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Benefits realisation from IT enabled innovation: A capability challenge for NHS English Acute Hospital Trusts?

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1. Introduction

Benefits realisation (BR), from IT and systems innovations, has been a concept studied in the Information Systems (IS) academic literature for a number of years. There are many definitions of BR within this literature but the definition that is most frequently used is '…*the process of organising and managing such that the potential benefits arising from the use of IS/IT are actually realised'* (Ward et al., 1996:214). Early BR research resulted in framework development which combined theories and concepts from strategic management and organisation theory (e.g. Farbey et al., 1994; Leyton, 1994; Remenyi and Sherwood, 1998; Ward et al., 1996). More recent studies have explored how successful BR manifests itself (e.g. Doherty et al., 2012) and inhibitors and facilitators of BR (e.g. Breese et al., 2015; Coombs, 2015). The process of BR has been incorporated into some project management methodologies such as **pr**ojects **in** a **c**ontrolled **e**nvironment (PRINCE2) and has also been the subject of a longitudinal study of BR in a number of workplace environments (Ward and Daniel, 2006). Nevertheless, it is apparent, both within the public and private sector, that there is a dearth of empirical research on BR and in times of austerity when resources are limited realising benefits from IT investments is essential. Additionally the public sector in a number of countries are now utilising BR when developing IT enabled innovations and researchers have explicitly called for more empirical research to facilitate a better understanding of BR processes in this public sector context (Braun et al., 2009, Nielsen et al., 2012).

One area of BR research that has relevance for the public sector relates to the human resourcing of BR within the organisation and the ability to understand the skills required to deliver successful outcomes in the context of the evolving IT environment (Ward and Peppard, 2002; Ashurst et al. 2008; Ashurst and Hodges, 2010). What has emerged from this research is the concept of an '*IS capability'* which has the potential to be aligned with a degree of organisational maturity when delivering BR on IT enabled projects. How this might work is the subject of the research discussed in this article.

Within the UK public sector, the National Health Service (NHS) is the largest organisation. It has many component organisations, one of which is the acute hospital sector. In England, most of these hospitals have developed into trusts with their own boards of directors and governors thus giving them a relative degree of independence but still relying on central government funding for their activities. In the last six years, the UK government have pursued a policy of reducing the public sector with the NHS acute trusts being subject to similar austerity measures. The expectations are that they will deliver the government's health reforms agenda with fewer resources but through an increasing use of Information Technology (IT) (Waring, 2015). Benefits realisation of IT and systems innovation is seen as the approach through which many of the reforms will be delivered (Waring and Alexander, 2015). New systems such as nurse-rostering (Wilson and Howcroft, 2005), bed management and patient flow are essential to a more efficient and effective NHS but significantly involve clinical staff in the delivery of any benefits from them.

Ashurst and Hodges (2010) have argued that in order to deliver benefits from IT enabled innovations organisations must develop a benefits realisation capability that is multi-

disciplinary and is not just situated within the IT function (In the NHS this would involve doctors, nurses and other ancillary staff in delivering the IT solutions). They go on to state that a BR capability can mature over time and is related to a number of important factors identified within their research e.g. the ability to measure success, the competence of the staff. However, their framework is highly theoretical and requires further investigation of its utility. Thus this article has three main aims: first to address the call for more public sector empirical studies on BR (Braun et al., 2009, Nielsen et al., 2012); second to contribute to the literature on benefits realisation as a dynamic capability within the context of IT enabled innovation in a public sector context through an exploratory survey of acute hospitals in England utilising the framework developed by Ashurst and Hodges (2010); third to highlight the challenges facing organisations if they adopt a benefits realisation competence and capability framework. The next section outlines the underpinning BR theory that informs our approach. This is followed by the research methodology and the findings of a national survey that took place between May and August, 2013. The discussion section proposes a BR capability framework that involves the concepts of 'sensing', 'seizing the opportunity' and 'maintaining optimum performance'. Finally the conclusion suggests that maturity and a strong BR capability are not one and the same and that a more entrepreneurial approach to IT enable change should be adopted in a complex and changing environment.

2. Development of Benefits Realisation of IT

Much of the literature on IT enabled change and innovation can be found in the management field and especially within the information systems (IS) discipline. From this perspective benefits realisation implies that benefits are inherent to the use of information technology, apparent before implementation and latent until the appropriate process and people realise them (Casey and Waring, 2014). The assumed benefits of technology typically become the instrument of change rather than its product or outcome (Knights and Murray, 1994). Although there have been a number of authors in the IS discipline who have carried out research on benefits realisation (e.g. Farbey et al.,1993, 1994, 1999a,b; Leyton, 1995; Remenyi and Sherwood, 1998) it is evident that the most influential have been John Ward and collaborating colleagues based at Cranfield as well as other academics informed by their approach (e.g. Ward et al., 1996; Ward and Daniel, 2006; Ward and Murray,1997; Ashurst et al, 2008; Doherty et al., 2012; Doherty, 2014; Coombs, 2015). The target audience for much of this prescriptive work, detailing the means and how BR ought to be done, has in general been directed at managers and not the practitioners who have to deliver the IT solutions. This has led to a variety of frameworks and approaches to BR (Figure 1).

2.1 Overview of BR Frameworks

Overall, twelve different BR frameworks or classification schemes were identified in the literature (see Figure 1). Five of these (see left column of Figure 1) were developed independently in the late eighties and early nineties and six build on Ward et al.'s (1996) benefits management approach. The number of frameworks suggests an enthusiasm for prescription and some kind of generalisable model as opposed to a situational account of benefits. As Farbey et al. (1994) explain '*using frameworks make it easier on the eye, easier to comprehend the whole and easier to spot gaps'* (p.278). Organisation and categorisation of benefits is thought to be improved and the framework then acts as a prompt to examine

what has already been addressed by the introduction of new systems and what has not (Farbey et al, 1993).

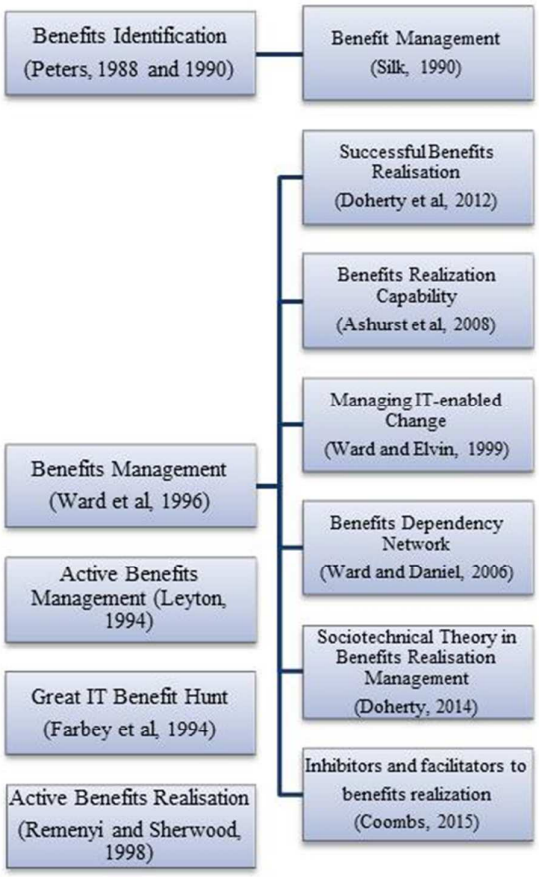

Figure 1 Benefits Realisation Frameworks

2.2 Influences on BR frameworks

All of the recommended frameworks reference theories and concepts predominantly from the strategy and organisation literatures. One argument for combining literatures is that it '*introduce(s) a greater depth of argument and build(s) bridges from one discipline to another*' (Farbey et al, 1994: p.278). For example the benefits management process developed by Ward et al. (1996) draws upon Pettigrew and Whipp's (1991) managing strategic change, best practices developed in Total Quality Management (TQM) and business improvement and process excellence approaches (such as Six Sigma). The subsequent body of work, which has evolved from Ward's initial model, incorporates: change management theory to produce a benefits dependency network (Ward and Daniels, 2006, 2012); Ashurst et al., 2008 take a resource based view and later benefits management is combined with dynamic capabilities and competencies (Ashurst and Hodges, 2010); IS success factors and competitive strategy are identified as influencers of benefits realisation (Doherty et al., 2012); the role of sociotechnical principles helps leverage value from IT investments (Doherty, 2014) and a critical realist approach extends the benefits dependency network to include inhibitors as well as facilitators (Coombs, 2015). Meanwhile Farbey et al. make use of Kay's

(1993) structure of strategy framework, Mintzberg's (1983) structure in fives and evaluation as a learning process developed by Earl (1989) and Symons and Walsham (1991). By introducing theory from organisation and strategy the intention of all of these frameworks is to make explicit the connection between identifying benefits from IT and the business objectives of the organisation whilst necessitating some form of organisational change through a process model.

2.3 Process and Benefits Realisation

As can be seen from Figure 1 it is the framework developed by Ward et al. (1996) that has influenced much of the more current research in BR. Research and consultancy developed over a ten year period resulted in a BR process model as shown in Figure 2.

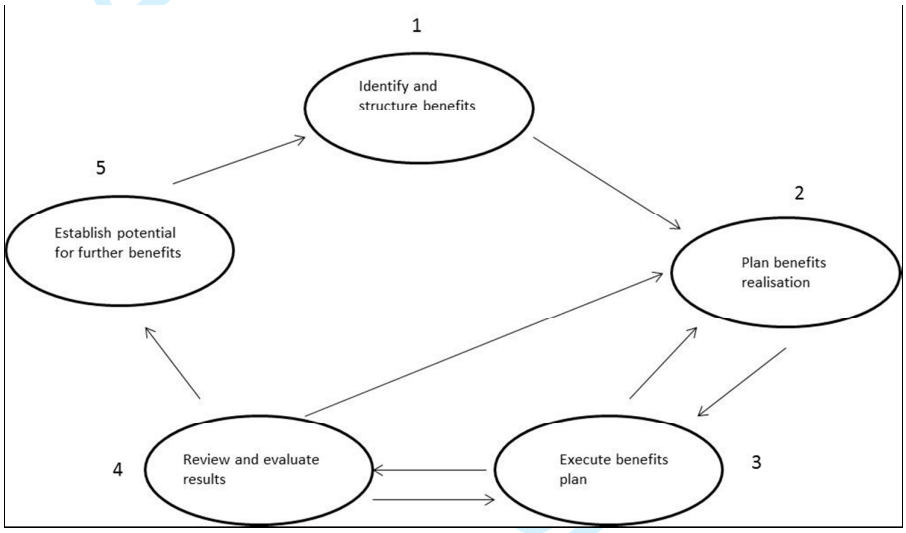

Figure 2: A process model for benefits realisation (Reproduced with permission from 'Benefits Management: delivering value from IS&IT investments' Ward and Daniel, 2006: 105)

Although this process of BR appears relatively straightforward, each stage has embedded within it a number of tools and techniques for addressing the issues within that specific stage. Each stage is structured around workshops facilitated by management consultants experienced in this methodology. It is certainly not an approach for novices and it is debateable whether outcomes could be achieved without these expert practitioners.

Other than to privilege this process as a management activity existing theory does not elaborate on who should be involved, at what point and to what extent. For example, Ward and Daniel (2006) mention that delivering this process to a wide range of different stakeholder groups is a challenge for benefits realisation but then do not elaborate on how to overcome this in practice.

Within Figure 2 BR's explicit and unambiguous focus is on the delivery of business value (Doherty, 2014) mainly grounded in an economic model of competitive advantage. It struggles to address the challenges of other organisational forms such as public services. This is extremely relevant when considering how BR can be implemented within organisations such as the English NHS where patient centric care is seen as a priority. Nevertheless, in a climate of austerity and public sector funding cuts there is a balance to be

struck and IT is seen as a facilitator of both quality care and resource efficiency (DoH, 2012a;b). However, empirical studies which help to understand BR in the public sector context remain limited (Braun et al., 2009, Nielsen et al., 2012) and lacking in the NHS.

3. Benefits Realisation and the NHS

BR is a term that is recognised within the NHS, is incorporated to a minor degree, into their preferred project management methodology, PRINCE2, and is an approach that has been intermittently used over the last twenty years to try to ensure that benefits are identified in the business case for new IT systems (Waring and Alexander, 2015). Nevertheless, even though a number of NHS IT staff have been trained in BR (e.g. in Ward and Daniel, 2006) and it is advocated by the Department of Health (Waring, 2015), the implementation is still difficult for frontline staff and the benefits are sometimes challenging to evidence. This is apparent when some national healthcare IT projects are examined: for example, one study (Hendy et al., 2005) investigated the UK National Programme for IT (NPfIT) and interviewed senior managers within the hospitals under study. The managers believed that the IT staff and consultants working on NPfIT underestimated the socio-cultural challenges that need to be faced if IT projects are to deliver benefits as well as the staff development this requires for clinicians whose main role is the care of patients.

Another twelve-month study within the NHS (Steventon et al., 2012) investigated the effects of using telehealth to prevent chronically ill patients being regularly admitted into hospital. Contrary to what was expected this research revealed that in one of their study groups the number of admissions increased over the study period. They also discovered only modest, if any, cost savings for the NHS once the purchase of the technology was taken into account. Looking more closely at the role of 'champions' within IT projects, MacNeill et al.'s (2014) longitudinal telehealth study concluded that for benefits to emerge from the use of IT within a healthcare context the clinical practitioners needed to have skills development which supported this important 'champion' role. Although the projects briefly discussed here are discrete and within a specific context, they do highlight the need for greater consideration of the human resource challenges that face organisations trying to develop a BR capability. However, there is limited research on what this might look like or how it might be developed (Braun et al, 2009). Thus, exploration of the activities and skills needed to develop such a dynamic capability are the basis for this research.

