BEREAL BENEFITS REALISATION MODEL INTEGRATED APPROACH: THE BUILT ENVIRONMENT LIFECYCLE AND ORGANISATIONAL VIEWS

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ABSTRACT

The overall performance measurement of a healthcare system should be related to benefits realisation optimisation, looking for equilibrium between resource utilization (*cost* and *time*) and *services provided* (*access* and *quality*). The built environment should be seen, not only as *context*, but also as a *resource* that enables and potentially impacts on healthcare operations efficiency, influencing care and service efficacy. Based on an extensive literature review, focus group discussion, and case studies, this paper gives a perspective of the BeReal (*benefits realisation*) model structure and, describes a selected group of benefits which are used as preliminarily performance high-level targets (*strategic benefits* and *sub benefits*), organising the basis for further characterisation of detailed (end) benefits. In line with that, the scope of the BeReal model is discussed and characterised through a selected group of criteria (i.e. through the *built environment lifecycle view*, *organisational view* and other related *dimensions*). For some of these criteria a roadmap is proposed, emphasising on further research that could lead to fundamental improvements in the BeReal model, more precisely in benefits specification and segmentation, within the context of the UK healthcare sector.

KEYWORDS

Healthcare, built environment, performance management, benefits realisation, programme development.

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1. INTRODUCTION

The overall performance measurement of a healthcare system should be related to benefits[3] realisation, looking for equilibrium between *resource utilization* (*cost*[4] and *time*) and *services provided* (*access* and *quality*). Traditionally, focus has been on *cost*, *quality* and *time* of delivery, and has not been directly related to the *benefits* desired at a projects' onset, or those delivered (or *realised*).

Not identifying or defining benefits during development/conception makes managing and monitoring them more challenging, which may lead to poor performance and ultimately to the breakdown of an organisation, programme or project (Bartlett, 2006; Reiss *et al.,* 2006; Payne, 2007). Indeed, *benefits realisation* has emerged as a method that can be used to help steer organisations away from this potentially uncontrolled/failure approach. Through the active managing, monitoring and realising of (Glynne, 2007) benefits within the healthcare system, the equilibrium between *resource utilisation* and *services* provided might become better balanced.

Since the 1980s there has been huge programme investment into the UK's education, housing, community regeneration and in particular healthcare systems. These complex public and private organisations and programmes are driven by the need to realise benefits throughout their lifecycle. Indeed, benefits realisation was originally developed to justify spending within the *IT – Information Technology* sector in the late 1980s and early 1990s (Farbey *et al.,* 1999), but has become increasingly used within other sectors and, more recently, in healthcare (OGC, 2007, Bradley, 2006).

Healthcare programmes are complex systems (Carruthers *et al.,* 2006; Sweeney and Griffiths, 2002) developed on long timescales with large number of multi stakeholders. This complexity often leads to the programme not delivering what it planned to do from the early phases of a programme. This disparity can be due to either a lack of or poor benefits management (Sapountzis *et al.,* 2008a). Benefits realisation can be used to ensure this disparity is minimized, by enabling programmes do deliver what they set out to do (Glynne, 2007), through a process that involves eliciting, monitoring, managing, measuring, and realising benefits throughout the programme lifecycle.

From this paper emerges an approach to typify the organisation and the scope of benefits, whilst establishing a proper basis for the BeReal (*benefits realisation*)

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[3]   The term benefits is used to define an outcome perceived as advantageous to a stakeholder (OGC, 2007) e.g. reduction of patients' waiting times. Whilst a *dis-benefit* is "…an outcome perceived as negative by one or more stakeholders" (Merriam-Webster, 2005; Encarta, 2005) e.g. disruption of healthcare operations during construction works. The term "Benefits Realisation Management" refers to the realisation and management of both benefits and dis-benefits.

[4]   Cost detailed quantification will not be discussed in this paper.

model. The paper discusses the theory and describes the methodology behind the segmentation of benefits as considered by the BeReal model, highlighting what has been achieved to date, throughout two major case studies: (A) *MaST – MAnchester, Salford and Trafford LIFT – Local Initiative Finance Trust* (NHS, 2008) and (B) *Brighton 3Ts – Brighton Trauma, Tertiary and Teaching* (NHS, 2008a).

