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Towards A Critical Approach To Benefits Realisation Of Information Systems In The NHS

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Towards a critical approach to benefits realisation of information systems in the NHS

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Abstract

This paper discusses a conceptual approach to the study of benefits realisation of information systems (IS) within the context of the UK National Health Service (NHS). Benefits realisation has become an important topic of study for both academics and practitioners. The focus and concerns of such studies cover a spectrum of concepts ranging from positivist to more interpretive discussion with many prescribing practical methods for effective delivery of benefits from investment in IS. However, much of this work has failed to translate espoused ideals into successful action and insufficient attention has been given to the social and political aspects of the topic. Furthermore, closer inspection of the literature reveals that use of concepts is varied. The purpose of this paper is to review the existing knowledge on benefits realisation of IS, propose a framework that synthesises existing research and suggest what is missing is a critical approach.

Keywords: benefits realisation, IS evaluation, critical IS research

1. Introduction

Over the past twenty years the UK NHS has strived to deliver a variety of Information Management and Technology (IM&T) initiatives both within the primary and secondary care sectors. The 1990s saw major integration projects such as HISS (Hospital information support systems) while the 2000s were the era of the National Programme for IT (NPfIT). The HISS concept was built on integrating three core applications comprising: the electronic patient record (EPR), Order Communications Systems (OCS), and Patient Administration Systems (PAS). The integrated technological architectures would then facilitate the connection of disparate specialties and services such as diagnostics and picture archiving and communications systems (PACS) (Thomas et al., 1995). NPfIT, on the other hand, was built upon a vision of a national integrated care record system held on a national data infrastructure called N3 or 'the spine' and serviced by a consortium led by British Telecom. Unfortunately the track record of the organisations tasked with implementing the new systems has been mixed (Hughes, 2003, Wilson and Howcroft, 2005, Greenhalgh et al., 2010, Sheikh et al., 2011). The HISS pilot initiatives were deemed to be a waste of money by the National Audit Office (National Audit Office, 1996) as £100m was spent with £3m delivered benefits. NPfIT has not fared much better and in 2013 the NAO stated:

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“There is...very considerable uncertainty around whether the forecast benefits will be realised...Overall, around two-thirds of the total estimated benefits are future benefits that have yet to be realised. For a number of programmes, 98 per cent of estimated benefits are yet to be realised.” (National Audit Office, 2013)

Although the HISS initiative was undertaken ten years before NPfIT both had similar issues around their failure including a lack of shared vision for HISS between the key stakeholders, the proposed users, the external systems consultants and the lack of substantive benefits both to patients and the tax payer (Wyatt, 1995, Takian and Cornford, 2012).

During the HISS and NPfIT period a key concept was introduced into the NHS, ‘*benefits realisation*’, which was intended to support the delivery of successful IT projects. Although the definition of benefits realisation has changed over time the original intention was ‘*Benefits of information systems must be identified and their realisation must be planned and monitored*’ (Information Management Group, 1992). Currently the process for benefits realisation is governed by a number of guidelines. Most recently the Benefits Eligibility Framework published in 2010 which is based on the HM Treasury’s Greenbook, a cost-benefit analysis technique and the Benefits informatics zone which is a repository for benefits data set up in 2009 (Health and Social Care Information Centre, 2014). The more established process in use is the Managing Successful Programmes (MSP) guidelines and Projects in Controlled Environments (PRINCE2) management system (Cabinet Office, 2011). Despite a relatively substantial body of academic IS literature on benefits realisation there is little evidence to suggest that studies proposing such methods have been implemented successfully if at all (Doherty et al, 2012). Failure to adopt these methods in practice has been attributed to a lack of awareness, disagreement about responsibility for ensuring benefits are realised and because unexpected consequences are associated with complex projects (Doherty et al., 2012, Ashurst et al., 2008, National Audit Office, 2006). The implication for researchers and managers advocating benefits realisation is that ‘*it may be necessary to look more deeply into underlying concepts, in order to address the many reasons why organisations behave in ways which fail to meet the approaches being advocated*’ (Breese, 2012 p.344).

The aim of this paper is to critically evaluate the manner in which the concept of benefits realisation has been explored and developed both within the IS community and the NHS and

to argue that, within the context of the NHS, an alternative approach which focuses upon benefits to patients must be at the forefront of IS delivery. To do this we adopt a heuristic framework utilising the three main paradigms of positivist, interpretivist and critical research. These categories, which follow Chua's (1986) classification, are used by Orlikowski and Baroudi (1991) and many subsequent studies of IS research epistemologies. According to their criteria the aim of positivist studies is to test theory with structured instrumentation. Whilst interpretive studies take a nondeterministic perspective in order to explore phenomena in its natural setting without imposing any a priori understanding on it. Meanwhile the aim of critical studies is to expose deep-seated structural issues, to critique the status quo and eliminate contradictions from organisations and society. Critical research is concerned with evaluation as well as with description and explanation (Orlikowski and Baroudi, 1991).

