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**Revisiting the project management knowledge framework:
Rebalancing the framework to include transformation projects
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Revisiting the Project Management Knowledge Framework: Rebalancing the Framework to Include Transformation Projects

Article classification: Conceptual paper

Structured Abstract

Purpose: We argue that extant project management bodies of knowledge have not fully addressed organisational transformation enabled by information systems projects. This paper examines the transformation context in the project management disciplines. We argue that the execution-oriented project management bodies of knowledge are limited, as they place too much emphasis on the delivery outputs by the supplier rather than the achievement of beneficial outcomes by the project owner.

Design/method/approach: As a conceptual paper, this paper reviews extant project management bodies of knowledge, life cycle models, the context of organisational transformation and benefits realisation, and the distinction between a project owner's and the project supplier's capabilities.

Findings: A new project management knowledge framework is provided as an advanced research frame for future works by enhancing Peter Morris' Management of Projects framework by employing the conceptual lens of Winch's Three Domains of Project Organising model.

Originality/value: The advanced model emphasises the necessity of distinguishing a project owner's and a supplier's project management capability and knowledge to achieve successful IS-enabled organisational transformation. Through this effort to resolve the fragmentation and specialisation problems in project management disciplines, the model can be used as a theoretical groundwork for the advancement of project management research.

Keywords: project management body of knowledge; management of projects; three domains of project organising; organisational transformation; benefits realisation; project owner

Introduction: Setting the Scene

Project management (PM) has been a well-defined approach for strategic change and innovation in most organisations (Morris & Hough, 1987; Kenny, 2003; Morris & Jamieson, 2005; Crawford *et al.*, 2006; APM, 2012; Morris *et al.*, 2012; Morris, 2013b). PM Researchers in a variety of disciplines have addressed scholarly enquiries in a multi-dimensional manner across individual, project and organisational levels (Geraldi and Söderlund, 2018). Those studies are foundational to developing a PM knowledge framework. Consequentially, it contributes to the formulation of PM in practice including methodologies, competence baselines, tools and techniques for their successful application (IPMA, 2006; Ohara & Asuda, 2009; APM, 2012; PMI, 2013). Despite these pluralistic academic progressions and impacts, a clear research gap can be found along this area. Inspired by the current state of PM research, this paper points out the unsatisfactory position of PM knowledge currently trapped in its *specialisation* and *fragmentation* (Söderlund, 2011). Knudsen (2003) defines scientific pluralism with two aspects: a specialisation trap that encompasses too little pluralism with a biased view and a fragmentation trap that encompasses too much pluralism with a lack of unification. We criticise the limitation of extant PM knowledge focusing heavily on a project supplier's execution-based approach (caught in a specialisation trap) and a lack of a valid framework to orchestrate before and beyond the project implementation stage such as benefits realisation and organisational transformation (caught in a fragmentation trap). In this context, this paper will address how a project can be successfully managed and how business operation after a project completion can be efficiently transformed to achieve the expected benefits (Shenhar & Dvir, 2007; Zwikael & Smyrk, 2012; Breese *et al.*, 2015; Zwikael, 2016). Specifically, this paper attempts to unsettle the settled PM knowledge (Morris, 2013b; Authors, 2016a) by emphasising the significance of operational benefits after the delivery of a project. To reduce

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3 the research gap, the transformation context within PM disciplines will be explored to
4 complement the extant PM body of knowledge and to develop an advanced PM knowledge
5 framework.
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10 Understanding the project mission (Author, 2010) is the starting point of this study. From a
11 wider viewpoint, the project mission is to enable the successful transformation of a project
12 owner's organisation in some way. this has become a key agenda in recent times (Author,
13 2014; Badewi, 2016; Zwikael, 2016; NAO, 2017). In other words, the mission of a project
14 can be defined in various ways by considering the different perspectives of the project
15 supplier and project owner, where the former focuses on project deliverables and the latter on
16 the transformation of the owner organisation (Morris, 2013a; Author, 2014; Badewi, 2016).
17 First, from the supplier's perspective, a project is an operational activity that is carried out in
18 a similar way for different project owners. A supplier delivers project outputs based on a
19 project owner's requirements within the fixed project life cycle. The second approach is
20 based on the project owner's viewpoint. For the project owner, the reason for launching a
21 project is to realise better operational benefits than the current capabilities offer. Contrary to
22 the project supplier's PM perspective, thus, a project owner should aim to enhance their
23 business to gain dynamic benefits through turning project outputs into organisational
24 outcomes (Morris, 2013a; Author, 2014).
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43 The importance of achieving a project owner's desired benefits in managing projects is well-
44 acknowledged (Bartlett, 2006; Melton *et al.*, 2011; Ward & Daniel, 2012; Badewi, 2016).
45 However, the various PM bodies of knowledge have not fully addressed this transformational
46 aspect and tend to focus on the delivery aspects (Morris, 2013b; PMI, 2013). Most PM
47 studies, for instance, have focused too much on the delivery of project execution, which
48 predominantly considers the project supplier's perspective (Breese *et al.*, 2015; Zwikael,
49 2016). Competence frameworks underpinning the bodies of knowledge have followed this
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3 lead (Author, 2014). Hence, the lopsided research phenomenon intensifies the challenges in
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5 realising the project owner's desired benefits from a project that eventually entails a
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7 successful or unsuccessful transformation (Authors, 2016b). In this regard, we point out that
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9 execution-oriented traditional PM knowledge has caused limitations in current PM studies
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11 that consider the owner organisation's successful transformation as a marginal issue
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13 (Kloppenborg & Opfer, 2002).
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16 Our principal contribution, therefore, is to offer an enhanced PM knowledge framework - as
17
18 an attempt to resolve the specialisation and fragmentation problems of the PM discipline -
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20 appropriate to the challenges of organisational transformation. The new knowledge
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22 framework is built on *the Management of Projects* framework (MoP) developed by Morris
23
24 (2013b) through the conceptual lens of the *Three Domains of Project Organising* developed
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26 by Author (2014). Morris' framework considers the necessity of escaping from the execution-
27
28 based PM approach, and Author's argument contains the necessity of distinguishing between
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30 the PM approaches of a project supplier and a project owner. Further details of the two
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32 models will be reviewed in the following sections. The research question is addressed as
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34 below:
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38 • *In what ways do the current project management bodies of knowledge need to be*
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40 *developed to address the challenges of organisational transformation that emphasise*
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42 *post-implementation benefits?*
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46 To examine this, we review key themes: (1) a project owner's distinctive project capabilities
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48 (compared to a project supplier) and their benefits realisation into organisational
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50 transformation, and (2) PM knowledge framework, bodies of knowledge and PM life cycle
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52 models. The first section presents the conceptual clarification of organisational capability,
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54 individual competence, and project capability. This is followed by a critical review of the
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3 theoretical distinction between a project owner's capabilities and a project supplier's
4 capabilities. Then, the importance of benefits realisation and organisational transformation is
5 reviewed. In the second section, the Management of Projects framework, extant PM body of
6 knowledge, PM life cycle models, and their limitations are examined and critiqued. In
7 response to the review, an advanced PM knowledge framework is provided as a new
8 conceptual skeleton of PM research, including justifications for its components based on our
9 literature review. The framework is developed from the MoP model using the conceptual lens
10 of the three domains approach (Author, 2014; Turner and Müller, 2017). The new PM
11 knowledge framework provides a unique contribution in that it reflects the significance of a
12 project owner's transformation context as an improved and integrated PM knowledge base.
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25 **Project Owner/Supplier's Capabilities for Benefits Realisation and Transformation**

