Kagioglou, M., and Tzortzopoulos, P. (2016). "Benefits Realisation: An Investigation of Structure and Agency" In: *Proc. 24th Ann. Conf. of the Int'l. Group for Lean Construction*, Boston, MA, USA, sect.4 pp. 183-192. Available at: <www.iglc.net>

BENEFITS REALISATION: AN INVESTIGATION OF STRUCTURE AND AGENCY

Michail Kagioglou[1] and Patricia Tzortzopoulos[2]

ABSTRACT

The last 3 decades have seen significant developments in all aspects of process management and New Product Development (NPD) in the Built Environment. Many of the characteristics of NPD models have been challenged and new key principles are emerging as necessary for success. The issue of delivering benefits rather than just tasks and processes has become more prominent also.

Previous work related to NPD and Benefits Realisation has focused on the representational and process aspects of their implementation. This paper extends these notions and in particular introduces and explains 'structure' and 'agency' as they are understood in social sciences. In particular the notion of 'structure' will be presented as part of the overarching imperative for action and the actors involved in both undertaking and enacting processes.

Finally, the paper concludes in describing how research should be undertaken within the particular context of benefits realisation. The Unique Adequacy (UA) requirement of methods is critical in researching benefits realisation. As such, researchers need to be competent (in theory and practice) of and in the context, which they investigate. Implications for future research are also identified.

KEYWORDS

Benefits realisation, structuration theory, value, process, new product development.

INTRODUCTION

The area of NPD has been highlighted as a key competitive force for any organisation. Within the Built Environment in general and in construction more specifically NPD has been investigated form a number of perspectives, all of which aim to optimise the process of NPD and deliver 'value' to customers, both internal and external (Kagioglou et al. 2000). Recent changes to NPD processes over the last 15-20 years have primarily focused on sequencing or structure of activities (Cooper 1994; Cooper and Sommer 2016), the timing

[1] Professor of Process Management, Art, Design and Architecture, School., Dean, Univ. of Huddersfield, Huddersfield, HD1 3DH, UK, +44 1484472289, m.kagioglou@hud.ac.uk

[2] Professor of Integrated Design, Architecture and 3D Design, Depart., Head of Department and Director of the Innovative Design Lab, Univ. of Huddersfield, Huddersfield, HD1 3DH, UK, +44 1484472281, p.tzortzopoulos@hud.ac.uk

of activities in relation to stakeholder involvement as well as broadening the scope of the process as it is understood by different groups. This paper briefly presents these developments and extents the traditional view of NPD to that of Benefits Realisation Management (BRM) as a means of ensuring that overall project and programme benefits are delivered consistently. Much of recent research has focused on the representation of NPD and BRM processes with some understanding and incorporation of change. The theoretical foundations for how change and process representations co-exist is not very well understood. The paper introduces the structuration theory, which originated in social sciences as a potential candidate in providing the theoretical foundation for enacting NPD and BRM processes and how 'duality' of process and action is paramount for the future rather than the narrow and flawed current 'dualism' paradigm.

NPD IN BUILT ENVIRONMENT AND CONSTRUCTION

NPD can be defined as (adapted from Kagioglou et al. 2000): The process by which an outcome (tangible and/or intangible) is produced to satisfy a (implicit or explicit) need/want as identified by a customer (individual, group or stakeholders groups) through the planning and organising of resources (human, capital, financial, etc.). There are many different models of NPD that have been produced all of which have embedded within them both implicit and explicit logics and philosophies. This section briefly describes their main characteristics and progress made in each area.

WHAT IS THE STARTING AND FINISHING POINT?

The starting and finishing points of NPD processes are largely dependent on the context within companies use them. For example, in construction where the client procures a building NPD processes normally start form pre-procurement and contract award i.e. feasibility/concept development to the delivery and handover of a building. Hence, this project focus of NPD processes (endemic in construction) is designed to accommodate the project delivery. Typical examples of such processes include the RIBA plan of works prior to 2013's version (www.ribaplanofwork.com), which has been prominent in UK construction for decades.