In summary, this paper focuses on the following *objectives*: (1) provides an insight of how the benefits should be organised, in terms of classification and characterisation and, (2) contributes to a formal clarification of major issues subjacent to benefits, through identification of dimensions as a form of high-level scope characterisation. Complementary to these, the importance of the stakeholders diversity is highlighted and the need for developing various segmentation initiatives is discussed.

The methodology used includes a literature review and case studies as discussed in section *2. Research Method*. Section *3. Benefits Realisation, Contextualised Scope* highlights a proposed benefits organisation structure, and develops a benefit segmentation exercise applied to the two selected case studies. Conclusions and suggested (future) research directions are summarised in section *4. Conclusions*.

2. RESEARCH METHOD

Based on an extensive literature review focusing on benefits realisation and on a specific methodology (e.g. case studies, workshops, consultation with key stakeholders), this paper provides a perspective of the BeReal model. For further and general information, please visit the BeReal draft version website (see: BeReal, 2008), which is used as a major technology platform for knowledge organisation, discussion and dissemination.

BeReal model development is based upon an *action research* approach, following a cycle of planning change, acting, observing the consequences, planning further action and repeating (Kemmis and Wilkinson, 1998). The ongoing research discussed on this paper considers two case studies, both based on *action research*, to validate and inform the BeReal model. Such cases studies were developed at different phases of the healthcare programmes. *Action research* mode brings the researchers and practitioners together to produce practical results (McNeill, 2002), which can be used to assess past, current and future initiatives in relation to the benefits they set out to achieve.

Selected cases studies were developed at different phases of a healthcare programme's lifecycle – this is because the whole lifecycle of such programmes can span from 20 to 30 years, and it has not been possible to undertake a single

research initiative for this length of time. Nevertheless, between the two programmes a common pattern of six major phases is considered (Yates *et al.,* 2009): *policy setting*, *programme development*, *business case approval*, *construction*, *post project/occupancy evaluation*, and *operational*.

Table I: NHS Programme Phases, Built Environment Lifecycle and Organisational Views

Healthcare programme phases		Built environment lifecycle view			Organisational view
a)	b)	Development	Construction	Facilities	Operations & Back-office
Policy setting	PS	✓			
Programme develop,	PD	✓			
Business case approval	BCA	✓			
Construction	CON		✓		
Post project/occupancy evaluation	POE			✓	✓
Operational	OP			✓	✓

Legend: ✓ : Main focus. a) Phases as mentioned on the main references for *Case Study Phases* see: Yates *et al.* (2009). b) Abbreviations for the right-mentioned phases.

Indeed as summarised in Table I, coverage of the identified phases of a healthcare programme is comprehensive in terms of the *built environment lifecycle* view. *Policy setting*, *programme development*, and *business case approval* programme phases are related with the *development* dimension. After *construction*, *post project/occupancy evaluation* and *operational* programme phases are highly related with the *facilities* dimension and the *operations & back-office* view.

2.1. Case Studies (and Research Group)

Two major *NHS – National Health Service* case studies were selected for this phase of the research: *MaST LIFT* further referenced as *Case Study A*, and the *Brighton and Sussex 3T Development Programme* further mentioned as *Case Study B*. These cases are identified/summarised on Table II.

Case studies were selected as they were at different stages of the healthcare programme lifecycle: *Case Study A* is at the *POE – Post Occupancy Evaluation* stage and *Case Study B* is at the *BCA – Business Case Approval* stage. Benefits for both case studies were identified through *SSDP – Strategic Service Development Plans*, *LDP – Local Development Plans* and interactive workshops between key stakeholders.

The use of *multiple* case studies allows findings between the different cases to be evaluated against each other, increasing the study's robustness (Herriott and Firestone, 1983), resulting on combination of independent and yet complementary perspectives. Furthermore, the mix of a case study in a later stage and of a case study in an early stage also contributes to enable cross-validation.

Benefits that emerged from *Case Study A* were elicited by HaCIRIC researchers and relevant MaST LIFT stakeholders through workshops, from the original LIFT

plan and outline business cases; over 5 *strategic benefits* and 36 *sub benefits* were found in this *Case Study*. In *Case Study B*, 8 *strategic benefits* and 37 *sub benefits* were elicited through workshops between HaCIRIC researchers (faciliatators) and Brighton 3Ts stakeholders. Through researcher group meetings, as detailed in Table II the segmentation of the benefits from both case studies was made, as complied in Table V and Table VI. Researchers discussed where each individual benefit has more potential of being realised, whether it was in the *development*, *construction*, *facilities* or *operations & back-office* dimension. The segmentation of benefits from *Case Study B* have since been validated through workshops with the programme group, based on a consolidation approach of 682 benefits elicited during stockholders meetings that HaCIRIC researches have facilitated.