26 *Organisational capabilities and individual competencies*

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28 As outlined in the introduction, the substantive objective of a project is to successfully realise
29 the benefits to a project owner's organisation through the project outputs. Thus, conceptual
30 clarification of existing organisational capabilities needs to take precedence to understand the
31 transformation context. In general, a capability refers to the capacity to perform a particular
32 task, function or activity. Though the term was infrequently mentioned in the management
33 literature, a considerable amount of literature in social science studies has been published
34 concerning the concepts of capability and competence (Finegold *et al.*, 1998).
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46 Two main bodies of research have discussed the value of capability. On the one hand, the
47 strategic management literature discusses the concept of "capability" within the domain of
48 business strategy. This literature takes a resource-based view of a firm (Wernerfelt, 1984) and
49 draws on the concept of organisational capabilities (Chandler, 1990; Barney, 1991; Leonard-
50 Barton, 1992; Winter, 2000). Therefore, within this context, a capability is defined as an
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3 essential factor for companies to achieve strategic differentiation and sustain organisational
4 change (Leonard-Barton, 1992; Bresman, 2000; Salaman & Asch, 2003). In this context,
5 capabilities are considered to be a compilation of knowledge, skills, routines and abilities
6 built within the organisation and which are brought together to accomplish work (Nelson,
7 1991; Dosi *et al.*, 2000). That is, organisational capabilities are a combination of the
8 competencies of an organisation's individuals and are the abilities that enable the
9 organisation to conduct its business activities (Dosi *et al.*, 2000). Broadly, the notion of
10 organisational capabilities considers managerial aspects such as "processes, management,
11 coordination and governance" (Kogut & Zander, 1992; Melkonian & Picq, 2011, p. 457).

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23 On the other hand, the human resource development and management literature tend to mix
24 the concepts of capability and competence from a managerial perspective. Stephenson (1994)
25 defined capability as the combination of knowledge, skill and individual qualities. This body
26 of work focuses on the individual knowledge, skills, traits, attributes and behaviours required
27 to carry out functional roles (Stamp, 1981; Cave & Wilkinson, 1992; Sandberg, 2001; Le
28 Deist & Winterton, 2005; Königová *et al.*, 2012).

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Among this diversity, this study takes forward the conceptual notion of capability that
emphasises the organisational aspect in a manner similar to the strategic management studies.
The concept of capability in the strategic management field has been established with a more
consistent view than those in the human resource development and management literature.
'Capabilities' are clearly distinguished from 'competencies', which are "work-related
knowledge, skills and abilities" (Nordhaug & Gronhaug, 1994, p. 90; Le Deist & Winterton,
2005) held by individuals. Thus, collective individual competencies can facilitate
organisational capabilities to achieve certain organisational goals. In the context of the
management of projects, Morris (2013b) explained the difference between the conceptual
definitions of competence and capability within a PM environment. By highlighting the

conceptual diversity between the two, we here define the concept of ‘competence’ as individual knowledge, skill and behaviour, in contrast to organisational ‘capability’ which combines these competencies with organisational routines and productive assets to deliver outcomes.

Project capabilities and owner/supplier perspectives

Researchers have addressed the necessity of project capabilities and competencies for the efficient delivery and better performance of a project (Davies & Brady, 2000; Brady & Davies, 2004; Söderlund, 2005, 2008; Crawford, 2006; Nightingale *et al.*, 2011). Extant PM capability studies were limited in that they were unable to fully explain the context of benefits realisation and transformation (Ashurst *et al.*, 2008). As explained in the previous section, we argue that this limitation is influenced by an imperfect PM knowledge base.

An undeniable research trend we can observe is that most project capability studies have been strongly biased towards a project supplier viewpoint (Brady & Davies, 2004; Authors, 2016b). For instance, Ethiraj *et al.* (2005) pointed out the importance of client-specific capabilities, but the point of view was that of a project supplier. Hence, most PM literature has been preoccupied with the successful delivery of project outputs, with a lack of recognition of the business benefits and strategic values (Zwikael, 2016). From a project owner’s viewpoint, successful business change cannot be completed within a project’s life cycle (Shenhar & Dvir, 2007; Zwikael & Smyrk, 2012; Breese *et al.*, 2015), and improved business performance (outcomes) can be achieved through the reliable operation of project deliverables (outputs). Thus, a project owner needs to consider the realisation of post-implementation benefits as well as the project accomplishment itself. In order to manage successful business change and benefits, a project owner’s capabilities need to be understood more widely by recognising the managerial continuity from the project stage to the operational stage (Pellegrinelli, 1997; Zwikael, 2016). To make this feasible, the concept of