In order to achieve this aim the paper begins with a brief overview of IM&T strategy within the UK NHS in order to appreciate the current environment and why a new approach to benefits realisation needs to be adopted. It then provides insight into the definition of benefits realisation both from an NHS and academic perspective. Section four outlines the methodology used to conduct the literature review and section five provides an analysis of the pertinent benefits realisation literature. Finally section six provides some conclusions to the study and suggests ways in which benefits realisation can be conducted from a critical perspective.

2. IM&T strategy in the NHS and Benefits Realisation

From the mid-1980s until 2010 the various UK governments of the day have tried to improve the efficiency and effectiveness of the public sector through the implementation of large scale IT integration systems. Although well-intentioned and ambitious many of these projects have been disasters (King and Crewe, 2013). From the perspective of the NHS IM&T strategies over this period there has also been increasing ambition and complexity in the aspirations to integrate IM&T across the UK (Waring and Wainwright, 2000, Eason, 2007, Clegg and Shepherd, 2007, Peltu et al., 2008, Currie, 2012). It is not our intention to explore all of the historical IT developments within the NHS but to focus on NPfIT which has been costly and failed to deliver many benefits to patients or clinicians.

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Following on from the pilot HISS programme a grand strategy, *Information for Health*, was conceived to reconcile the problems of large scale technological integration and to modernise the working practices of the NHS (Burns, 1998). The development and implementation of the hospital based, and episodic, electronic patient record was seen as central to the success of the strategy alongside a new emphasis on a 'cradle to grave' electronic health record (EHR). The EHR was to be held on a national data infrastructure called N3 or 'the spine' and serviced by a consortium led by British Telecom (Takian, 2012). NPfIT was forecast to deliver many benefits both to patients and clinicians: e.g. if a patient was taken ill in any part of the UK clinicians would have access to their care records in real time; large data sets would be available for clinical research; costs of medical procedures could be compared across the UK; individual clinicians could have their work scrutinised in terms of effectiveness.

The main project, estimated at over £12 billion pounds was seen as the most historically ambitious IT programme worldwide (Brennan, 2007). It was to be driven and governed by the Department of Health's Information Management Group renamed as the National Programme for IT (NPfIT) and later Connecting for Health (CfH). This centralised government agency then administered outsourced contracts initially to five regional local service providers (LSPs). The LSPs were consortia of large consultancy companies in association with healthcare IT vendors. They then became part of the NPfIT management structure and worked with their regions (Strategic Health Authorities, Hospitals and Trusts, and Primary Care Trusts) to deliver the core components of the strategy (Takian and Cornford, 2012; Greenhalgh et al., 2010; Sheikh et al., 2011). By 2010 only two of the LSP consortia remained, large companies such as Accenture having withdrawn from the project with massive penalties due to non-delivery of specified hardware and software. NPfIT was quietly 'wound down' in 2011. Large scale centrally controlled strategies and systems were now seen as impossible to deliver. A localised delivery approach based on devolved budgets to hospital trusts and care commissioning groups (CCGs) replaced NPfIT and CfH (Takian, 2012).

The current IS strategy for the NHS sets out the government's vision for greater autonomy and locally led development of IS within Trusts (Department of Health, 2011). Prior to this change top-down government directives with a one-size-fits-all approach had attempted to standardise complexities of the multifaceted NHS. Whilst the NHS is generally thought of as

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a single organisation it is more like a federation of smaller enterprises (Peltu et al., 2008) with ‘differences in size, structure, culture, clinical services, patient population, IT capabilities and management roles’ (Currie, 2012, p.241). Trusts face rising hospital admissions, an ageing population, obesity epidemic and an increasing number of patients with complex, chronic and multiple illnesses. Alongside these health challenges trusts are expected to adapt to organisational changes introduced by the new Health and Social Care Act 2012 as well as continue to exploit the latest technologies, drugs and innovations. In addition to these major developments there is the requirement to manage significant and unprecedented reductions (or ‘efficiencies’) to budgets and staffing numbers (Royal College of Physicians, 2012).

