Driving forward organisational performance in UK Higher Education through effective Project Management practices

Stewart

Andrew Jeffery

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DRIVING FORWARD ORGANISATIONAL PERFORMANCE IN UK HIGHER EDUCATION THROUGH EFFECTIVE PROJECT MANAGEMENT PRACTICES

A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MSc PROJECT MANAGEMENT

ANDREW JEFFERY STEWART
http://orcid.org/0000-0003-1922-0356

May 2014
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Signed: Date: 02 May 2014
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Preface

Fundamentally, Project Management (PM) is about change, or at least introducing change (OGC, 2009, p.3). One sector in particular, from the UK, that has had no shortage of change recently is Higher Education (HE). Not only do HE Institutions (HEIs) drive change internally on a regular basis (Northumbria University, 2013 and Jisc infoNet, 2012a), they are faced with huge external pressures such as the changes to HE funding and student finance (Browne, 2010). How do HEIs manage change? Is PM well established within UK HEIs? Can effective PM practices improve Organisational Performance (OP) across HE?

As it stands there are no clear answers to these questions. To begin to answer them a baseline is required i.e. an overarching picture of PM practices across HE which also begs the question how can we assess an organisation's maturity in PM? Bryde and Leighton (2009) outlined this exact need within their study carried out at Liverpool John Moores University – “Further work is required in terms of benchmarking PM from an inter-organizational [sic] perspective to explore variations across HEIs. One task will be to establish suitable ways of classifying HEIs to enable meaningful comparisons.” This study aims to fill that gap and assess the relationship between PM maturity and OP across UK HE.
List of abbreviations

APM – Association for Project Management

AY – Academic Year

BCE – Business and Community Engagement

BCS – Business Classification Scheme

BoK – Body of Knowledge

CMMI – Capability Maturity Model Integration

CoP – Community of Practice

DELNI – Department for Employment and Learning

ERDF – European Regional Development Fund

HE – Higher Education

HEDIIP – Higher Education Data & Information Improvement Programme

HEIDI – Higher Education Information Database for Institutions

HEFCE – Higher Education Funding Council for England

HEFCW – Higher Education Funding Council for Wales

HEIs – Higher Education Institutions

HESA – Higher Education Statistics Agency

IPR – Intellectual Property Rights

IT – Information Technology

OGC – Office of Government Commerce
OP – Organisational Performance

OPM3® – Organisational Project Management Maturity Model

P3M3® – Portfolio, Programme and Project Management Maturity Model

PIs – Performance Indicators

PISG – Performance Indicators Steering Group

PM – Project Management

PM² – Project Management Process Improvement Model

PMI – Project Management Institute

PMO – Project Management Office

RRS – Records Retention Schedule

SALSA – Search, AppraiseL, Synthesis and Analysis

SEI – Software Engineering Institute

SFC – Scottish Funding Council

UCISA – Universities and Colleges Information Systems Association

UK – United Kingdom

UKHEPM – UK Higher Education Project Management
Abstract

**Purpose:** Project Management (PM) is often linked to Organisational Performance (OP). A number of reports and literature attribute OP to an organisation’s ability to deliver successful projects. This study attempted to assess whether or not PM maturity had a significant impact on actual organisational success factors with a focus on UK Higher Education (HE).

**Design/methodology/approach:** The primary method of inquiry was quantitative. This was achieved by operationalising PM maturity using an online survey. PM maturity scores were then assessed against existing OP data e.g. student satisfaction, higher education-business and community interaction survey, and league tables.

**Findings:** The study provides an in-depth summary of PM maturity across UK HE. There were some instances where specific areas of PM practice had an impact on OP, however, more generally the study found no link between PM maturity and OP.

**Research limitations/implications:** There are a number of limitations/implications to this study: the statistical knowledge of the author; the number of respondents per institution was not ideal; and the study was unable to assess PM maturity against HESA’s most recently published Performance Indicators (PIs).

**Keywords:** Project Management, Projects, Organisational Performance, Maturity, Benchmarking, Education, Higher Education, UK, Universities.
1. Introduction

Projects involve risk and as such they often fail. In UK Higher Education (HE) this is no different. To support the sector Jisc, previously the Joint Information Systems Committee, issued a circular in May 2002 inviting interested parties "to tender for the establishment of a new, national JISC [sic] Centre of Expertise in the planning and implementation of information systems which improve the effectiveness of Further and Higher Education institutions" (Jisc, 2002).

Upon completion of the tendering process Jisc infoNet was formed as a service to support the sector. The focus of their guidance is on process improvement, project management, managing change, risk management and stakeholder engagement. It should be stated that the author of this dissertation is an employee of Jisc infoNet and much of his experience, having worked with hundreds of projects across HE, has led to its development. Many of the projects that succeed do so because they manage their projects appropriately.

Project Management (PM) is typically a concern for planning departments and Information Technology (IT) departments within HEIs. Over the years it seems PM practices are maturing. A number of institutions have established PM Offices (PMOs) (Becker, 2013) and the sector is beginning to establish Communities of Practice (CoP) around PM, for example the Universities and Colleges Information Systems Association’s (UCISA) Project and Change Management Group (UCISA, no date-a). However, there is no clear evidence or understanding of how mature PM practices are across the sector (Bryde and Leighton, 2009, p.718) or how they affect an organisation’s overall performance.

1.1 Aim of the research

The research undertaken as part of this study aims to identify the UK HE sector's maturity in PM by defining a PM maturity model and benchmarking PM practices across UK HEIs. The research also aims to determine if there is a relationship between high performing organisations and those that employ mature PM practices. More explicitly, this research has four broad objectives:

1. Research existing PM maturity models.
2. Assess the maturity of PM across UK HE.
3. Explore the relationship between the maturity of PM and organisational performance (OP) across UK HE.
4. Provide universities with practical advice and recommend relevant support interventions.

1.2 Impact of the research
The expected impact of this research is to improve the effectiveness of HEIs. They operate in a complex environment and as a result they tend to develop strategies on a rolling 3-5 year cycle (Jisc infoNet, 2012a). These strategies provide a roadmap for where UK HEIs want to be; however putting that into effect is a difficult task. That is where PM can help. By establishing a benchmark, exploring good practice and providing recommendations to the sector this research can help to ensure HEIs respond well to future internal and external drivers resulting in improved OP.
2. Literature (Secondary)

This literature review focuses on three main areas:

1. **UK HE.** This section focuses on the history of HE and its overall aim is to help inform what kind of data will be useful in assessing OP.

2. **PM.** This section focuses on the basics of PM. This is to ensure nothing is taken for granted when deciding upon a method of calculating the maturity of PM practices employed by UK HEIs.

3. **PM Maturity Models.** This focuses on existing PM maturity models and, in particular, to assess whether or not they could be used to calculate the maturity of PM practices employed by UK HEIs.

2.1 UK Higher Education (HE)

It was at The University of Bologna, perhaps the first university in the western world, where the first ever charter outlining academic freedom as a solid belief was developed – the Constitutio Habita.

“...in 1158 Federico I promulgated the Constitutio Habita, in which the University was legally declared a place where *research could develop independently from any other power.***” (The University of Bologna, no date, my italics)

In a presentation published by the Royal Society for the encouragement of Arts, Manufactures and Commerce (RSA, 2012), Professor Stefan Collini notes that one way of distinguishing universities from other organisations is that they provide a partly protected space within which trying to extend and deepen human understanding has priority over any other immediate purposes. He also echoes the Constitutio Habita, stating that universities are there for the public good, and not for anyone/or any organisation deriving a private benefit at any given moment. Maloberti (2012) notes, however, that experiments are becoming much more expensive and the money to run those experiments needs to come from somewhere – in which case a university will typically need to partner with an external organisation. This makes it very difficult for HEIs to carry out research *independently.*
2.1.1 The purpose of UK HE

The Robbins Report (Committee on Higher Education, 1963) describes UK HE as having four *objectives*, summarised below:

1. Instruction in skills suitable to play a part in the general division of labour.
2. To produce not mere specialists but rather cultivated men and women.
3. The advancement of learning – the search for truth.
4. The transmission of a common culture and common standards of citizenship.

The Dearing Report (National Committee of Inquiry into Higher Education, 1997), using Robbins’ recommendations as a starting point, outlined the following four *purposes* of HE:

1. To inspire and enable individuals to develop their capabilities to the highest potential levels throughout life, so that they grow intellectually, are well-equipped for work, can contribute effectively to society and achieve personal fulfillment.
2. To increase knowledge and understanding for their own sake and to foster their application to the benefit of the economy and society.
3. To serve the needs of an adaptable, sustainable, knowledge-based economy at local, regional and national levels.
4. To play a major role in shaping a democratic, civilised, inclusive society.

Dearing shifted the balance of UK HE, placing much greater emphasis on benefits to society and the individual concerned – the purpose of UK HE as a place where research could be carried out independently from any other power appeared to be fading. The Dearing Report (National Committee of Inquiry into Higher Education, 1997) also introduced the idea of student fees, therefore starting the process of commodifying UK HE (Crace and Sheppard, 2007), or at least *Learning and Teaching*.

The Browne Review (Browne, 2010, p.14) goes on to simplify our understanding of what HE is outlining three well-defined *benefits*:
1. It helps to create the knowledge, skills and values that underpin a civilised society.
2. It transforms the lives of individuals – in terms of both employment and social mobility.
3. It drives innovation and economic transformation.

Notice the subtleties in the language used by each of the three key reports outlined above. Over a 40 year period UK HE has gone from having objectives, a purpose, to benefiting the UK. According to Oxford Dictionaries (no date) a ‘benefit’ can be defined as “an advantage or profit gained from something”. This is a long way removed from the Constitutio Habita and Collini’s description of HE.

2.1.2 HEIs as a business
The benefits defined by Browne are reflected across UK HEIs’ vision and mission statements, and can be summarised by the following three core strategic aims:

1. Learning and teaching;
2. Research; and

(Durazzi, 2013, p.4; HEFCE, no date; HEFCW, 2013, p. 5; Scottish Funding Council, no date; Department for Employment and Learning, no date)

The University of Leeds’ (no date) strategy map is a nice example of this in practice, particularly their key themes, see Figure 1.
By 2015 our distinctive ability to integrate world-class research, scholarship and education will have secured us a place among the top 50 universities in the world.

Our stakeholders – including our staff, students, alumni, external sponsors and partners – expect the University of Leeds to:

- Provide a stimulating environment that supports personal development
- Provide exceptional graduates who become the leaders of tomorrow
- Attract and retain the best students and staff
- Provide a world-class teaching experience
- Sustain a reputation for delivery and professionalism
- Be recognized for its impact: local, national, international, community and culture
- Enjoy global standing as a research-intensive university
- Provide world-leading research

Table 1 summarises the functions associated with learning and teaching, research, and BCE.

<table>
<thead>
<tr>
<th>Function group</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning and teaching</td>
<td>Comprises the design and delivery of taught programmes that lead to an academic award, and supporting students to develop academic, personal and employability skills.</td>
</tr>
<tr>
<td>Research</td>
<td>The undertaking of academic research and delivery of research programmes that lead to an academic award.</td>
</tr>
<tr>
<td>Business and Community Engagement (BCE)</td>
<td>Comprises the exploitation of Intellectual Property Rights (IPR), consultancy to external organisations, delivering educational programmes to external organisations and individuals, setting up and managing related companies, and service delivery external to the university.</td>
</tr>
</tbody>
</table>

This may at first appear to be a very simple breakdown, however, the reality is much more complex. Jisc infoNet’s (2007) Business Classification Scheme (BCS) and Records Retention Schedule (RRS) provide a conceptual representation of a UK HEI’s business. Table 1 summarises the functions associated with learning and teaching, research, and BCE.
services, student services and business units. HEIs are in themselves huge and complex organisations. In the Academic Year (AY) 2012 - 2013 UK HE had a total income of £29.1bn and an expenditure of £29.1bn (HESA, no date-a), employing 382,515 members of staff (HESA, no date-b).

Figure 2 Income of UK HEIs by source 2012/13

UK HEIs are responsible for huge sums of money and are therefore accountable to a range of key stakeholders – UK HE funding bodies (as a proxy to government); students who now pay a greater proportion of teaching funds (Department for Business, Innovation & Skills, 2011); research councils; and external organisations. Understanding the needs and priorities of those stakeholders is an incredibly difficult task. For example, priorities set by UK HE funding bodies are often dictated by government and are short term in their nature. HEIs must consider how they react to those requirements, whilst maintaining a long-term vision for the future. A range of Jisc projects indicate the importance of including ‘students as change agents’ with some success (Jisc, 2013a), and yet Mahri, Student Union President, notes just how difficult this kind of relationship can be.

“I think it’s hard to engage students here in London to come to events such as Get the Digital Edge or engage in focus groups because simply people are very busy. Students in particular – have obviously got coursework to keep on top of, may have family obligation duties, they may even have a job. So you know to try and get students to
come to these types of event can be quite difficult in that regard.”
(University of Westminster, 2013, 06:14)

Managing stakeholders’ needs is difficult in itself; measuring performance (or reporting) against those needs is perhaps even more difficult.

2.1.3 Measuring the performance of UK HEIs
From a strategic viewpoint, HESA’s *Performance Indicators in Higher Education in the UK* provide the best snapshot of sector progress. These performance indicators are determined by the Performance Indicators Steering Group (PISG) whose membership comprises government departments, the funding councils and representative bodies (HESA, no date-c). HESA’s UK HE performance indicators include:

- Widening participation indicators;
- Non-continuation rates (including projected outcomes);
- Module completion rates;
- Research output; and
- Employment of graduates.