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3 the project owner also needs to be defined more precisely and with this in mind, Morris &
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5 Hough (1987) introduced the concept of a ‘strong owner’. In their foundational work, they
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7 captured the challenges of eight project cases, including the computerisation of tax payment
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9 processes (chapter 8 in their book). They then highlighted the importance of the
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11 “government’s role as the direct owner of a major project” (Morris & Hough, 1987, p. 224).
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13 However, the contextual meaning of a strong owner is within the boundary of contractual
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15 matters, namely as a purchaser of the products and services needed by the project. Similarly,
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17 Aritua *et al.* (2009) suggested the concept of the ‘intelligent client’, but in their definition, the
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19 role of client is still limited. In other words, the importance of organisational/relational
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21 connectivity between project and operation is not covered and the definition of owner project
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23 capabilities remains imprecise (Flowers, 2007; Author, 2014; Authors, 2016b).
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27 To highlight the distinctive perspectives among diverse project organisations, Author (2014)
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29 provided the Three Domains of Project Organising model (i.e. “owners & operators”,
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31 “project-based firms” and “projects & programmes”) and the interfaces among them (i.e.
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33 “governance”, “commercial” and “resources”). These were originally developed from the
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35 perspective of an engineering and construction project environment, but we suggest here that
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37 this can be a generic PM model. However, the model is static, so we propose Figure 1 to
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39 emphasise the dynamics of the three domains and their interfaces through time. Horizontally,
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41 the upper stream describes a project owner’s PM themes, and the bottom stream describes
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43 those of a project supplier. Following the timeline from left to right, the figure shows
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45 different PM approaches between the domain of supplier and owner. While the supplier side
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47 focuses on resourcing to deliver project *outputs*, an owner needs to establish and govern
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49 project strategy (front-end) and benefits realisation as *outcomes* (back-end). During the
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51 project, both owner and supplier interface with each other in terms of commercial aspects
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53 such as contract management. The framework contributes to a better theoretical
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3 understanding of a distinctive PM approach among temporary project organisations and the
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5 two permanent organisations of owner and operator and project-based firms (Turner and
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7 Müller, 2017). In particular, the framework draws our attention to the necessity of further
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9 studies within the perspective of the owner/operator organisations. In this context, we use this
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11 framework as the theoretical base for developing an advanced PM knowledge framework.
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13 Thus, the new knowledge framework will point out and clarify the different roles and
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15 responsibilities among different project organisations.
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18 <insert Figure 1 about here>
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21 In addition to the academic efforts as reviewed above, one recent consultancy paper also
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23 followed this argument that there is little attention paid to different skills (i.e., competencies)
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25 between client project managers (owner side) and delivery project managers (supplier side).
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27 This lack of clarity about the competencies and responsibilities between a project supplier
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29 and an owner “results in projects not delivering benefits, frustrated deliverers and sponsors,
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31 widespread angst and re-works” (Godbold, 2016, p. 62). In order to formulate this
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33 differentiation, the required competencies and responsibilities of two organisations are
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35 suggested. For example, the context of owner covers strategic contexts including the
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37 operational benefits mechanism and the commercial arrangement of projects, such as supplier
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39 and contract management, continual stakeholder management and support. In contrast, the
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41 roles and responsibilities of delivery project managers are focused on delivery against the
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43 contract and bridging the skills between sub-contractors and project owners. Godbold
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45 concluded that both differentiated approaches were necessary, but the roles of the client are
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47 still weighted towards commercial project issues within the perspective of individual
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49 competencies.
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54 *Benefits realisation for organisational transformation*
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3 Organisational transformation has been constantly addressed in business and management
4 studies from 1970s and 1980s, since Levy and Merry provided its definition as “a multi-
5 dimensional, multi-level, qualitative, discontinuous, radical organisational change involving a
6 paradigmatic shift” (Pettigrew, 1987; Levy and Merry, 1986, p. 5). Thus, organisational
7 transformation refers to the revolutionary and radical change of organisations. Though its
8 concept and theoretical position has been researched so far, common understanding of its
9 explicit context still remains as insufficient. After that, the rapid change of information
10 technology has triggered organisational transformation. On the basis of the organisational
11 transformation context, many IS scholars have elaborated its content, context and process by
12 introducing derived concepts such as IS(IT)-enabled organisational transformation, digital
13 transformation and digitalisation (Orlikowski & Robey, 1991; Ward & Elvin, 1999; Besson
14 and Rowe, 2012). The fundamental aim of organisational transformation from projects is to
15 realise a project owner’s operational benefits. The term benefits management was first
16 mentioned in the late 1980s (Farbey *et al.*, 1999). Scholars have expressed increasing concern
17 that the expected benefits from IS implementation are questionable despite the large
18 investment in business change (Ward *et al.*, 1996; Bradley, 2010; Ward & Daniel, 2012;
19 Breese *et al.*, 2015). As a business term, benefits management has been defined from a
20 process perspective as “the process of organising and managing such that the potential
21 benefits arising from the use of IS/IT are actually realised” (Ward & Elvin, 1999; Ward &
22 Daniel, 2012, p. 8).

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46 Badewi’s (2016) study emphasises the criticality of benefits realisation associated with
47 managing projects. Badewi (2016) examined whether PM practices and benefits management
48 practices enhance the probability of success if they are used in tandem, based on the project
49 benefits governance framework. This framework explains that the authority and
50 responsibility of a benefits owner (on the owner side) has wider managerial coverage than
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3 those of the project manager (on the supplier side). By distinguishing the managerial role of
4 projects and benefits, Badewi emphasises the differentiated duties of the project manager and
5 benefits owner. The benefits management life cycle, including benefits identification,
6 planning, implementation, audit and business case development, is added to the traditional
7 PM life cycle. Thus, one can conclude that a project owner should consider benefits
8 management issues such as benefits identification, planning and implementation before the
9 project, during the project, and after the project. In regard to the project back-end issues,
10 Heeks (1998) analysed the case of an information systems (IS) training project in the public
11 sector and highlighted the importance of training capabilities for operational benefits as an IS
12 owner in public organisations. The UK government also echoed the positive influence and
13 the importance of an IS training programme (Home Office, 2012; NAO, 2015), and how a
14 programme could enhance productivity of public owner organisations by taking a strategic
15 approach on knowledge sharing and training. This approach could also contribute to
16 improving individual competencies, minimising managerial risks and assuring public service
17 quality.

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36 In addition to the academic approaches, the importance of transformation project has also
37 been a recent agenda outside the academia. In the case of the UK central government, for
38 example, a transformation project refers to projects that are aiming to change how the
39 government operates, including modernising government activities and improving the
40 delivery of public services (NAO, 2016, 2017). The Cabinet Office uses the terminology
41 'transformation' to denote major change programmes in order to improve how the
42 government delivers public services and manages operations: "when we say transformation,
43 we mean a significant step change in the way a government organisation delivers its service
44 and in the way it operates" (Cabinet Office, 2017). The context of a transformation project
45 covers not only the management of the project itself but also the operational advancement of
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3 organisations after a project close-out. Moreover, the perspective of transformation focuses
4 more on a project owner's business rather than a project supplier's project execution by
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6 reinventing the organisational processes and models.
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10 **Management of Projects, Body of Knowledge and Life Cycle**