Attempting to address some of these issues the information strategy purports to ‘harness information and new technologies to achieve higher quality care and better outcomes for people, making health and care more convenient, joined up and flexible’ (Department of Health, 2012). It is intended to provide Trusts with ‘a framework to enable local innovation, driven by a stronger voice for service users and citizens, and clear ambitions for the next decade’ (Ibid). However, the organisational complexity and multiple stakeholders that make up the NHS create a highly charged political environment. Whilst IS are designed for specific purposes e.g. coordinating beds and patient flow, systems also embody particular interests of different groups e.g. doctors, managers, IT designers and patients (Waring et al., 2013). Powerful professional bodies have the potential to disrupt new IS initiatives where their interests are challenged or when no benefits accrue from the system (Bloomfield and Vurdubakis, 1997). IS are thus linked to structures of politics and power relations and can serve to shape certain perceptions and actions (Wilson and Howcroft, 2005, Waring and Wainwright, 2002).

There also remains the legacy of NPfIT with its contractual issues between the NHS and its suppliers and the best practice requirements promoted throughout Trusts (Peltu et al., 2008). The metrics used to evaluate and manage IS benefits strongly influence current behaviour and priorities. As has already been stated the process for benefits realisation is governed by a number of guidelines including the Benefits Eligibility Framework published in 2010 and the Benefits informatics zone (Health and Social Care Information Centre, 2014). However it is the more established project management methodologies such as MSP and PRINCE2 that hamstring NHS staff from deviating from historical IM&T practice. Nevertheless given the change in government strategy the criteria used within the context of these methodologies

might be broadened beyond the usual quantified measures to include performance of new practices and the identification of benefits to NHS staff and patients (Clegg and Shepherd, 2007).

3. Defining the concept of Benefits Realisation

The concept of benefits realisation has been defined and described in a variety of ways within the NHS over the last two decades. Table 1 provides examples extracted from Department of Health websites and printed publications 1992 – 2013. The earliest reference is in the ‘Guidance for formal realisation of the benefits from the Hospital Information Support Systems (HISS)’ in the early 1990s. These guidelines for pilot projects formed the basis of a more generic approach ‘investment appraisal and benefits realization for IM&T in the NHS’. The terminology and descriptions vary slightly over time. For example the earliest definitions appear to reflect criteria normally associated with the practice of evaluation whilst later descriptions clearly link benefits realisation to organisational change (e.g. organisational change is managed as part of the project through explicit benefits management such as that defined by Ward & Elvin, (1999)). Nevertheless common to all models is a prescriptive and structured framework in order to provide practitioners with standardised guidelines and templates.

Year	NHS Department	Definition/Description
1992	Information Management Group	Benefits of information systems must be identified and their realisation must be planned and monitored.
1995	Information Management Group	Benefits realisation is an assessment and evaluation process.
2009	Connecting for Health	Benefits are net positive changes in outcomes.
2013	Health & Social Care Information Centre	Benefits are whatever is perceived as an advantage or positive change by a stakeholder. Identifying benefits involves identifying the change that could take place.
2013	Institution for Improvement and Innovation	Benefits realisation is a tool to make sure you actually get the intended benefits originally planned.

Table 1 – NHS Definitions of Benefits Realisation of IS

Examining the concept from a more generic perspective, the Oxford English Dictionary suggests ‘benefit’ is a noun meaning an advantage gained from something. The Latin origin of the word is *benefactum*, which translates as ‘good deed’. Whilst the word benefit when

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used in relation to society can refer to that which enhances the community or society at large, in the business sphere benefit traditionally means economic advantage associated with cost-benefit analysis. This is a monetary calculation of the total expected cost against the total expected benefits, in order to determine whether the benefits outweigh the costs, and, by how much. Meanwhile within the context of IS benefits realisation implies that benefits are inherent to IS, dormant until the right process and people realise them, decided beforehand almost like *a fait accompli*. But how are such criteria defined? What benefits are being identified and who benefits from them? A benefit to one relevant social group can be interpreted as detrimental by another (Wilson and Howcroft, 2005). For example Ward and Daniel's (2006) discussion on the delivery of successful benefits of NPfIT's Choose & Book (an outpatient booking system) is not perceived as positive by discontented medics reported in a study undertaken by Hendy et al. (2005). Attention to such differences in understanding of benefits is a key omission in the literature.

Slightly different terminology is used by academics to describe benefits realisation of IS. Some use the term benefits realisation whilst others use benefits management. A much quoted definition is one suggested by Ward et al.(1996, p.214) '*the process of organization and managing such that the potential benefits arising from the use of IS/IT are actually realized*' (which will not be used here). Much of the focus in the literature is on the practical task of how to successfully realise benefits from information systems. There appears to be a preoccupation with the means (better methodologies) rather than the ends (what is measured and why) (Wilson and Howcroft, 2005, Smithson and Hirschheim, 1998).