These are the most robust performance indicators currently available to the sector and are long-term in their nature, as opposed to priorities set out within the UK HEIs annual grant letters/outcome agreements.

UK HEIs currently provide more than 500 data collections to various representative bodies, as detailed by the ‘Inventory of HE data collections’ (HEDIIP, 2014). Some of these collections are extremely useful in providing further evidence as to how well UK HEIs perform. For example, the National Student Survey provides detailed data specific to the student experience.

Another, slightly more contentious, set of performance indicators are provided by national newspapers – *league tables*. Those in favour of league tables argue that they: provide a way of benchmarking performance; allow the general public to assess inefficiencies; and help managers to identify areas for improvement (Turner, 2005, p.353). Turner (2005) himself, however, notes concerns over the methodologies used
to assess league table standings. Many others share similar concerns around accuracy, quality/methodology and the ability to easily compare such complex organisations (Broon, 2006; Hazelkorn, 2008). Broon (2006, p. 38) vehemently disagrees with the use of league tables to the extent that they are in danger of undermining the quality and standards of universities and colleges.

2.2 Project Management (PM)

The ability to balance day-to-day activities and continually innovate is one of the biggest challenges faced by any organisation. It affects private companies, charities and public organisations, whether they are small, medium or large. It even affects smaller groups within those organisations such as departments, services, schools and faculties. PM is an effective way of managing that balance and delivering organisational change.

“Project management is an activity designed to make changes in a change-resistant world.” (Parry, 2013, p.34)

There are a number of factors that influence the behaviour of any organisation, typically summarised as Political, Economic, Social, Technological, Legal and Environmental – or PESTLE (Jisc infoNet, 2008). A change in one or more of these areas requires an organisation to adapt. If an organisation becomes idle for too long it will struggle to compete with its rivals.

“...reality has changed, but the theory of the business has not changed with it.” (Drucker, 1994, p.98)

Perhaps the best example of this in recent times can be found in the mobile phone market. Nokia and BlackBerry (Vilpponen, 2013; Arthur, 2013) both failed to maintain momentum with iOS and Android based phones.

On top of their day-to-day activities, or business as usual, organisations need to develop a clear understanding of where they would like to be in the next three to five years – a vision. A well thought through strategy outlines how an organisation will realise that vision. Projects deliver it by allowing the organisation to effectively plan, organise and control its resources despite the associated risks involved with change.
This may, however, be somewhat difficult across UK HE if UK universities’ vision and mission statements are used merely as marketing tools as opposed to realistic statements of strategic purpose (Shattock, 2003, p. 4).

“Project management is a key strategic tool to drive critical initiatives and reap their full value. Organisations that understand this – and are committed to improving the quality of their project management – will therefore have a strong competitive advantage.” (KPMG, 2013, p.3)

2.2.1 Definitions of PM

The following list provides a mix of PM definitions:

“Project management is the planning, delegating, monitoring and control of all aspects of the project, and the motivation of those involved, to achieve the project objectives within the expected performance targets for time, cost, quality, scope, benefits and risk.” (OGC, 2009, p.4)

“Project management is the application of processes, methods, knowledge, skills and experience to achieve the project objectives.” (APM, 2012, p.12, my bold)

“Project management is the application of knowledge, skills, tools and techniques to project activities to meet the project requirements.” (PMI, 2013, p.6, my bold)

“Project management is a discipline: There is an active and growing cadre of people researching and documenting the practices and issues associated with the success of projects.” (Rosenau and Githens, 2005, my bold)

The first definition, taken from PRINCE2™ (a PM methodology) oversimplifies PM. There is too much emphasis on the actions typically required to successfully complete a project. It fails to recognise the importance of knowledge which is highlighted by the definitions developed by the broader Bodies of Knowledge.
(BoKs). The final definition goes one step further, recognising the importance of PM in academia. PM is not a magic wand that can be waved, leading an individual, team, or organisation to utopia. PM is a profession, a discipline and project managers must work hard to ensure success, not just in terms of performance, cost and time but in the broader setting of organisational success.

2.2.2 Types of project
A number of authors distinguish between different types of project. For example Lock (2013, pp. 6-8) categorises projects into four different types:

1. Civil engineering, construction, petrochemical, mining and quarrying;
2. Manufacturing;
3. Information Technology (IT) projects and projects associated with management or business change; and
4. Projects for pure scientific research.

Obeng (1995, cited in Webster, 2012) focuses his categories on the journey itself:

1. Walking in the fog – you do not know what you want or how to achieve it;
2. Making a movie – you know how but not what you need to do;
3. Going on a quest – you know what you want but not how to achieve it; and
4. Painting by numbers – you know what you want and how to achieve it.

Maylor (2010, pp. 7-9) describes projects in a similar way to Obeng using the categories: first-timers; as… but… (as the job we did last time but with the following differences); and painting by numbers. A good understanding of the type of project an organisation wishes to undertake can help to determine which PM approach to take and how it might be adapted. For example, if you know what you want and how to achieve it you are less likely to require a rigorous governance structure than a project where you do not know what you want or how to achieve it.

2.2.3 Characteristics of a project
All projects have a similar set of characteristics regardless of their type. Projects:

- are unique;
- involve risk and uncertainty;
● are focused – undertaken to achieve planned objectives; and
● are temporary.

Table 2 provides a summary of project characteristics, described by a range of literature.

Table 2 Characteristics of projects

<table>
<thead>
<tr>
<th>Author/Organisation</th>
<th>Project characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lock (2013)</td>
<td>novelty, risk and uncertainty, unique</td>
</tr>
<tr>
<td>Maylor (2010)</td>
<td>aspects of uniqueness, temporary, mission focused, change, integrating, social construction, emergence and uncertainty</td>
</tr>
<tr>
<td>Rosenau and Githens (2005)</td>
<td>temporary, unique, proceeds in steps or stages</td>
</tr>
<tr>
<td>OGC (2009)</td>
<td>change, temporary, cross-functional, unique, uncertainty</td>
</tr>
<tr>
<td>Schwalbe (2012)</td>
<td>temporary, unique, developed using progressive elaboration, requires resources, uncertainty</td>
</tr>
<tr>
<td>Callahan and Brooks (2004)</td>
<td>temporary, unique, well-defined scope</td>
</tr>
<tr>
<td>Association for Project Management (APM, 2012)</td>
<td>unique, transient, undertaken to achieve planned objectives</td>
</tr>
<tr>
<td>Project Management Institute (PMI, 2008)</td>
<td>temporary, undertaken to create a unique product (service or result), uncertainty</td>
</tr>
</tbody>
</table>

2.2.4 Approaches to PM

**Association for Project Management (APM) Body of Knowledge (BoK)**

The APM (2012, p.xvii) describe a BoK as “a complete set of concepts, terms and activities that make up a professional domain.” The BoK is developed and owned by the APM’s community, which comprises practitioners, academics and authors. As an association the APM use the term PM to cover project, programme and portfolio management. It describes and provides guidance in four key areas:

1. **Context** – comprising governance and setting.
2. **People** – comprising interpersonal skills and professionalism.
3. **Delivery** – comprising integrative management, scope management, schedule management, financial and cost management, risk management, quality management and resource management.
4. **Interfaces** – comprising accounting, health and safety, human resource management, law, security and sustainability.
**Project Management Institute (PMI) BoK (PMI, 2013b)**

The PMI BoK takes a very similar approach to the APM in that it is developed and owned by its membership. The approach is made up of five process groups which can be broken down into 47 individual processes. The fourth edition makes it clear that these processes map across nine knowledge areas: integration; scope; time management; cost management; quality management; human resource management; communications management; risk management; and procurement management (PMI, 2008, p.43). The fifth edition still contains these knowledge areas but does not make it as explicit, also adding stakeholder management to the list. Table 3 below provides an overview of the PMI’s approach. Those in **italics** are new additions/amendments in the fifth edition.

Table 3 An overview of the PMI approach. Adapted from PMI (2008; 2013b) BoK.

<table>
<thead>
<tr>
<th>Knowledge Areas</th>
<th>Initiating</th>
<th>Planning</th>
<th>Executing</th>
<th>Monitoring &amp; Controlling</th>
<th>Closing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Integration</td>
<td>1.1 Develop project charter</td>
<td>1.2 Develop project management plan</td>
<td>1.3 Direct and manage project execution</td>
<td>1.4 Monitor and control project work 1.5 Perform Integrated change control</td>
<td>1.6 Close project or phase</td>
</tr>
<tr>
<td>2. Scope</td>
<td></td>
<td>2.1 Plan scope management 2.2. Collect requirements 2.3 Define scope 2.4 Create WBS</td>
<td>2.5 Validate scope 2.6 Control scope</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Time Management</td>
<td></td>
<td>3.1 Plan schedule management 3.2 Define activities 3.3 Sequence activities 3.4 Estimate activity resources 3.5 Estimate activity durations 3.6 Develop schedule</td>
<td>3.7 Control schedule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Cost Management</td>
<td></td>
<td>4.1 Plan cost management 4.2 Estimate costs 4.3 Determine budget</td>
<td>4.4 Control costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Quality Management</td>
<td>5.1 Plan quality management</td>
<td>5.2 Perform quality assurance</td>
<td>5.3 Quality control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------</td>
<td>-------------------------------</td>
<td>-------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Human Resource Management</td>
<td>6.1 Plan human resource management</td>
<td>6.2 Acquire project team</td>
<td>6.3 Develop project team 6.4 Manage project team</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Communications Management</td>
<td>7.1 Plan communications</td>
<td>7.2 Manage communications</td>
<td>7.3 Control communications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Risk Management</td>
<td>8.1 Plan risk management</td>
<td>8.2 Identify risks</td>
<td>8.3 Perform qualitative risk analysis 8.4 Perform quantitative risk analysis 8.5 Plan risk responses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Procurement Management</td>
<td>9.1 Plan procurements</td>
<td>9.2 Conduct procurements</td>
<td>9.3 Control procurements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Stakeholder Management</td>
<td>10.1 Identify stakeholders</td>
<td>10.2 Plan stakeholder management</td>
<td>10.3 Manage stakeholder engagement</td>
<td>10.4 Control stakeholder engagement</td>
<td></td>
</tr>
</tbody>
</table>

**PRINCE²™ (OGC, 2009)**

PRINCE²™ is a process-based approach for managing projects, developed by the UK’s Office of Government Commerce (now the Cabinet Office). More recently, CAPITA acquired the majority stake in PRINCE²™ (Reid, 2013). PRINCE²™ is comprised of seven principles, seven themes and seven processes shown in Table 4 below. It should be noted that there is no relationship between the information held across each row.
Table 4 PRINCE2™ principles, themes and processes

<table>
<thead>
<tr>
<th>PRINCE2™ Principles</th>
<th>PRINCE2™ Themes</th>
<th>PRINCE2™ Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continued business justification</td>
<td>Business case</td>
<td>Starting up a Project</td>
</tr>
<tr>
<td>Learn from experience</td>
<td>Organisation</td>
<td>Directing a Project</td>
</tr>
<tr>
<td>Defined roles and responsibilities</td>
<td>Quality</td>
<td>Initiating a Project</td>
</tr>
<tr>
<td>Manage by stages</td>
<td>Plans</td>
<td>Managing a Stage Boundary</td>
</tr>
<tr>
<td>Manage by exception</td>
<td>Risk</td>
<td>Controlling a Stage</td>
</tr>
<tr>
<td>Focus on products</td>
<td>Change</td>
<td>Managing Product Delivery</td>
</tr>
<tr>
<td>Tailor to suit the project environment</td>
<td>Progress</td>
<td>Closing a Project</td>
</tr>
</tbody>
</table>

4D (Maylor, 2010)

Another, perhaps less well-known, process based approach to PM comes in the form of the 4D model which stands for: define it; design it; do it; and develop it. The approach also takes into consideration the need to make sense of a project’s wider context. The 5 process groups and underlying processes are shown in Table 5 below.

Table 5 Process groups and underlying processes from the 4D PM approach

<table>
<thead>
<tr>
<th>Process Group</th>
<th>Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Making sense of the project context</td>
<td>1.1 Introduction</td>
</tr>
<tr>
<td></td>
<td>1.2 Structures and frameworks</td>
</tr>
<tr>
<td></td>
<td>1.3 Projects and organisations</td>
</tr>
<tr>
<td>2. Define it</td>
<td>2.1 Stakeholders, strategy and success</td>
</tr>
<tr>
<td></td>
<td>2.2 Initial planning</td>
</tr>
<tr>
<td>3. Design it</td>
<td>3.1 Time planning</td>
</tr>
<tr>
<td></td>
<td>3.2 Rethinking time planning</td>
</tr>
<tr>
<td></td>
<td>3.3 Cost and benefit planning</td>
</tr>
<tr>
<td></td>
<td>3.4 Stakeholders and quality</td>
</tr>
<tr>
<td></td>
<td>3.5 Risk and opportunities management</td>
</tr>
<tr>
<td>4. Do it</td>
<td>4.1 Project organisation: structure and terms</td>
</tr>
<tr>
<td></td>
<td>4.2 Management and leadership in projects</td>
</tr>
<tr>
<td></td>
<td>4.3 Control</td>
</tr>
<tr>
<td></td>
<td>4.4 Supply chain issues</td>
</tr>
<tr>
<td></td>
<td>4.5 Problem-solving and decision-making</td>
</tr>
<tr>
<td>5. Develop it</td>
<td>5.1 Project completion and review</td>
</tr>
<tr>
<td></td>
<td>5.2 Improving project performance</td>
</tr>
</tbody>
</table>
**Agile**

Agile PM is an iterative approach used to manage complex projects and became widely adopted after its success within the software development industry. A key aspect of Agile PM is its focus on customers’ requirements. The Agile Manifesto (Beck et al, 2001) highlights four key values of the Agile approach:

1. Individuals and interactions over processes and tools  
2. Working software over comprehensive documentation  
3. Customer collaboration over contract negotiation  
4. Responding to change over following a plan

There are a number of different methodologies of which the most well known is Scrum. Despite being widely recognised for the development of Scrum, Ken Schwaber (GoogleTechTalks, 2007) claims not to have invented it because it lends so much from a range of different peoples’ ideas. The Agile approach differs from traditional PM approaches because it is not as easy to describe its lifecycle. As previously mentioned, Agile PM is iterative; it starts with identifying a problem, framing a potential solution and working in cycles to deliver a workable solution (EDUCAUSE, 2010).