Table II: BeReal Model – Main Methodological Approaches

Characterisation of approaches		Case Study A	Case Study B	Research Group
Healthcare programme phases	:	POE	BCA	
Built environment lifecycle view	:	*development*	*construction*	
Categories of stakeholders involved	:	> 5[5]	> 5[6]	Researchers
Meeting attendees (overall n.°)	:	16	48	3
Month/year (since)	:	12/2006	09/2008	01/2009
Location	:	Salford	Brighton	Salford
Meeting facilitator	:	NHS	HaCIRIC	HaCIRIC
Stakeholders' meetings month/year	:	12/2006 and 01/2007	09/2008 and 12/2008	
Elicitation source (research)	:	Documentation	meetings	
Overall n.° of elicited benefits[7]	:	41	682	
N.° of elicited strategic benefits	:	5	8	
N.° of elicited sub benefits	:	36	37	

Note: For details on *Case Study A* see Yates and Sapountzis (2008); for *Case Study B* see Sapountzis *et al.* (2008b).

3. BENEFITS REALISATION, CONTEXTUALISED SCOPE

The built environment should be seen, not only as context, but also as a *resource* that enables and potentially impacts on patients health and wellbeing (Ulrich *et al..* 2004; Devlin and Arneill, 2003; Chaudhury *et al.,* 2005; Zeisel *et al.,* 2003; Passini *et al.,* 2000; Daykin and Byrne, 2006 as in Codinhoto *et al.,* 2008). Therefore, it is important that healthcare programmes deliver as many *benefits* as possible to all stakeholders.

3.1. BeReal Model, Brief Overview

Healthcare buildings generally have a long lifespan, starting with policy settings and ending with renewal/demolition. Such a long lifecycle provides a proper

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[5]   *Case Study A* major examples of *categories of stakeholders* involved: (1) partnership directors, (2) Centre Managers.

[6]   *Case Study B* examples of *categories of stakeholders* involved: (1) imaging, (2) cancer, (3) HIV/ infectious diseases, (4) medicine/elderly care, (5) trauma/critical care/neurosciences, (6) programme board, (7) patient representatives.

[7]   For further information on benefits organisation, please consider Figure I.

setting to realise *benefits* by using a benefits realisation management approach (Bartlett, 2006). The BeReal model helps to identify, manage and monitor benefits throughout a programme's lifecycle by providing facilitation for evidence-base decision making, continuous improvement and organisational learning (Sapountzis *et al.,* 2008a).

The BeReal model considers four main non-sequential phases (Yates *et al.,* 2009) as summarised below, and organises the benefits into a three-level hierarchical organisation as represented and further discussed in section *3.1.1. BeReal Benefits Organisation*:

- **Phase 1** – **Benefits Management Strategy & Benefits Realisation case.** This first phase is concerned with identifying desired *strategic benefits* and *sub benefits,* developing a benefits management strategy in order to share and communicate these to a wider number of stakeholders.
- **Phase 2** – **Benefits profile & benefits mapping.** Group meetings and benefits mapping workshops with the appropriate group of stakeholders are critical for the success of this phase. Identification of *end benefits*, benefits mapping and profiling form the basis of an ongoing benefits realisation plan.
- **Phase 3** – **Benefits realisation plan**. Focus is on the execution of a benefits realisation plan as developed and formulated in the previous phases, consisting of measuring and tracking the benefits previously identified (and, potentially, incorporating emerging benefits), through data collection and measurement.
- **Phase 4** – **Benefits evaluation and review**. This phase encloses evaluation/ measurement of *benefits* as these have been characterised and/or emerged through the previous phases.

3.1.1. BeReal Benefits Organisation

Benefit is a term that has many different definitions (Sapountzis *et al.,* 2008a). BeReal defines a benefit as 'an outcome whose nature and value are considered advantageous[8] by an organisation' (OGC, 2007a; Thorp, 1998; Ward *et al.,* 1995) which is owned[9] by individuals or groups who want to obtain value (Glynne, 2007).