Citation	Definition
Ward et al (1996) cited by: Doherty et al (2012); Lin and Pervan (2003); Ashurst et al (2008).	The process of organizing and managing such that the potential benefits arising from the use of IS/IT are actually realized.
Farbey et al (1994)	A systematic search for the benefits (and costs) over the lifetime of an IT investment...the process that realises the benefits that are achieved and manages the unexpected ones.
Remenyi and Sherwood (1998)	Process for managing information systems development through a continuous evaluation approach.

Table 2 – Academic Definitions of Benefits Realisation of IS

It is the different research paradigms that underpin these definitions that ultimately govern the various approaches, criteria, methods and knowledge. For this reason a review of the existing literature is pertinent since it is these distinctions, which subsequently shape understanding of the concept of benefits realisation of IS, its use and effects.

For the purpose of this paper benefit is taken to mean the value, worth or usefulness of the IS and benefits realisation is the assessment and appraisal of these benefits (Hirschheim and Smithson, 1988, Farbey et al., 1994). The next section deals with the research approach taken by the authors to explore the literature review.

4. Methodology

According to a recent article by Frances Rowe in *MIS Quarterly* the writing and publication of literature reviews are a necessary but deficient genre in IS research (Rowe, 2012). Important contributions can be made to the community when analysis of the literature reveals such things as research gaps, operating theories, frameworks and previously unrecognised assumptions (Ibid: p.470). The aim of this article, therefore, is to review all the existing knowledge on benefits realisation of IS (what do we know?), to identify where the gaps exist (what do we still need to know?) and propose paths for closing the knowledge gap (how can we get there?) (Schryen, 2013).

To make sense of concepts defined and investigated in different ways and which produce varied findings features of Greenhalgh et al's (2005) methodology for a meta-narrative review is a comprehensive and useful approach. The method is referred to as '*an unfolding storyline of research in a particular scientific tradition (defined as a coherent body of theoretical knowledge and a linked set of primary studies in which successive studies are influenced by the finding of previous studies)*' (p.583). Whilst it was not possible, within the constraints and available resources, to undertake each of the steps of this technique (for example assemble a multidisciplinary research team), care was taken to broadly follow the six core phases (see appendix 1). The necessity here is convention rather than steadfast ideas of knowledge when taking a critical approach to a conceptual framework. This review is informed by their approach rather than totally derived from it.

4.1 Planning Phase

Whilst broad research questions are recommended by Greenhalgh et al. (2005) the scope of this review is confined to the area of IS. Therefore specific research questions will provide more fruitful results. The questions are as follows:

RQ1: What research has been conducted on benefits realisation of IS? Which are the seminal studies? Do any of these relate to the UK NHS?

RQ2: What are the historical antecedents, including reasons to adopt a benefits realisation approach? What terms and concepts have been used?

RQ3: What theoretical frameworks and reference theories have been applied to study the topic? Orlikowski and Baroudi's (1991) three research paradigms (positivist, interpretivist, critical) will be used to organise approaches.

RQ4: What conclusions can be drawn from existing research?

4.2 Search Phase

The search phase was organised according to procedures found in Webster and Watson (2002), Greenhalgh et al (2005) and Iden and Eikebrokk (2013). The key words of the search phase include 'benefits reali*' and 'benefits management'. The search specifically targets articles pertaining to information systems so whilst benefits realisation is a topic of research in the area of construction, see for example (Sapountzis, 2009, Love and Irani, 2004, Andresen et al., 2000) for the purpose of this review these have been excluded. Since seminal articles are likely to be published in leading journals those listed in the Information Management category of the Associated Business Schools Academic Journal Quality Guide are referred to in the first instance. This is followed by a search in online databases of ISI Web of Knowledge, EBSCO and Emerald Insight. Following guidelines provided by Webster and Watson (2002) citations in the seminal articles are identified to determine prior articles as well as articles citing the key studies.

4.3 Synthesis phase

Findings of the seminal studies are grouped into the following four themes:

1. Definitions and terms used to describe benefits realisation
2. Antecedent categories including:
 - a. research and practice which preceded benefits realisation e.g. IS evaluation, best practice, continuous improvement and project management.