Over the last decade or so more holistic NPD models have started to be developed which aim to accommodate two important issues. The first is to recognise that projects and programmes are there to deliver change and fit around an overall business model and strategy with expected results. As such, issues of strategic intent, business model development, feasibility aspects have started to be developed which do not assume that a building is always the right answer to a specific business need. In doing so, a more thorough investigation is necessary to examine all options. On the other hand, at the end of a project the whole aspect of operations, maintenance and decommissioning are making their appearance as part of a drive to consider whole life costing issues, sustainability, operational costs vs. capital costs, etc. The latest revision of the RIBA plan of works (www.ribaplanofwork.com) is a great example of how such issues should be considered. 'Seeing the whole' NPD processes are now prominent.

WHAT IS IN AND WHAT IS OUT?

The content of NPD processes in terms of what needs to take place and at what stage is also different. There is a proliferation of models, which include anything from 6-7 steps to more than 30. There is still an apparent confusion about what is the purpose of an NPD model, at what level of the organisation is used at e.g. senior management, portfolio and project reviews, etc. and therefore there are still operational processes that are looked at and considered as strategic and vice-versa. This distinction can have significant implications, especially for repeat clients and those organisations that are interested in overall system improvements time after time.

INTERNAL LOGIC AND 'SPIRIT' OF NPD PROCESSES

There are two key distinctive characteristics that can exemplify the logic of NPD processes and identify their 'spirit'. The first characteristic has to do with how different stages and phases are enacted in the process. For example in traditional processes e.g. waterfall models, the stages are distinct form each other and followed the traditional over-the-wall approach. To resolve the 'over the wall' deficiencies NPD processes developed in two ways. The first had to do with overlapping stages and the second with progressive fixity deliverables or outcomes. In the former case, the notion of 'fuzzy or overlapping stages was introduced (Cooper 1994) where instead of handovers between stages (some) activities are allowed to overlap stages so that other activities from subsequent stages can be initiated. This approach has proved to be popular and it manifested in various ways in different models. For example, it helped the planning of the 'fuzzy' front end of design processes where there is still much ambiguity about what needs to be realised and through which schemes (Cooper 1994). It also forced projects to bring about specific expertise and actors in the process together to provide more complete solutions.

The second aspect of progressive fixity enabled activities to 'exist' through stages and develop incrementally until either a full solution has been identified or the best solution up to that point has been identified with the former being a measure of satisfaction the latter being a compromise. Both are valid approaches for different reasons.

FORMALITY VS INFORMALITY

The area of formality or informality of processes is very important. There is normally an implicit assumption that formality relates to large and complex organisations and informal to small and fairly straight forward organisations/projects. This might indeed be the case in most circumstances. Cooper and Sommer (2016) have recently introduced the concept of agile stage-gate hybrid models where they identify, briefly, when each model should be used. For example, they claim: agile fits better when 40%-70% of final design parameters are defined prior to development, whereas it requires more that 90% in formal/traditional processes; when the product specification is established in general, upfront agile works best as opposed to when it is established in detail where formal processes work better, among other features. In terms of the overall approach Cooper and Sommer (2016) also identify agile as an evolutionary process based on frequent design-build-test iterations, milestone releases and beta versions with actual customers, continually reprioritising

features. Traditional but efficient phase-gate processes are well defined with clear entry/exit criteria, explicit tasks and deliverables and rigorous checkpoint review meetings and monitoring happening according to plan.