4. Benefits realisation as a dynamic capability of an organisation

In terms of organisational strategy, Ashurst et al. (2008) have argued, with reference to the 'resource based view' of strategic management, that BR should be viewed as part of the '*dynamic capability'* of an organisation, and as such, should be developed and enhanced as an on-going process of organisational learning. A central concept within the resource based view (RBV) is that of *'core competence'* (Prahalad and Hamel, 1990). Core competence is usually defined as being shared among several organisational actors and sustained ability to deliver successful outcomes is attributed to the blending of their diverse skills in unusual and highly effective ways.

In the 1990s, the RBV had two competing concepts '*core competence'* (Prahalad and Hamel, 1990) and '*core capability'* (Stalk et al., 1992). Javidan (1998) proposed a

hierarchical arrangement where core competence is a higher order construct that depended upon competence, capability and resource in a descending hierarchic manner. A shortcoming of the RBV is that it only portrays a 'snap-shot' of a sustained period thus lacks consideration of how core competence and core capabilities might evolve so that a sustained performance level can be maintained or prolonged. Pertusa-Ortega et al. (2010) have pointed to the addition of '*meta skills'* to the RBV as a way of describing how enterprises could produce a series of contributing resources that could be assembled as a succession of core competences. Meta skills can include the concept of 'd*ynamic capabilities*' and cover the temporal extension to exogenous strategic analysis (Teece and Pisano, 1994; Teece et al., 1997).

The theory of dynamic capabilities (DC) has been proposed as a way of addressing the criticism levelled at the RBV that the definition of resources is vague and tautological (Priem and Butler, 2001). Thus, DC focuses less upon identifying the 'static' advantage-creating resources and concentrates more upon exploring how these resources are created and used:

> '*Dynamic capabilities are the antecedent organizational and strategic routines by which managers alter their resource base … to create new value-creating strategies… They are the drivers behind the creation, evolution and recombination of other resources into new sources of competitive advantage'* (Eisenhardt and Martin, 2000:1107).

Teece (2007) argues that dynamic capabilities can be disaggregated into the capacity (1) to sense and shape opportunities and threats, (2) to seize opportunities and (3) to maintain optimum performance through enhancing, combining, protecting and where necessary, reconfiguring the organisation's intangible and tangible assets. However the micro-foundations of dynamic capabilities- the distinct skills, processes, procedures, organisational structures, decisions rules, and disciplines – which underpin enterprise level sensing, seizing and reconfiguring capacities are difficult to develop and deploy. Enterprises with strong (possibly mature) dynamic capabilities tend to be intensely entrepreneurial with a decentralised approach to management. Nevertheless, it is important that these capabilities are not just embedded in a few individuals but developed across the organisation through the use of knowledge management systems and shared decision making.

4.1 Developing Dynamic Capabilities

As stated dynamic capabilities are difficult to manage and develop and arise from everyday tasks undertaken by the organisation's staff (Maklan and Knox, 2009). They are grounded in tacit knowledge (Lam, 2000; Polyani, 1967) and are often seen as 'the way we do things around here'. They are not easily documented, transferred internally and more importantly, they cannot readily be imitated by trying to follow the same path. This management problem can be compounded by the lack of clarity around who exactly is responsible for ensuring their development. It is not just a case of training staff in carrying out a new task or using new technology, rather it is about helping them to innovate, adapt and to ensure survival in a highly volatile economic environment. Easterby-Smith et al. (2009) recognise the complexity of dynamic capabilities as a concept and suggest that they can take a variety of forms and involve different functions including marketing, process development and innovation. However, the overriding common characteristics are that they are higher level capabilities

which provide opportunities for knowledge gathering and sharing, continual updating of the operational processes, interaction with the environment and decision-making evaluations.

4.2 Developing a BR Capability

From the perspective of IT enabled innovation and change, Ward and Peppard (2002) have proposed the concept of an '*Information Systems (IS) capability*', which can facilitate sustained competitive advantage or in the case of the public sector, sustained optimal organisational performance. This IS capability does not emerge from any one IS project or solution, but from the ability to continually deliver solutions that provide a stream of temporary sources of sustained high performance. The concept of an IS capability or 'BR capability' (Ashurst et al., 2008; Ashurst and Hodges, 2010) is particularly relevant to the challenges of BR as a whole and would not just apply to the IT function. As pointed out by MacNeill et al. (2014) within the context of the NHS, a BR capability would require a range of individuals with different knowledge and skills working together in multi-disciplinary, cross functional teams and to be effective, would need a common language and some level of common experience and common process.

Exploring this concept of a BR capability through an empirical study of BR workshops with IT professionals and utilising previous research (e.g. Ashurst et al., 2008), Ashurst and Hodges (2010) proposed a BR capability framework (Table 1) which suggests that organisations may be at different levels of BR maturity. The factors that have been identified as indicating levels of maturity are expressed through how organisations measure IT project success, whether there is a much broader view of change and its management, how the BR effort can be sustained within the organisation through training and development, and how BR supports the strategic alignment of IT projects. Table 1 shows this in more detail but it arguably lacks specificity and context.

Factor	**Level 1: Basic**	**Level 2: Improving**	**Level 3: Enhanced**	**Level 4: Advanced**
Ability to measure success	Including all relevant costs/ benefits in the business case.	Carrying out benefits realisation reviews.	Focus on 'measuring the right things' as a driver of change.	Measures of the benefits realisation capability.
Ability to take a broader view of change	IT solution delivery	Benefits realisation from business change	Designing the approach to change for each initiative.	Creating a more flexible approach to governance, such as enabling local innovation.
Ability to sustain benefits realisation	Ongoing provision of education to maintain expertise through staff turnover.	Ongoing emphasis on improvement and incremental change.	Designing projects with greater emphasis on preparing for post-project learning.	New approaches for knowledge work scenarios.
Ability to manage the benefits realisation portfolio	Establishing control of the IT project portfolio.	Strategic alignment of a cross organisation portfolio of investments in change	Adapting the approach to projects based on the portfolio.	Emphasizing business innovation and learning.
Ability to develop the capacity for benefits	Establishing a baseline of effective IT	Focus on the skills of individuals as a	Establishing a more agile approach to	Developing leaders of benefits

realisation	service management and a common project framework	driver of success.	projects including incremental delivery.	realisation.
The competence of the individuals	Localised/ individual development of skills (PRINCE2, MSP)	Broad education programs- with an emphasis on benefits realisation.	Moving from education to a broader emphasis on development and organisational learning.	Top management engagement to address this as a strategic priority.

Table 1: A benefits realisation competency framework (adapted from Ashurst and Hodges, 2010:233)

Table 1 suggests that there are micro-foundations (Teece, 2007) of BR capability and these may be classified hierarchically with organisations at Level 4 being most mature and having a strong BR capability. Ashurst and Hodges (2010) acknowledge that the framework (Table 1) requires further research to explore its utility in better understanding BR capability and the proposed maturity levels as well as its ability to act as a diagnostic and planning tool for organisations. It is this that underpins the study and to which the article now turns.

5. Research Methodology

The study of benefits realisation to date has predominantly been undertaken by qualitative research. Early work by Farby et al. (1994; 1999a; 199b) utilised a case study approach where data was collected by interview, document analysis and observation. From this, the authors developed their theoretical contribution to the wider IS evaluation literature. Ward et al., (1996) chose to undertake exploratory, descriptive survey research with the sixty companies who responded to their study in order to investigate BR practice at that time. However, Ward and Elvin (1999) chose to derive a framework for managing IT-enabled change management from the academic literature and applied it to a number of real projects they worked on in a variety of organisations thus being able to comment on the utility of the said framework. Even Doherty et al. (2012) have used in depth case studies to develop a rich understanding of highly complex organisations. The difficulty with BR research is its general lack of coherent theory, its multi-faceted nature, its application in specific contexts and the sociotechnical dimension that can be different in organisations, which appear to have similar characteristics. Therefore, it can be argued that exploratory research to investigate aspects of theory is still as relevant today as it has been over the last twenty years.

Survey methods can be used for exploratory research and allow researchers to become more familiar with a particular topic or aspect of theory or where concepts of interest need to be better understood (Pinsonneault and Kraemer, 1993). Exploratory surveys can be used as the basis for developing concepts and methods prior to a more detailed study. For example, Malhotra and Grover (1998) discuss how an exploratory survey has been used to determine the benefits that might be associated with adopting ERP systems as well as the challenges facing organisations. Forza (2002) suggests that exploratory surveys are particularly useful in the early stages of research into a phenomenon and can help to uncover or provide preliminary evidence of association among concepts.

The empirical research conducted within this article is an exploratory survey with an aim to better understand the concept of BR capability as well as that of BR maturity within the context of English acute hospitals. The survey instrument used was informed by the BR maturity framework in Table 1. The framework is highly generic as well as abstract and therefore required a level of interpretation and translation for an NHS audience. The questionnaire was divided into three sections with no indication of maturity attainment. This may have produced a degree of bias in the answers.

From their work (Ward and Peppard, 2002) argue that the benefits realisation capability of an organisation is a strategic issue and the responsibility of its senior management. Therefore, 492 questionnaires were sent to three distinct groups of senior staff in each NHS acute hospital in England (164 in total):

- Directors of Nursing (or comparable role)
- Directors of Finance
- Directors of IT (or comparable role)

The involvement of employees holding these positions is based on the assumption that they are located in the associated organisational hierarchies close to, or at, board level, and therefore contribute to strategic decision-making within their hospital. Directors of Nursing represent the clinical dimension of this study mainly because of the nature of the work of doctors and the transient aspect of their roles often precludes them from taking part in systems implementations, which may last months or even years. Up to the level of Consultant, doctors are frequently rotated around and between hospitals in a particular geographic area. The authors also took advice on these role profiles from senior staff in a hospital located in the North East of England. The survey instrument evaluates both perceptions and collects factual information.

The questionnaire, with the exception of a starting multiple-choice question relating to specific project experience, is based upon 37 five-point Likert scale questions. This was piloted during April 2013 with amendments made accordingly. The most important aspect of the structure of the questionnaire was in how it related to the literature. The initial draft questionnaire was scrutinised by the research team and then it was sent out to a local acute trust hospital to be completed by three directors. We asked the Directors for their comments on the ease of completion of the survey e.g. in terms of terminology, language, length and understanding. Based on their feedback, specific changes were made to its length and use of NHS terminology.

The survey, in paper format, was then disseminated through the post to the three individual groups of senior managers listed above staff over a period of three months from May to July 2013, with responses received up to September 2013. Different coloured paper was used for each category of director to make it visually more noticeable when it arrived on a Trust desk. The questionnaire to Directors of Nursing was despatched in May, with a June delivery to the Finance Directors and a July despatch for the IT Directors. The rationale for this staggered delivery was to ensure Directors within an individual Trust did not have the opportunity to collaborate on their survey responses. In the small number of cases where multiple responses were generated from an individual Trust, comparison with the two-set or three-set responses was made to determine whether the data represented a group of individual responses or represented a multiple submission of the same response, thus

representing a collective rather than individual perspective. The decision was taken, should the latter arise, to eliminate the "*collective*" survey responses from the subsequent analysis.

The survey data were transcribed into and analysed using SPSS version 20. The results presented here represent key descriptive statistical analysis and the outcomes of the first stage of the research into benefits realisation, both at question level and rate of positive response by role.

Recognising that the focus of the study is primarily an assessment of the state of the benefits realisation capability within the English NHS hospitals rather than one of hypothesis development or testing, the analysis presented comprises appropriate graphical display of the scale-question responses, together with tabular presentation and percentage frequency distributions. There is some limited significance testing presented to highlight differences or associations to question response by senior manager role, significance being reported at the 5% or 1% levels typical to business and management research. The areas for consideration cover assessment of how benefits realisation is deployed in hospitals and their relative maturity in doing so. In addition to this, a correlation analysis is undertaken to assess the degree of association between resources and processes in line with the recommendations made by Easterby-Smith *et al*. (2009), together with assessment of the differences in relative level of investment relating to resources at the different levels of benefits realisation maturity. All aspects of this research were guided by relevant ethics policies related to the organisations involved in the study.

In the analysis presented, the suites of respective tests for differences in level of statement agreement by role and correlations between items for levels of benefits realisation maturity involve multiple comparisons across the items included within the study's measurement instrument. This assessment of multiple hypotheses increases the potential for one-off differences detected and reported, leading to increased rejection of the respective null hypotheses and to associated Type I errors. This is countered within the multiple comparisons by means of a Bonferroni correction. By applying this correction, the assessment of each individual test will be taken at the α/k significance level, where α is 0.05 or 0.01 for the respective and standard 5% and 1% levels and k represents the number of hypotheses assessed.

For the tests assessing differences in item agreement by role, k is equal to 37, hence the Bonferroni correction for the 5% and 1% significance levels leads to cut-off significance values of $\alpha = 0.05/37 = 0.0014$ and $0.01/37 = 0.0003$. Likewise, for the multiple comparisons involving the correlations assessed, which consider the associations between levels of resourcing (six measures – statements 9, 10, 11, 13, 23, 35) and benefits realisation processes (seven measures - statements 16, 17, 24, 30, 32, 36, 37), these involve 42 measurements, hence the corrected cut-off values for significance are $0.05/42 = 0.0012$ and $0.01/42 = 0.0002$.

For significance reported in this paper, these corrections are applied, providing a more conservative reporting of differences by role or association between item scores. In the subsequent analysis, the reader can assume the relevant correction has been applied to the significant differences or associations highlighted.

6. The Survey Findings

The findings are presented in the order which the participants answered the questionnaire and begins with an overview of the demographics of the senior managers.