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- b. reasons/justification provided for its application and espoused effectiveness
e.g. business value, IS evaluation, IS investment, failure of IT projects, ineffective evaluation.
3. Characteristics of successful benefits realisation models.
4. Reference concepts and theories e.g. dynamic capabilities, critical success factors, resource based view, learning, strategy, social shaping of technology, relevant social groups, interpretive flexibility, sociotechnical theory.

4.4 Mapping phase

This phase makes use of Orlikowski and Baroudi's (1991) three categories of IS research based on the underlying research epistemology of positivist, interpretive and critical (Table 3). This classification is one of various research frameworks within social research e.g. Burrell and Morgan's (1979); Guba and Lincoln (1994); Crotty's (1998). Within IS research, however, Orlikowski and Baroudi's paper is frequently cited in surveys and discussion of IS research paradigms (2646 citations according to Publish or Perish) and therefore this classification is the one that is adopted here. The criteria for categorising articles is informed by Hirschheim and Smithson's (1988) literature review of IS evaluation theory but since these authors only analysed positivist and interpretivist work the criteria for critical research is taken from Richardson & Robinson (2007).

	<i>Positivist</i>	<i>Interpretivist</i>	<i>Critical</i>
<i>Epistemology</i>	Science is logical progression towards greater truth and goodness based on sound and objective methods which predict the relationship among factors and test hypotheses or theories (Richardson and Robinson, 2007).	There are many constructed social realities. Truth is a matter of consensus among individuals and groups (Guba and Lincoln, 1994).	Concerned with 'unquestioned assumptions about the role of IS as instruments for enhancing managerial control, increasing rationalization and enabling domination in the workplace' (Cecez-Kecmanovic, 2011, p.448).
<i>Implication for Benefits Realisation of IS</i>	Managerial and economic imperatives decide practices and processes (Peters, 1990).	Reconciliation of the widest range of stakeholder perspectives (Wilson and Howcroft, 2000).	Reveal the ends of benefits realisation to assist excluded or less powerful actors in developing alternatives and envisaging and enacting change (Cecez-Kecmanovic, 2011)
<i>Criteria for Categorising the Literature</i>	Hypotheses, propositions, models, quantifiable measures of variables and the inferences drawn from samples to populations (Orlikowski & Baroudi, 1991).	Deterministic perspectives not imposed by the authors. Participants' perspectives are the primary sources of data (Hirschheim and Smithson, 1988). The phenomena are examined with respect to cultural or contextual circumstances (Walsham, 1995).	Critique of status quo. Concerned with evaluation, as well as with description and explanation. (Orlikowski & Baroudi, 1991) Reference theories include Marxism, the Frankfurt School (including Habermas), Foucauldian analyses, Labour Process Theory, emancipatory design methods, and the work of Bourdieu (Richardson and Robinson, 2007).

Table 3 – Research Paradigms for Mapping Phase

5. Literature Review

5.1 Historical Chronology

Overall twenty-seven articles were identified as relevant studies. These are categorised on the below timeline (see Figure 1) according to research paradigm. The framework includes information about two major sources of influence: the use of evaluation theory in the 80s and 90s followed by the arrival of Ward et al.'s benefits management in 1996. Some of the articles e.g. Hirschheim and Smithson (1988) and Currie (1989) are from the field of evaluation and are included here because they are repeatedly cited in subsequent studies on benefits realisation.

The framework reveals that in the 80s and 90s there are approximately the same number of positivist and interpretive studies yet positivism dominates the writing of the last two decades. With the exception of two articles the critical paradigm leaves a gaping chasm.

Positivist	Interpretive	Critical
USE OF EVALUATION OF INFORMATION SYSTEMS THEORY		
1980s		
1988 Peters	1988 Hirschheim and Smithson	
1989 Currie		
1990s		
1990 Ward		
1990 Silk		
1990 Peters		
	1991 Symons	
1993 Willcocks and Lester	1993 Farbey, Land and Targett	
	1993 Walsham	
	1994 Farbey, Land and Targett	
ARRIVAL OF WARD et al's BENEFITS MANAGEMENT		
1996 Ward, Taylor and Bond		
1997 Ward and Murray		
1998 Remenyi and Sherwood-Smith	1998 Smithson and Hirschheim	
	1999 Farbey, Land and Targett (<i>a</i> and <i>b</i>)	

2000s		
		2000 Wilson and Howcroft
2003 Lin and Pervan		
2005 Lin, Pervan and McDermid		2005 Wilson and Howcroft
2006 Ward and Daniel		
2008 Ashurst, Doherty and Peppard		
2010 Ashurst and Hodges		
2012 Doherty, Ashurst and Peppard	2012 Breese	
2014 Doherty		