Based on literature and *case studies* data, benefits might be organised in three main categories, as represented on Figure I. These categories which provide a structure for classification and characterisation are: *strategic benefits*, *sub benefits (or high level benefits)* and *end benefits*.

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[8]   Or disadvantageous, in case of a *dis-benefit*.
[9]   Authors note: *owned* or *realised*.

Legend: Main related phases, as mentioned on section "*3.1. BeReal Model, Brief Overview*":

- ■ - Initially developed on *Phase 1.*
- □ - Fully characterized on *Phases 2-4.*
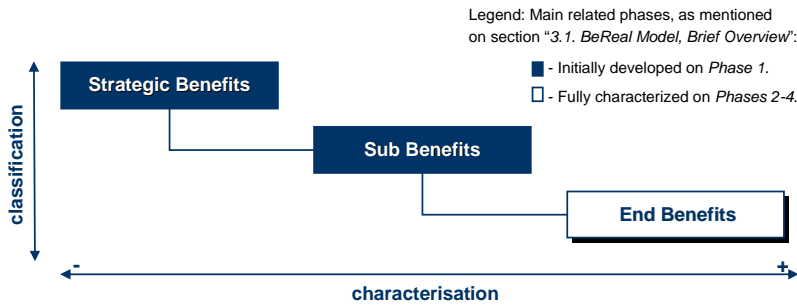
Figure I: BeReal Benefits Organisation

Strategic benefits are related with the purpose of the characterisation of the programme, providing an overall direction of success throughout the life cycle; *sub benefits* (or *high level benefits*) characterise specific targets linked to strategic benefits, and should drive design and preliminary evaluation of (design) alternatives; *end benefits* are measures that characterise in detail (e.g. hard, soft, tangible, intangible, quantitative, qualitative) the targeting and achieving of sub benefits (Sapountzis et al., 2008).

3.2. Benefits Scope and Segmentation

As represented in Figure II, benefits within BeReal might be segmented in to the following areas: (1) *development*, (2) *construction*, (3) *facilities management*, (4 & 5) *operations management* and *back-office*. Different terms are used by different sectors to describe the phases within a construction project the terms used are usually dependant "upon the procurement route adopted, the lead discipline and the way in which the project is managed" (Dallas, 2006). Although these differentials exist, the meaning of the phases remains relatively similar.

Legend:
- ■ Organizational view
- □ Built environment lifecycle view

operations management

development & construction

facilities management

back-office management

Figure II: BeReal Scope Integrated Five Dimensions

The *development* and *construction* dimensions lie under a *project* approach since they temporarily endeavour to create a unique product or service, considering the overall scope of work being performed to complete a specific job (Construction Place, 2005; Phillips, 2004). Construction management consists in organising and directing men, materials and equipment to accomplish the purpose of the designer (Construction Place, 2005). Both these areas are related with project management

since they should include the processes of planning, organising, integrating, and overseeing to assure that the programme's objectives are achieved and the system is implemented according to expectations. From a resource view, this includes directing and coordinating human and material resources throughout the life of a project (Senn, 1998).

Operations management is related with day-to-day business activities that facilitate the achievement of a business's prime function (e.g. production of goods, delivering healthcare, outbound logistics). Following this perspective, *operations* are considered distinct from other business activities, such as *financing* (e.g. raising money by issuing stocks and bonds) and *investing* (e.g. acquiring another company or selling off a subsidiary).

Tables III and IV illustrate the strategic benefits and sub benefits identified for *Case Study A* and *Case Study B*, segmented into *development*, *construction*, *facilities*, *operations* & *back-office*. It is important to point out that one benefit may relate to different dimensions.

In line with the views held and as represented in Figure II, the criteria related to the *built environment lifecycle view* will be further discussed and characterised in section 3.2.1. Whilst those dimensions related with the *organisational view* are covered by section 3.2.4.

3.2.1. Built Environment Lifecycle View

The built environment lifecycle view is considered as being constituted by three dimensions: *development*, *construction*, and *facilities* management.