6.1 Participant Overview – Role, Response by Trust and Project Experience

The response to the survey comprises 108 returned questionnaires, which apart from two replies, were fully completed. As shown in Figure 3, there was one hospital from which all three questionnaires were returned. For a further 19 hospitals, two questionnaires were returned, 7 involving Directors of Nursing and IT, 4 Directors of Nursing and Finance and 8 involving Directors of Finance and IT. An additional 67 hospitals contributed with the returned of one questionnaire. This provides a total representation in the study of 87 hospitals, accounting for 54% of those targeted across England's acute hospital provision. Whilst the study does is not seeking to test any particular hypotheses, the involvement of a majority of English based NHS trusts does point to a reasonable representative sample of senior management across this sector.

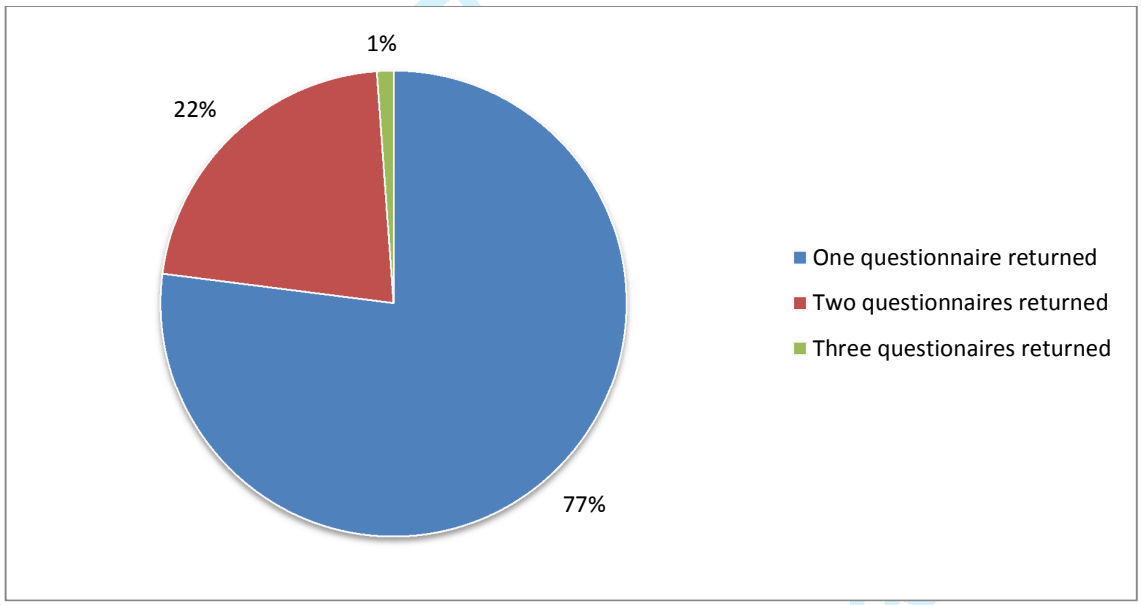

Figure 3: Number of survey returns by Trust

No questionnaires were removed from the subsequent analysis based on collective rather than individual completion involving respondents from the same Trust. Overall, 30% of the participants led the Finance function, 35% IT and 35% were Directors of Nursing, represented by 32, 38 and 38 respondents respectively, thereby accounting for 20% to 23% of Trusts for each of the Director categories and providing a broad based assessment of experience and perception from across the sector.

Figure 4 shows the variety of 'hands on' systems implementation experience indicated by these senior participants, with a majority of the senior staff representing Finance, IT and Nursing having contributed to each of these four key areas, aside from order communication systems for Nursing Directors. This experience level displayed no significant difference by

role category, although 'order communication systems' experience has some role association, indicating IT Directors being more likely to have worked in this area, with Nursing Directors less so. The mean number of different project types per respondent was 3.17, thereby displaying a broad level of project experience, with the modal numbers of different projects being 4 for Finance, 2 and 3 for Nursing and 4 and 5 for IT Directors. Interestingly, 8% of the IT Directors participating in the study failed to indicate that they had any experience of working with the key systems presented here, compared with 8% of the Nursing Directors and 1% of the Finance Directors, although overall, no significant difference in breadth of experience exists by role. Thus in terms of organisational learning which can contribute to the development of a '*dynamic capability'* (Ashurst et al,. 2008) the participating hospitals appear to have senior staff who are building up a portfolio of implementation experience which can only enhance future IT innovations e.g. telehealth systems (MacNeill et al. 2014). In addition, a minority of respondents indicated that they had other relevant experience in the implementation of systems such as e-prescribing, theatre systems, radiology and electronic patient record systems.

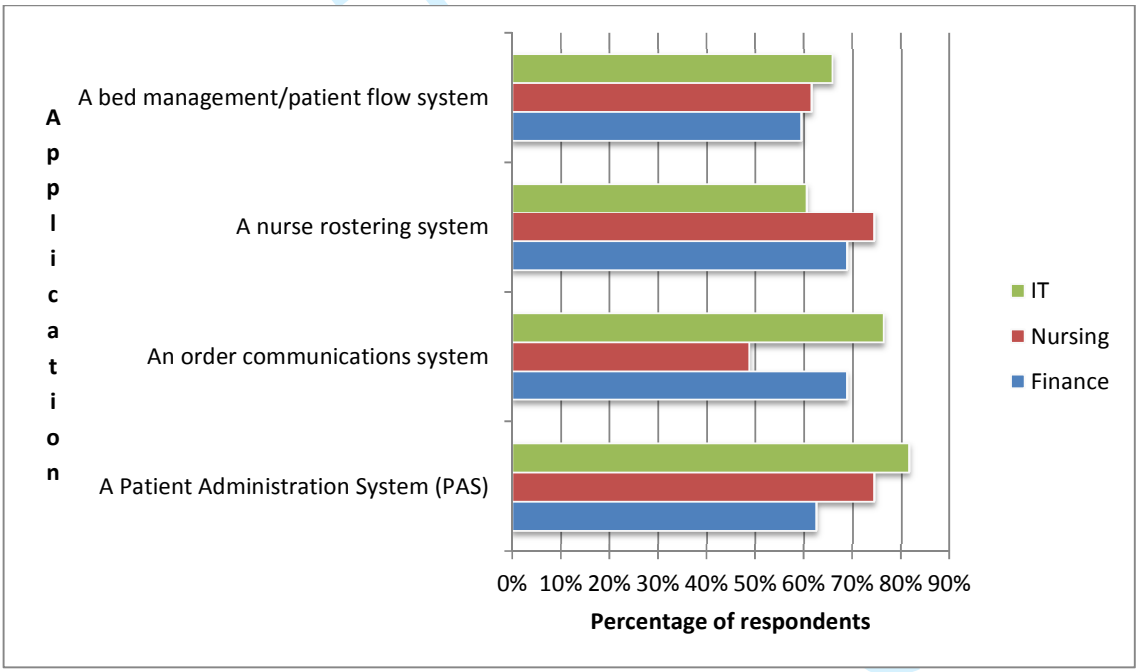

Figure 4: Experiences of system implementation by role

6.2 Level 1- Basic level maturity

Having considered the Ashurst and Hodges (2010) framework shown in Table 1 questions 1-13 were constructed to reflect a basic level of BR maturity. IS capability here (Ward and Peppard, 2002) involves the ability to contribute to a business case for a new system and identify the relevant benefits and costs associated with the implementation. Lower level capabilities (Easterby-Smith, 2009) include education of staff in basic skills e.g. understanding how specific systems operate and accessing relevant clinical information or

how to use PRINCE2 to manage a project. The basic level would not see staff considering a more strategic and complex perspective such as IT programme management.

A number of measures were considered in this component of the study, percentage frequency distributions corresponding to each are presented in Table 2, alongside the percentage level of agreement for each of the different types of Director role. In order to develop dynamic capabilities, organisations need to effectively control resources, and by doing so, be able when required, to deploy them flexibly (Teece, 2007). With few exceptions, 98% of the respondents agree that their Trust encourages the implementation of IT systems that support effective resource deployment. This resonates with participant experience around initiatives such as nurse rostering and bed management systems, systems noted for both challenge in implementation and realisation of a broader range of benefits (Wilson and Howcroft, 2005). Willingness to support this endorsement does however differ by role, although not in any statistically significant way, Finance Directors being more positive compared with counterparts responsible for Nursing or IT.

	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)	Mean	Level of Agreement		
							Finance	Nursing	IT
1 Our Trust/hospital is keen to adopt IT systems to support the management of resources	69%	29%	2%	0%	0%	1.33	100.0%	97.4%	97.3%
2 New IT systems cannot be purchased without making a business case	69%	27%	1%	3%	0%	1.37	100.0%	94.7%	94.7%
3 I have been involved in the adoption of a new IT system	72%	24%	3%	1%	0%	1.32	96.9%	94.7%	97.4%
4 When a business case is made for a new IT system we identify all relevant costs and benefits in terms of ROI	44%	44%	7%	5%	0%	1.71	78.1%	94.7%	92.1%
5 When making a business case for a new IT system we identify the benefits to patients	50%	45%	5%	1%	0%	1.57	93.8%	89.5%	97.4%
6 When making a business case for a new IT system we identify the benefits to staff	38%	50%	10%	1%	0%	1.73	84.4%	94.7%	86.8%
7 Our hospital has had some unsuccessful IT projects	21%	53%	17%	9%	1%	2.16	71.9%	68.4%	76.3%
8 Realising benefits from new IT systems is important to our hospital	65%	34%	1%	0%	0%	1.36	100.0%	100.0%	94.7%
9 I have attended training and development on "benefits realisation"	25%	22%	9%	36%	8%	2.79	34.4%	36.8%	68.4%
10 My staff/colleagues within my organisational area of responsibility have had training on benefits realisation	12%	30%	26%	26%	7%	2.85	40.6%	36.8%	47.4%
11 When new staff are appointed in my area of responsibility we train them in benefits realisation	4%	12%	31%	44%	10%	3.44	12.5%	13.2%	21.1%
12 Our Trust/hospital is experienced in managing IT project successfully	19%	60%	17%	4%	1%	2.08	71.9%	78.9%	84.2%
13 I have been trained in PRINCE2 project management	34%	23%	3%	29%	11%	2.59	37.5%	34.2%	97.4%

Table 2: Assessment of how benefits realisation plays a role in successful delivery of new IT

Long established in the NHS is the application of investment appraisal and the need to provide an accompanying business case to support the acquisition and implementation of new IT systems. The necessity to incorporate the latter was not disputed here, although 4% of the senior managers pointed to examples where this has not happened within their Trust, with an example provided of business cases only required for expenditure above a certain financial value. A traditional approach to supporting a business case with a comprehensive assessment of benefits and costs is "*return on investment*" (RoI), although more recent recognition has been given to the existence of the qualitative and perhaps non-tangible benefits that may exist (Ward and Daniel, 2006). Challenges have been made to how such evaluations are undertaken, leading to a wider and sometimes more political means of assessment, including the perspectives of those who have a direct link to the operation of the systems concerned. In the context of IT systems implementation within a healthcare setting, there are arguably only a minority of such systems that have no effect on the patient experience or environment. In this respect, most participants in this study perceived that patient benefits were always identified, although with some potential for challenge within the sector, 11% of Nursing Directors believed that patient benefits were not articulated as part of the associated business cases within their Trust. Given that healthcare represents organisational core competence in this context, it would be assumed that care quality should predominate as a key benefit emanating from IT investments. From a staff perspective, most of the responding Trusts explicitly consider employee benefits. Figure 5 illustrates the responses to the '*Level 1: Basic'* questions within the survey and appears to indicate that most respondent Trusts have at least reached a basic level of benefits realisation.

In terms of the resource related items, labelled as questions 9, 10, 11 and 13 in Table 2, the level of agreement is somewhat lower amongst the senior managers compared with the other items presented as Level 1 of benefits realisation maturity, with their mean scores ranging them as the four lowest scales. Assessment shows the responses for each resource area to be lower than each of the other presented. This represents a clear sector challenge given the potential for association with benefits realisation processes, measured specifically in this study by questions 16, 17, 24, 30, 32, 36 and 37 in Tables 3 and 4. The measures of resource *Q9 - I have attended training and development on "benefits realisation"* and *Q10 - My staff/colleagues within my organisational area of responsibility have had training on benefits realisation* show association with the most or all of process measures defined. The stand-out correlations of 0.395 and 0.351 (significance in both cases accounting for multiple testing correction, sig =0.000) occurs with *Q30 - Benefits realisation continues to be monitored up to one year after an IT project is completed.* There are also various associations involving *Q11 - When new staff are appointed in my area of responsibility we train them in benefits realisation*. In particular, it demonstrates significant association with *Q32 - Staff within my area of responsibility are able to realise benefits from IT projects through the use of metrics to measure success* (r = 0.350, sig =0.000) and *Q36 – The senior management of the hospital are always engaged in the benefits realisation efforts in the Trust* (r = 0.318, sig = 0.001).