PLANNING AND/OR ORGANISING

Johnson and Brennan (1996) in their seminal paper state that " …the widely held but conceptually flawed motion that activity proceeds via the implementation of plans, informs the idea that a strong causal connection between management and goals and operational activity can be established through representation and plan generation." They go on to state/highlight that " From the manager's point of view adoption of the management-as-organising approach may be accompanied by a feeling of loss of control because a tight coupling between management goals and operational activity is denied. However, we have argued that such a coupling is not feasible and therefore the feeling of control engendered by the management-as-planning approach is largely illusionary." Indeed, they use Lean Manufacturing as an example of management-as-organising "…where the systems are largely reactive and production scheduling relies on the structuring of the physical environment rather than the planning environment of the teams." Dant and Francis (1998) have also looked at the issue of planning and suggested an interactional approach to planning in organisations by comparing and contrasting the relevance of the rationalist and the contingent models of planning concluding that "…neither model is adequate to describe the process of planning activity which is always a practical and situated activity whose character emerges in the process of interaction." Therefore, it is quite clear that the role of NPD models has some representational value, which can lead to planning activity, which however does not constitute action. Activity is situated and therefore can only be understood through the impact of agency. The paper expands on this issue by considering at structuration theory and Benefits Realisation.

OUTPUTS VS OUTCOMES

In addition to the flawed assumption that planning equals action and that causality exists between management and operational activity, there is an equally flawed assumption that project plans deliver outputs and outcomes. This flawed assumption exists at two levels. At the first level there is the whole contested area of project success (Serra and Kunc 2015) and what actually translates to with the – appropriate – criticism of the traditional project management practices (Koskela and Howell 2002). At the second level there is the implied assumption that the delivery of a project will automatically deliver the required business outcomes. It is very important to stress that any NPD process will need to look at the relationship between project outputs and outcomes and fuse the two as part of an integrated whole. Reiss et al. (2006) emphasize that there is a path from projects to benefits: projects have outputs and the combination of different outputs generates the capabilities that enable the desired benefits to be achieved. According to Maylor et al. (2006), without the effective transition from outputs to outcomes, products and services remain only capabilities, or potential sources of benefits.

KEY PRINCIPLES FOR NPD PROCESSES

The discussion up to now has highlighted a number of areas that are pertinent when considering NPD processes as representational models and maps which can guide projects through to completion as well as the embedded thinking in these models and how they specifically relate to organising and action towards delivering outcomes. It is possible therefore to identify the following as key principles for an NPD process:

1. Seeing the whole – from cradle to grave
2. Customisable / flexible and consistent of its principles
3. Progressive fixity of activities
4. Coordination / Orchestration of process (linking planning to organising)
5. Organises actors for delivery and synthesising the knowledge base
6. Feedback loops and learning
7. Aiming to realise project/programme outcomes and benefits

The following sections will expand on point (7) and also introduce the theory of structuration as a means of explaining and articulating the conceptual/theoretical bridge between NPD process representation and realisation.

BENEFITS REALISATION MANAGEMENT

Benefits realisation Management (BRM) is defined by Bradley (2006) as: an outcome of change, which is perceived as positive by a stakeholder. Breese (2012) locates the BRM growth to the growth of change management and also performance management paradigms in management studies. The approach assumes right form the outset that coordinated action can introduce a sense of causality between action and outcome, which can be predictable. This need for predictability arose from the failures of many projects and some argue of project management in general, to deliver strategic benefits (Mir and Pinnington 2014; Badewi 2016). It is within this framework that traditional approaches to delivering on cost, time and quality become obsolete both as concepts and also as practice. BRM aims to bridge link between defined strategic benefits and project/programme management.

Tillmann et. al., (2009) identified the following reasons for the need for BRM:

1. Vagueness of benefits definition, tracking and allocating responsibility for delivery
2. Definition of client and stakeholder groups as well as their influence on the realisation of benefits
3. Long delivery timescales involved between benefits definition and realisation
4. Lack of making explicit identifiable interdependencies
5. Lack of explicit and correct actions taken to manage change

Although BRM was designed to accommodate the above deficiencies, it is argued by Breese (2012) that because it is located within the ‘modern paradigm’ of management science, it has seven supporting themes as identified by Darwin et al (2012) and adapted below:

1. Logic: assumption that by planning a good outcome it can automatically be realised
2. Linear Thinking: one activity leads to another over the duration of the project/programme

3. Quantification: this follows the notion that if it cannot be quantified it does not exist. Quantification is critical to evaluation
4. Cause and Effect: causality can be pre-determined
5. Reductionism: some benefits and impacts can be more 'valuable' than others
6. Split between thinking and doing: planning vs. organising split
7. Control: the appraisal process is a means of exercising management control over resources

Tillman et al. (2009) has identified eight models of benefits realisation and Sapountzis et al. (2010) have also developed a BRM model called BeReal which is making more explicit the link between change, benefits and organisation for delivery as well as suggesting the organising functions necessary to deliver relevant plans (Sapountzis et al. 2011).