Development comprises the policy setting, programme development and business case approval stage, also known as the pre-project and preconstruction phases (Kagioglou *et al.,* 1998). The *development* of a project/ programme is where/when the clients' needs are defined and solutions developed. Financial approval must be gained at this point for the business case to be approved. Examples of elicited benefits from the case studies, related to this dimension include: *strategic fit and contextual* (Sapountzis *et al.,* 2008b) and *development (and implementation)* (Sapountzis *et al.,* 2008b).

Construction relates to the physical production of the project solution (Kagioglou *et al.,* 1998). *Construction* can include new construction or renewals of existing built environments, as one of the first stages of the built environment life cycle under a continuous asset, property and facility management and transaction activities (e.g. *operations* management).

Furthermore, *construction* is highly influenced/dependent with the *development* dimension, since if communication during the *development* has been effective

there should be very little need for changes at this point. Through increase communication between stakeholders during *construction* the efficiency of the supply-chain might be improved (Dallas, 2006). Example of a *sub benefit* (selected from the case studies) related to this dimension: *construction negative impact* (Sapountzis *et al.,* 2008b).

According to the *IFMA – International Facility Management Association* (2009) the definition of *facility management* is: "… a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, process and technology". Generally, *facilities* management services are divided into: *hard services* and *soft services*; selected examples are compiled in Table III. Example of a *sub benefit* selected from one of the case studies, related to this dimension: *removal of backlog maintenance* (Yates and Sapountzis, 2008).

Table III: Facilities Management Services Examples

Hard Services	Soft Services
• HVAC operation and management. • Plumbing and water supply. • Sewage management/treatment. • Building signage management. • Waste management. • Cabling and data/voice infrastructure.	• Cleaning, catering, vending supplies. • Building information technology. • Concierge and security management. • Consumables/office supplies, printing/copying, archiving and paper storage. • Travel agency, transport and chauffer services.

Examples adapted from: (Croner, 2008).

3.2.4. Organisational View

In line with the discussions held on section *3.2. Benefits Scope and Segmentation* and as graphically represented in Figure II, the following paragraphs describe the two dimensions related with the *organisational view* (*operations management* and *back office*), are further characterised.

According to Heizer *et al.* (2006), *operations management* comprehends "… the set of activities related to the creation of goods and services through the transformation of inputs to outputs." Based on Tzortzopoulos *et al.* (2008) *operations management* might be summarised as focusing "…on understanding and improving processes, identifying problems and route causes, making waste and inefficiencies visible, supporting appropriate value generation and enabling organisational learning" (Liker, 2004).

Its principles have been adopted in manufacturing, construction and healthcare aiming at increasing the efficiency and effectiveness of the production and delivery of goods and services (Koskela, 2000; Head, 2003; Davis and Heineke, 2005; Chase and Apte, 2007)". Indeed, *operations management* has its origins in production study or manufacturing management, having been proposed three-typified *operations management* levels as discussed below (Lowson *et al.,* 2003).

- **1st level definition** – The design, operation and improvement of the systems that create and deliver the firm's primary product and service combinations (i.e. every organisation that offers goods or services performs *operations*).
- **2nd level definition** – The design, operation and improvement of *internal and external* systems, resources and technologies that create and deliver the firm's primary product and service combinations. This definition expands the *operations management* concept beyond internal production or manufacturing, encompassing other activities such as (Stevenson, 2002): purchasing, distribution, product and process design, etc. In some cases, there will also be external managerial responsibilities at a supply network level (Stevenson, 2002), covering a number of interconnections between external firms. Furthermore, Slack *et al.* (2001) argue that it should be considered a broader viewpoint that will take account of all firms' activities that have any connection with the delivery of a service on a day-to-day, on a make-it-happen basis.
- **3rd level definition** – The design, operation and improvement of *internal and external* systems, resources and technologies that create and deliver product and/or service combinations *in any type of organisation* (Pinto, 2006). Such definition includes manufacturing and non-manufacturing firms (i.e. the service sector: whether profit or non-profit making) and, more important, covers organisation's activities and systems, whether performed by an individual, group, unit or department (e.g. marketing, sales function can also be viewed as an operational activity); this also gives us the notion of internal consumers and suppliers. All organisation's activities will create a product and service combination (the latter might include information) supplied to either an internal or external consumer. Similarly, other internal/external suppliers will also support these activities.