**2.2.5 Success in PM**

Success in PM is not as straightforward as it might seem. It often depends upon whose perspective the project is viewed from. Cooke-Davies (2002) breaks it down into three different types:

1. PM or *process* success;  
2. Individual project or *product* success; and  
3. Delivering consistently successful projects – *organisational* success.

PM success relates to a project manager’s perspective (Lock, 2013; McLeod, Doolin and MacDonell 2012), taking into account elements of the *iron triangle* – performance (originally defined as quality), cost and time (Delo, 2012). More recently, the *iron triangle* has encountered greater criticism (Ika, 2009; Weaver, 2012; and Hubbard, 2012 – see Darren Jaundrill’s comment in particular) with less emphasis being placed upon the triple constraint as a measure of success. Ika (2009,
p.7) notes “projects have often enough been delivered within time, cost, and quality, only to be considered failures.”

Individual project success relates to the perspectives of a range of internal and external stakeholders. It is very difficult to map all stakeholders associated with a specific project and virtually impossible to meet all of their requirements. That is why it is so important to clearly communicate the aims and objectives of the project as well as what is and is not within scope. Alderman and Ivory (2011, p.18) describe the project manager’s primary role as one of “developing and managing relationships across an extended network of actors”. Cooke-Davies (2002, pp. 186-188) notes that there is a particular focus at this stage on the management and realisation of benefits.

“Regardless of how well you define and achieve the tangible deliverables of your project, failure to manage the project stakeholders adequately may cause your project to fail.” (McElroy and Mills, 2003, p.99)

Delivering consistently successful projects relates to the organisation(s) funding the project. KPMG (2013) state organisations deemed to be successful consistently apply a suitable methodology throughout the lifecycle of a project. However, portfolio and programme management practices are notoriously difficult to put into practice; it is incredibly difficult to establish a set of metrics to highlight the performance of projects in that portfolio/programme and organisations struggle to establish clear methods of learning from their own experiences (Cooke–Davies, 2002, p.188).

**Critical Success Factors**

The Association for Project Management (APM, 2012) list five management practices, that when implemented can increase the chances of a project, programme or portfolio succeeding. Those management practices include:

1. Defining clear goals and objectives;
2. Maintaining a focus on business value;
3. Implementing a proper governance structure;
4. Ensuring senior management commitment; and
5. Providing timely and clear communication.
The level to which those management practices are embedded within an organisation indicates its level of maturity. There is of course much more to it than meets the eye.

Jisc’s Transformations programme funded and supported 57 UK HEIs to deliver large-scale organisational change (Jisc, 2013b). The programme support team recently gathered to discuss lessons learned from the programme; the following list describes the kinds of thing successful projects did (Jisc Transformations, 2013).

- Involve all stakeholders from the start and throughout.
- Give explicit time and attention to change processes, with reference to all stakeholders - including the project team.
- Identify and baseline the institutional context at the start of the project.
- Do not reinvent the wheel – take a look at what others have done and build upon that.
- Successful projects are often part of a larger programme.
- Take risk analysis seriously!
- Take a realistic, informed and flexible approach to project timescales and outcomes.

2.3 Existing PM maturity models

This section focuses on existing PM maturity models. It was difficult to fully assess some of the maturity models in detail because of the commercial sensitivities surrounding them. There was also a cost involved in gaining access to some such as the PMIs Organisational Project Management Maturity Model (OPM3®).

2.3.1 The PM process improvement model

The project management process improvement (PM³) model breaks PM processes and practices into nine PM knowledge areas (integration, scope, time, cost, quality, communication, human resources, risk and procurement) and five PM processes (initiating, planning, executing, controlling and closing) by adopting the PMI BoK (Kwak and Ibbs, 2002). By answering a set of multiple choice questions an organisation can begin to assess its strengths and weaknesses, and also begin to determine its level of maturity: ad-hoc; planned; managed at project level; managed at corporate level; or continuous learning – see Figure 3.
2.3.2 Capability Maturity Model Integration (CMMI)

CMMI is a process improvement maturity model (Wangenheim et al, 2010; McGraw and Blash, 2008). It was developed by the Software Engineering Institute (SEI) and consists of a collection of process areas each containing a set of specific practices and generic practices. Table 6 provides an overview of the process areas defined by the CMMI.

<table>
<thead>
<tr>
<th>Process area</th>
<th>Brief purpose description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project planning</td>
<td>To establish and maintain the project’s plan</td>
</tr>
<tr>
<td>Project monitor and control</td>
<td>To provide an understanding of the project’s progress so corrective actions can be taken</td>
</tr>
<tr>
<td>Risk management</td>
<td>To identify potential problems before they occur</td>
</tr>
<tr>
<td>Quantitative project management</td>
<td>To quantitatively manage the project’s defined processes</td>
</tr>
<tr>
<td>Requirements management</td>
<td>To manage the requirements</td>
</tr>
<tr>
<td>Requirements development</td>
<td>To produce and analyse requirements</td>
</tr>
<tr>
<td>Technical solutions</td>
<td>To design, develop and implement solutions</td>
</tr>
<tr>
<td>Verification</td>
<td>To ensure selected work products meet requirements</td>
</tr>
<tr>
<td>Validation</td>
<td>To demonstrate that a product fulfills its intended use</td>
</tr>
<tr>
<td>Product and process quality assurance</td>
<td>To provide objective insight into products and processes</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>Measurement and analysis</td>
<td>To develop and maintain a measurement capability to support management information needs</td>
</tr>
<tr>
<td>Decision analysis and resolution</td>
<td>To analyse possible decisions evaluating alternatives against established criteria</td>
</tr>
<tr>
<td>Causal analysis resolution</td>
<td>To identify causes of defects and other problems and take action</td>
</tr>
<tr>
<td>Organisational process focus</td>
<td>To plan, implement, and deploy organisational process improvements based on strengths and weaknesses</td>
</tr>
<tr>
<td>Organisational process definition</td>
<td>To establish and maintain a usable set of organisational process assets</td>
</tr>
<tr>
<td>Organisational training</td>
<td>To develop skills and knowledge of people so they can perform their roles effectively and efficiently</td>
</tr>
<tr>
<td>Integrated project management</td>
<td>To establish and manage the project and involvement of relevant stakeholders according to the defined process</td>
</tr>
</tbody>
</table>

2.3.3 P3M3® Project Model

The Office of Government Commerce (OGC) is responsible for the development of the Portfolio, Programme and Project Management Maturity Model (P3M3®). It was first published in 2006 and has recently been updated, in 2013, to reflect the growing body of knowledge around programme management and wider acceptance of portfolio management (Axelos Limited, 2013a). There is a specific maturity model for portfolio management, programme management and project management.

The P3M3® model focuses on seven process perspectives (Axelos Limited, 2013b):

1. Management control.
2. Benefits management.
3. Financial management.
4. Stakeholder engagement.
5. Risk management.
6. Organisational governance.
7. Resource management.

P3M3® has five maturity levels and there are a range of specific and general attributes set out within the seven process perspectives against each maturity level.
Organisations assess themselves against these attributes in an attempt to assess their maturity level.

2.3.4 Application of existing PM Maturity Models

There are three major issues with regards to the application of existing PM maturity models in assessing the maturity of PM practices across UK HEIs.

1. **Intellectual Property (IP)** – the PM process improvement (PM²) looked to be a very promising maturity model and the approach used a questionnaire which appeared as if though it could be applicable for this study. However, when approached the authors were unwilling to share their work for commercial purposes having built a successful company on the back of their work.

2. **Complexity** – all of the PM maturity models noted above were extremely complex in their nature. Questionnaires involved hundreds of questions or a detailed understanding of the methodology underpinning the approach was required. There simply was not the time to investigate them thoroughly enough and it was felt that if the approach to gathering data was too complex there would not be enough data returned.

3. **Definitions of maturity** – many of the models available were developed off the back of a project management methodology. For example PM² focuses on the PMI BoK and P3M3® builds upon the OGC’s suite of resources e.g. PRINCE2™. This study is not focused on how well an HEI can apply a PM methodology, it is focused upon how well individuals across the organisation apply PM practices that are consistent with success.
3. Research method

This section outlines the research approach used to meet the aims of this study. The approach outlined below has changed from the initial research proposal (Stewart, 2013), where this was the case it has been noted.

3.1 The philosophical worldview proposed in this study

“One of the most difficult tasks facing anyone doing advanced research for the first time is coming to terms with what seems to be a bewildering range of different philosophical arguments on what constitutes science, knowledge and truth.” (Hart, 2005, p.194)

Despite the difficulties in understanding philosophical worldviews it is important to identify the basic set of beliefs a researcher has about the world and how those beliefs might guide their actions. Bradford University (2007) describes two main research philosophies in their introduction to research and research methods:

1. Positivistic – seeks out the facts or causes of any social phenomena in a systematic way.
2. Phenomenological – particularly concerned with understanding behaviour from the participants’ own subjective frames of reference.

Cresswell (2014, p.6) breaks this down even further and describes four worldviews, summarised by Table 7.

Table 7 Four worldviews defined by Cresswell (2014, p. 6)

<table>
<thead>
<tr>
<th>Postpositivism</th>
<th>Constructivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Determination</td>
<td>• Understanding</td>
</tr>
<tr>
<td>• Reductionism</td>
<td>• Multiple participant meanings</td>
</tr>
<tr>
<td>• Empirical observation and measurement</td>
<td>• Social and historical construction</td>
</tr>
<tr>
<td>• Theory verification</td>
<td>• Theory generation</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Transformative</td>
<td>Pragmatism</td>
</tr>
<tr>
<td>• Political</td>
<td>• Consequences of actions</td>
</tr>
<tr>
<td>• Power and justice oriented</td>
<td>• Problem-centered</td>
</tr>
<tr>
<td>• Collaborative</td>
<td>• Pluralistic</td>
</tr>
<tr>
<td>• Change-oriented</td>
<td>• Real-world practice oriented</td>
</tr>
</tbody>
</table>
The author of this research feels more aligned to a pragmatic worldview, perhaps partly down to his experience (or lack of) in carrying out formal research projects and having “not committed to any one system of philosophy and reality” (Creswell, 2014, pp. 10-11) at this stage in his career. In carrying out this research, the author studied part-time whilst in full-time employment; the research being undertaken relates directly to his line of business and therefore also aligns to the idea of the research being “real-world practice oriented.” However, the author does appreciate the methods often associated with a positivist view of the world and the use of quantitative data (Bradford University, 2007) to evidence research outcomes/outputs. In a letter to his brother James (cited in Stuhr, 2007), one of the original founders of pragmatism, described a pragmatic worldview as a “turn away from abstraction and insufficiency, from verbal solutions, from bad a priori reasons, from fixed principles, closed systems, and pretended absolutes and origins” and “a turn towards concreteness and adequacy, towards facts, towards action, and towards power.” This may explain the author’s appreciation of what may be considered more positivistic research methods.

3.1.1 Pragmatism defined

This section aims to provide a definition of pragmatism, as understood by the author. It is by no means perfect, however it helps to provide the reader with an understanding of the foundations underpinning the author’s selection of a research approach.

“The pragmatic method is primarily a method of settling metaphysical disputes that might otherwise be interminable”. (James, 2000, p. 194)

Pragmatism as a worldview finds itself somewhere between the more traditional positivist and constructivist worldviews. Pragmatism arises out of actions, situations and consequences as opposed to antecedent conditions (Creswell, 2014, p.10). Despite recognising a reality separated from human experience exists, pragmatists believe that reality can only be encountered through human experience.

The work of John Dewey, a respected philosopher and pragmatist, focuses on the concept of inquiry as a form of experience that helps to resolve uncertainty (Morgan, 2014). The uncertainty being addressed in this study is whether or not mature PM
practices positively impact the performance of UK HEIs. There have been a number of reports published in this area that state PM does have a positive impact on OP, see KPMG (2005), KPMG (2010), KPMG (2012), KPMG (2013), PIPC (2005), PMI (2012), PMI (2013a) and PWC (2012) for example. However, these reports may well be influenced by their sponsoring bodies, all of which are PM organisations that would benefit from such publicity. Also, very few of the respondents to those surveys come from the education sector. Research specific to UK HEIs is scant. Bryde and Leighton’s study (2009), Improving HEI Productivity and Performance through Project Management, at Liverpool John Moore’s University is perhaps the best but it makes no conclusion as to whether PM maturity positively or negatively affects OP. This research will go some way to addressing the uncertainties surrounding the relationship between mature PM practices and OP, and provide a foundation for further research.