This paper locates NPD as the overarching process by which strategic and business benefits come together for realisation through the delivery of a product or service. In doing so, it also positions BRM as an integral part of the NPD process in linking strategic benefits to realised products and services. There are still though significant issues that need careful consideration in relation to what and how NPD and BRM processes work within the spectrum of planning and organising. Project management practices should consider projects situated in a social and political context, adequately dealing with the dynamics of this context, the complexity of social interaction and human action and the framing and reframing of projects within an evolving array of social agenda, practices, stakeholder relations, politics and power (Winter et al., 2006).

Rooke et al. (2010) also identified the problem of value associated with Lean knowledge management within the BRM framework. Expanding from this position the 'value for who' question sits at the heart of BRM which is defined through a process of negotiation and evaluation through human action. It is this difference between what Breese (2012) calls the 'modern paradigm' of management and the 'real world.' In doing so he concludes in the study of regeneration programmes that "…demonstrated that where the assumptions of the scientific approach of the 'modern paradigm' underpin the management framework there will be tensions and conflicts, because the assumptions do not hold in 'the real world'. The consequence will be that benefits management (and also related aspects of project management, such as value management) will be played out in an ambiguous and contested manner, reflecting the roles and actions of the different stakeholders, how will vary in the degree of power and influence they wield." He also states that "There is a need for theories of BRM to be developed which are based on in-depth analysis of practice and acknowledge and incorporate ambiguity and uncertainty.' The inevitable issue raised here is that in many situations there is very little scope for an objectively defined 'best option' rather the ones exist are relative and mediated through human action.

STRUCTURE AND AGENCY

The paper demonstrates two critical aspects. Firstly, that Benefits Realisation as a Process sits within the realm of NPD and therefore is bound by some of its characteristics, and secondly that a simplistic process-view of NPD and BRM (as a meta project management

process) is not enough to explain and incorporate the dynamics of both situational technical and non-technical choices and expressions of value. Therefore, both representational (hard view of process) and perceived (soft view of process) aspects need to be considered.

The notions of structure and agency have been considered extensively in the realm of social sciences (Giddens 1984; Sewell 1992; Chouinard 1997.) Initial views of structuralism and functionalism have tended to follow an objectivism paradigm. Functionalism tended to look towards biology as the science that is nearer to social sciences whereas Structuralism rejected evolutionism and biological sciences. However, both of them strongly emphasised the pre-eminence of the social whole over its individual parts (Giddens 1984). Further developments in social sciences constituted 'structure' as one of the most elusive terms on social sciences (Sewell 1992). In traditional discourse on structures, change is located outside of structures. In doing so it emphasises the priory of structure (or culture as it is understood in many writings) over agency. In such a way it becomes deterministic in nature and very rigid. Structure and agency exist as a duality i.e. two parts existing in isolation with some relationship between them. Giddens theory of structuration (1984) has been introduced as an alternative to these rigid views and it aimed to reject structural determinism through constant emphasis on the interplay of structure and agency, offering a broader conception of social power as the outcome of struggle over allocative and authoritative resources and recognises the significance of spatial organisation in the structuration of social relations (Chouinard 1997).