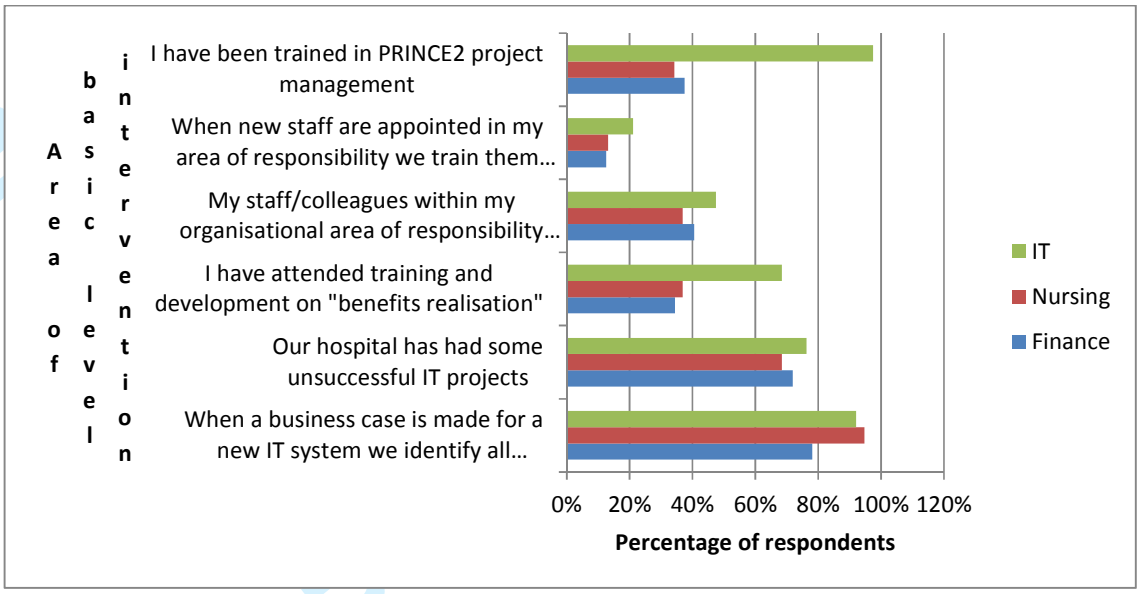

Figure 5 - Responses to basic level benefits realisation

It is perhaps understandable that most respondents have experience of unsuccessful IT projects. This is clearly the case in relative terms for the IT Directors, as presented in Figure 3. What defines "*unsuccessful*" has not been explored here, although it could be reasonably argued that it has the potential for subjectivity and could well encompass the non-delivery of benefits to stakeholders perhaps specific to the respondent and their role. An outcome of such failure is the learning opportunities afforded to the organisations, which may be realised as part of any post-project review.

Almost all of the study respondents have suggested they believe the realisation of benefits from newly invested IT systems has importance for their Trust. Despite this, an obvious miss-match in response becomes apparent with only 46% of these research participants indicating that they have been the recipients of "*benefits realisation*" training. Role disparities become noticeable here, with IT Directors being twice as likely to have received training in benefits realisation compared with Nursing and Financial counterparts, although this is not statistically significant after accounting for multiple assessment. As the Directors may not directly realise the benefits of any new IT interventions, consideration was given to dedicated staff development around benefits realisation, with 42% agreeing that their staff had been trained. Again, differences by role area emerge, with fewer than 50% of IT staff being trained in this specific area, compared with only 34% of nursing staff and just over 40% from the finance provisions. Challenging questions to the Trust come out of these findings "*If most staff are not being trained in benefits realisation how do they know how to carry it out and measure the delivery of benefits?*" and "*Is benefits realisation a strategic priority for the Trusts?*" A more negative picture emerges in Figure 3 through the consideration of new appointments, with only 15% of the study's participating senior managers suggesting these colleagues were afforded benefits realisation training, with little difference emerging by area of specialism.

Benefits realisation is a component of PRINCE2, the project management methodology used in all NHS organisations. IT Directors exhibit the greatest levels of training here, as clearly

indicated by Figure 3, with almost all of the IT respondents having been trained. This compares with a much smaller percentage of Directors of Nursing and Finance, significant differences being evident (sig =0.000). Despite the documented limitations, PRINCE2 affords its users a framework for delivering IT projects, and as such, offers a level of support in the identification of associated benefits at an early stage in the project lifecycle. As a measure of resource, levels of response relating to this question display limited association with the various of measures considered that represent process, with the exception of *Q32 - Staff within my area of responsibility are able to realise benefits from IT projects through the use of metrics to measure success* (r = 0.304, sig = 0.001).

Despite the lack of employee development at the various levels of the Trust hierarchies, 78% of the Directors contributing to this study indicated that their Trusts were successful in managing IT projects. Some differences of opinion across the three director groups have emerged, albeit without statistical significance. Directors of IT provide the relatively greater levels of endorsement here, the least being afforded by those from Finance.

6.3 Level 2 – Improving in Benefits Realisation

This part of the study findings attempts to explore whether Trusts have moved beyond the '*basic level*' of benefits realisation maturity. Table 3 illustrates the questions used for Level 2 and 3 assessments. The challenge for the design of the questionnaire was interpreting the meaning of 'improving' and 'enhanced' within the context of BR. It is apparent that Level 2 'improving' is still linked to the project management of individual projects. PRINCE2 does allow for BR reviews as well as the strategic alignment of the cross organisational IT portfolio. An 'enhanced' approach to BR is seen as moving away from the rigidity of a project management and into a much more strategic approach to all IT enabled change where organisational learning is designed into all projects within a portfolio. Here confidence of success also allows for agility in projects as well as incremental delivery (Ashurst and Hodges, 2010).

Progressive organisations that have an 'improving' profile conduct post-implementation benefits realisation reviews as a means to establishing whether the new system is delivering the benefits detailed in the business case and to see if there are unanticipated benefits emerging over time (Waring, 2015). Across the participant group, 43% suggested that Trust employees are not trained in benefits realisation, which prompts the question "*To what extent are benefits identified, managed and ultimately achieved over a project's lifetime?*" Despite this lack of specific and formal development, 61% of the respondents concur that their Trusts conduct benefits realisation reviews, although responses differed by role, with only 44% of the Finance Directors supporting this (Figure 6). This difference is particularly interesting given the reporting lines established in many of these Trusts, where IT employees typically report through to the Director of Finance.

In assessing pre-training of staff in benefits realisation prior to IT project involvement, clear differences exist between the relatively low endorsement from the Directors of Finance and their Nursing and IT counterparts (sig = 0.001). This is perhaps unexpected given the assurances that business cases are scrutinised prior to project sign-off, with training and development representing key cost components for projects of this nature. Existing academic research suggests once again that the more progressive organisations not only have formal strategies for realising benefits from technology change projects, but they also

encompass benefits realisation within their more generic change projects (Ward and Daniels, 2006; Ashurst *et al*., 2008).

	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)	Mean	Level of Agreement		
							Finance	Nursing	IT
14 Before staff become involved in IT projects they have some training and development by specialist trainers	16%	42%	18%	20%	5%	2.55	34.4%	68.4%	68.4%
15 We do not train our staff in benefits realisation	11%	32%	25%	27%	6%	2.84	46.9%	36.8%	44.7%
16 After IT systems go live we carry out benefits realisation reviews to ensure all benefits identified in the business case have been achieved	14%	46%	20%	19%	0%	2.43	46.9%	68.4%	65.8%
17 When carrying out any change management within our hospital we always look to identify benefits	32%	59%	6%	3%	0%	1.79	84.4%	94.7%	94.7%
18 Our hospital philosophy on benefits realisation applies to all change management projects not just IT projects	23%	46%	19%	10%	1%	2.19	75.0%	78.9%	55.3%
19 Our hospital has undertaken continuous change through projects such as Lean, Six Sigma, TQM etc.	19%	47%	19%	12%	3%	2.31	59.4%	76.3%	63.2%
20 Our IT and change projects are always aligned with the hospital business strategy	30%	51%	17%	1%	2%	1.94	81.3%	84.2%	76.3%
21 No IT projects are funded unless they have been identified to deliver strategic benefits to the hospital	28%	51%	12%	8%	1%	2.04	81.3%	84.2%	71.1%
22 This hospital recognises the delivery of IT projects is dependent on the skills of all stakeholders in those projects	26%	57%	12%	6%	0%	1.97	93.8%	84.2%	71.1%
23 The hospital supports staff to undertake management training and development in order to achieve benefits from its change projects	14%	49%	24%	11%	2%	2.38	53.1%	76.3%	57.9%
24 When IT or change management projects are undertaken we put metrics in place to measure our success in achieving the stated benefits of the projects	12%	53%	21%	14%	0%	2.37	53.1%	73.7%	65.8%
25 Our hospital always adopts the same methodology or approach to the delivery of IT enabled change	12%	24%	31%	32%	0%	2.84	43.8%	26.3%	39.5%
26 We always consult all relevant stakeholders in IT or change projects	17%	45%	21%	16%	0%	2.35	56.3%	63.2%	68.4%
27 We consult patient stakeholders where new IT may affect their interaction with the Trust	11%	35%	32%	21%	0%	2.64	34.4%	47.4%	55.3%
28 After an IT enabled change project we have post-project reviews with stakeholders to embed the learning from the project	15%	33%	25%	27%	1%	2.67	34.4%	47.4%	57.9%
29When putting in a new IT system the hospital management team looks for incremental change	8%	46%	37%	8%	1%	2.50	56.3%	68.4%	34.2%
30 Benefits realisation continues to be monitored up to one year after an IT project is completed	9%	25%	31%	30%	5%	2.95	31.3%	39.5%	31.6%

Table 3: Items exploring Levels 2 and 3 Benefits Realisation Maturity within NHS Trusts

In this study, 92% of the senior managers have supported the idea that within their Trust, benefits are identified in general change projects. This overwhelming endorsement is perhaps surprising and at odds with various findings reported elsewhere in this study especially when considering the lack of staff development in benefits realisation.

In terms of business strategy alignment (Figure 6), 80% of the respondents agreed that their IT projects are always aligned, although there is marginally less endorsement from the IT Directors, perhaps because of their closer working relationship with the various change implementations that have been put in place. The recognition that the delivery of IT projects is dependent on the skills of all stakeholders in those projects differs by respondent role, with 83% agreement overall, but relatively small but insignificant differences emerging between the three Director groups, IT Directors being more likely to depart from supporting this, with Finance Directors offering the greatest levels of statement support.

There is one statement here that explicitly relates to resourcing *Q23 - The hospital supports staff to undertake management training and development in order to achieve benefits from its change projects.* Unlike those resource measures at Level 1 of benefits realisation maturity, this measure has a range of responses within the Levels 2 and 3 measures of benefits realisation that is very much typical for the items being assessed, rather than displaying a relatively high level of participant disagreement. It has association with various processes, which are statistically significant across the range of items considered and listed earlier. The most prominent correlations are with *Q36 – The senior management of the hospital are always engaged in the benefits realisation efforts in the Trust* (r = 0.469, sig =0.000) and *Q37 - Benefits realisation is a strategic priority in this Trust* (r = 0.469, sig =0.000).

In identifying levels of institutional support for training to achieve benefits from change projects, 63% agreed their Trust supports staff, with some relatively minor but statistically insignificant differences by manager role, as shown in Figure 6.

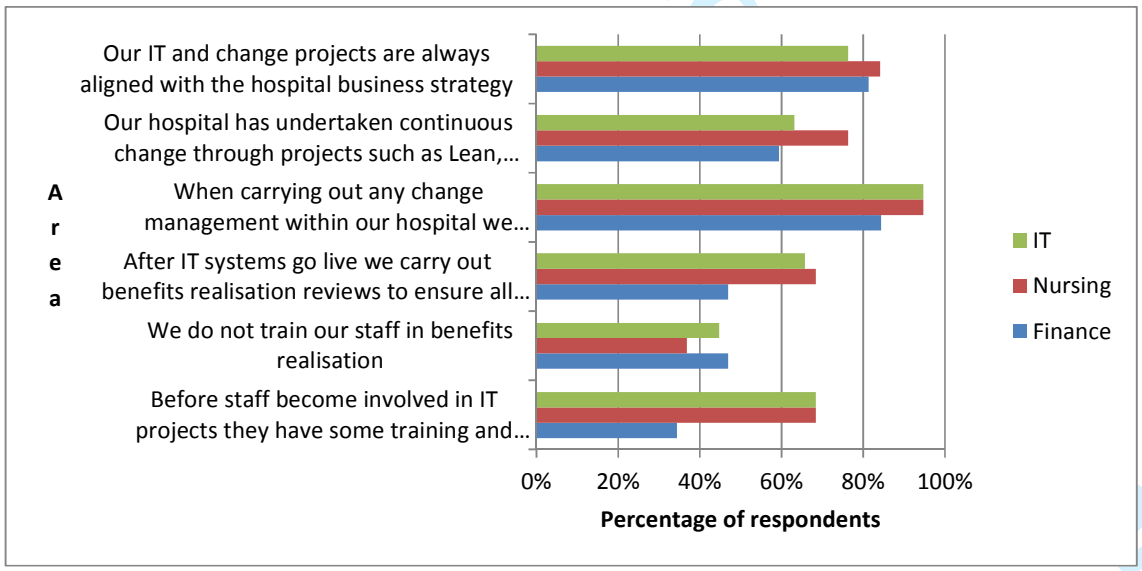

Figure 6: Level 2 benefits realisation maturity

6.4 *Level 3 – Enhanced Benefits Realisation Maturity*

Considering both Figure 7 and the data presented in Table 3, 64% of the respondents indicate that their Trust has implemented formal metrics to assess success in the various projects delivering their pre-defined benefits. However, there appears to be divergence in the methodologies adopted in achieving IT delivery, with a relatively small proportion of respondents, 36%, agreeing their Trust consistently adopts the same methodology project by project. There is, as presented in Figure 7 relatively less agreement amongst the Directors of Nursing, although these differences overall are not statistically significant.