11 *The Management of Projects*

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13 Among the various PM studies, Morris has continually contributed to the PM discipline in an
14 effort to formally address the success or failure of managing projects (Morris & Hough, 1987;
15 Morris, 1997, 2013a, 2013b). One of his first comprehensive research studies (Morris &
16 Hough, 1987) reviewed reports on 1,653 projects and analysed eight major project cases to
17 describe the key 'anatomy' of project success and failure. By examining the cases with a
18 diverse level of technical uncertainty, the importance of organisational, political and
19 environmental management perspectives is emphasised. On the basis of his foundational
20 work, Morris (1997) provided the 'Management of Projects' model by covering internal (e.g.
21 structure, behaviour and systems) and external (e.g. location and politics) aspects. By
22 including environmental factors, Morris highlighted the significance of a more strategic
23 approach to managing projects with a harmonisation between internal and external
24 perspectives.
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41 In his more recent publication, *Reconstructing Project Management*, Morris (2013b)
42 criticised the conventional PM body of knowledge with extensive theoretical underpinnings
43 to re-draw the post-knowledge model of PM. The revised MoP framework reconstructs
44 current PM practice that relies on an execution-oriented approach (Morris, 2013b; Authors,
45 2016a). In addition to project delivery, Morris suggested the need for a project definition (e.g.
46 strategy & finance, commercial and organisational activities). He pointed out that the
47 managerial coverage of formalised project knowledge has not fully explored the MoP
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3 concept he highlighted. “The Management of Projects involves managing the definition and
4 delivery of the project for stakeholder success. The focus is on the project in its context”
5 (Morris, 2013b, p. 62). Thus, he argues that the necessity of more detailed management of
6 projects from the front end (project definition) (i.e., front-end management: strategic,
7 financial, commercial and organisational activities) rather than having a high focus on
8 execution (PMI-based project delivery model). In doing so, Morris makes significant
9 contributions to the future research direction of PM. At the same time, however, this direction
10 also needs to be re-examined in detail. For instance, the MoP model clearly defines ‘what’
11 has to be considered, but it does not provide ‘how’ the concept of MoP can be applied to
12 future theory and practice. Furthermore, it does not distinguish the roles and responsibilities
13 of a project supplier and an owner. In this regard, Authors (2016a) revisited the main research
14 stream of Morris’ framework and its implication. To determine how the ‘settled normative
15 best practice’ (PMI’s PMBOK®) should be ‘unsettled’ (Morris’ MoP), Authors identified key
16 areas (i.e. the prospects for theory in PM, new conceptualisations of the field of PM research,
17 and developing an empirical research agenda in project shaping) in which further project
18 studies can pursue the context of Morris’ MoP.
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38 *Project management body of knowledge*

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40 Scholars have paid considerable attention to the development or advancement of bodies of
41 knowledge to stimulate PM research (Morris *et al.*, 2006a; Gasik, 2011; Hanisch & Wald,
42 2011; Fernandes *et al.*, 2014). In response to these academic efforts, diverse research topics
43 and knowledge areas on PM have been revealed and covered by widely known PM bodies of
44 knowledge (Ohara & Asuda, 2009; Starkweather & Stevenson, 2010; APM, 2012; PMI,
45 2013). The Project Management Institute (PMI)’s (2013) PMBOK® has been considered as
46 the *de facto* standard of PM knowledge. In 1996, PMI published the first edition of the
47 PMBOK® to officially put PM knowledge, processes and management issues together.
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3 PMBOK[®] has gone through several revisions, and recently the 6th edition has been released.
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5 Mainly, there are nine knowledge areas and sub-processes identified by the PMBOK[®]:
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7 integration, scope, time, cost, quality, human resource, communications, risk and
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9 procurement (PMI, 2013).
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12 In regard to the PMBOK[®], two major limitations can be identified with respect to the
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14 transformational aspect. First, the PMI model focuses heavily on the viewpoint of the project
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16 supplier. By providing a five-staged PM life cycle (initiation, planning, executing, monitoring
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18 and controlling, and closing), the PMBOK[®] defines the critical processes and activities of a
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20 project supplier. This execution-based model provides valuable resources for managing
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22 projects. However, the roles and responsibilities of the project owner are not fully covered.
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24 Because of this limited approach, the PMBOK[®] ignores operational benefits and
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26 organisational transformation after executing a project. In general, business benefits and
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28 transformations (via project deliverables) cannot normally be achieved with just the
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30 successful delivery of project outputs. The fixed project life cycle and relevant project
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32 capabilities provided by the PMBOK[®] focus only on project execution itself and do not
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34 recognise the realisation of a project owner's operational benefits. Recently, however, the
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36 PMI has paid attention to the importance of project benefits management (PMI, 2016a, 2016b,
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38 2016c, 2016d). Though the PMI's benefits realisation framework focuses on the roles of
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40 executive sponsor, benefits owner and project manager, the point of view is still weighted
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42 towards temporary project organisations without a clear distinction between a supplier and an
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44 owner organisation (PMI, 2016c, 2016d). For example, a project owner's unique
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46 responsibilities are de-emphasised. In other words, current PM disciplines need to consider
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48 the fundamentally different project objectives between a project supplier and a project owner.
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51 In contrast, we argue that there should be a clear distinction between a project supplier's
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53 capabilities and a project owner's capabilities (Morris, 2013a; Author, 2014).
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3 To move beyond the execution-based approach, the Association for Project Management
4 (APM) developed the APMBoK by covering wider PM knowledge areas, such as objectives,
5 strategies, techniques, business and commercial, organisation and governance and people and
6 the profession (Morris *et al.*, 2000; APM, 2012). In particular, the APMBoK tries to cover
7 project front-end activities and organisational governance issues (Morris *et al.*, 2006b) but
8 neglects to distinguish the roles, responsibilities and required capabilities of a project owner
9 which are critical for the beneficial business transformation after a project from those of a
10 supplier.
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21 *Project management life cycle*