3.1.2 How a pragmatic worldview has shaped the research approach

As previously mentioned the author is not committed to any one system of philosophy and therefore is deemed to have a pragmatic worldview. The author, therefore, is not wedded to a quantitative, qualitative or mixed method approach. Having worked in the UK education sector for over ten years the author identified an area of uncertainty relating to the emphasis being placed on PM practices as a means of improving OP. Having identified this uncertainty the author then sought the best approach possible to resolve this uncertainty given the constraints of his place of study, employment and family life.

A pragmatist may typically be associated with a mixed methods approach and this was indeed the authors intended approach when submitting his research proposal (Stewart, 2013). The original intention was to develop a PM maturity model through both a formal review of the literature and the organisation of a series of participatory workshops (Jisc infoNet, 2012b) – a form of action-based research. The benefits expected from delivering a series of participating workshops were threefold:

1. **Buy-in** – engaging the sector in the development of a PM maturity survey would help to foster a greater buy-in to the project and therefore result in a higher survey return rate.
2. **Communication** – the author hoped to establish a network of interested stakeholders that could be harnessed in advertising the study and getting others involved.

3. **Accuracy** – nobody knows the sector better than those working in it. It was felt the involvement of experienced project staff would result in a more accurate and comprehensive PM maturity survey.

Due to unforeseen personal circumstances early in the research project, the author decided not to carry out the series of participatory workshops. This should, however, be considered by anyone carrying out further research into this area in the future.

The research approach, therefore, leaned more heavily towards the quantitative end of the research approach continuum (Newman and Benz, 1998) consisting of three key components:

1. **Literature (Secondary research)** – a critical evaluation, analysis and synthesis of existing knowledge relevant to the research (Hart, 2005, p. 153). The literature review helped to inform the design of the PM maturity survey.

2. **Data collection (Primary research)** – existing data will be collected from relevant bodies, e.g. HESA, Funding Councils and News Agents, to gather an understanding of the OP of UK HEIs. The PM maturity survey will provide quantitative data used to determine a PM maturity score for each UK HEI.

3. **Statistical analysis** – the final phase of the research project will determine whether or not there is a relationship between the PM maturity score of UK HEIs and their OP.

More detail on the three key components listed above can be found in the following sections.

**3.2 Literature (Secondary research)**

When trying to understand what a literature review is, it can be helpful to break it down into two component parts:

1. the finished product; and
2. the process involved in creating that product.
As a finished product the literature review is included as specific sections within a dissertation or it is integrated throughout. Either way, the literature review questions “the current state of knowledge about a topic in order to define an area for new research” (Machi and McEvoy, 2012, pp. 2-3). Process is more concerned with how a researcher approaches the literature review. A number of authors describe the literature review process as organised or systematic in its nature, something that can be easily replicated (Fink, 2005, pp. 3-5; Machi and McEvoy, 2012, pp. 4-7; Booth, Papaioannou and Sutton, 2012, pp. 17-35).

This study originally intended to use the SALSA (Search, Appraise, Synthesis and Analysis) framework (Booth, Papaioannou and Sutton, 2012, p. 25), however difficulties were found in the first stage – search. Once the initial research proposal had been accepted further work was carried out to develop a set of key search terms and phrases. These key search terms and phrases were then used to search relevant subject databases, however the literature being returned was of little or no use. Perhaps the SALSA framework and guidance on searching for literature was taken too literally.

Instead, and based upon the advice given from a librarian based at Northumbria University, a more organic approach was adopted. Once an interesting article had been found key references within that paper were noted and reviewed. Key terms and phrases were also used to search for new resources. The overarching process was much less stringent and mapped more closely to Fink’s (2005) seven step model.

1. **Selecting research questions** – developed as part of the research proposal and refined with guidance from the module tutor.

2. **Selecting bibliographic or article databases** – the primary sources used to search for literature as part of this dissertation were Business Source Premier, Emerald and British Education Index. Northumbria University’s power search (NORA) was used throughout to help determine key words and the library was used to loan relevant literature.

3. **Choosing search terms** – as previously mentioned the search terms were developed organically throughout the process.
4. **Applying practical screening criteria** – results were not necessarily screened using metadata, rather the author read through the abstracts and made a judgement as to whether a resource should be included in the review.

5. **Applying methodological screening criteria** – no attempt was made to screen literature based upon a study’s coverage or scientific quality (in terms of citations), however, where an article frequently appeared in the literature being reviewed that resource was found and reviewed.

6. **Doing the review** – a judgement was made at this stage with regards to the quality of the literature, with a focus on the author’s reputation (citations and recommendations), method of research, literature review of the study and the journal it was published in.

7. **Synthesising the results** – the resulting literature review can be found in Section 2 and has been developed descriptively.

The literature review focuses on three broad topics: UK HE; PM; PM maturity models.

### 3.3 Data collection (primary research)

There are two key areas regarding data collection for this study.

1. **Secondary research** – existing data will be used to show how well HEIs performed during the Academic Year (AY) 2012-2013.

2. **Primary research** – a survey will be developed to gather data on the maturity of each HEI’s PM practices during the AY 2012-2013. The design of the survey was informed by the literature review.

The reason this study focuses on the AY 2012-2013 is that performance indicators for 2013-2014 will not be published until Spring 2015. Further information on the collation of existing data can be found in Section 3.3.3. The remainder of this section will describe how and why the survey was designed the way it was. A printable version of the survey can be found in Appendix A.

#### 3.3.1 Design of the UK HE PM (UKHEPM) Survey

Surveys provide researchers with a mechanism for collecting quantitative or qualitative data which, when analysed, provides information about a specific group
of people – a *population* (Buckingham and Saunders, 2004, p.12; Fowler, 2009, p.1). For the purposes of this research the survey will be used to capture quantitative data about the PM experiences of individuals working within UK HEIs, and to *operationalise* the maturity of their PM practices.

“In a broader social science context, operationalisation refers not just to survey measurement, but rather to any attempt to make an abstract or general concept usable in practical research contexts.” (Olsen, 2012)

A number of PM surveys (KPMG, 2005; KPMG, 2010; KPMG, 2012; KPMG, 2013; PIPC, 2005; PMI, 2012; PMI, 2013a; PWC, 2012) have been studied to help inform the survey design and Bryde and Leighton (2009b; 2009c) were kind enough to provide a copy of a school and service questionnaire used in their original study (2009).

The primary sources of guidance used to design the survey used for this research were Dawson (2007, pp. 91-104), Wisker (2008, pp. 186-191) and Olsen (2012, pp. 119-120), with a summary of the key findings and decisions provided in the following sections. Any supporting materials have been referenced within each section.

**Survey design: layout**

The survey will be developed so that it is as short as possible – longer surveys can be off-putting to potential respondents and may result in a low response rate (Nielsen, 2004). Both pages and questions contained within the survey will be numbered to ensure the respondent is clear of their progress and so that they will have a clear reference point should they need to return to a question or query the author about the survey.

Overcrowding can appear off-putting to respondents and so the appropriate use of whitespace and line height will be used throughout. Another key aspect of the layout relates to the flow of questions. Respondents should be made to feel comfortable with the survey by starting out with *easier* questions, building the complexity throughout. If the survey incorporates both closed and open questions then the open
questions should be asked towards the end, increasing the chances of a good response.

Survey design: wording and structure of questions
Similar to the survey itself, questions should be kept short and simple to make it as easy for the respondent to understand. The author will attempt to avoid jargon, technical terms, heteronyms and ambiguity. It is also important to ensure questions do not contain prestige bias i.e. questions that could embarrass respondents or force them into altering their answer. Leading questions can also affect a respondent's answer and therefore will be avoided.

Survey design: question types
The most difficult decision with regards to the design of the survey has been how to operationalise the PM maturity of an HEIs PM practices. In line with Bryde and Leighton’s (2009a, 2009b) surveys a set of statements were produced to assess an HEIs maturity. Respondents were asked to what extent they strongly agree or disagree with a statement using a five point likert scale. Wisker (2008, p.189) notes that using a scale with a midpoint “will tend to attract responses in the middle and these are considered to be a lazy, indecisive response, and so can often be discounted.” However, the scale being proposed is classed as a bipolar scale that reflects two opposing alternatives and therefore a midpoint does make sense (Krosnick and Fabrigar, 1997). It would be nonsensical to force respondents into answering in favour of one alternative over another if they do not know the answer.

The author also considered a larger scale. Dawes (2008) carried out a comparison of five, seven and ten point scales. His research showed that five point and seven point scales tended to produce higher mean scores than a ten point scale but had no real impact on standard variation, skewness or kurtosis. If future research needed to make comparisons with the findings from this research it is possible to rescale findings from a five point scale to a seven and ten point scale.

Each statement relates to what the literature considers to be good PM practice. Questions from existing maturity models were too complex for what was required in this study and in some cases were simply not available to use.
The majority of questions used throughout the survey were closed, mainly in an attempt to operationalise PM maturity scores. Closed questions are typically: easier to administer, easier to code, and the ease of response may result in higher response rates. Respondents can only answer in a predefined way, which can be deemed both beneficial in terms of specificity and problematic in terms of respondents not agreeing with the answers provided. The difficulty with closed questions is that new issues cannot be raised. To attempt to alleviate this issue space towards the end of each section, allowing respondents to raise any concerns and/or raise new ideas, will be provided.

Survey design: personal information

Despite the small amount of personal data being captured as part of the survey it was still important to adhere to the UK Data Protection Act 1998 which comprises 8 data protection principles (ICO, no date). Principles 5 and 8 are particularly relevant to this study.

- Personal data processed for any purpose or purposes shall not be kept for longer than is necessary for that purpose or those purposes.
- Personal data shall not be transferred to a country or territory outside the European Economic Area unless that country or territory ensures an adequate level of protection for the rights and freedoms of data subjects in relation to the processing of personal data.

Personal information captured as part of the survey, used in this study, was kept to a minimum. The main purpose for capturing any personal information was to contact the respondent if they wished to be informed of the research findings. In line with Principle 5 of the DPA 1998, personal information will be destroyed after informing individuals that the published research is available. The survey produced as part of this study was distributed online and so Principle 8 was a key consideration. Survey Monkey\(^1\), an online survey service, was chosen as the mechanism for distributing the survey and capturing data because the functionality offered is exceptional. Survey Monkey complies with US-EU and US-Swiss Safe Harbor Frameworks (Survey Monkey, 2013) and therefore complies with Principle 8.

\(^{1}\) [http://www.surveymonkey.com](http://www.surveymonkey.com)
**Survey design: response rates**

To ensure the survey achieved as high a response rate it was:

- Meaningful to the respondents;
- Well constructed and well laid out;
- Clear, concise and uncluttered;
- Straightforward and realistic about how long it would take to complete;
- Clear about what the research is for and what the results will be used for; and
- Compliant with the DPA (1998).

The survey was piloted with a small group of people with statistical, design and administrative backgrounds. The feedback received as a part of this small pilot was extremely useful in refining the design in accordance to the list above.

**Population**

Choosing the population for this survey was perhaps the most difficult decision. Firstly, a decision was required with regards to the reference period. As previously mentioned the AY 2012-2013 was chosen so that PM maturity data could be compared to OP data made available through HESA.

The next major consideration focused on multiple or single returns for each UK HEI. Multiple returns was the preferred option to provide a more representative view of how the organisation operates as a whole. The primary audience for the survey developed as part of this study, and those more likely to provide a return, were Project Managers. UK HEIs do not have the fortune to employ Project Managers capable of undertaking every project and so they are often distributed to staff that show a willingness and have the subject expertise to drive change forward (Woerner-Dolley, 2014; Jisc infoNet, 2008). The issue with this approach is to what extent the survey will elicit multiple returns across each UK HEI.