Table 4 - Benefits Realisation of Information Systems: A historical perspective

One of the earliest articles to specifically discuss benefits of IS and how they are identified and realised, albeit operationally rather than conceptually, is Peters (1988). Benefits are identified as critical criteria for appraising the strategic value of IS investment. With an explicit business orientation Peters (1988) proposes three categories. These are ‘enhancing productivity’, ‘risk minimisation’ and ‘business expansion’ (analogous to Silk’s (1990) categories ‘efficiency’, ‘effectiveness’ and ‘strategic advantage’ cf to Hirschheim and Smithson’s (1998) ‘efficiency’, ‘effectiveness’ and ‘understanding’). Using his own industry, petrochemicals, as the context Peters provides many examples of benefits which predominantly aim to create organisational efficiencies and minimise risk e.g. headcount reduction, processing economies, quality improvements, reduce risk of loss of profit and market share. A second paper published in 1990 develops the methodology to include a cost benefits hierarchy which resembles a balance sheet. The benefits are broken down into measurable variables, some in cost terms whilst others include measures of work activities, sales or customer throughput. Although it appears department users are involved in categorising what is important to their department the author recommends that the identified benefits must have an explicit orientation to the improvement of business performance for the investment to be even considered viable by managers.

Cited in Peters (1988) and all but two subsequent articles in the positivist category is the work of John Ward. Prolific authors on what is defined in 1996 as ‘benefits management’ his and colleagues work provide the foundation of all successive positivist research on the topic. One of Ward’s first articles to single out benefits as a research topic appears in the early nineties. It explores *‘the nature of the benefits that can accrue in relation to the business*

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objectives of IS investment' (Ward, 1990, p.222). Building on the work of Parker et al., (1988) and McFarlan (1984) there is an explicit aim to inform how IS can be used by organisations to gain competitive or strategic advantage. Borrowing classifications developed by Parker et al. (1988) to quantify how benefits might accrue Ward proposes how categories of benefit are related to particular IS applications (similar to the categories used by Silk and Peters):

A wholly economic approach to evaluation this early technique favours quantification and cost analysis. However, Ward does acknowledge that spurious calculations to quantify the unquantifiable e.g. staff morale cannot be financially expressed even after the initiative let alone before it (1990, p.224). The two decades of work undertaken by Ward and the later research which builds on it gives special treatment to the judgement and decision-making of managers. This is arguably a highly subjective, social practice yet the same body of research contradictorily recommends objective, consistent criteria in order for benefits to be successfully realised.

The first article to explicitly identify benefits in an alternative paradigm to Ward's benefits management is Farbey et al. (1993). Critical of a prevailing focus on measurement and formal procedures they argue that these are subverted by the political skills of managers (Farbey et al., 1994). The authors advocate a 'learning' approach since what might work for one evaluation might not work for another. Their discussion of benefits is considered only as a subtopic within the broader field of evaluation theory. With this in mind citations in the interpretivist paradigm on benefits realisation are traced back to early IS evaluation theory of the 1980s. The main sources of influence from this era are Hirschheim and Smithson (1988), Currie (1989) and Symons (1991). Hirschheim and Smithson's (1988) work reviews the theory and practice of IS evaluation, which became a significant platform for subsequent work. The same authors update their research a decade later to take into account the introduction of changing contextual issues such as outsourcing, re-engineering and e-commerce. Currie's (1989) work is on the specific use of accounting based evaluation techniques and how this relates to post-implementation success of IS which she argues might be higher if non-financial managers are given better access to organisational resources. Meanwhile, Symons (1991) argues for a broader conceptualisation of evaluation beyond the traditional meaning of cost/benefit analysis to incorporate the content, context and process or the 'what', 'why' and 'how' of evaluation.

The proliferation of evaluation articles which followed in the 1990s occurred for a variety of reasons, mainly operational, such as perceived inadequacy of informal evaluations, overstated benefits of IS, the requirement for planning and reduction of uncertainty (Smithson and Hirschheim, 1998). Another reason frequently mentioned, particularly in the positivist body of work, is the information technology productivity paradox which points to the apparent contradiction between the advances in computer power and the relatively slow growth of productivity at the level of the economy, individual firms and specific applications (Brynjolfsson, 1993). Farbey et al. (1999a), however, question the existence of this paradox and suggest that it is poor evaluation practices which contribute to dubious statistics and bad decision making when choosing IT projects which negatively affects productivity.