22 Numerous academics, professionals and organisations have suggested a standardised PM life
23 cycle for efficient management of projects. “The one thing that distinguishes projects from
24 non-projects is their project life cycle” (Morris, 2013b, p. 150). In the case of information
25 systems, for example, the standards, ISO 12207 and IEEE standard 1074, provide the process
26 model for software life cycle and the standard for developing software life cycle processes,
27 respectively (IEEE Standard Association, 1997; IEEE/EIA, 1998). In the case of published
28 works, researchers and various guides have tried to standardise the project life cycle from
29 project initiation to closing out (Bennatan, 1995; Royce, 1998; Jurison, 1999; IPMA, 2006;
30 OGC, 2009; Favaro, 2010; APM, 2012; ISO, 2012; PMI, 2013). Figure 2 summarises the
31 extant PM life cycle models in the literature. As seen in the diagram, none of them represents
32 the transformational stage of the delivery of benefits from project outputs - i.e. a dotted-line
33 box, ‘Benefits realisation & Transformation’ indicates the missing stage. Though APMBoK’s
34 life cycle model considers a benefits realisation and operation phase, the phase is included in
35 the ‘extended’ project life cycle, not in the general life cycle, i.e., “some projects will be
36 expected to incorporate the management of change and realisation of benefits (the extended
37 project life cycle)” (APM, 2012, p. 27).
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3 PM studies have been carried out on the basis of the standardised life cycle models and
4 methodologies. Moreover, managing the project life cycle through phases has been regarded
5 as the enabler for improving managerial control (PMI, 2013). Smith (2007) also highlighted
6 the importance of managing the project life cycle as projects become more complex due to a
7 wider variety of processes and tasks. However, a few major problems with this kind of
8 application can be seen within the perspective of transformation and benefits from project
9 execution. An increasing concern has been raised that previous PM and life cycle studies tend
10 to emphasise certain phases such as planning and implementation. Havila *et al.* (2013)
11 criticised previous project capabilities and competencies research for focusing only on the
12 early and middle stages of managing projects. In addition to this internal concern about the
13 life cycle, managerial coverage needs to be expanded to ‘before’ and ‘after’ the project to
14 realise the transformational benefits. Therefore, this paper raises this as a critical problem in
15 terms of realising successful operational transformation from project delivery.
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31 <insert Figure 2 about here>
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34 **Developing Project Management Knowledge Framework**

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37 *Approach: The Management of Projects and Three Domains of Project Organising*
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39 In Figure 3, an advanced PM knowledge framework is displayed in response to the
40 implications from the extant literature. Theoretically, it further develops the three domains
41 model (Author, 2014; Turner & Müller 2017). The framework distinguishes PM roles among
42 temporary project organisations, permanent supplier organisations and permanent owner
43 organisations, and points out project owners’ differentiated perspectives for transformational
44 benefits. We therefore focus on distinguishing the roles between supplier and owner
45 organisations, since a temporary project organisation is a collaboration between the two
46 permanent ones. Structurally, this presented framework was derived from Morris’ (2013b)
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3 MoP framework. The MoP framework works well as a base model because it is the result of
4 thorough research; existing PM bodies of knowledge tend to provide relatively more practical
5 context such as PM tools, techniques and methods to help project managers and practitioners.
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7 Thus, the advanced PM knowledge framework is the result of re-interpreting the MoP model
8 within the context of the three domains approach. The explanation of the revised and newly
9 added components on the original framework is as follows.
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16 <insert Figure 3 about here>
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19 *Advanced project management knowledge framework*

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21 Figure 3 describes the advanced PM knowledge framework. Horizontally, the PM knowledge
22 areas are divided by the project owner's and project supplier's perspectives to categorise the
23 required knowledge areas of the two major project organisational bodies. Vertically, the
24 Operations and Value Creation stage was added as the last phase in the project life cycle to
25 highlight benefits realisation and transformation activities. Moreover, the Close-out stage is
26 replaced by a Transfer stage to point out the significance of a continuous approach from
27 project execution to project benefits delivery. Third, the knowledge domains of Project
28 Governance and Project Benefits are included based on the identified factors from the
29 literature review. In addition to the traditional PM boundaries covered by Project Delivery,
30 the importance of front-end, back-end and governance capabilities are included as the key
31 managerial factors of project owner organisations. As seen in Figure 3, a project owner's
32 capabilities are evidently different from those of a project supplier. The concepts and
33 components of the framework are summarised as follows:
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- 50 • Life Cycle Model: The life cycle model is composed of six stages: Concept,
51 Feasibility, Definition, Execution, Transfer, Operations and Value Creation. The first
52 four stages originate from Morris' MoP framework. The fifth stage, Transfer, points
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3 to the importance of connectivity between project execution stages and operational
4 stages. In Morris' framework, this stage is defined as Close-out and is the last stage of
5 the life cycle. By changing it to Transfer, it can be connected more easily to the next
6 stage, Operations and Value Creation. The last step conceptualises the process of
7 project benefit realisation and management during a project owner's operations.
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14 • Project Definition (Front-end): The collaboration between a supplier and owner is
15 critical. In advance of a project commencement, this phase clarifies the objectives of
16 projects and the roles and responsibilities of each project stakeholder. This component
17 has the same elements as Morris' approach, with two minor changes: First, a project
18 owner's managerial position is enlarged compared with that of the project supplier.
19 To emphasise the project owner's responsibilities of project definition activities, the
20 proportion between a project owner and supplier is modified. The major role of this
21 domain belongs to a project owner. Second, the continuity of commercial and
22 organisational capabilities between Project Definition and Project Governance is
23 highlighted (see dotted arrows in the Figure 3).
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27 • Project Delivery (Supplier): Most PM studies have focused heavily on the activities in
28 this component and, to date, the domain knowledge is well established. In other words,
29 traditional PM knowledge and activities (e.g., PMI's PMBOK[®]) are set in the narrow
30 project life cycle from the Definition to Transfer stages. The roles and responsibilities
31 of this component belong to a project supplier to achieve the successful delivery of
32 the project.
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36 • Project Governance (Owner): Project governance relates to a project owner's
37 managerial roles during a project life cycle. A few studies have highlighted the
38 importance of project governance in terms of their engagement and contract
39 management. Our literature review supports this and points to the importance of
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project governance. The elements include supplier management, contract management, stakeholder management and support, and project governance.

- **Project Benefits (Back-end):** This component is added based on our literature review. Few studies have focused on the role of the project owner to create value/benefits from a project. Our literature review shows that benefits creation and realisation need to be approached at the implementation stages (from project level to operation level). As emphasised in the results and findings sections, a few owner capabilities, such as training and knowledge transfer, are included. The elements of this component are employee training, knowledge transfer, operation governance, and process change and transition.
- **Interfaces:** In addition to the major four components and the six-stage life cycle, a few internal and external interfaces are also emphasised. These include the interaction between owner and supplier, interaction with general environment, and identifying a business need to improve legacy systems.

This framework is suggested to be the knowledge framework for the MoP by covering organisational perspectives, project front-end, project governance and project back-end capabilities. Therefore, on the basis of the key implications from the literature review, the theoretical framework suggests specific required PM knowledge domains and management factors that will contribute to a project owner's benefits realisation and effective organisational transformation.