3.3.2 Developing the survey

Table 8 provides an overview of the questions used within the survey and explains why those questions were chosen.
### Table 8 Survey design – providing an outline of why each question was incorporated

<table>
<thead>
<tr>
<th>Survey question</th>
<th>Why the question was incorporated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Which organisation did you work for in the academic year August 2012 - July 2013?</td>
<td>Used to match the institutions PM maturity score with key performance data. Organisation names will not be published in an attempt to foster greater input.</td>
</tr>
<tr>
<td>Q2. In which of the following areas have you had experience of leading/taking part in projects?</td>
<td>Allows for greater specificity e.g. comparing PM maturity scores from those involved with learning and teaching against learning and teaching performance indicators.</td>
</tr>
<tr>
<td>Q3. Which roles have you carried out in the projects you have been involved with? (Tick all that apply)</td>
<td>This will provide a better understanding of how different role types rate their organisation’s PM maturity.</td>
</tr>
<tr>
<td>Q4. Which project management methodologies have you used in the projects you’ve been involved with? (Tick all that apply)</td>
<td>This will provide a better understanding of the current PM landscape across UK HE. It will also be interesting to see if a chosen methodology impacts the organisation’s PM maturity score.</td>
</tr>
<tr>
<td>Q5. What are the key drivers for project activity in your organisation? Please rank the drivers listed below in order of their importance – 1 being the most important and 7 the least important.</td>
<td>Aims to assess why projects are undertaken in the first place.</td>
</tr>
<tr>
<td><strong>Making sense of the project context</strong></td>
<td></td>
</tr>
<tr>
<td>Q6-Statement 2. My organisation provides projects with relevant and effective senior management support (sponsorship).</td>
<td>The project sponsor/executive is ultimately responsible for the outcome of a project. They ensure the project is focused on achieving its objectives and delivering the expected benefits. (OGC, 2009, p.270; KPMG, 2010, p.13; PMI, 2013a, p.8)</td>
</tr>
<tr>
<td>Q6-Statement 3. My organisation manages projects as part of a wider portfolio/programme.</td>
<td>KPMG (2010, p.13) states that 70% of projects managed within a portfolio consistently achieved their stated deliverables as opposed to 25% managed with no wider structure. See also KPMG (2012, p.10), PMI (2013a, p.11), PWC (2012, p.4).</td>
</tr>
<tr>
<td>Q6-Statement 4. My organisation actively supports projects. For example, through a Programme Support Office.</td>
<td>Projects supported by its organisation are more likely to deliver on time, to budget and to the agreed performance levels (KPMG, 2010, p.13; KPMG, 2012, p.14; PWC, 2012, p.4).</td>
</tr>
<tr>
<td>Q6-Statement 5. My organisation adopts a common project management methodology across its projects.</td>
<td>This is a slightly contentious area, however one study suggests that a standardised PM approach has a high correlation to high performing organisations (PMI, 2013a, p.8).</td>
</tr>
<tr>
<td><strong>Defining the project</strong></td>
<td></td>
</tr>
<tr>
<td>Q7-Statement 1. Project teams baseline organisational context at the start of the project, which can be used to evaluate progress.</td>
<td>Baselining is typically carried out when developing a business case (KPMG, 2010, p.13; KPMG, 2012, p.18). It is a vital component of PM allowing the organisation to measure its progress by providing a snapshot of the organisation before any change is instigated. It also allows the project to effectively plan/prioritise tasks to be carried out.</td>
</tr>
<tr>
<td>Q7-Statement 2. Projects are tailored to suit the culture of the department/service that it affects.</td>
<td>A project manager may wish to work with the existing culture of the organisation or attempt to change it. Either way, it is important to understand what type of culture a project has to work with from the start.</td>
</tr>
<tr>
<td>Q7-Statement 3. A defined set of roles and responsibilities are agreed upon for each project.</td>
<td>Managing a project effectively will require a project team (Jisc infoNet, 2012c), often multi-disciplinary (Rad and Anantatmula, 2010). It is important that members of the team understand their responsibilities.</td>
</tr>
<tr>
<td>Q7-Statement 4. Relevant stakeholders are consulted when defining the business case and project initiation document (or project charter) for each project.</td>
<td>OGC (2009, p.41) notes that stakeholder engagement typically takes place at a programme level however evidence suggests that it can be extremely beneficial during the initiation stages (Jisc, 2012a). PMI (2013b) notes the importance of identifying and planning stakeholder engagement at the early stages of managing projects.</td>
</tr>
<tr>
<td>Q7-Statement 5. A project initiation document (or project charter) is created and signed-off by a member of senior management before a project is undertaken.</td>
<td>Derived mainly from PRINCE2™ (OGC, 2009), but also included because a lack of senior management support is often cited by reports as a reason why projects fail (PWC, 2012, p.17; KPMG, 2010, p.7; Jisc infoNet, 2014).</td>
</tr>
</tbody>
</table>

**Designing the project**

<p>| Q8-Statement 1. A clear project plan is discussed and developed, showing the major products, activities and resources required for each project. | Planning is a must, outlined by every methodology whether PRINCE2™ (OGC, 2009, pp. 59-72) or Agile (EDUCAUSE, 2010). How formally that planning is carried out is a decision to be made by the project manager. |
| Q8-Statement 2. A risk strategy is developed for each project; risks are identified and categorised appropriately. Risk responses are discussed and logged. | KPMG (2010, p.13) highlights the active management of risks as a key attribute of project success whilst KPMG (2012, p.14) describes the importance of investing in risk management to develop strong project and programme capabilities. |
| Q8-Statement 3. The success criteria of each project is discussed and clearly defined. | This is often cited as a reason for project failure (PWC, 2012, p.4; KPMG, 2010, p. 7; Jisc infoNet, 2014). The University of Bolton (2012) notes how a lack of senior management support on their business intelligence project led to their project drifting for some time, whilst the University of Sheffield (2013) and The University of Cumbria (2009) both highlight how senior management support really helped their projects flourish. |
| Q8-Statement 4. Project managers assess at the outset whether to acquire outside support, and if so, what to acquire, how to acquire it, how much is needed, and when to acquire it. | This statement, perhaps rather cryptically, relates to procurement. It is specifically outlined as a key component of PM within the PMI (2013b) and APM (2012). |</p>
<table>
<thead>
<tr>
<th>Q8-Statement 5. Complex projects are managed in stages, and the plan is reviewed to ensure the outputs are still in line with the organisation’s strategic aims.</th>
<th>Breaking a project down into stages helps to make it more manageable and this is a common trait of most PM methodologies. Different methodologies may approach it differently, i.e. more formal stages within PRINCE2™ (OGC, 2009) or a Sprint in agile PM (Schwaber and Sutherland, 2011, p.8), but in both cases it helps to ensure the project is aligned with the organisation’s strategic aims.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Doing the project</strong></td>
<td></td>
</tr>
<tr>
<td>Q9-Statement 1. Project managers within my institution have excellent leadership skills.</td>
<td>Turner (1999, pp. 434-435) notes three important aspects of leadership: the project manager (or leader) has values and beliefs worth working for; they are respected and have the support of their team; they can persuade the team of the situational logic. Leadership at all levels is seen as the key to competitive advantage and enabling change (Hamel, 2013).</td>
</tr>
<tr>
<td>Q9-Statement 2. Project managers consistently apply a project management methodology to their projects.</td>
<td>Both the KPMG (2013, p.12) and PWC (2012, p.4) reports highlight the importance of applying a PM methodology with regards to project success.</td>
</tr>
<tr>
<td>Q9-Statement 3. Time (e.g. to complete a specific task), cost (e.g. staff costs) and performance (e.g. customer satisfaction) data are regularly recorded and reported.</td>
<td>Regular reporting is another area considered to be of value to the delivery of successful projects by a number of the reports reviewed (KPMG, 2010, p.13; KPMG, 2012, p.10). It is also a key component of a number of the methodologies reviewed, especially PRINCE2™ (OGC, 2009, p.13).</td>
</tr>
<tr>
<td>Q9-Statement 4. A project’s risks are regularly monitored, and the appropriate measures are taken where a change is required.</td>
<td>This is closely aligned to the question focused on developing a risk strategy. It is an area seen as fundamental to PM due to the uncertainties involved. This question is more focused on the active management of risks identified during the design stage.</td>
</tr>
<tr>
<td>Q9-Statement 5. Project managers regularly communicate with key stakeholders.</td>
<td>Communication is a vital aspect of PM, highlighted in a number of the reports reviewed, e.g. KPMG (2010, p.13) and PWC (2012, p.4), but also a key aspect of PM approaches, e.g. APM (2012), PMI (2013b), PRINCE2™ (2009) and Agile PM (Schwaber and Sutherland, 2011).</td>
</tr>
<tr>
<td><strong>Developing the project</strong></td>
<td></td>
</tr>
<tr>
<td>Q10-Statement 1. Time and support is provided for a project’s outputs to become embedded within the organisation.</td>
<td>This was a key lesson learned during the course of Jisc’s Transformations programme. The provision of time to embed outputs was highlighted by a number of projects as having a significant impact on their success (Jisc Transformations, 2013).</td>
</tr>
<tr>
<td>Q10-Statement 2. My organisation has a clear benefits measurement and realisation process in place.</td>
<td>PMI (2013a, p.11), in particular, highlights the importance of having benefits realisation processes in place noting that this leads to better project outcomes. There is some debate as to whether it falls within a PM lifecycle or not e.g. PRINCE2™ (OGC, 2009). A robust business case should provide a solid foundation upon which benefits can be effectively assessed (KPMG, 2010).</td>
</tr>
</tbody>
</table>
Q10-Statement 3. My organisation regularly undertakes strategic reviews to track the benefits realised. KPMG (2010, p.6) notes the need for more robust benefits evaluation and measurement processes.

Q10-Statement 4. A project completion and review exercise is undertaken for each project. A project completion and review exercise (or evaluation) is commonly recommended by many of the PM approaches reviewed e.g. APM (2012) and OGC (2009).

Q10-Statement 5. The outcomes and lessons learned from the project are clearly communicated to staff from across the organisation. Executing projects and programmes to schedule is still a huge issue. It is therefore essential to log lessons learned and use them to inform future work (KPMG, 2012, p.10; OGC, 2009).

Q11. Did your organisation have a Project/Programme Management Office (PMO) during the academic year August 2012 - July 2013? Answers to this question provided a way of assessing whether or not an organisation with a PMO has more mature PM practices. A number of the reports reviewed recommend PMOs (PWC, 2012, p.5; KPMG, 2010, p.13; PMI, 2013a, p.11).

Q12a. In the academic year August 2012 -July 2013 did you experience a failed project i.e. the project did not deliver the expected outputs and/or benefits were unrealised? This question was asked as a precursor to the following question (12b) to assess the reasons why many projects fail across UK HE.

Q12b. If you did experience a failed project, why did it fail? The aim of this question was to assess why projects typically fail across UK HE. The findings can then be compared with findings from existing reports and used to highlight areas HEIs need to be aware of and address upfront.

Q13. Please add any further comments you might have in this box. It does not have to relate to a previous question or statement. This question was included to allow for any final comments relating to the survey or ideas the respondent might have for future work.

### 3.3.3 Organisational performance data

The part of the literature review which focuses on HE has informed what data should be collected as a measure of OP. Data sources include:

  - HESA also manages the Higher Education Information Database for Institutions² (HEIDI) – [http://www.heidi.ac.uk](http://www.heidi.ac.uk).
- UK HE Funding Councils.

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² HEIDI is a subscription based service
○ Scottish Funding Council (SFC) – http://www.sfc.ac.uk.
○ Higher Education Funding Council for Wales (HEFCW) – http://www.hefcw.ac.uk.

● News agencies develop league tables in an attempt to rank UK universities. The rankings themselves are often based upon data provided by HESA, however due to the annual publishing cycle and timings of HESA releases the data used is often out of date.
4. Results and data analysis

The survey developed to capture data about the maturity of PM across UK HE was published on 30th January 2014 and closed at midnight on 14th February 2014. The survey attracted 149 responses. 14 respondents exited the survey without agreeing for their data to be used and have therefore been excluded. 21 respondents entered the survey, answered one or two questions and then exited and so have also been excluded leaving 114 usable responses. Those 114 individual responses were representative of 58 UK HEIs.

The survey was advertised through a range of mailing lists relevant to UK HEIs, including³:

- AMMOSHE the student services organisation;
- Association for Research Managers and Administrators (Stewart, 2014a);
- Association of University Directors of Estates;
- Association for University Research and Industry Links (Stewart, 2014b);
- CETIS Announce (Smart, 2014);
- Jisc infoNet (Elliott, 2014);
- Jisc Transformations programme (Stewart, 2014c); and
- UCISA Project and Change Management (Ritchie, 2014).

The survey was also advertised through LinkedIn and Twitter. An archive of Twitter messages highlighting the survey can be found in Appendix B. It is incredibly difficult to evidence which method of communication was the most successful however it was felt that Twitter helped to raise awareness of the survey but the mailing list appeared to result in actual responses (survey responses seemed to coincide with messages sent out through mailing lists).

The maturity model developed for this survey focuses on critical success factors associated with the management of projects within the UK HE sector. It was designed to be relatively simple in order to ensure a good response rate. With this in mind it was split into five key components using Maylor’s 4D model as the underpinning framework:

³ Where a reference to the original email is available it has been included.
1. Making sense of the project context
2. Defining the project
3. Designing the project
4. Doing the project
5. Developing the project

This was seen to be a model easily understood by both experienced and inexperienced project managers. Each component comprised 5 key statements researched from a range of literature, described more fully in the ‘Literature Review’ section of this report. A respondent could score between -10 and 10 for each statement using weightings against the likert scale. The weightings used for this survey were: strongly agree (10), agree (5), neutral (0), disagree (-5) and strongly disagree (-10).

These scores were then added together to reveal a component score between -50 and 50. An average across the five components was then taken and used to provide each respondent with a maturity score between -50 and 50. Where multiple entries were received for one organisation, an average was taken from those entries to provide an organisational maturity score. Findings relating to the maturity of PM practices will be explored in greater detail in Section 4.5.

4.1 Type of projects

Respondents were asked in which of the following areas they had led or experienced projects:

- Business and community engagement;
- Learning and teaching;
- Management/business change/Information Technology (IT);
- Relocation/refurbishment/construction;
- Research projects; and
- Other, with the option of explaining that selection.

The list was an adaptation of Lock’s (2013) categorisation of projects whilst also taking into account the key strategic aims of UK HEIs. For each area, participants could select whether they had led or experienced that type of project within a
department/service and/or across a number of departments/services. Figure 4 highlights that the vast majority of respondents had experienced projects in the area of ‘Management/business change/Information Technology (IT)’ across a number of departments/services.

It was encouraging to see that the majority of projects experienced by respondents were across a number of departments/services. The Diamond Report (Universities UK, 2011) provided a key set of recommendations as to how UK HEIs could realise their potential to deliver cost savings and embed a continuous commitment to efficiency. Findings from a wider cross-sector report referenced in the Diamond Report (Universities UK, 2011, p.20) notes “Simplification and standardisation of processes is the most important starting point for any sector that is looking to achieve significant efficiency savings.” The findings in this survey provide evidence that UK HEIs are managing change strategically (see the section ‘Drivers’) and that processes are being considered across departments/services.