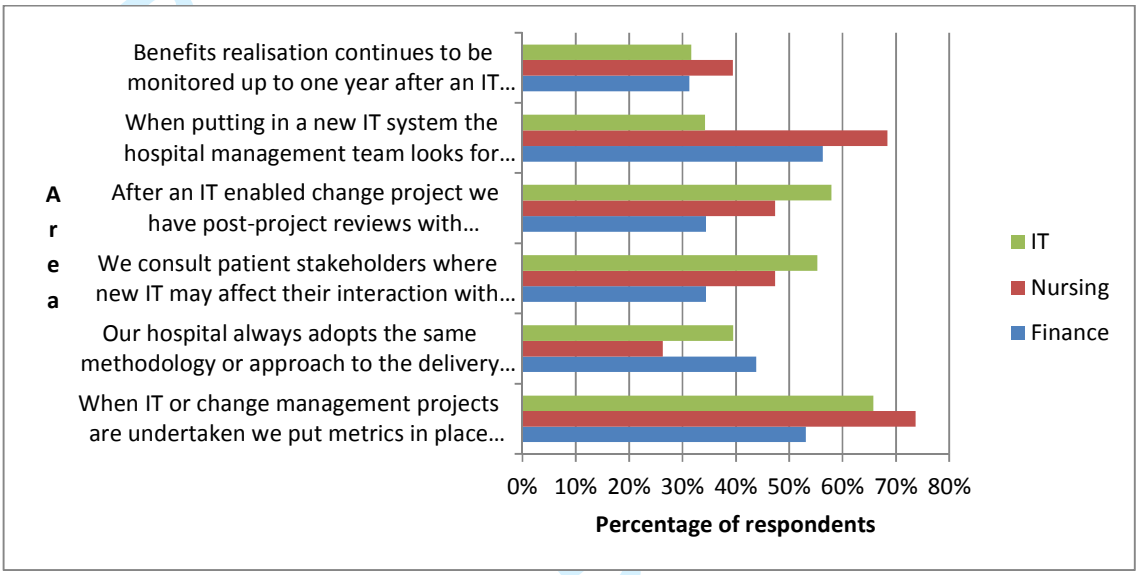

Figure 7: Level 3 enhanced benefits realisation maturity

As a proxy question for '*designing projects with greater emphasis on preparing for post-project learning*' (Table 1) the monitoring of benefits realisation for up to one year was used. This was believed to provide insight into whether the Trusts were continuing to learn from the benefits realisation approach to IT implementation. Overall, 35% of the senior managers suggested that their Trust continued to monitor benefits realisation on IT projects. A proxy question was also used for '*adapting the approach to projects based on the portfolio*'. Here, the stakeholder consultation process was used because new systems or working practices introduced for clinical or ancillary staff may require more interaction with IT for patients. For stakeholder consultation, senior employees participating here agree that Trusts undertake necessary dialogue with regard to the various changes or IT projects being put in place. It would appear, however, levels of patient consultation are lower, with only 46% agreeing that Trusts consulted in relation to new IT initiatives. There are differences in the relative levels of senior management perception with respect to this consultation, as exhibited in Figure 5, but these are not statistically significant.

In terms of change within the Trusts, 54% of the participants considered that senior management sought an incremental approach to change, with no differences in support for this position emerging between the Directors of Nursing, Finance and IT groups, despite the relative negativity shown by the latter in Figure 5. In consideration of organisational learning, only 47% of respondents stated they hold post-project stakeholders reviews, whilst the

specific assessment of learning into the longer term is perceived by a smaller proportion of these senior managers.

	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)	Mean	Level of Agreement		
							Finance	Nursing	IT
31 The hospital values its staff and is committed to the development of organisational learning	51%	39%	7%	3%	0%	1.63	93.8%	89.5%	84.2%
32 Staff within my area of responsibility are able to realise benefits from IT projects through the use of metrics to measure success	18%	51%	18%	14%	0%	2.28	50.0%	65.8%	84.2%
33 The hospital empowers staff in my area of responsibility to develop their own innovative solutions to change management	18%	49%	22%	10%	1%	2.28	62.5%	71.1%	63.2%
34 The hospital is developing means to manage organisational knowledge	15%	44%	22%	18%	1%	2.46	37.5%	81.6%	52.6%
35 The hospital has benefits realisation leaders/specialists who help deliver the benefits of new IT systems	12%	24%	26%	30%	8%	2.96	25.0%	34.2%	47.4%
36 The senior management of the hospital are always engaged in the benefits realisation efforts in the Trust	16%	44%	22%	15%	4%	2.47	46.9%	73.7%	55.3%
37 Benefits realisation is a strategic priority in this Trust	19%	47%	23%	9%	2%	2.29	65.6%	73.7%	55.3%

Table 4: Items exploring Level 4 Benefits Realisation Maturity

6.5 *Level 4: Advanced benefits realisation maturity*

Ashurst and Hodges (2010) argue that many organisations find both Level 3 and 4 aspirational and would struggle to understand the concepts expressed in Table 1. Eight measures were considered here, the percentage frequency distributions displayed in Table 4, alongside the levels of agreement shown by the three categories of senior manager.

It was assumed here that benefits realisation capability would depend to an extent on the staff resources and development of their ability to undertake a long term evaluation of benefits realisation. Over 90% of senior managers stated that their Trust was committed to organisational learning, but only 68% indicated employees who are directly or indirectly managed by them have the capability to realise benefits from IT projects by means of appropriate metrics. There are minor differences in this perception by participant role. There is a greater level of belief that this is true amongst the IT Directors, whilst the opposite is the case for those with financial responsibilities, albeit not in a statistically significant way. Here, only 52% agreed with this statement, which is unexpected given their control and oversight of the return on investment of such IT system implementation, this disparity being clear from Figure 6.

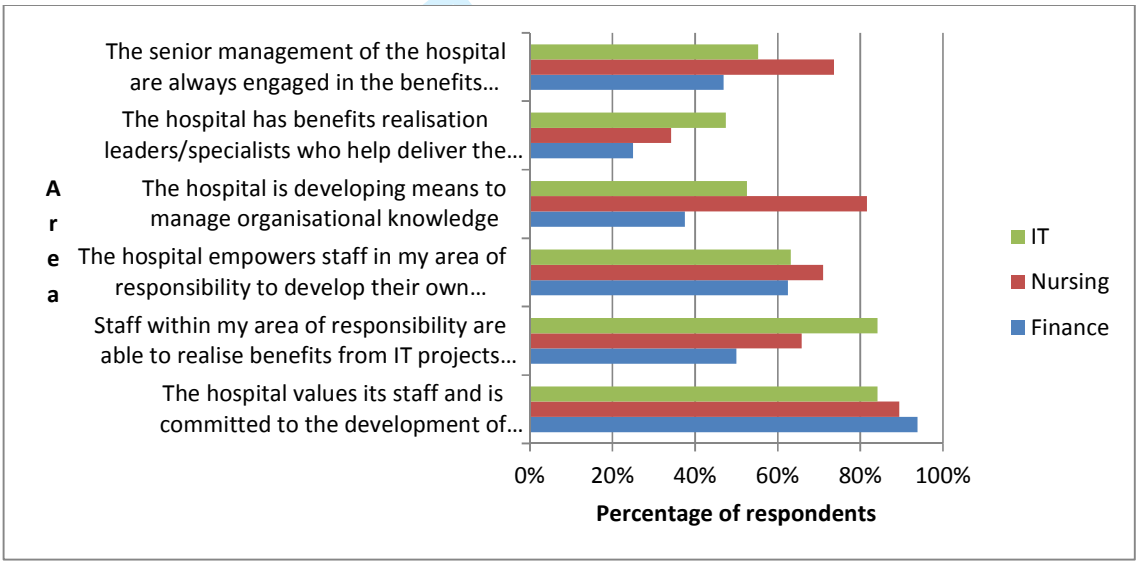

Figure 8: Level 4 benefits realisation maturity

In the assessment of employee empowerment, 67% of the survey participants believed that their Trust empowers staff to develop their own innovative solutions to change management, with similar levels of endorsement exhibited by the three categories of Director. Less of an endorsement is given to the Trusts by these senior managers that mechanisms are in place to manage organisational knowledge, with 59% responding positively to the specific statement provided on the questionnaire. Differences also exist between the three Director groups (sig = 0.001). The greatest accord can be found amongst the Nursing Directors, followed by the IT Directors, with the least support provided by Directors of Finance, as shown within Figure 6. Only 36% of these participants believe their hospital has benefits realisation leaders or specialists in place, representing an even greater challenge across the sector and one that displays some differences across the three discipline areas considered, as presented in Figure 6. There is a relatively negative perception amongst the Directors of

Finance. In considering the extent to which these evaluations are supported by senior management, 60% of the respondents consider senior management to be continually engaged in benefits realisation. Going one step further through assessing the level of acceptance that benefits realisation represents a Trust strategic priority, a positive response of 66% from the participating Directors was achieved. The respective levels of agreement is presented in Figure 6. Whilst no significant differences exist, there is relatively less support for this belief amongst the Directors of IT.

Finally, with respect to measuring resourcing, *Q35 - The hospital has benefits realisation leaders/specialists who help deliver the benefits of new IT systems*, displays a relatively low level of agreement compared with the various measures of Level 4 benefits realisation maturity, its mean score placing it at the bottom of the seven measures associated with this maturity level. Furthermore, the related response distribution is lower than those for each of the other measures in this group. This represents a further sector challenge in terms of resourcing, given it has across the board association with the various process indicators considered. The most prominent correlations are with process measures *Q36 – The senior management of the hospital are always engaged in the benefits realisation efforts in the Trust* (r = 0.629, sig =0.000), *Q37 - Benefits realisation is a strategic priority in this Trust* (r = 0.521, sig =0.000) and *Q24 - When IT or change management projects are undertaken we put metrics in place to measure our success in achieving the stated benefits of the projects* (r = 0.471, sig = 0.000). Each of these, accounting for multiple comparison assessment are statically significant.

7. Discussion

This section considers how this research contributes to both practice and theory and explores whether the framework (Table 1) as developed by Ashurst and Hodges (2010) is appropriate within the context of a BR dynamic capability. In his discussion of the micro-foundations of dynamic capabilities, Teece (2007) explains that resourcing is essential to build organisations with 'strong' dynamic capabilities. The human capacity to deliver excellent enterprise performance must be aligned to 'sensing', 'seizing' and 'managing threats/ transforming' and is not just organisationally focused but also externally focused. Dynamic capabilities do not develop overnight, must be nurtured and refreshed and this applies to the BR capability within the IT domain.

7.1 BR dynamic capabilities

The research within this study builds upon the benefits realisation framework (Figure1) by extending the work of Ashurst et al. (2008) and Ashurst and Hodges (2010) and it specifically focuses upon the maturity aspects of BR as a dynamic capability.

In this study, the micro-foundations of a BR capability are viewed as basic, improving, enhanced or advanced and an organisationally focused approach has been taken. Benefits realisation research to date (e.g. Ward and Daniel, 2006, Coombs, 2015) has generally been concerned with making the connection between identifying benefits from IT and the business objectives of the organisation. Nevertheless, it is the human dimension of BR and the staff capability to deliver the organisational benefits that is an essential component of IT enabled change.

Teece (2007) argues that before looking inwardly enterprises should undertake '*sensing to shape opportunities and threats*'. From a BR perspective within a healthcare context of an acute hospital there would be evidence of processes which allowed for the scanning and exploration of technologies which may provide clinical as well as patient benefits; there would be processes for evaluation of international IT/ BR research; opportunities to test out ideas and explore with suppliers new technology. Within the Ashurst and Hodges (2010), (Table 1) framework 'sensing' is interpreted as a capability of a mature organisation and is somewhat aspirational.

From this research, it is clear that the majority of hospital trusts fall within the 'basic' level category. Whilst there is a commitment to benefits realisation as a strategic priority and a strong association with supporting staff to undertake management training and development, BR leaders are not being developed. Therefore, they do not appear to be resourcing innovation, knowledge management or taking more flexible approaches to governance. Rather, the main focus is on the system implementation rather than a comprehensive search for benefits over the longer term (Farbey et al., 1994).

The research suggests that the focus of the BR effort in the NHS hospitals is on '*seizing*' the opportunity whereby they implement a new IT systems through processes well established within the organisation. Project management is generally in place and the IT Directors tend to be trained in the process. However, it is also clear that staff in other areas, as well as new staff, are not necessarily trained in BR (Figure 5 and 6). Responding to the call for more research into the links between resources and processes (see Easterby-Smith et al., 2009), responses reveal there is significant association between training and development resources and BR processes such as senior management support, making BR a strategic priority, monitoring benefits and the use of metrics. The lack of training therefore reveals that this dynamic capability link between resource and process is not being optimised, explaining why BR is not currently working as a dynamic capability. Teece argues (2007) that dynamic capabilities are enhanced by staff improving their technical competencies but can be hindered where there are layers of bureaucracy, which hamper effective decision making. In the NHS all projects must conform to PRINCE2 standards with its many, cumbersome reporting structures which can sometimes lead to inertia and bias (Waring, 2015). Nevertheless, if an organisation can do the basic project management of IT implementation then these everyday tasks may eventually lead to the development of DCs (Maklan and Knox, 2009). Evidence from our research indicates that application of PRINCE2 training amongst our respondents correlates strongly with the use of metrics for evaluating benefits, supporting the importance of a link between resources and processes.

Once a new system is in place '*maintaining optimum performance/transforming'* work must still go on (Teece, 2007; MacNeill et al. 2014). With regards to BR, bringing staff together from across the enterprise is essential to developing knowledge management. Experience of undertaking IT projects in different clinical areas and realising the benefits allows organisational learning where staff are given the opportunity, in a safe environment, to share experience new possibilities emerge. Our respondents are in strong agreement about the importance of organisational learning yet in practice there is little monitoring of BR up to one year after a system is implemented. Senior management may be prepared to allow different managers to make their own decisions on IT and change based on previous success/failure. Governance of projects may need to change for example bringing in more patients/users of the technology to provide alternative views on benefits.