Conclusion

There has been a growing research interest in realising benefits and the importance of organisational transformation in PM disciplines. However, extant PM studies and bodies of knowledge have limitations in addressing the issues. Most of the current body of knowledge models focus heavily on delivering the project outputs without highlighting the criticality of

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3 outcomes in the form of operational benefits after project delivery has ended, which is the
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5 fundamental objective of the investment. Hence, the successful transformation of a project
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7 owner's organisation and its business has been a marginalised issue in PM studies to date. To
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9 address the limitations of existing PM body of knowledge models - a lack of recognition of
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11 the transformation context - we examined how the extant PM knowledge framework can be
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13 enhanced to better enact business transformations from improved project management. In the
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15 same vein, this research sought to address the following question, and the question was
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17 answered by developing the advanced PM knowledge framework based on the literature
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19 review: *In what ways do the current project management bodies of knowledge need to be*
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21 *developed to address the challenges of organisational transformation that emphasise post-*
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23 *implementation benefits?*
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27 As a conceptual paper, we reviewed key themes to answer the question. First, the distinction
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29 and interrelationship between individual competencies and organisational capabilities in
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31 managing projects were briefly reviewed by clarifying each concept. Then, we highlighted
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33 the different perspectives of project owners and suppliers with respect to capabilities required
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35 by PMs for realising project benefits and transformation. The studies on how benefits and
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37 transformation management issues have been currently addressed in PM disciplines were
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39 reviewed. Second, the existing PM body of knowledge (including Morris' MoP model) and
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41 life cycle models were reviewed with a particular focus on the case of information systems
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43 projects as evidence of a lack of the recognition of transformation context. By critiquing the
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45 traditional PM models, we identified their limited execution-based approach to addressing the
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47 transformation context.
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51 As a core contribution of this paper theoretically, this study attempts to resolve the scientific
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53 pluralism (i.e. specialisation and fragmentation) in the PM discipline by developing an
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55 enhanced PM knowledge framework. Specifically, we argue that current PM knowledge base
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3 is heavily dominated by a project supplier's execution-based perspective, and accordingly
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5 none of the extant knowledge framework fully covers the wider issues such as beneficial
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7 transformation beyond the project implementation. The advanced PM knowledge framework
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9 was developed by analysing Morris' MoP framework through the conceptual lens of the
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11 Three Domains model and employing the key findings from the literature review. Both the
12
13 three domains and the MoP frameworks that our study adopt, give focus to our research by
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15 inviting new and broader perspectives. The three domains approach draws our attention to
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17 important new research areas (e.g. interface between temporary and permanent organisations)
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19 in addition to the extant execution-based approach. The new MoP framework suggests the
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21 necessity of strategic and organisational PM with a wider viewpoint such as project front-end
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23 activities. On the basis of these academic efforts, the advanced model emphasises the
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25 importance of distinguishing a project owner's and a supplier's PM knowledge to achieve the
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27 successful organisational transformation through more effective project management and
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29 reveals the limitations of the existing approach to project and transformation management
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31 research. Moreover, the significance of project back-end capabilities such as training,
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33 knowledge transfer and operational governance were discussed. The model can be used as a
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35 theoretical groundwork for the advancement of PM research for addressing the
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37 transformation context, which is the fundamental aim of projects.
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42 As a conceptual paper, we suggest a few further studies as follows. First, empirical studies on
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44 this framework should be necessary to researchers to discover details and evidence of each
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46 component and to test the validity of the framework. Second, identifying a distinctive
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48 benefits realisation context between the different types of projects (e.g. physical asset-based
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50 projects and information systems projects) benefit for a better understanding of
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52 transformation context in PM. Third, a project owner's financial accountability and burden
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3 also needs to be discussed further as they are the one who should deal with the budget and
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5 spending as managing the benefits may require additional costs and delays to the project.
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9
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11
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13
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Revisiting the Project Management Knowledge Framework: Rebalancing the Framework to Include Transformation Projects

Figures

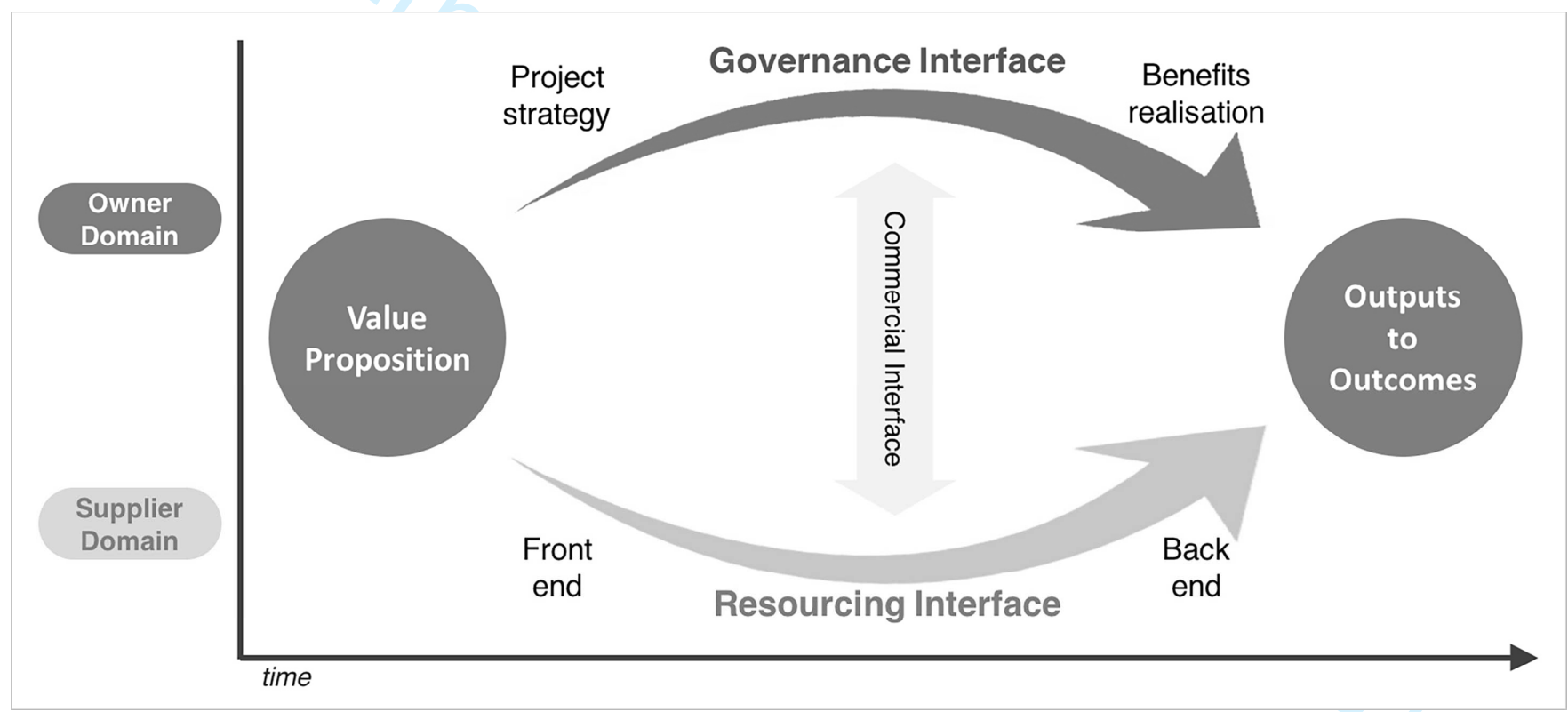


Figure 1. Dynamics of three domains model (Derived from Author (2014))