Figure 4 Types of project experienced by UKHEPM survey respondents

The respondents that selected ‘Other’ as a type of project typically referenced their source of funding e.g. European Regional Development Fund (ERDF) or Changing the Learning Landscape. Enterprise projects were listed, however this would fall

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under the definition of Business and Community Engagement. Student Experience was also noted as an extra type of project and is worth considering if a similar survey was to be developed in the future because it is a much broader issue than just learning and teaching. The remainder of responses focused more on ‘Management/business change/Information Technology (IT).’

Table 9 provides an overview of the average maturity scores (maximum of 50, minimum of -50) recorded by project type.

Table 9 Average maturity scores by project type and context

<table>
<thead>
<tr>
<th>Type</th>
<th>Within a department/service</th>
<th>Across a number of departments/services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business and community engagement</td>
<td>8.73 (6)</td>
<td>10.50 (5)</td>
</tr>
<tr>
<td>Learning and teaching</td>
<td>3.47 (11)</td>
<td>10.93 (3)</td>
</tr>
<tr>
<td>Management/business change/Information Technology (IT)</td>
<td>4.54 (10)</td>
<td>7.39 (7)</td>
</tr>
<tr>
<td>Relocation/refurbishment/construction</td>
<td>10.81 (4)</td>
<td>12.83 (1)</td>
</tr>
<tr>
<td>Research projects</td>
<td>5.67 (8)</td>
<td>5.18 (9)</td>
</tr>
<tr>
<td>Other (participants were asked to specify this)</td>
<td>2.29 (12)</td>
<td>12.25 (2)</td>
</tr>
</tbody>
</table>

An interesting observation from Table 9, above, is that in every row but one the maturity score is greater where the project was undertaken across departments/services. Research projects being the exception.

The following list highlights the top five biggest differences why projects undertaken across departments scored more highly than those undertaken within a department.

1. Project risks are regularly monitored and the appropriate measures are taken where a change is required.
2. A project completion and review exercise is undertaken for each project.
3. The organisation provides projects with relevant and effective senior management support (sponsorship).
4. A defined set of roles and responsibilities are agreed upon for each project.
5. Project managers consistently apply a project management methodology to their projects.

4.2 Roles

‘Project manager’ and ‘project board’ were the roles most experienced by respondents to the survey. It could be considered a sign that the respondents were experienced in managing projects and had the relevant knowledge required to deliver projects. However, this is not always the case. In the author’s experience, many individuals across UK HE find themselves in the role of ‘project manager’ having never formally undertaken such a role. This is not necessarily a bad thing but it can cause difficulties e.g. the individual lacks the necessary experience/training, or they do not have the necessary authority to make key decisions and to some extent influence key stakeholders (Shurville, Browne and Whitaker, no date; Darrell, Baccarini and Love, 2010). If the survey was to be issued again it might be useful to question whether or not the respondent has managed projects previously or whether it was their first time managing a project during the academic year in question.

Figure 5 Roles experienced by UKHEPM respondents

![Roles experienced by UKHEPM respondents](image)

Those that selected ‘other’ as their role typically explained this as being ‘programme manager’. That group of people had the highest average PM maturity score of all the roles listed at 11.46. Those respondents that listed ‘Project Assurance’ as a role they had experienced came in with the second highest PM maturity score at 8.32 with
those selecting ‘Project Board’ in third at 7.68. See Table 10 for a full breakdown of average PM maturity scores against role.

Table 10 Average maturity scores against roles experienced

<table>
<thead>
<tr>
<th>Role</th>
<th>Average PM maturity score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Board (oversight of the project; secures funding for the project)</td>
<td>7.68 (3)</td>
</tr>
<tr>
<td>Project Manager (runs the project on a day-to-day basis)</td>
<td>5.89 (5)</td>
</tr>
<tr>
<td>Team Manager (produces products as defined by the project manager)</td>
<td>5.06 (6)</td>
</tr>
<tr>
<td>Team Member (carries out tasks assigned by the team manager)</td>
<td>4.48 (8)</td>
</tr>
<tr>
<td>Project Assurance (covers the primary stakeholders’ interests - gives them confidence)</td>
<td>8.32 (2)</td>
</tr>
<tr>
<td>Change Authority (approves responses to requests for change)</td>
<td>6.38 (4)</td>
</tr>
<tr>
<td>Project Support (provides the project manager with ‘formal’ support)</td>
<td>4.64 (7)</td>
</tr>
<tr>
<td>Other (participants were asked to specify this)</td>
<td>11.46 (1)</td>
</tr>
</tbody>
</table>

4.3 Methodology

There are a whole host of PM practices available to organisations. The most popular choice within UK HE is PRINCE2™. This is perhaps due to it being deeply embedded within the UK’s public sector. Agile methodologies are beginning to gain some traction, perhaps partly due to their popularity within IT services (Nolan, 2009; McGarvey, 2013). It is interesting to note that these are methodological in their nature. Approaches that focus more on knowledge are much less popular across UK HE i.e. the Association of Project Management’s Body of Knowledge (APM BoK). See Figure 6 for an overview of the methodologies experienced within UK HE during the academic year 2012–2013.
There are mixed feelings when it comes to the application of a common methodological approach across an organisation. Many professional organisations advocate this type of approach and evidence suggests this to be a characteristic of high performing organisations (PMI, 2013, p.8; KPMG, 2013). Pennell (2013) disagreed with the idea of a common methodology being all that important, and had a good case having delivered what was arguably the most successful summer Olympics to date (BBC, 2012). A number of respondents to the UKHEPM Survey also queried the importance of a common methodology.

“In a very large University like [institution] there are so many projects taking place that it would not make sense or be feasible to have things like a common project methodology. The absolutely key context is fitting with strategic aims and having senior management support.” (UKHEPM Survey, Respondent)

It is worth noting that Pennell and the survey respondents were not against PM methodologies, they just do not agree with the need for a common methodology across the organisation.

Table 11 provides an overview of the average maturity score against the different methodologies experienced. PMI and 4D had only been experienced by two respondents and it is perhaps unfair to say that they are weak because of the maturity
score represented within this survey. APM scored the highest average maturity score out of the methodologies experienced. It is perhaps to be expected that those respondents who were unaware of the methodology being used, in their experience of taking part in a project, scored the lowest average maturity score.

Table 11 Average PM maturity scores against PM methodology

<table>
<thead>
<tr>
<th>PM Methodology</th>
<th>Average PM Maturity Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Association for Project Management’s Body of Knowledge (APM BoK)</td>
<td>10.17 (1)</td>
</tr>
<tr>
<td>Agile approaches e.g. adaptive software development, Kanban, Scrum.</td>
<td>9.40 (2)</td>
</tr>
<tr>
<td>PRINCE2™ (Projects in a Controlled Environment)</td>
<td>8.69 (3)</td>
</tr>
<tr>
<td>Other (participants were asked to specify this)</td>
<td>7.35 (4)</td>
</tr>
<tr>
<td>4D (Define it, Design it, Do it, Develop it)</td>
<td>4.50 (5)</td>
</tr>
<tr>
<td>Project Management Institute’s Body of Knowledge (PMI BoK)</td>
<td>4.00 (6)</td>
</tr>
<tr>
<td>Respondents unaware of the methodology being used</td>
<td>1.57 (7)</td>
</tr>
</tbody>
</table>

Respondents that selected ‘Other’ typically specified the use of a variation on PRINCE2™ which they labelled as their own in-house methodology.

“We use a modified version of PRINCE2, which we call the [HEI name] Method” (UKHEPM Survey Respondent)

“PRINCE2 'lite’” (UKHEPM Survey Respondent)

There were a whole host of other methodologies listed too, shown below:

- Bradley’s Benefit Realisation Management.
- Chartered Institute of Building (CIOB) methods – very similar to the APM/PMI but focused more specifically on estate/construction projects.
- Define, Measure, Analyse, Improve and Control (DMAIC) – a process improvement model and a core tool used in Six Sigma projects.
- Delivering Strategy Delivering More (DSDM) – an agile PM and delivery framework.
- Gantt Analysis and Vector Individuation Network (GAVIN).
● Lean 5Es methodology (Establish, Explore, Envisage, Experiment and Embed).
● Managing Successful Programmes (MSP) – a programme management methodology which was developed to work with PRINCE2™.
● Soft systems methodology (SSM).
● UIMPROVE – appears to be a bespoke service offered by The Universal Improvement Company.
● Value Management Framework.

A number of respondents noted how they rely heavily on their own previous experience whilst one respondent indicated that they are “Actively not using a formal project methodology for small projects” (UKHEPM Survey Respondent).

4.4 Drivers

The importance of PM as a strategic tool, enabling the organisation to balance ‘business as usual activities’ and drive organisational change, was noted in the introduction. The UKHEPM Survey (Stewart, 2014) provides further evidence of this, highlighting the ‘achievement of strategic objectives’ as the key driver for undertaking projects, see Table 12.

Table 12 Key drivers for undertaking projects by organisation and individual respondents

<table>
<thead>
<tr>
<th>Drivers</th>
<th>Avg. organisational responses</th>
<th>Avg. individual responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Achievement of strategic objectives</td>
<td>1.54</td>
<td>1.68</td>
</tr>
<tr>
<td>2 To support organisational change</td>
<td>3.53</td>
<td>3.58</td>
</tr>
<tr>
<td>3 Ensuring continuity of your organisation</td>
<td>4.04</td>
<td>4.35</td>
</tr>
<tr>
<td>4 To introduce new products and services</td>
<td>4.12</td>
<td>4.10</td>
</tr>
<tr>
<td>5 Legislative/compliance drivers</td>
<td>4.37</td>
<td>4.19</td>
</tr>
<tr>
<td>6 Implementing government policy</td>
<td>4.94</td>
<td>4.85</td>
</tr>
<tr>
<td>7 To develop information technology</td>
<td>5.46</td>
<td>5.25</td>
</tr>
</tbody>
</table>

Scores were produced for individual responses and averages per organisation. This only resulted in one slight difference (see shaded rows in Table 12) with individuals favouring ‘To introduce new products and services’ over ‘Ensuring continuity of your organisation.’
4.5 Project Management Maturity

The following graphs provide an overview of the PM maturity scores for responses by organisation and also individual responses. The highest maturity score for an organisation was 45 and the lowest score was -29. The most returns received for one institution was 17; their average score was 5.7 with a high of 35 and a low of -25. The average maturity score for the sector was 9.3. Table 13 highlights the average, lowest and highest maturity score by mission group. The number in brackets represents the number of institutions represented within the survey by that mission group.

Table 13 PM maturity scores by mission group

<table>
<thead>
<tr>
<th>Mission Group</th>
<th>Avg. Maturity Score</th>
<th>Lowest Maturity Score</th>
<th>Highest Maturity Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>GuildHE (4)</td>
<td>9.63</td>
<td>6.5</td>
<td>15</td>
</tr>
<tr>
<td>Million+ (8)</td>
<td>8.31</td>
<td>9</td>
<td>32</td>
</tr>
<tr>
<td>Russell Group (14)</td>
<td>12.78</td>
<td>-12</td>
<td>45</td>
</tr>
<tr>
<td>University Alliance (14)</td>
<td>6.99</td>
<td>-29</td>
<td>22.5</td>
</tr>
</tbody>
</table>

The maturity model explored five key components:

1. Making sense of the project context;
2. Defining the project;
3. Designing the project;
4. Doing the project; and
5. Developing the project.

‘Developing the project’ was by far the weakest area with an overall average score of -5.18 by organisation. This area is concerned with embedding the project outputs, benefits realisation, strategic/project reviews and lessons learned. It is the area most people have difficulties with, however, it is also inextricably linked with our ability to define projects which received the second highest overall score at 15.29 by organisation. If a project is appropriately defined then it is much easier to measure and realise the benefits of that project, however, according to the survey results benefits realisation is the most difficult aspect of managing a project. This perhaps
indicates that guidance focused on defining a project is inadequate or that people believe they are performing much better in this area than is the case.

Figure 7 Maturity of PM practices across UK HE

When assessing the model in greater detail it appears that five key areas appear to have had the biggest impact on the overall PM maturity score of each UK HEI. They include:

- The development of a clear project plan;
- Project manager leadership skills;
- Clear benefits measurement and realisation process;
- Undertaking strategic reviews to track benefits; and
- Recommendations being followed up by the senior management team and made visible for future projects.

When assessing the correlation between individual statements from the survey and the overall PM maturity score of each institution these areas were highlighted as being statistically significant – scoring above 0.7 with regards to Pearson Correlation and less than 0.001 in terms of Sig. (2-tailed). After carrying out a regression analysis for these areas against the PM maturity score, it showed that these five areas accounted for 88.4% (Adjusted R Square, R came out at .946) of the variance in scores achieved. These findings should be viewed with some skepticism as the
maturity score itself is derived from the statement scores and therefore not completely independent of the data being assessed.

Before moving onto the detail of each maturity component it is worth considering whether or not institutional characteristics had a major impact on the maturity score of each organisation. This data is freely available from HESA’s mobile app. In this instance, using Pearson Correlation, no relationship was found. The characteristics tested were: number of undergraduates; number of postgraduates; number of academic staff; number of non-academic staff; income; and expenditure.