The shortcomings of IS evaluation and in particular the cursory consideration given to identification and management of benefits appears to have motivated scholarly attention to the realisation of benefits (Smithson and Hirschheim, 1998). Returning to the work of Farbey et al. (1999a) evaluation theory reveals that a top down, scientific approach is inadequate for a number of reasons some of which are already mentioned. Part of the explanation and already highlighted by the positivists is that traditional applications implemented to create efficiencies have advanced to include effectiveness, work improvement and strategic benefits e.g. offering new products or services. This broader range of benefits means that organisations must identify less tangible and less predictable benefits. However the difficulties associated with such uncertainty means that managers deliberately exclude such benefits or abandon evaluation altogether (Farbey et al., 1994). A systematic search for the benefits and costs which incorporates qualitative factors over the lifetime of an investment is proposed as a solution. Benefits realisation thus evolves from a concept into a framework to be applied to IS development and implementation within organisations. Justification for its use and function separates benefits realisation into the different paradigms of positivist, interpretivist and critical research.

5.2 Critique of Benefits Realisation

The characteristics of the traditional approach to benefits realisation incorporate the functionalist, rational model dominant in the project management community e.g. linear thinking, quantification, cause and effect, reductionism, control and a split between thinking and doing (Pellegrinelli, 2011). Popularised by the Association for Project Management

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(APM), from a practice perspective this approach offers managers an appealing standardised methodology to realise their investment outcomes and the associated benefits (Breese, 2012). The apparent success of return on investment as an evaluation technique for non-IS projects has led to a propensity for organisations to identify a similar ‘one best way’ approach (Farbey et al., 1993). This view is also shared by survey respondents of Australia’s largest organisations who perceive such value in the use of formal methodologies (Lin et al., 2005). Breese (2012) attributes development of the topic to Darwin et al.’s (2002) modern paradigm of a more scientific and positivist approach to management studies. Attempts to develop contemporary theory have resulted in studies that combine other literatures with benefits realisation to deliver a more explicit business benefits orientation (see for example Doherty et al., 2012, Ashurst et al., 2008 and Remenyi and Sherwood-Smith 1998.). Others maintain that the importance of context cannot be ignored since ‘*generic benefits do not exist*’ (Ward and Daniel, 2006, p.372). Every organisation is different so that benefits realised for one organisation may not easily transfer to another. This latter point is particularly relevant to the context of the NHS where trusts can achieve different positive outcomes from completely different ways of working. For example in considering the realisation of benefits for patients, one trust might focus on fast discharge with intensive support at home and another emphasise full rehabilitation in hospital. This illustrates the point that a top-down benefits realisation strategy which prescribes one or the other across the board needs to be more flexible to local needs.

One direction for research possibly could be to quantify the impact of benefits realisation on the performance of an organisation. The value of such a direction, however, is limited since the literature has already revealed that quantification of benefits realisation on its own is insufficient therefore may be equally unproductive used in research (Breese, 2012).

An important aspect of benefits realisation explored by interpretive and critical studies is the different perceptions of gains and losses. A benefit to one group can be considered detrimental to another e.g. in Symons (1991) improved access to headquarters information seen as a benefit for those working in the field is seen as loss of power to the managers in headquarters. Likewise in a study of implementation of a nursing information system Wilson and Howcroft (2005) argue that evaluation tools and criteria as well as understanding of value and success/failure are unlikely to be commonly agreed within the same organisation. Adopting Pinch and Bijker’s (1987) social constructivist concepts of ‘relevant social groups’,

‘interpretive flexibility’ and ‘closure’ help to reveal the perspectives which come to dominate and it can become possible to see how this influences the evaluation process (Wilson and Howcroft, 2005). The advocates of a particular technology can be seen to enrol followers and exclude the dissenters in order to make it a success. Evaluations are thus used as political tools to persuade users of benefits perceived by the project sponsors (Wilson and Howcroft, 2005). Positivist research has tended toward the view that research should be confined to identifying the changes organisations and workers must make if benefits are to be realised (Alvesson and Willmott, 2003, Knights and Willmott, 2007).

Interpretivist research offers approaches based on the accommodation of differences and resistance among stakeholders. However, attempting to reconcile differences does not sufficiently recognise or uncover the political issues inherent to benefit realisation. Farbey et al. (1999) recommend that in order to successfully realise benefits it ought to be placed on the management agenda even though their research also reveals that it is managers who deliberately avoid or even distort the process. Decision making about the possible outcome of a benefits realisation process can be decided ahead and planned to support other managerial interests in what the authors call de facto decision-making (Wilson and Howcroft, 2000, p.20). Additionally the political nature of benefits may compound the problem of hidden agendas making a ‘systematic search for benefits’ more difficult’ (Farbey et al., 1999). A critical orientation to the social and political aspects of benefits realisation and in particular the question of *cui bono*, who benefits? might provide more insight and ultimately progress benefits realisation theory and practice.