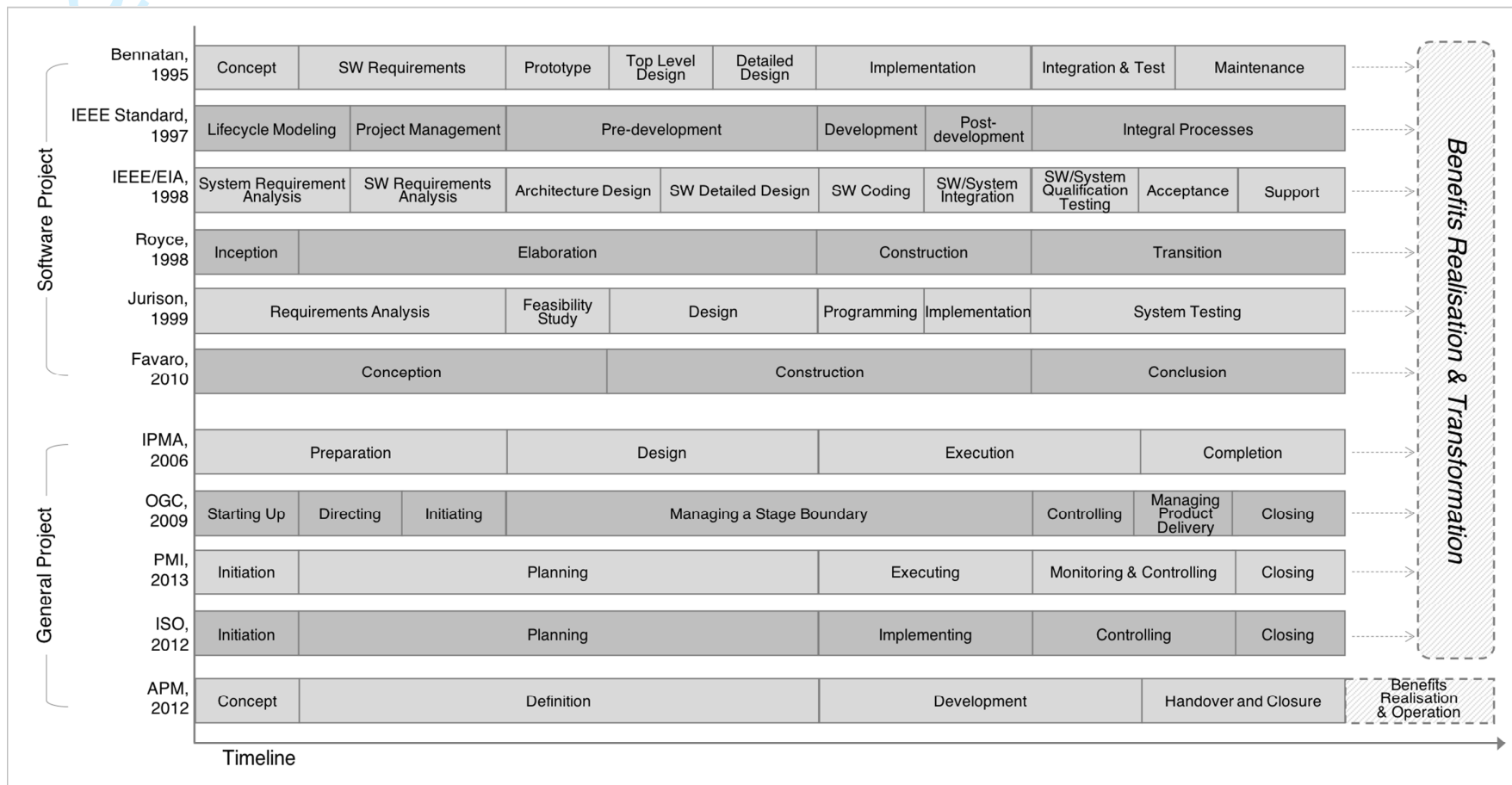


Figure 2. Evidence from general/software PM life cycle: A lack of the recognition of benefits realisation and transformation