The research described here reveals that capturing the essence of a BR capability within IT enabled change is complex and establishing maturity is even more challenging. The real issue for the public sector in the UK is that organisations are not able to determine their own destiny due to the funding structures and austerity measures that are still in place. They frequently have IT change imposed from government (Waring, 2015) and have little say in the type of technology available. The healthcare market is a problematic one for suppliers of IT especially since the demise of NPfIT (Hendy et al., 2005). BR capability within hospitals is patchy and not necessarily shared across the organisations yet it is recognised as being vital to the delivery of successful IT projects. Instead of considering whether an organisation is at a stage of maturity with regards to its BR capability it might be better to explore whether it is aligned to the dynamic capabilities framework as discussed by Teece (2007) as he believes that dynamic capabilities are a function of shared skills and abilities and not just of experience in 'good practice'. Figure 9 demonstrates how this BR framework looks in the context of the NHS hospitals that participated in the study and incorporates the competency framework discussed by Ashurst and Hodges (2010). However, it also pays attention to the original work by Teece (2007) at a strategic level. Thus, organisations that have strong (mature) dynamic BR capabilities will have systems in place to '*sense*' the BR possibilities for their organisation from a range of IT. They will have staff whose role it is to scan the environment for opportunities and present them to internal committees. There will be processes in place for decision making and these will allow for changing patient needs and organisational priorities. The process of 'sensing' is creative and may need staff other than IT professionals to be involved.

Once an opportunity has been agreed then it is important not to lose sight of the goal. If a project management methodology such as PRINCE2 is to be used then it must not become the main driver of the project (Breese et al., 2015). In fact, other decision making protocols may need to be considered especially those that can include stakeholders such as patients and clinicians. Easterby-Smith et al., (2009) suggest that innovation is key and must not be lost in the quest for control. Figure 10 also shows that investment in developing staff is essential when building a BR capability. Staff need to commit to the project and feel that they have an understanding of what is required from them. Cutting across departmental boundaries is important, as is the formation of cross-functional teams and BR champions (MacNeill et al., 2014).

Post implementation BR is often forgotten in the quest to move to the next IT project. Figure 9 also focuses on the need to maintain optimum BR performance. Thus, knowledge management systems (Lam, 2000; Polyani, 1967) must be developed to capture the information on the IT enabled projects in order to learn and share experience. BR should be managed for an agreed number of months after implementation in order to ensure all tangible and intangible benefits are realised. Organisations should also be able to measure to some degree their BR capability and know where they need to enhance their resources and develop processes.

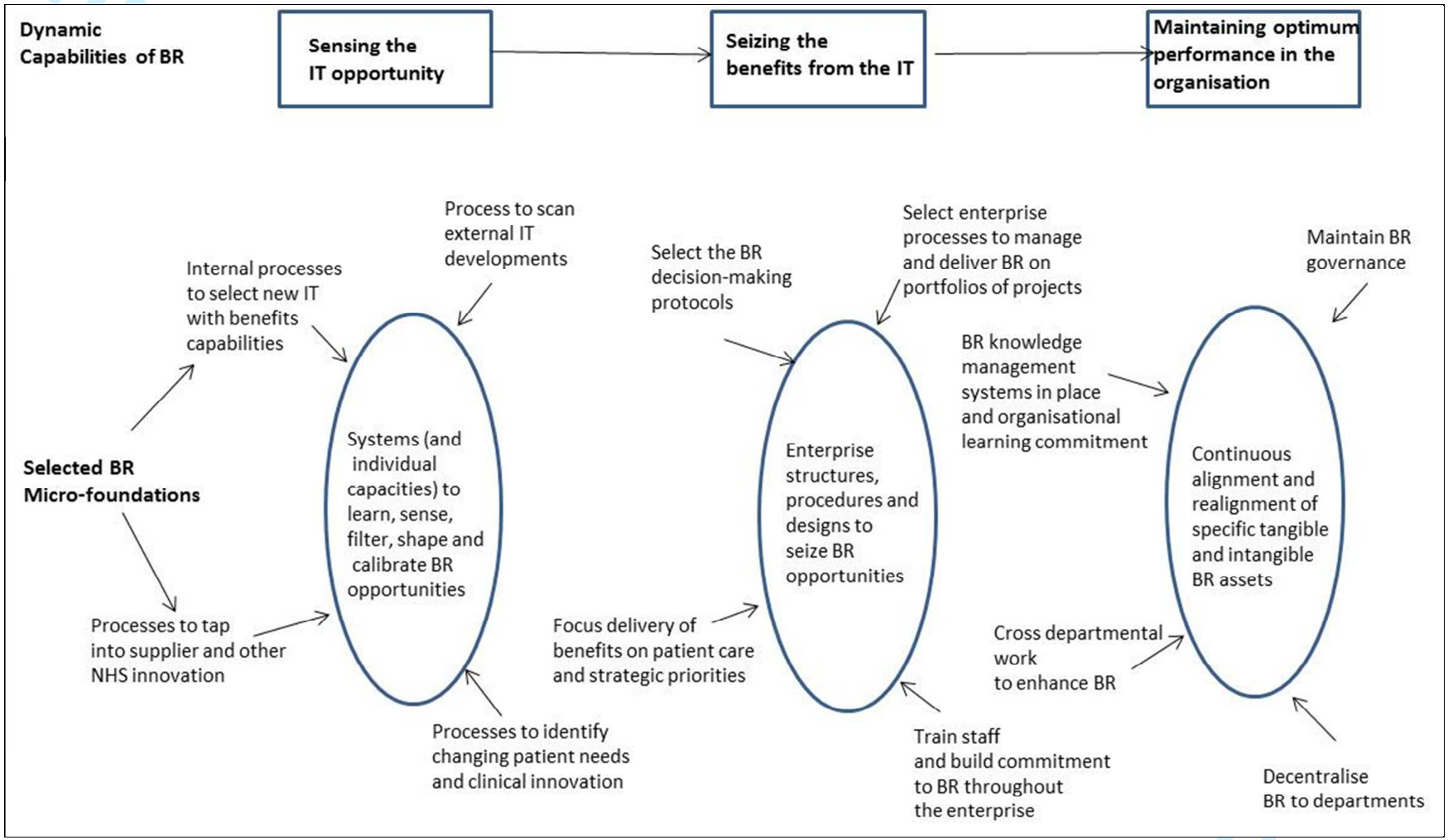

Figure 9: Foundations of BR capabilities and IT enabled change performance (Adapted from Teece, 2007:1342)

Finally, where possible they should decentralise and provide managers within other areas of the organisation opportunities to make decisions on IT pertinent to their departments.

7.2 Benefits realisation and NHS Hospitals

The research conducted here has explored the BR capability of English NHS acute hospitals and has highlighted a number of concerns and issues. The first concern is related to the internal focus of hospitals and the lack of planning for BR beyond the end of the project implementation. Hospitals need to be more proactive in their approach to IT enabled change and benefits should be looked for well in advance of developing a business case for a system that is imposed by government. Understanding potential benefits and seeking out organisations that have experience of realising those benefits is essential. This could also involve reading reports and academic articles (e.g. Steventon et al., 2012; Hendy et al., 2005; Waring and Alexander, 2015) on implementation issues in a clinical environment in order to build up both an evidence and a knowledge base of key issues and challenges. Involving stakeholders such as patients and clinical staff and even suppliers in this '*sensing*' work (Teece, 2007) is essential to BR success. This should be done in an authentic and non-threatening manner where all opinions matter and decisions are made collectively.

In terms of '*seizing the benefits'* from IT, hospitals must attempt to extricate themselves from the straight-jacket of PRINCE2 (and similar project management methodologies) in order to focus on the important aspects of BR. Identifying benefits, planning how they will be realised, putting measures in place to ensure they are and reviewing the process are the essence of BR. Hospitals also need to invest in educating their staff in BR and develop a process by which all staff on IT projects share experiences and learn from those experiences. Ensuring that new staff coming into the organisation have some degree of education in BR is also important. Wilson and Howcroft (2005) demonstrate within their study of a nursing system development how difficult it is to get 'buy in' to management approaches such as BR and the political nature of this type of implementation. BR is not value free and even a benefit to one group is a dis-benefit to another. This development could be done during an induction programme or as part of a generic core education programme. It would apply to clinical as well as management staff as most of the innovation in IT within hospitals is in clinical systems (Waring, 2015). Managing projects in isolation should be discouraged and a portfolio approach taken, thus ensuring that e.g. the benefits of integration emerge once the systems come on stream.

Finally, '*maintaining optimum performance in the hospital'* from IT enabled change relies on hospitals moving towards a more strategic approach to planning for innovation (Teece et al., 1997). The meaningful involvement of cross-functional teams in the planning, implementation and post-project process is important to the success. These teams may be temporary structures that can be dissolved and reassembled when experience is required (Ward and Peppard, 2002). The fluid nature of these teams would allow for flexibility and prevent inertia setting in. Having knowledge management systems in place is ideal providing they are used for organisational learning and not as a repository for information never utilised (Lam, 2000). Governance of BR is also very important as is decentralisation of the associated decision-making. In most hospitals, BR is led by the IT function through the PRINCE2 project management structures. BR should be placed in the hands of departments so that they can ensure they reap the rewards for both their patients and staff (Waring and

Alexander, 2015). The challenge for hospitals is their current governance structures under 'Trust' status where government have stipulated a specific format.

Benefits realisation has been a concept in use within the NHS since the 1990s but has become much more important since NPfIT (Hendy et al., 2005) and the beginning of the austerity measures within the public sector. IT is being rolled out across the NHS at an increasing pace but what needs to be highlighted are the challenges involved in developing a BR capability:

- The lack of environmental scanning to establish where innovations are being developed and used.
- The need to include a larger diversity of stakeholders in identifying IT projects and their benefits.
- Too much focus on internal bureaucratic management of projects and not enough on portfolio integration
- Lack of staff development in BR especially in clinical areas and too much emphasis on ward nurses.
- The need to develop knowledge management systems to support IT change projects.

Creativity in addressing these issues is needed as the NHS is managed through organisational structures that are determined by central government.

8. Conclusion

Dynamic capabilities (DC) research has tended to be focused upon open economies exposed to rapid technological change and has highlighted the organisational and management competences that can enable a firm to achieve optimum performance and competitive advantage. Thus, they can iteratively morph so as to maintain it. Within the context of the public sector benefits realisation, it is argued, is a DC that has to be incorporated into strategic management if IT enabled change is to deliver successful outcomes and maximum benefits for stakeholders.

Implicit in the BR dynamic capabilities framework (Figure 9) is a recognition that senior staff in the NHS can no longer rely on traditional methods of best practice in IT management but need to recognise that success requires the creation of new services and the implementation of innovative organisational forms and business models. A new genre of entrepreneurial of managers to sense and shape the future, unshackle the organisation from the past and to utilise the knowledge resource to transform the organisational structures.

There are obvious tensions and inter-relationships between the three classes of BR capability identified. The managerial skills needed to sense are quite different from those needed to seize and those needed to reconfigure and maintain optimal performance. Successful organisations must build and use all three classes of capabilities and employ them simultaneously. When undertaking IT enabled change all three classes must be represented in the top management group initiating the change, as they are unlikely to be found in one individual.

Establishing a BR dynamic capability in the English NHS or public sector is complex and not necessarily dependent on maturity and 'time served' on IT projects although these contribute to the micro-foundations of this BR capability. The opportunities to reap rewards within the

field of IT has never been greater than it is today but the complexity of the environment both nationally and internationally challenges even the most successful organisations as to the future. The BR capabilities framework (Figure 9) goes beyond the traditional approaches to understanding BR in that it recognises the processes needed to achieve good outcomes but it also endeavours to explicate new strategic considerations and decisions making disciplines. Above all, it highlights that without the appropriate people at the helm to sense, seize and transform then a benefits realisation approach to IT enabled change will continue to deliver poor results in the NHS and public sector.

In terms of future research to date, we have been collecting data on BR through in depth interviews with a number of the participants who completed our survey. The purpose of this is to better understand how some hospital trusts have developed their BR capability beyond the very basic level. This research will be presented in the near future. We also have a three-year ethnographic study in a trust that has allowed access to BR at the front line of IS implementation and has provided insight into what actually takes place within projects. This comes to an end in April 2017.

Nevertheless although this research was not specifically about maturity or stages of growth models the authors recognise that to progress this work in that direction in the future there may be a need to explore some of the more recent work in this area. Research by Gottschalk and Solli-Saether (2006) developed a maturity model for IT outsourcing relationships that contained a resource stage that appears to be congruent with some of the results in the empirical data presented here. They have also suggested that there is a modelling process for stages of growth that has the potential to create new knowledge and insights into many organisational phenomena for both researchers and practitioners alike (Solli-Saether and Gottsschalk, 2010).