6. Conclusion

From our reading of the literature on benefits realisation it can be concluded that mechanistic approaches have never been adequate and that the social nature of benefits realisation must be considered, especially within the context of the NHS. This paper concurs with Wilson and Howcroft (2005) that taking an overly rationalistic approach ignores the possibility that benefit outcomes can, in reality, be decided beforehand to uphold other management decisions. Nevertheless the authors note that awareness of political intention does not necessarily mean that behaviour is openly political. Rather action is justified based on the rational approach and rituals. However, a significant omission from all previous research is the lack of attention to the wider perspective of society which is particularly relevant in the

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case of the NHS. Rather, the focus of research to date is primarily motivated by managerial and business objectives. What is missing is a critical approach to examine how benefits criteria have been produced and which relevant social groups have been included (and excluded) in order to reveal and challenge the prevailing beliefs and social practices (Myers and Klein, 2011). As Orlikowski and Baroudi (1991) state:

The critical research perspective offers many new insights beyond those of the positivist and interpretive perspectives. It alerts us to the reality of interdependence of parts with the whole, and that organizations cannot be studied in isolation of the industry, society, and nation within which they operate, and which they in part constitute. Likewise, we are alerted to the central influence of historical, economic, social, and political conditions for the nature and development of phenomena. And finally, this perspective reminds us of the constantly changing potential of humans who need not be defined by their immediate circumstances. The status quo is merely one moment along an evolving and emergent dynamic of social reality.

This type of enquiry can contribute to the scrutiny of IS development by drawing on the rich knowledge of critical theories developed over recent decades (Stahl, 2012). The aim of taking such a perspective is to examine broader societal concerns rather than merely looking at the point of view of a single organisation or indeed individual. Patients and clinicians must be included in identifying benefits of IM&T within the NHS. There must be more open discussion on the value of tele-health initiatives, patient data security, the role of private organisations and their use of patient data as well as how clinicians can achieve benefits to support their practice. Only through such openness can stakeholders see the implications of NHS IT investments and the impact upon their life.

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Appendix 1

		Replicated for this review
1	Planning Phase	
	a. Assemble a multidisciplinary research team whose background encompasses the relevant research traditions.	Not feasible
	b. Outline the initial research question in a broad, open-ended format.	Yes but given the narrower boundaries, questions more specific.
	c. Define outputs in collaboration with funder or client.	Not applicable
	d. Set up a series of regular, face-to-face review meetings, including planned input from external peers drawn from the intended audience for the review.	Planned
2	Search Phase	
	a. Lead the initial search by intuition, informal networking, and 'browsing' in order to map the diversity of perspectives and approaches.	Yes
	b. Search for seminal conceptual papers in each research tradition by tracking references of references. Evaluate these by the generic criteria of scholarship, comprehensiveness, and contribution to subsequent work within the tradition.	Yes
	c. Search for empirical papers by electronically searching key databases, hand-searching key journals, and 'snowballing' (references of references or electronic citation tracking).	Yes
3	Mapping Phase Identify (separately for each research tradition):	
	a. The key elements of the research paradigm (conceptual, theoretical, and methodological, and instrumental)	Yes
	b. The key actors and events in the unfolding of the tradition (including the main findings and how they were discovered).	Yes
	c. The prevailing language and imagery used by scientists to "tell the story" of their work.	Yes
4	Appraisal Phase Using appropriate critical appraisal techniques:	
	a. Evaluate each primary study for its validity and relevance to the review question.	Yes
	b. Extract and collate the key results, grouping together comparable studies.	Yes
5	Synthesis Phase	
	a. Identify all the key dimensions of the problems that have been researched.	Yes
	b. For each dimension, give a narrative account of the contribution (if any) by each separate research tradition.	Yes
	c. Treat conflicting findings as higher-order data, and explain them in terms of contestation among the different paradigms from which the data were generated.	Yes
6	Recommendations Phase Through reflection, multidisciplinary dialogue, and consultation with the intended users of the review:	Planned
	a. Summarize the overall messages from the research literature along with other relevant evidence (budget, policymaking priorities, competing or aligning initiatives).	Yes
	b. Distil and discuss recommendations for practice, policy, and further research.	Yes

Adapted from Box1 'Phases in Meta-Narrative Review' in Greenhalgh et al (2005)