfIT was dubbed the largest civilian IT project attempted in the world [16]. As part of the NPfIT initiative a database was set up. The aim of this was to allow authorised healthcare providers to access a patient's records securely wherever they were [17]. A further aim was to connect every family doctor and hospital in England, and provide online records for 50 million patients by 2010. The NPfIT was much more ambitious in scale than simply shared health records. It covered 330 acute hospitals and mental health trusts and primary and community care organisations across England [18]. Many features were implemented including a central link to a patient register, online booking “choose and book”, radiology picture archiving and electronic prescription facilities. Patients were ultimately expected to have access to their own health records through a service called HealthSpace. In order to manage the project, England was divided into five geographic regions each one made up of between five and seven strategic health authorities (SHAs). Regional implementation directors (RIDs) lead the implementation in each region and national standards were maintained so that data could flow seamlessly between the areas [19]. The project was dogged with management and procurement issues [20]. In particular IT vendors found the management structure of RIDs and SHAs difficult to deal with. At the time of writing the project has been terminated in favour of a decentralised system.

Electronic Health Record systems present unique challenges in implementation and design, because compared to non-health information systems they have a greater biological and social complexity. In reality, banking and airline systems' customers or travellers are grossly simplified abstract versions of a person [21]. The issue of complexity in health care has been addressed by previous authors such as Plsek and Greenhaugh [22] and Sturmberg and Martin [23] Added to this there are quite considerable challenges inherent in health systems such as; mobility of patients, multiple Health Care Professionals (HCP), and frequent changes in technology and the law. Sauer and Willcocks [24] identify the main players in National EHR initiatives as; the relevant government offices, HCPs, professional institutes, patient representatives, and professional critics including audit bodies and academia. We suggest that the press is a form of professional critic since it has the power to frame issues and sway public opinion. Further we suggest that it is important for all players to understand the media landscape so that they can present their positions on critical issues. The news media are charged with covering issues in a balanced and informative manner. These issues are framed for the public by newspapers using particular language and opinions, which in turn feedback the weight of public opinion to policy makers.

This study focuses on the big budget NPfIT in the UK. It reviews how the system was portrayed in the UK's major newspapers. The aim of the current project is to explore the media's role in public perception of Integrated Health Records (IHR).

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