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Figure 1

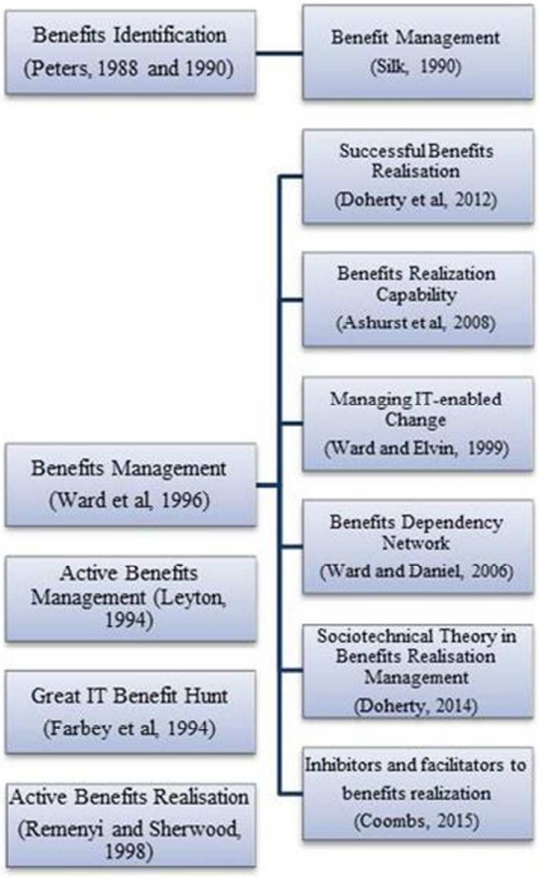


Figure 2

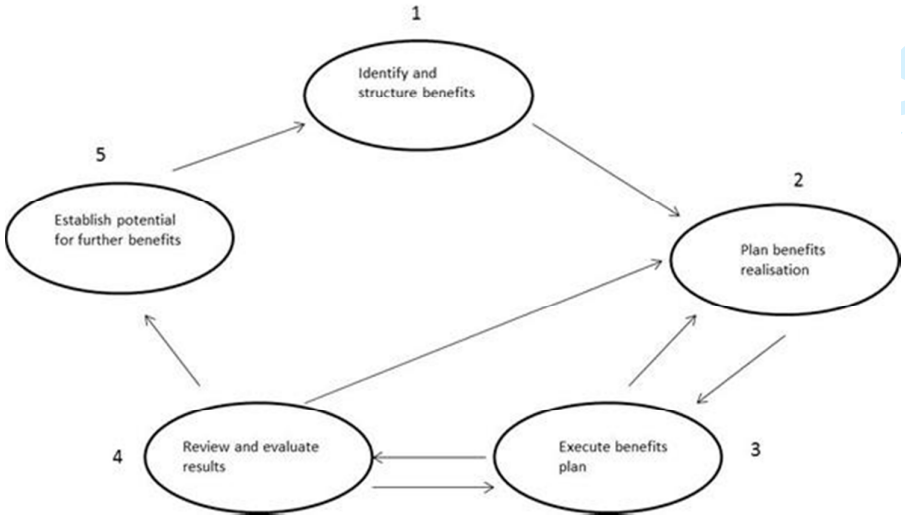


Figure 3

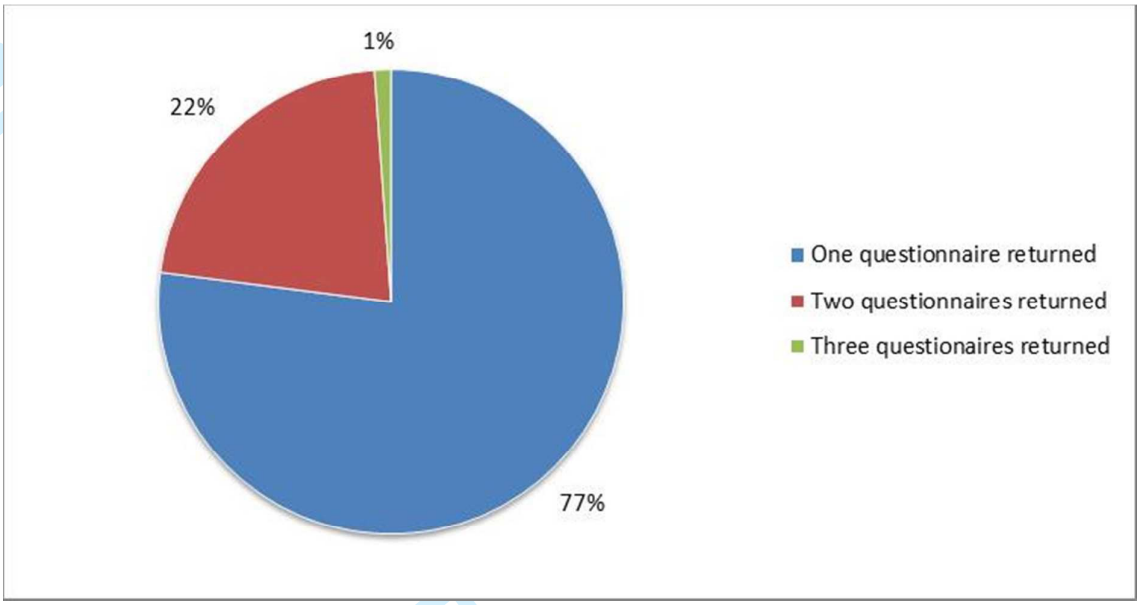


Figure 4

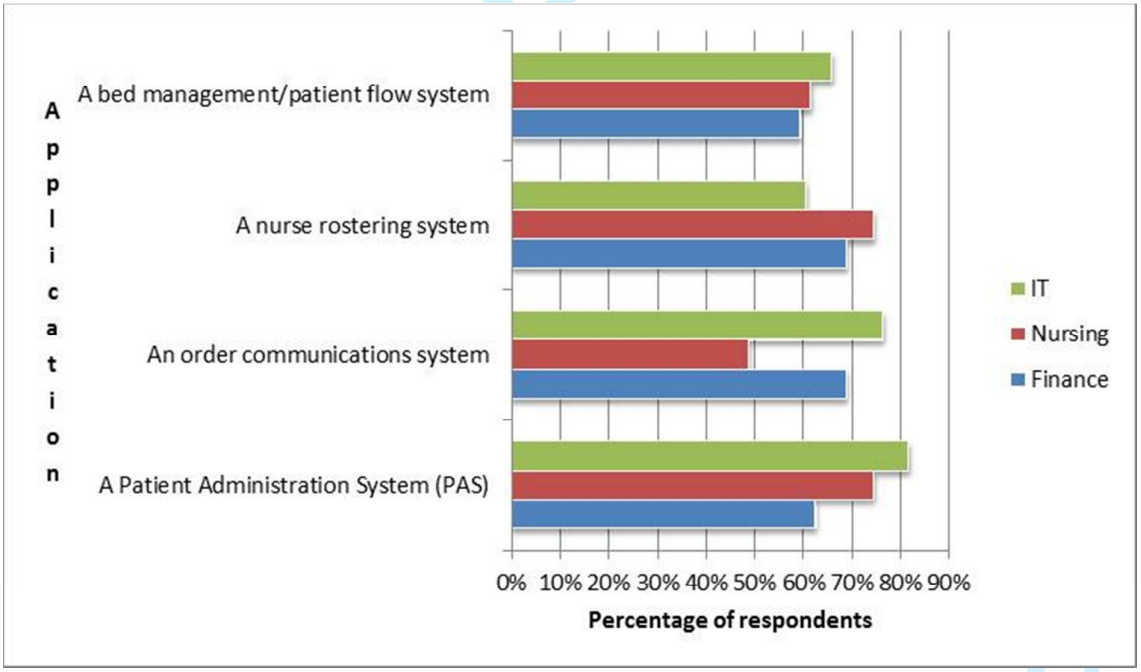


Figure 5

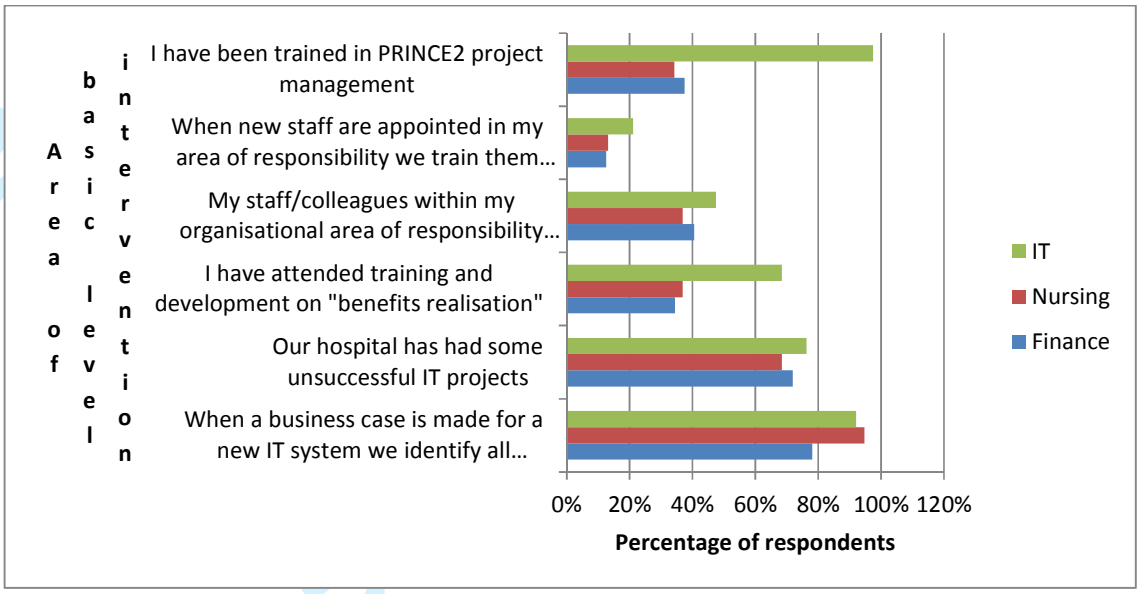


Figure 6

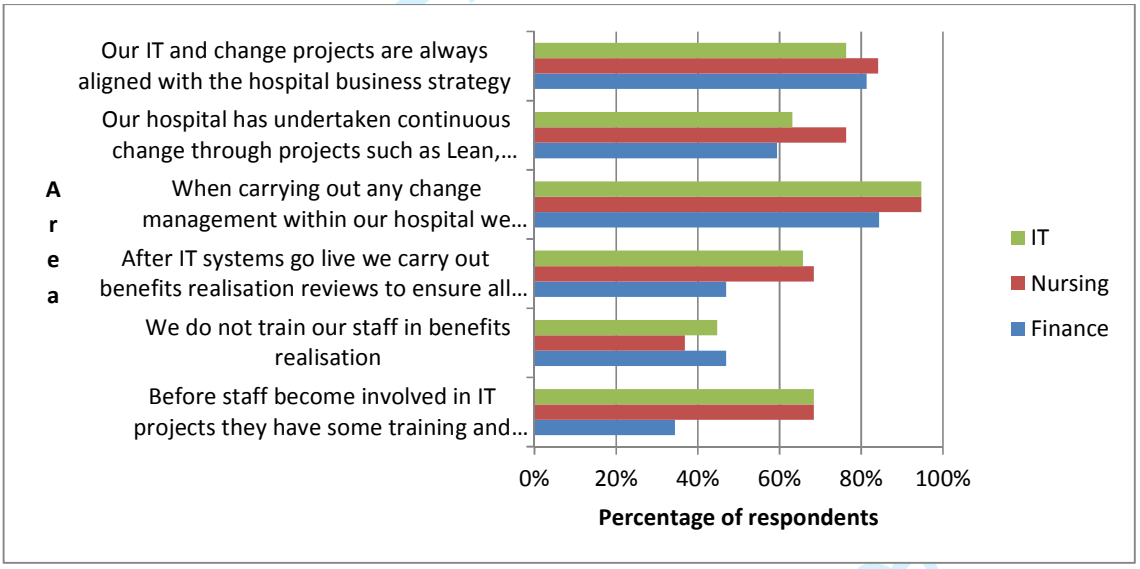


Figure 7

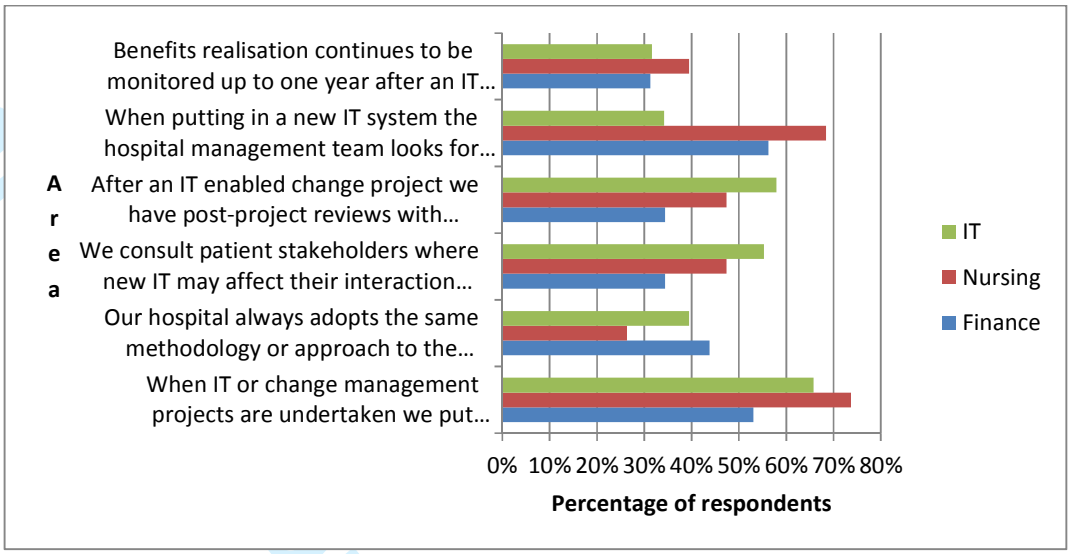

Benefits realisation continues to be monitored up to one year after an IT...
When putting in a new IT system the hospital management team looks for...
After an IT enabled change project we have post-project reviews with...
We consult patient stakeholders where new IT may affect their interaction...
Our hospital always adopts the same methodology or approach to the...
When IT or change management projects are undertaken we put...
Area
IT
Nursing
Finance
0% 10% 20% 30% 40% 50% 60% 70% 80%
Percentage of respondents