4.5.1 Making sense of the project context
The first key component of the PM maturity model is concerned with ‘making sense of the project context.’ The five key statements used to assess an organisation’s maturity level in this area were:

- Projects I have taken part in relate directly to my organisation’s strategic aims.
- My organisation provides projects with relevant and effective senior management support (sponsorship).
- My organisation manages projects as part of a wider portfolio/programme.
- My organisation actively supports projects, for example, through a Programme Support Office.
- My organisation adopts a common project management methodology across its projects.

Figure 8 provides an overview of the average maturity score for each statement by both organisation and individual. This was the second lowest scoring component of the maturity model, however, the inclusion of the statement regarding a common PM methodology may have skewed the score. It was previously noted that the variation of views relating to a common PM methodology (see the section ‘Methodology’) and the score may be a reflection that most organisations do not consider it to be important in terms of their PM capability.

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5 Available here: [http://www.hesa.ac.uk/index.php?option=com_content&task=view&id=1798&Itemid=297](http://www.hesa.ac.uk/index.php?option=com_content&task=view&id=1798&Itemid=297)
It is perhaps surprising to see the area of project support score so lowly especially when coupled with data from the question asking whether the respondent’s institution had a project/programme support office. Table 14 highlights the average maturity score for those respondents that had a project/programme support office in place, those that did not and those that did not know if they did or did not. It also provides the average score for the component ‘My organisation actively supports projects.’ For example, through a Programme Support Office.’ Unsurprisingly, scores where much higher where a project/programme support office was available.

Table 14 Maturity scores against those individuals who stated they had a project/programme support office

<table>
<thead>
<tr>
<th>Project/Programme Support Office</th>
<th>Number</th>
<th>Average maturity score (individual)</th>
<th>Average score for project support component (individual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have a project/programme support office.</td>
<td>49</td>
<td>12.29</td>
<td>3.27</td>
</tr>
<tr>
<td>Did not have a project/programme support office.</td>
<td>44</td>
<td>5.23</td>
<td>-2.16</td>
</tr>
<tr>
<td>Did not know if they had a project/programme support office.</td>
<td>21</td>
<td>3.81</td>
<td>-3.10</td>
</tr>
</tbody>
</table>
4.5.2 Defining the project

The second key component of the PM maturity model is concerned with ‘defining the project.’ The five key statements used to assess an organisation’s maturity level in this area were:

- Project teams baseline organisational context at the start of the project, which can be used to evaluate progress.
- Projects are tailored to suit the culture of the department/service that it affects.
- A defined set of roles and responsibilities are agreed upon for each project.
- Relevant stakeholders are consulted when defining the business case and project initiation document (or project charter) for each project.
- A project initiation document (or project charter) is created and signed-off by a member of senior management before a project is undertaken.

Figure 9 provides an overview of the average maturity score for each statement by both organisation and individual. This was the second highest scoring component of the maturity model.

**Figure 9 Scores for maturity statements against the component 'Defining the project'**

Stakeholder engagement is notoriously difficult however the survey does indicate that UK HE is quite strong in this area. Universities are really beginning to find innovative and more engaging ways to involve key stakeholders in the work they do,
for example: students as agents of change (Jisc, 2013c); through social media (Edwards, 2013); or perhaps a Visitors and Residents approach to evaluating services (White, 2008).

Sign-off scored quite highly and there were no major concerns raised with regards to this in the comments. However, one respondent did quite rightly state “Senior management [sic] do not have the time to sign off absolutely everything that happens in a large University. They would do nothing else! Sign-off is required but at a level appropriate to the project. So major projects would require Senior Leadership Team [sic] sign off - minor projects would be signed off at a much more local and lower level.”

Baselining was by far the weakest area of this component and one of the weakest across the whole survey. It is, however, an area the sector appears to be taking more seriously in recent times (Jisc infoNet, 2013; Jisc, 2012b), evidenced even further by the sectors interest in approaches such as Enterprise Architecture (UCISA, no date-b). It is worth noting that there could have been an issue with the terminology used as part of the survey. One respondent noted, “I'm not sure what a baseline of organisational context would look like and I definitely don't understand how it could be used to evaluate progress. I tried to leave this question blank but the form required an answer. Since I don't understand the question, I guess we don't do it!” (UKHEPM Survey, Respondent)

4.5.3 Designing the project
The third key component of the PM maturity model is concerned with ‘designing the project.’ The five key statements used to assess an organisation’s maturity level in this area were:

- A clear project plan is discussed and developed, showing the major products, activities and resources required for each project.
- A risk strategy is developed for each project; risks are identified and categorised appropriately. Risk responses are discussed and logged.
- The success criteria of each project is discussed and clearly defined.
Project managers assess at the outset whether to acquire outside support and if so, what to acquire, how to acquire it, how much is needed and when to acquire it.

Complex projects are managed in stages and the plan is reviewed to ensure the outputs are still in line with the organisation's strategic aims.

Figure 10 provides an overview of the average maturity score for each statement by both organisation and individual. This component was the most mature component assessed as a part of the survey.

Figure 10 Scores for maturity statements against the component 'Designing the project'

Although this was the strongest scoring component there is still room for improvement where each statement is concerned. One respondent noted that practice is often inconsistent within their own institution and that people see it as a “ticking boxes” exercise as opposed to really understanding the importance and potential impact they might have on success/failure.

4.5.4 Doing the project

The fourth key component of the PM maturity model is concerned with ‘doing the project.’ The five key statements used to assess an organisation’s maturity level in this area were:

- Project managers within my institution have excellent leadership skills.
● Project managers consistently apply a project management methodology to their projects.
● Time (e.g. to complete specific task), cost (e.g. staff costs) and performance (e.g. customer satisfaction) data are regularly recorded and reported.
● Project risks are regularly monitored, and the appropriate measures are taken where a change is required.
● Project managers regularly communicate with key stakeholders.

Figure 11 provides an overview of the average maturity score for each statement by both organisation and individual. This component was the third strongest assessed during the survey, however there is some degree of variance in the scores for each statement.

Figure 11 Scores for maturity statements against the component 'Doing the project'

The statement regarding communication was the third highest scoring statement across the survey, which bodes well when managing and engaging key stakeholders. However the other areas assessed within this component scored quite low. One UKHEPM respondent noted “We have a number of excellent project managers. I do not think that they have leadership skills, instead their strengths appear to be more in administration and planning. These skills are required too. I am also concerned that the bureaucracy of the project and the processes used become more important than what it is we are trying to deliver/develop/change. I think there is some risk
management, but I am not sure it is mature. Communication is difficult to get right but I think this is an area in need of improvement.”

4.5.5 Developing the project

The final key component of the PM maturity model is concerned with ‘developing the project.’ The five key statements used to assess an organisation’s maturity level in this area were:

- Time and support is provided for a project's outputs to become embedded within the organisation.
- My organisation has a clear benefits measurement and realisation process in place.
- My organisation regularly undertakes strategic reviews to track the benefits realised.
- A project completion and review exercise is undertaken for each project.
- Recommendations, typically from a lessons learned report, are followed up by the senior management team and are visible for future projects.

Figure 12 provides an overview of the average maturity score for each statement by both organisation and individual. This component was by far and away the lowest scoring of the maturity model. The findings from this survey are quite alarming and indicate that very little care is given when considering how project outputs should be taken and embedded within a given institution or how UK HEIs learn from the journeys they have undertaken. When considering the importance of efficiency to the sector in the current climate (UUK, 2011) this is very worrying.
Comments made by respondents within the survey provide further evidence that the embedding of project outputs, benefits realisation processes in place and approaches to knowledge management require a vast amount of improvement across the board.

“This is something we are trying to look at and improve. But the project teams are usually moving onto something else pretty quickly and the business does not really understand how to undertake reviews from what I [sic] have seen. This is a clear area for development.”
(UKHEPM Survey, Respondent)

“Lessons learned reports are produced, but whether they're reviewed or any lessons are learned is another matter.”
(UKHEPM Survey, Respondent)

However, evidence from the survey does appear to suggest that a number of the respondents are beginning to look into these areas, some of whom are just beginning to implement formal processes to ensure their outputs are not just left on a shelf to
gather dust. It is also worth bearing in mind that the data represent the AY 2012-2013 and therefore does not necessarily reflect current practice.

“These processes are being introduce [sic] now.” (UKHEPM Survey, Respondent)

“We are just embarking on a formal review process, hence neutral as I don't know how effective it will be, yet.” (UKHEPM Survey, Respondent)

4.6 Failure

113 people responded to the question regarding whether or not they had experienced a failed project during the AY 2012-2013. Of those 113 respondents 48 (42%) had experienced a failed project, whilst 65 (58%) did not experience a failed project – see Figure 13.

Figure 13 Project failure experienced by respondents to the UKHEPM survey

Those respondents that had experienced a failed project were then asked why their project failed. Table 15 provides an overview of the key reasons why UK HE projects failed during the AY 2012-2013. Respondents were allowed to select multiple options.
Table 15 Reasons for project failure

<table>
<thead>
<tr>
<th>Why projects failed</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers and end users are not engaged</td>
<td>24</td>
</tr>
<tr>
<td>Scope changes</td>
<td>23</td>
</tr>
<tr>
<td>Lack of organisational/strategic support (Governance)</td>
<td>20</td>
</tr>
<tr>
<td>Unrealistic deadlines</td>
<td>18</td>
</tr>
<tr>
<td>Uncertain dependencies</td>
<td>17</td>
</tr>
<tr>
<td>Poor communication</td>
<td>16</td>
</tr>
<tr>
<td>Resource competition</td>
<td>16</td>
</tr>
<tr>
<td>Unclear objectives</td>
<td>15</td>
</tr>
<tr>
<td>Poor cost and scheduling estimation</td>
<td>13</td>
</tr>
<tr>
<td>Failure to plan</td>
<td>12</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>12</td>
</tr>
<tr>
<td>Poor risk management</td>
<td>12</td>
</tr>
<tr>
<td>Poor change management</td>
<td>11</td>
</tr>
<tr>
<td>Insufficient team skills</td>
<td>9</td>
</tr>
</tbody>
</table>

4.7 PM Maturity and Organisational Performance

The survey itself provided a means to assess the maturity of PM practices across UK HEIs. This data was then used to assess whether or not mature PM practices result in improved OP. The test carried out for each area was Pearson Correlation.

4.7.1 Student Satisfaction

The first area tested was student satisfaction using data available from HEFCE (2013). The National Student Survey (NSS) summary data was used focusing on the findings for taught students i.e. students for whom the majority of their teaching is at an HEI or FEC, regardless of where they are registered. No relationship was found between the maturity of PM practices at UK HEIs and NSS scores (see Table 16). A more detailed analysis was carried out to see if there was any kind of relationship between the NSS scores and individual scores for each maturity statement but again the findings showed no relationship.
4.7.2 League tables

Similar to the test for student satisfaction, an assessment of league table scores were carried out. The Complete University Guide (no date) and Sunday Times (no date) both provide scores that were suitable to test against. However, similar to student satisfaction, no relationship was found from the analysis.

4.7.3 HESA Performance Indicators

HESA released its UK Performance Indicators data (excluding research and employment indicators) on 27 March 2014. The data is very complex and difficult to interpret if unfamiliar with it. A comparison between PM maturity and the UK HE Performance Indicators has therefore been omitted from this study because the author did not have time to fully understand what was being reported and how to successfully compare the information being presented.

4.7.4 Higher education-business and community interaction

HESA (2014) also publish data specific to Business and Community Engagement. The author does have some experience of working in this area and was able to assess whether or not PM maturity had a positive (or not) impact on OP in this area. This relates back to Section 2.1.2 where we discussed the key strategic aims of HEIs.

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**Table 16 Relationship between PM maturity and organisational performance**

<table>
<thead>
<tr>
<th></th>
<th>Correlations</th>
<th>Complete Uni Guide</th>
<th>Sunday Times</th>
<th>Maturity score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Student satisfaction score</strong></td>
<td><strong>Pearson Correlation</strong></td>
<td>Sig. (2-tailed)</td>
<td><strong>Student satisfaction score</strong></td>
</tr>
<tr>
<td>Student satisfaction score</td>
<td>.730**</td>
<td>1</td>
<td>.000</td>
<td>.614**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.090</td>
<td>055</td>
<td>.000</td>
<td>.459</td>
</tr>
<tr>
<td>N</td>
<td>58</td>
<td>55</td>
<td>55</td>
<td>58</td>
</tr>
<tr>
<td>Complete Uni Guide</td>
<td>.730**</td>
<td>1</td>
<td>.982**</td>
<td>.102</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.090</td>
<td>055</td>
<td>.000</td>
<td>.459</td>
</tr>
<tr>
<td>N</td>
<td>58</td>
<td>55</td>
<td>55</td>
<td>58</td>
</tr>
<tr>
<td>Sunday Times</td>
<td>.614**</td>
<td>.982**</td>
<td>1</td>
<td>.102</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.090</td>
<td>055</td>
<td>.000</td>
<td>.225</td>
</tr>
<tr>
<td>N</td>
<td>58</td>
<td>55</td>
<td>55</td>
<td>58</td>
</tr>
<tr>
<td>Maturity score</td>
<td>.113</td>
<td>.102</td>
<td>.102</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.397</td>
<td>.459</td>
<td>.225</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>58</td>
<td>55</td>
<td>55</td>
<td>58</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed).**

---

6 Due to be released 3 July 2014
The areas tested for related to five specific Business and Community Engagement activities:

1. **Research**: income from collaborative and contract research.
2. **Business and Community**: total income from consultancy contracts, courses for business and the community, and facilities and equipment. The number of learner days offered as Continuing Professional Development (CPD)/Continuing Education (CE) was also assessed.
3. **Regeneration and development**: total programme income.
4. **Intellectual Property (IP)**: number of disclosures and patents, IP revenues, and licence numbers (for software and non-software).
5. **Social, community and cultural**: the number of attendees at free and charged events.