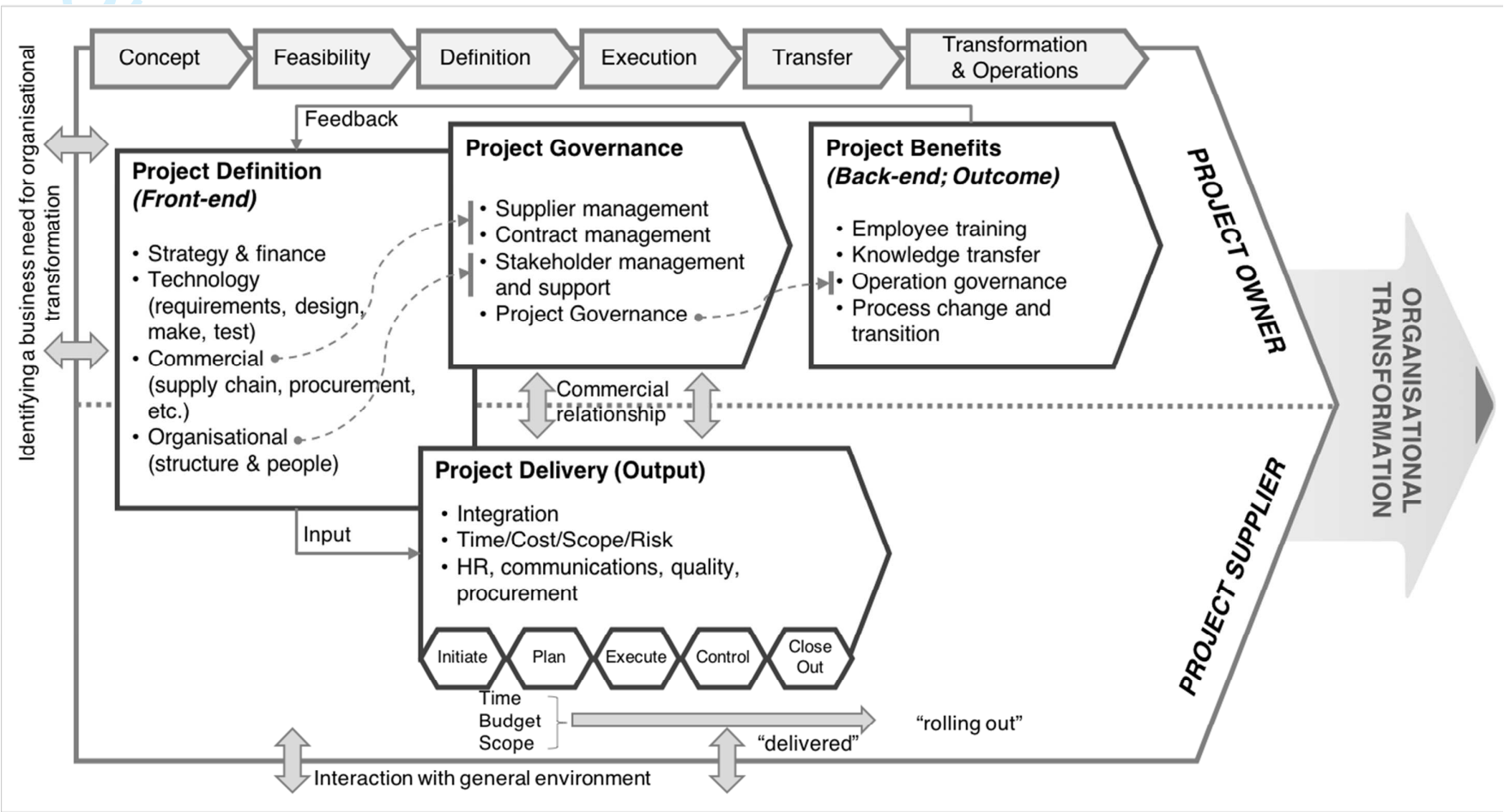


Figure 3. Project management knowledge framework for organisational transformation

Revisiting the Project Management Knowledge Framework: Rebalancing the Framework to Include Transformation Projects

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Response to Editor's and Reviewers' Comments

We appreciate your valuable reviews that give us the opportunity to improve the quality of manuscript. Through our discussion, the whole review results from the Editor and the Reviewers were grouped by four key themes, and we carefully revised each section of the manuscript. We provide our responses and key revision issues to the feedback along with the summary of original comments as follows.

1. Conceptual Clarification

Review Comments	Responses with Revision Summary
<i>Globally, the paper needs some work to tighten the concepts of the model. (...) The three domains approach seems to be central to your argument, but insufficiently developed in the paper to me.</i>	It is correct that the two models, “the Management of Projects” and “the Three Domains” approach are the core base of this study. We have highlighted this more precisely and have added further explanations in the introduction and literature review sections (i.e. how we see the two models, what we learn from the models and why they are significant).
<i>In your argument, there is variability on the depth in which you go to introduce the different concept of your model. (...) There is very few explanations on Figure 1 outside the fact that the stating that the model should include transformation projects, not only engineering or construction projects.</i>	Figure 1, as a conceptual lens of this study, is developed from the Three Domains model to emphasise the dynamics between a project supplier and an owner. Taking the review comments, we have added more explanations on what each component in Figure 1 refers to.
<i>(...) owner and the supplier. However, there are other perspectives on a project from a</i>	We clarify that distinguishing the two domains (owner and supplier) are the core of

<p>variety of major stakeholders (users, for example). This should be mentioned somehow. I understand that the aim of the paper is to enlarge a narrow conception of the delivery of a project, but this wider perspective has also limitations.</p>	<p>our new framework. We have decided to reduce addressing other perspectives such as users and stakeholders (that might lead to theoretical confusion), in order to focus more on the distinction between the owner and supplier perspectives.</p>
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2. Distinguishing Academic and Professional Approaches

Review Comments	Responses with Revision Summary
<p>There is no distinction in the paper on the “quality” of the literature, research versus consultancy. (...) To me, there is no problem to refer to consultant work, but it must be taken for what it is: based on experience, not research. (...) I suggest to working the problematics in the introduction both for professionals and for research.</p>	<p>In order to clearly set the academic scene in the introduction, we have carefully revised on how we elaborate the research context within both academic and professional perspectives. For instance, we have added the research context of specialisation and fragmentation in a PM discipline to highlight why this study is necessary and contributable in an academic manner.</p>
<p>The same should apply with normative literature. (...) I suggest revising the literature review in this perspective and to distinguish on what we know from research, and then, indicate if consultant literature confirm or not the results from research study.</p>	<p>We agree with this thankful feedback. This has been revised across the whole literature review sections. In each section, we review the academic sources first, then provide the additional professional sources that support our theoretical argument, where applicable.</p>
<p>The paper main focus is around the project management bodies of knowledge and their limitation/potential to capture the full project’ life-cycle. At first reading, the contribution appears to be more oriented towards practical and professionals. (...) I think that the paper main contribution in research is on avoiding fragmentation of the</p>	<p>In order to build more up the theoretical contribution of our paper, we have added the theoretical implication of how our enhanced PM knowledge framework can contribute to minimise pluralism in the PM disciplines including specialisation and fragmentation traps. As a conceptual paper, moreover, we have also suggested possible further research</p>

<i>field in the core substance of our field (Söderlund, 2011).</i>	areas in the conclusion.
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3. Literature Review

Review Comments	Responses with Revision Summary
<i>The literature is extensively covered for something that is not so crucial, in my view. I suggest here to tighten what is essential for the model parsimoniously. (...) on project and programme management. I fully understand the statement that the difficulty to distinguish relates to your argument of distinguishing between project owner and project supplier capabilities... but to me it is too much on this point. I think other more central theme should be further developed (for example the three domains approach).</i>	We agree with the comments that many research topics are contained in the first version. Taking your feedback, the section addressing the debate between project and programme management has been deleted. Instead, further explanations and reviews have been added into the literature review section including the Three Domains model (in line with the further explanations of Figure 1).

4. Others

Review Comments	Responses with Revision Summary
<i>I had the chance to read an earlier version of the paper at EURAM 2017. I suggest you indicate this in the paper, as footnote for example.</i>	This is indicated in the acknowledgement at the end of manuscript: "An earlier version of this paper was presented at the European Academy of Management Conference in Glasgow in 2017. This paper has benefited from comments and feedback from conference participants".