Figure 8

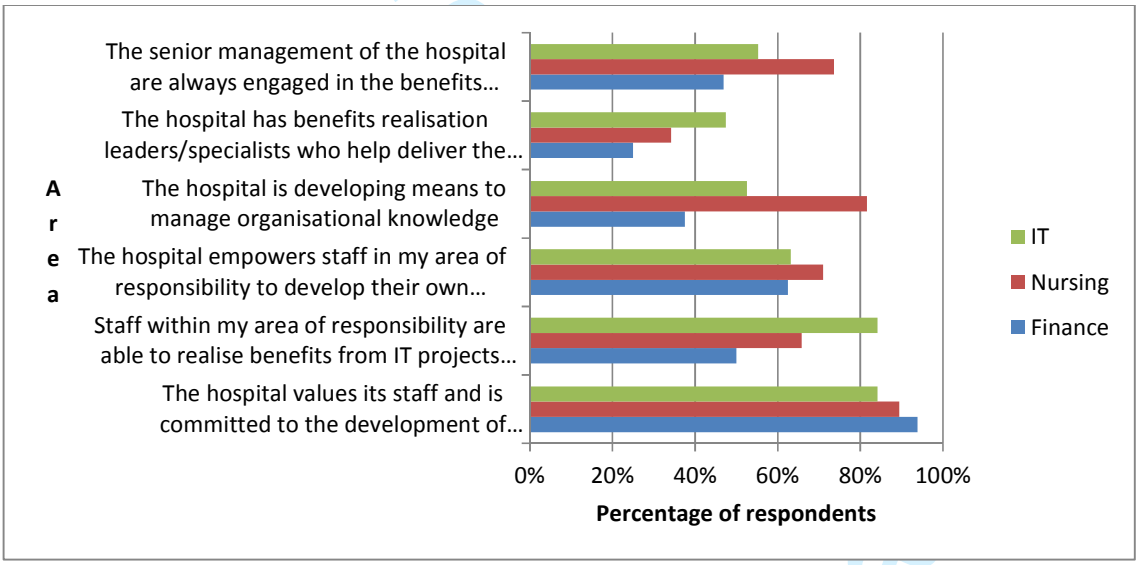
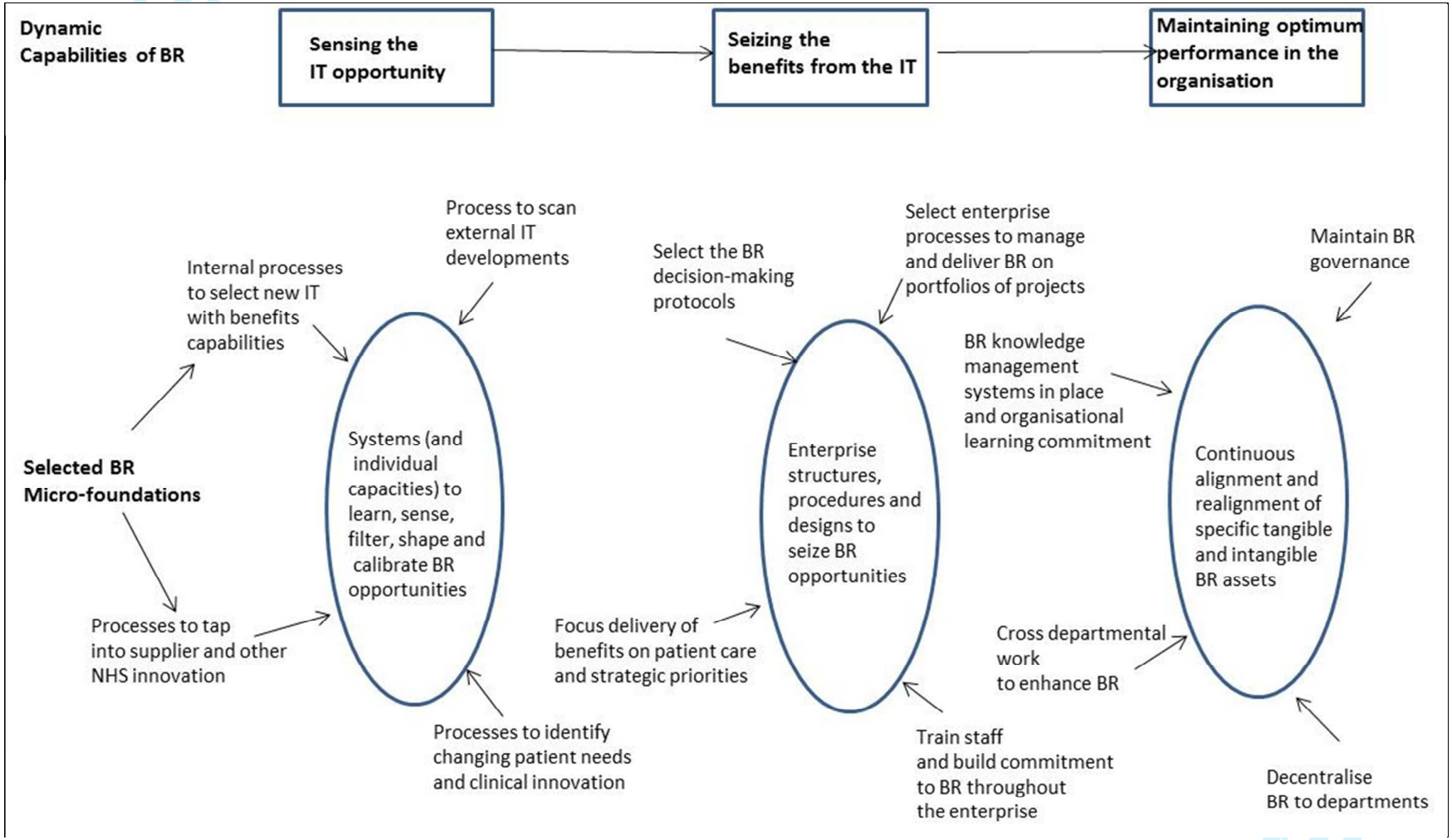

The senior management of the hospital are always engaged in the benefits...
The hospital has benefits realisation leaders/specialists who help deliver the...
The hospital is developing means to manage organisational knowledge
The hospital empowers staff in my area of responsibility to develop their own...
Staff within my area of responsibility are able to realise benefits from IT projects...
The hospital values its staff and is committed to the development of...
Area
IT
Nursing
Finance
0% 20% 40% 60% 80% 100%
Percentage of respondents

Figure 9


Dynamic Capabilities of BR
Sensing the IT opportunity
Seizing the benefits from the IT
Maintaining optimum performance in the organisation
Process to scan external IT developments
Internal processes to select new IT with benefits capabilities
Selected BR Micro-foundations
Systems (and individual capacities) to learn, sense, filter, shape and calibrate BR opportunities
Processes to tap into supplier and other NHS innovation
Processes to identify changing patient needs and clinical innovation
Select the BR decision-making protocols
Select enterprise processes to manage and deliver BR on portfolios of projects
Enterprise structures, procedures and designs to seize BR opportunities
Focus delivery of benefits on patient care and strategic priorities
Train staff and build commitment to BR throughout the enterprise
Maintain BR governance
BR knowledge management systems in place and organisational learning commitment
Continuous alignment and realignment of specific tangible and intangible BR assets
Cross departmental work to enhance BR
Decentralise BR to departments

Tables

Table 1

Factor	Level 1: Basic	Level 2: Improving	Level 3: Enhanced	Level 4: Advanced
Ability to measure success	Including all relevant costs/ benefits in the business case.	Carrying out benefits realisation reviews.	Focus on 'measuring the right things' as a driver of change.	Measures of the benefits realisation capability.
Ability to take a broader view of change	IT solution delivery	Benefits realisation from business change	Designing the approach to change for each initiative.	Creating a more flexible approach to governance, such as enabling local innovation.
Ability to sustain benefits realisation	Ongoing provision of education to maintain expertise through staff turnover.	Ongoing emphasis on improvement and incremental change.	Designing projects with greater emphasis on preparing for post-project learning.	New approaches for knowledge work scenarios.
Ability to manage the benefits realisation portfolio	Establishing control of the IT project portfolio.	Strategic alignment of a cross organisation portfolio of investments in change	Adapting the approach to projects based on the portfolio.	Emphasizing business innovation and learning.
Ability to develop the capacity for benefits realisation	Establishing a baseline of effective IT service management and a common project framework	Focus on the skills of individuals as a driver of success.	Establishing a more agile approach to projects including incremental delivery.	Developing leaders of benefits realisation.
The competence of the individuals	Localised/ individual development of skills (PRINCE2, MSP)	Broad education programs- with an emphasis on benefits realisation.	Moving from education to a broader emphasis on development and organisational learning.	Top management engagement to address this as a strategic priority.

Table 2

	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)	Mean	Level of Agreement		
							Finance	Nursing	IT
1 Our Trust/hospital is keen to adopt IT systems to support the management of resources	69%	29%	2%	0%	0%	1.33	100.0%	97.4%	97.3%
2 New IT systems cannot be purchased without making a business case	69%	27%	1%	3%	0%	1.37	100.0%	94.7%	94.7%
3 I have been involved in the adoption of a new IT system	72%	24%	3%	1%	0%	1.32	96.9%	94.7%	97.4%
4 When a business case is made for a new IT system we identify all relevant costs and benefits in terms of ROI	44%	44%	7%	5%	0%	1.71	78.1%	94.7%	92.1%
5 When making a business case for a new IT system we identify the benefits to patients	50%	45%	5%	1%	0%	1.57	93.8%	89.5%	97.4%
6 When making a business case for a new IT system we identify the benefits to staff	38%	50%	10%	1%	0%	1.73	84.4%	94.7%	86.8%
7 Our hospital has had some unsuccessful IT projects	21%	53%	17%	9%	1%	2.16	71.9%	68.4%	76.3%
8 Realising benefits from new IT systems is important to our hospital	65%	34%	1%	0%	0%	1.36	100.0%	100.0%	94.7%
9 I have attended training and development on "benefits realisation"	25%	22%	9%	36%	8%	2.79	34.4%	36.8%	68.4%
10 My staff/colleagues within my organisational area of responsibility have had training on benefits realisation	12%	30%	26%	26%	7%	2.85	40.6%	36.8%	47.4%
11 When new staff are appointed in my area of responsibility we train them in benefits realisation	4%	12%	31%	44%	10%	3.44	12.5%	13.2%	21.1%
12 Our Trust/hospital is experienced in managing IT project successfully	19%	60%	17%	4%	1%	2.08	71.9%	78.9%	84.2%
13 I have been trained in PRINCE2 project management	34%	23%	3%	29%	11%	2.59	37.5%	34.2%	97.4%

Table 3

	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)	Mean	Level of Agreement		
							Finance	Nursing	IT
14 Before staff become involved in IT projects they have some training and development by specialist trainers	16%	42%	18%	20%	5%	2.55	34.4%	68.4%	68.4%
15 We do not train our staff in benefits realisation	11%	32%	25%	27%	6%	2.84	46.9%	36.8%	44.7%
16 After IT systems go live we carry out benefits realisation reviews to ensure all benefits identified in the business case have been achieved	14%	46%	20%	19%	0%	2.43	46.9%	68.4%	65.8%
17 When carrying out any change management within our hospital we always look to identify benefits	32%	59%	6%	3%	0%	1.79	84.4%	94.7%	94.7%
18 Our hospital philosophy on benefits realisation applies to all change management projects not just IT projects	23%	46%	19%	10%	1%	2.19	75.0%	78.9%	55.3%
19 Our hospital has undertaken continuous change through projects such as Lean, Six Sigma, TQM etc.	19%	47%	19%	12%	3%	2.31	59.4%	76.3%	63.2%
20 Our IT and change projects are always aligned with the hospital business strategy	30%	51%	17%	1%	2%	1.94	81.3%	84.2%	76.3%
21 No IT projects are funded unless they have been identified to deliver strategic benefits to the hospital	28%	51%	12%	8%	1%	2.04	81.3%	84.2%	71.1%
22 This hospital recognises the delivery of IT projects is dependent on the skills of all stakeholders in those projects	26%	57%	12%	6%	0%	1.97	93.8%	84.2%	71.1%
23 The hospital supports staff to undertake management training and development in order to achieve benefits from its change projects	14%	49%	24%	11%	2%	2.38	53.1%	76.3%	57.9%
24 When IT or change management projects are undertaken we put metrics in place to measure our success in achieving the stated benefits of the projects	12%	53%	21%	14%	0%	2.37	53.1%	73.7%	65.8%
25 Our hospital always adopts the same methodology or approach to the delivery of IT enabled change	12%	24%	31%	32%	0%	2.84	43.8%	26.3%	39.5%
26 We always consult all relevant stakeholders in IT or change projects	17%	45%	21%	16%	0%	2.35	56.3%	63.2%	68.4%
27 We consult patient stakeholders where new IT may affect their interaction with the Trust	11%	35%	32%	21%	0%	2.64	34.4%	47.4%	55.3%
28 After an IT enabled change project we have post-project reviews with stakeholders to embed the learning from the project	15%	33%	25%	27%	1%	2.67	34.4%	47.4%	57.9%
29When putting in a new IT system the hospital management team looks for incremental change	8%	46%	37%	8%	1%	2.50	56.3%	68.4%	34.2%
30 Benefits realisation continues to be monitored up to one year after an IT project is completed	9%	25%	31%	30%	5%	2.95	31.3%	39.5%	31.6%

Table 4

	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)	Mean	Level of Agreement		
							Finance	Nursing	IT
31 The hospital values its staff and is committed to the development of organisational learning	51%	39%	7%	3%	0%	1.63	93.8%	89.5%	84.2%
32 Staff within my area of responsibility are able to realise benefits from IT projects through the use of metrics to measure success	18%	51%	18%	14%	0%	2.28	50.0%	65.8%	84.2%
33 The hospital empowers staff in my area of responsibility to develop their own innovative solutions to change management	18%	49%	22%	10%	1%	2.28	62.5%	71.1%	63.2%
34 The hospital is developing means to manage organisational knowledge	15%	44%	22%	18%	1%	2.46	37.5%	81.6%	52.6%
35 The hospital has benefits realisation leaders/specialists who help deliver the benefits of new IT systems	12%	24%	26%	30%	8%	2.96	25.0%	34.2%	47.4%
36 The senior management of the hospital are always engaged in the benefits realisation efforts in the Trust	16%	44%	22%	15%	4%	2.47	46.9%	73.7%	55.3%
37 Benefits realisation is a strategic priority in this Trust	19%	47%	23%	9%	2%	2.29	65.6%	73.7%	55.3%