Moreover, *operations management* is one of the three functions all organisations perform (Heizer *et al.,* 2006): "(1st) *marketing/sales*, which generates the demand, or at least takes the order from a product or service…(2nd) *production/operations*, which creates the product. (3rd) Finance/accounting, which tracks how well the organisation is doing, pays the bills, and collects money." Examples of *benefits* identified from the case studies, related with the *operations management* dimension include: *healthcare services delivery/implementation of services* in a *hospital context* (Sapountzis *et al.,* 2008b) and *training, teaching and research* in a *hospital-university context* (Yates and Sapountzis, 2008).

Having presented the *operation management* functions and processes, and considering that *back-office* scope should be complementary (so all organisational functions are covered/considered), *back-office* should include all those functions and processes dedicated to run a company (or a healthcare unit), as mentioned on Table IV.

Table IV: Back-office – Selected References

Functions a)	b)	Selected References (Silva, 2003)	(Lima, 2008)	(A. T. Kearney, 2009)
Information systems	1	✓		
Information technology				✓
Human resources	2	✓		✓
Human resources management			✓	
Personnel allocation and payroll			✓	
Legal	3			✓
Purchasing/procurement	4			✓
Accounting	5	✓		
Controlling		✓		
Financial and accounting control			✓	
Finance				✓
Treasury		✓		
Invoicing and receiving			✓	
Office services	6			✓

Legend: ✓ : Mentioned/considered. a) Functions as mentioned on the references. b) Emerging consolidated functions – see next paragraph.

Example of a *benefit* from one of the case studies, related with the *back-office* dimension: *increased training opportunities* (Yates and Sapountzis, 2008). Main back-office functions considered by the *research (focus) group* are those five that emerged from the previous table: (1) *information systems*, (2) *human resources*, (3) *legal*, (4) *purchasing and procurement*, (5) *finance and accounting* and other (6) *office services*.

Nevertheless, based on the discussions held on *operations management* and *back-office* management, it is not yet fully clear, for example, which of these *purchasing and procurement* would lie under. Keeping this intersection between the *organisational view* contents in mind, the analyses and discussions developed in this paper are under a consolidated/joint approach (i.e. for *operations management* and *back-office*).

Table V: BeReal Model – Case Study A Benefits Segmentation

Legend: ✓ – Where each programme's benefits have more potential to be realised.
▶ – Strategic benefits. ▶▶ – Sub benefits (or high level benefits).

Benefits			Built environment lifecycle view			Organisational view
			Development	Construction	Facilities	Operations & Back-office
1.	Improved Patient Services	▶		✓	✓	✓
1.01	Improved patient experience	▶▶			✓	✓
1.02	Better access to facilities (product)	▶▶		✓	✓	
1.03	Greater privacy	▶▶				✓
1.04	More services in 1 place (co-location)	▶▶			✓	✓
1.05	Improved health outcomes	▶▶				✓
1.06	Greater access (service)	▶▶				✓
1.07	Less waiting	▶▶				✓
1.08	New services	▶▶			✓	✓
1.09	Care closer to home	▶▶				✓
1.10	Increased patient choice	▶▶				✓
2.	Time Cost Quality	▶	✓	✓	✓	✓
2.01	Faster Procurement	▶▶	✓	✓		
2.02	Faster delivery from concept to operation	▶▶	✓	✓	✓	✓
2.03	Removal of backlog maintenance	▶▶			✓	
2.04	Non-interruption of service product	▶▶		✓		
2.05	Predictability of time cost delivery	▶▶	✓			
2.06	Actual time cost delivery	▶▶		✓	✓	✓
2.07	Flexibility and future proofing	▶▶			✓	✓
2.08	Cost savings due to co-location	▶▶			✓	✓
2.09	Lower total running costs	▶▶			✓	✓
3.	Contribution to Regeneration	▶		✓	✓	✓
3.01	Investment into deprived areas	▶▶		✓	✓	✓
3.02	Higher local employment	▶▶		✓	✓	✓
3.03	Improved community facilities	▶▶			✓	
3.04	Improved economic activity	▶▶		✓	✓	✓
3.05	Sustainable environment (economic)	▶▶		✓	✓	✓
3.06	Sustainable environment (social)	▶▶		✓	✓	✓
3.07	Better links with other services – "cause and effect"	▶▶				✓
4.	Improved Staff Satisfaction	▶			✓	✓
4.01	Better working environment	▶▶			✓	✓
4.02	Incentives	▶▶				✓
4.03	Reduced absences	▶▶				✓

Table V: BeReal Model – Case Study A Benefits Segmentation

Legend: ✓ – Where each programme's benefits have more potential to be realised.
▶ – Strategic benefits. ▶▶ – Sub benefits (or high level benefits).