THEORY OF STRUCTURATION

The theory of structuration was introduced by Giddens and broadly speaking it has some of the following characteristics (Giddens 1984):

- It suggests that the basic domain of study of the social sciences is neither the experience of the individual actor, nor the existence of any form of societal totality, but social practices ordered across space and time
- It accepts a hermeneutic starting-point in recognition that the description of human activities demands a familiarity with the forms of life expressed in those activities. It is the reflexive form of the knowledgeability of human agents that is most deeply involved in the recursive ordering of social practices.
- The reflexive monitoring of activity is a chronic feature of everyday action and involves the conduct not just of the individual but also of others. Therefore, actors not only monitor continually the flow of their activities and expect others to do the same for their own, but they also monitor aspects, social and physical, of the contexts in which they move.
- An ontology of time-space as constitutive of social practices is basic to the conception of structuration, which begins from temporality and thus, in one sense, 'history'
- Structures do not exist concretely in time and space except as "memory traces, the organic basis of knowledgeability" (i.e., only as ideas or schemas lodged in human brains) and as they are "instantiated in action" (i.e., put into practice).
- Rejects Dualism (separate parts in a system, broadly speaking) and adopts duality whereby structures are not brought into life by social actors but they are continually recreated by them via the very means by which they express themselves as actors. In

and through their activities agents reproduce the conditions that make these activities possible.

- Structure is not to be equated with constraint but is always both constraining and enabling

DISCUSSION AND CONCLUSIONS

The paper started off by reviewing progress made over the last few decades in NPD and arriving at a set of key principles critical to its success. Ultimately the success of NPD processes is defined by the degree to which envisaged benefits are delivered (outside of the traditional metrics of time-cost-quality which are narrowly defined).

The paper identifies the degree to which planning alone is adequate in realising outputs and it is shown that planning alone is simply inadequate. Human action/agency is critical in organising around project, programme and NPD delivery. Aspects of agility, progressive fixity, coordination, learning and delivery cannot be thought of, let alone realised, without the impact of human agency. Therefore construction processes have to be designed with this in mind, ensuring that representation and action are tied in together. The impact of such considerations can result in establishing, for example, acceptable levels of change of plans without penalty clauses, new forms of contract to evolve and closer consideration of collaborative project practices being established.

The theory of structuration identifies and promotes the dualism of structure and agency and that actions constitute structure which itself is constituted by the actions taken. Therefore, it rejects the dualist paradigm and adopts dualism as the modus operandi. The implications for theory and practice are significant. Firstly, it forces researchers to look at theorising around change and process concurrently rather than in isolation, together as one rather constituting the sum of the two parts. NPD and BRM processes should possibly be designed not only to accommodate change but also to effect change so that they can be reformulated as a result of this emerging change. In practice the implications would be that checks are put in place to ensure that 'fixed' solutions are 'opened up' and being re-validated, hence embedding a culture of continuous improvement rather than striving towards fixity as early as possible. Toyota's set-based design (fixing sets of attributed and solutions rather than whole systems) NPD process is starting to demonstrate this aspect to a moderate degree (Morgan and Liker 2006.) Significantly, the rate of change and the insistence of measuring benefits based on initial requirements should be, largely, rejected. Could the same apply to initial client requirements, specifically when long timescales and in-experienced clients are involved? This area can have significant implications on how project and programme success is measured, in that benefits need to be tracked continually and post-project and post-occupancy evaluations change their focus from measuring what was originally conceived to what have emerged through practice in NPD. The implications for how infrastructure policy (say in social housing, regeneration, health and schools programmes, etc.) is evaluated and measured are also significant.

Any notions of process representation alone are not enough to evaluate success. In relation to this Rooke and Kagioglou (2007) identified the need to consider the Unique Adequacy (UA) requirement of methods needs to be extended to researching NPD and

BRM issues whereby the researcher (and arguably practitioners also) needs to be competent (in theory and practice) of and in the context which is investigated. The research methods themselves also can only be determined through considerations of context and created within that context. Lean Construction's recent progress in production management and control can be examined around these new lenses which requires further research, in particular how considerations around time-space can be examined through the structuration theory.

The authors have introduced the structuration theory as a candidate for consideration when investigating the theoretical foundations of the interface between NPD, BRM and Project Management.

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