Benefits		Built environment lifecycle view			Organisational view
		Development	Construction	Facilities	Operations & Back-office
4.04	Increased career prospects ▶▶				✓
4.05	Increased training opportunities ▶▶				✓
4.06	Higher level of staff retention & increased corporate learning and memory ▶▶				✓
5.	Better Partnership/Continuous Improvement ▶	✓	✓	✓	✓
5.01	People working together on many schemes (greater understanding, reduced cost and time; better relationships, less conflict management) ▶▶			✓	✓
5.02	Increased quality between schemes ▶▶			✓	✓
5.03	Value for Money Improvement from Scheme to Scheme ▶▶			✓	✓
5.04	Access to finance ▶▶	✓	✓		✓

Main references: (Yates and Sapountzis, 2008) <———⌐> *Research (focus) group*

Table VI: BeReal Model – Case Study B Benefits Segmentation

Legend: ✓ – Where each programme's benefits have more potential to be realised.
▶ – Strategic benefits. ▶▶ – Sub benefits (or high level benefits).

Benefits		Built environment lifecycle view			Organisational view
		Development	Construction	Facilities	Operations & Back-office
1.	Strategic Fit (and Contextual) ▶	✓	✓	✓	✓
1.01	Stakeholders alignment ▶▶	✓			
1.02	Synergy of services ▶▶			✓	✓
1.03	Context development ▶▶		✓	✓	✓
1.04	Co-location / distribution ▶▶		✓	✓	✓
1.05	Image, reputation, objectives ▶▶	✓	✓	✓	✓
1.06	Appropriate location (and access) ▶▶			✓	
2.	Clinical Outcomes ▶			✓	✓
2.01	Reduce referrals ▶▶				✓
2.02	Improved quality of care ▶▶			✓	✓
2.03	Improve care outcomes ▶▶				✓
3.	Appropriate Facilities (and Facilities Management) ▶			✓	✓
3.01	Fit-for purpose building & infrastructure ▶▶			✓	✓
3.02	Facilities flexibility and future proofing ▶▶			✓	✓
3.03	Physical distribution of service locations (layout) ▶▶			✓	✓

Table VI: BeReal Model – Case Study B Benefits Segmentation

Legend: ✓ – Where each programme's benefits have more potential to be realised.
▶ – Strategic benefits. ▶▶ – Sub benefits (or high level benefits).

Benefits			Built environment lifecycle view			Organisational view
			Development	Construction	Facilities	Operations & Back-office
3.04	Improved support services	▶▶			✓	
3.05	Increased patient/user safety	▶▶			✓	✓
3.06	Greater privacy (by better design)	▶▶			✓	✓
3.07	Removal of backlog maintenance	▶▶			✓	
3.08	Better working environment	▶▶			✓	✓
4.	Access to Services	▶			✓	✓
4.01	Service diversity/capacity fit	▶▶				✓
4.02	Increased physical access	▶▶		✓		
4.03	Increased availability of services	▶▶				✓
5.	Training, Teaching & Research	▶				✓
5.01	Improved research capability	▶▶				✓
5.02	Improved teaching	▶▶				✓
5.03	Knowledge transfer	▶▶				✓
6.	Use of Resources	▶			✓	✓
6.01	Better equipment/recourses (technology)	▶▶			✓	✓
6.02	Better personnel	▶▶				✓
6.03	Improved efficiency	▶▶			✓	✓
6.04	Cost savings	▶▶			✓	✓
7.	Operations Management	▶			✓	✓
7.01	Improved service coordination	▶▶				✓
7.02	Preventive health services	▶▶				✓
7.03	Improved user experience	▶▶			✓	✓
8.	Development and Implementation	▶	✓	✓	✓	✓
8.01	Investment / change management effort	▶▶				✓
8.02	Construction negative impact	▶▶		✓		
8.03	Planning ability	▶▶	✓	✓	✓	✓
8.04	Sustainability	▶▶			✓	✓
8.05	Development feasibility	▶▶		✓		
8.06	Reduce service interruption	▶▶		✓		
8.07	Faster delivery (up to operation)	▶▶	✓	✓		

Main references: (Sapountzis *et al.,* 2008b) <——⌐—> *Research (focus) group*

4. CONCLUSIONS

Major conclusions have emerged through this paper and can be related back to the objectives initially identified: (1) provide an insight of how the benefits should be organized, in terms of classification and characterisation and, (2) contribute to a formal clarification of major scope dimensions subjacent to the BeReal (benefits realisation) model.

Main emerging conclusions are:

(1) Benefits organisation – As represented on Table V and Table VI, the i*mportance of a three-level typology of benefits* has been used and verified as useful in both case studies (emerging from different phases of the *built environment lifecycle*), as follows:
- *Strategic benefits* are related with the purpose of the (high-level) characterisation of the programme, providing an overall direction of success throughout the life cycle.
- *Sub benefits* (or *high level benefits*) characterise specific targets linked to *strategic benefits*, and should drive design and the preliminary evaluation of (design) alternatives.
- *End benefits* are measures that characterise in detail (e.g. hard, soft, tangible, intangible, quantitative, qualitative) the targeting and achieving of sub benefits.

(2) Scope clarification – According to the selected case studies both *built environment life-cycle* and *organisational* views impact/are considered during the *benefits elicitation* activities. Scope conclusions emerge from research (*focus*) *groups* segmentation contents, as summarised by Table V and Table VI.

Complementary, it can be said that a **diversity of stakeholder views** will certainly positively contribute to a comprehensiveness of benefits. Indeed, as stated by Hall (2001), it is important to have the involvement of all relevant stakeholders from the outset and throughout a programme to ensure its success; having a group of multi-stakeholders that range from the *top level* (e.g. partnership director) to the operational (such as centre managers) gives a broad overview of the programme.

In order to assure diversity of views, different stakeholders should be involved in benefits elicitation events (see case study information in Table II). Contributing for a better coverage, benefit **segmentation initiatives** should be developed, not only considering (1) **scope** comprehensiveness and (2) stakeholders' participation, but also should enclose (3) a proper **benefits organisation** of overall elicited benefits (e.g. more than six hundred, as on *Case Study B*), using each of the three

levels, depending on the programme phase and on the *built environment lifecycle* view dimension.

4.1. Further Research

This section encloses a research roadmap proposition, emphasising on a selected group of emerging research initiatives that, if considered, might lead to fundamental improvements in the benefits realisation and related knowledge (manly in terms of segmentation, specification and measurement) applied to the UK healthcare sector context.

Stakeholders – Meetings and benefits elicitation workshops with groups of stakeholders are critical for success (Yates *et al.,* 2009). Considering the historical groups of stakeholders, considered by the NHS, and having in mind those having the potential to elicit and/or realise benefits, a major identification and categorisation of relevant stakeholders needs to be developed. This approach will consider a diversity of stakeholders covering the *built environment lifecycle* view (e.g. *construction*) and the *organisational view* (e.g. *operations*) related dimensions.

Benefits reference model – In full alignment with BeReal's three-levels of benefits, further work needs to be done on identification of measures that characterise in detail (hard, soft, tangible, intangible, quantitative, qualitative) the targeting and realising of sub benefits; this detailed level of benefit is referred to as an *end benefits* within the BeReal model. (Dis)similarities between *requirements engineering* and *benefits realisation* fields of knowledge should be further discussed. The development of a benefits management tool should also be considered, including methods for tracking and reporting changes related to each benefit.

Benefits criteria and attributes – Additional work on the identification of benefits' attributes need to be done (e.g. hard, soft, tangible, intangible, quantitative, qualitative), specifically regarding how these should be detailed under an *end benefits* level approach. Other criteria/attributes should be considered, as follows: timeframe (e.g. long, medium, short term), context interaction (e.g. external/macro environment, structural/building, internal/ interior).

Profile, mapping and overlapping – Proposed initiatives should involve developing a *benefit profile* and a *benefit dependency map*. *Profiles* should provide details/attributes about each benefit: definition, benefit organisation (level), dependencies/overlapping, timeframe, etc.; a *dependency map* should be created to act as visual management tool, highlighting dependencies/overlapping of scopes.

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