Again, the findings were to some extent inconclusive. A couple of areas were flagged as weak negative correlations e.g. learner days offered as CPD/CE and attendees at free performance arts events.

A test was then carried out using only the data where a respondent had indicated they had taken part in a Business and Community Engagement project. Each performance area was tested in detail against all of the maturity statements. Again, only a range of weak positive and negative correlations were shown, significant only at the 0.05 level (2-tailed).

### 4.7. Organisational performance by Mission Group

Similar tests were carried out, but instead of using the whole sample it was filtered by mission groups. In this test, each maturity statement was assessed against the organisation’s student satisfaction, Complete University Guide (CUG) and Sunday Times (ST) scores. Table 17 highlights the relationship between specific maturity statements that appeared to have a significant impact on OP. GuildHE institutions were not assessed, as there were only four cases.
Table 17 Key correlations between maturity statements and organisational performance indicators

<table>
<thead>
<tr>
<th>Mission Group</th>
<th>Correlations</th>
</tr>
</thead>
</table>
5. Conclusion

The purpose of this study was to assess the maturity of PM practices across UK HE and the impact PM maturity has on OP. The study had four key objectives:

1. Research existing PM maturity models.
2. Assess the maturity of PM across UK HE.
3. Explore the relationship between the maturity of PM and OP across UK HE.
4. Provide universities with practical advice and recommend relevant support interventions.

The following sections provide a summary of the progress achieved under each of the four objectives stated above and outline the findings from this study.

5.1 Research existing PM maturity models

Three existing PM maturity models were explored in detail during this study, including:

- Project management process improvement (PM²) by Kwak and Ibbs (2002).
- CMMI by the Software Engineering Institute.
- Portfolio, Programme and Project Management Maturity Model (P3M3®) developed by the (OGC).

Existing research, particularly where focused on UK HE, is very limited. Kwak and Ibbs’s PM maturity model appeared to be the most referenced model from the literature searched as part of this proposal. However, there is an issue here as Kwak and Ibbs not only developed the maturity model, they are the authors of the original papers which have gained so much traction within the circle of PM academics. There doesn’t appear to be any kind of debate as to whether their model is appropriate. Kwak and Ibbs were approached to see if their questionnaire could be applied during this study however they declined because of the commercial sensitivities surrounding their model. It is interesting to note that their maturity model closely follows PMI’s PM approach.

CMMI grew out of a software development environment and is quite systematic in its approach. A great deal of the literature examined during the initial search focused
on software development. The process is also very complex. It would have required a large amount of resource for institutions to first of all understand the theory behind it before being able to assess themselves against its criteria. Multiply this across well over one hundred HEIs; the model was far too complicated for what could be achieved. It was a similar scenario for P3M3®, the resulting survey would have involved hundreds of multiple-choice questions.

5.2 Assess the maturity of PM across UK HE

To assess the maturity of PM practices across UK HE a PM maturity model was required. However, the PM maturity models researched as part of this study were unsuitable for one of three reasons:

1. Intellectual Property of the study.
2. Complexity involved in deriving a maturity score.
3. Definition of maturity focused on the underpinning methodology.

One journal article did stand out during the literature search and that was a study by Bryde and Leighton (2009) – Improving HEI Productivity and Performance through Project Management. As a part of the study the authors surveyed their institution to benchmark its PM maturity. This seemed ideal and through further investigation they were very willing to share their survey. This survey provided the inspiration for the development of the survey used as a part of this study. Bryde and Leighton’s survey was not repurposed but provided a great deal of insight into how such a survey might be developed. Instead, the survey developed as part of this study was produced based upon the PM literature reviewed – with a particular focus on studies that found PM to have a major impact on OP.

As a result the UKHEPM Survey was developed. In line with Bryde and Leighton’s generosity, the model will be made freely available along with the data derived from this study.
5.2.1 Design of the UKHEPM Survey

The design of the UKHEPM survey was critical to the success of this study. The aim of this study was ambitious, requiring a high response rate to give it any kind of credibility. There were a number of mistakes identified during the implementation of the survey, however, the overall design of the survey was deemed to be a great success. With 114 usable responses representing 58 UK HEIs it is perhaps the most in-depth study of the sector undertaken to date. Key design considerations included:

- **Layout:**
  - Designed to be as short as possible.
  - Questions and pages were numbered so the user could identify where they were.
  - The survey started with easier questions moving to the harder and more open questions towards the end.

- **Wording and structure:**
  - Similar to the survey, questions were kept short and simple.
  - Attempt made to avoid jargon, technical terms, heteronyms and ambiguity.
  - Attempt made to avoid prestige bias and leading questions.

- **Response rates:**
  - The survey complied with the UK Data Protection Act 1998.
  - The survey was designed to be meaningful to the respondents.
  - A clear explanation of how the data was to be used was included.
  - The survey was circulated to a range of relevant mailing lists and promoted through social media.

The most difficult decision with regards to the design of the survey was the scale used to assess maturity statements. In the end, a five-point scale was used. Dawes’ (2008) study indicated that if future research was carried out using a different scale then it is possible to rescale the findings from this survey to make comparisons. The biggest issue related to the inclusion of a neutral midpoint however much of the literature available on survey design either ignores the topic entirely or weighs in heavily for one side or the other. In the end a mid-point was included to reflect the bipolar scale being used (Krosnick and Fabrigar, 1997).
There were some difficulties with the design of the survey. The first issue being the placement of the question asking a respondent to confirm they had been briefed about the project, its purposes and that they agreed to participate. This was initially included towards the end of the survey in the hope that it would not put anybody off. However, the end section was labelled as being *optional* and so some users exited their browser without filling in the necessary information – by no means their fault. As soon as this issue was identified the question was moved to the very front of the survey, which resolved the problem immediately.

The second issue relates to the survey sample. In some instances only one return was received per institution. The maturity score is supposed to reflect the institution as a whole and in those cases where only one return was received it is highly unlikely that individual has a full grasp of the whole institution. If a similar survey was to be carried out in the future it should be made more explicit that we are only after answers that relate to the respondents experience and target as many individuals as we can from institutions whether they are project managers or not.

### 5.2.2 Comparing UKHEPM data with other surveys
Section 4 provides a detailed analysis of the data gathered as a part of this study and comprehensively outlines the maturity of PM practices across UK HE. This section provides a summary of those findings and compares those findings against the most recent existing PM studies – *New Zealand Project Management Survey* (KPMG, 2010); *Project Management Survey Report 2013* (KPMG, 2013); and *Insights and Trends: Current Portfolio, Programme, and Project Management Practices* (PWC, 2012). To begin with it is worth stating that this survey is small in comparison to some of the other studies – although this survey focused on one sector as opposed to a community of PM professionals. The number of individuals that responded to each survey was:

- **PWC (2012)** – 1,524 respondents from 38 countries
- **KPMG (2010)** – nearly 100 organisations
- **KPMG (2013)** – nearly 200 organisations
- **UKHEPM** – 114 respondents representative of 58 organisations
In terms of PM methodologies being employed by organisations the KPMG (2013, p.12) survey indicates a high uptake of PRINCE2™ across its respondents with similar findings from the UKHEPM survey. Findings from these surveys do seem to indicate a preference towards PRINCE2™ by public sector organisations; the largest response, by sector, to the KPMG survey was government. The PWC (2012, p.4) report indicated 34% of their respondents use an Agile methodology which is not too far removed from the UKHEPM findings at 22%. The PMI BoK was referenced as the most used methodology from the PWC survey whilst PRINCE2™ was the least used (PWC, 2012, p.18).

Table 18 provides an overview of the key drivers listed by each survey.

**Table 18 Key drivers for initiating projects by survey**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Achievement of strategic objectives</td>
<td>1) To introduce new products and services</td>
<td>1) To refresh key infrastructure/systems</td>
<td>1) Business imperative</td>
</tr>
<tr>
<td>2) To support organisational change</td>
<td>2) To support organisational change</td>
<td>2) To grow revenue</td>
<td>2) Revenue generation</td>
</tr>
<tr>
<td>3) Ensuring continuity of your organisation</td>
<td>3) To develop information technology</td>
<td>3) To support organisational change</td>
<td>3) Cost reduction</td>
</tr>
<tr>
<td>4) To introduce new products and services</td>
<td>4) To develop strategy</td>
<td>4) To introduce new products/services</td>
<td>4) Regulatory requirement</td>
</tr>
<tr>
<td>5) Legislative/compliance drivers</td>
<td>5) Legislative drivers</td>
<td></td>
<td>5) Obsolete technology refresh</td>
</tr>
</tbody>
</table>

PM maturity is mentioned a number of times across all of the studies examined, however, PWC (2012, pp. 12-14) seems to be the only survey that has robustly tested for PM maturity. Their maturity model has five levels and is assessed using the respondents’ answers given to certain survey questions. Table 19 provides a comparison between findings from the PWC and UKHEPM survey.

A similar system could have been applied to the UKHEPM survey where a score between -50 and -31 being sporadic, -30 and -11 being initial, -10 and 10 being implement, 11 and 30 being monitor and 31 and 50 being optimize. Table 19 provides a comparison between PWC’s survey and UKHEPM.
Table 19 Comparing UKHEPM Survey maturity levels against findings from the PWC survey

<table>
<thead>
<tr>
<th>Maturity level</th>
<th>PWC (2012)</th>
<th>UKHEPM Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 – sporadic</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Level 2 – initial</td>
<td>18%</td>
<td>5.17%</td>
</tr>
<tr>
<td>Level 3 – implement</td>
<td>18%</td>
<td>50%</td>
</tr>
<tr>
<td>Level 4 – monitor</td>
<td>42.5%</td>
<td>39.66%</td>
</tr>
<tr>
<td>Level 5 – optimise</td>
<td>19.5%</td>
<td>5.17%</td>
</tr>
</tbody>
</table>

The key differences here being that there is a higher weighting towards level three for the UKHEPM survey. The worry here is that the use of a neutral midpoint on the likert scale used within the UKHEPM survey questions has skewed the findings.

Table 20 highlights the five highest and lowest scoring maturity statements assessed by the survey.

Table 20 Highest and lowest scoring maturity statements assessed by the survey

<table>
<thead>
<tr>
<th>Highest scoring maturity statements</th>
<th>Lowest scoring maturity statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects I have taken part in relate directly to my organisation’s strategic aims.</td>
<td>My organisation adopts a common project management methodology across its projects.</td>
</tr>
<tr>
<td>Relevant stakeholders are consulted when defining the business case and project initiation document (or project charter) for each project.</td>
<td>My organisation has a clear benefits measurement and realisation process in place.</td>
</tr>
<tr>
<td>Project managers regularly communicate with key stakeholders.</td>
<td>My organisation regularly undertakes strategic reviews to track the benefits realised.</td>
</tr>
<tr>
<td>A clear project plan is discussed and developed, showing the major products, activities and resources required for each project.</td>
<td>Recommendations, typically from a lessons learned report, are followed up by the senior management team and are visible for future projects.</td>
</tr>
<tr>
<td>A project initiation document (or project charter) is created an signed-off by a member of senior management before a project is undertaken.</td>
<td>Time and support is provided for a project’s outputs to become embedded within the organisation.</td>
</tr>
</tbody>
</table>

Despite stakeholder engagement featuring in the top five highest scoring maturity statements assessed by the survey it was also the most cited reason for project failure i.e. customers and end users are not engaged. Scope changes were a close second.

---

7 Approximations have been used, as it was difficult to interpret the exact figure from a table used within the survey.
which was the top reason for failure in the KPMG’s (2010, p.7) survey. Reasons that were consistently cited across the top five reasons for failure in the UKHEPM, KPMG (2010) and PWC (2012) surveys included: scope changes; and unrealistic deadlines.

5.3 Relationship between the maturity of PM and organisational performance across UK HE

PWC (2012) and PMI (2013a) both consistently discuss the practices of high performing organisations however their definition of high performing organisations is dependent upon their ability to consistently deliver projects on time, within budget, to the agreed performance levels and that they deliver the expected benefits. This does not necessarily mean that an organisation is successful or a “high flyer” within its own industry. KPMG (2013) are more consistent in their message relating their findings to the delivery of successful projects as opposed to high performing organisations. The UKHEPM survey is perhaps the first of its kind to attempt and assess the relationship between PM maturity and OP data.

The findings, in general, did not highlight any kind of relationship between PM maturity and OP. When the data was analysed in greater detail there were some interesting findings relating to the correlation between maturity statement scores and OP data. Worryingly, the majority of the relationships found were negative. The following list summarises maturity statement scores that had a negative impact on OP when filtered by mission group.

- **Procurement** – assessing whether to acquire outside support (the only score to have a strong negative correlation significant at 0.01 level, 2 tailed);
- **PM methodology** – project managers consistently apply a PM methodology to projects;
- **Iron triangle** – recording and reporting on time, cost and performance;
- **Risk strategy** – a risk strategy is defined for each project; and
- **Defining success** – success criteria is discussed and clearly defined.
One exception to this list was found. When analyzing data from Russell Group Universities the data highlighted a medium positive correlation (significant at the 0.05 level) between the scores achieved in the CUG’s league table and the score against the organisation supporting projects (through a Programme Support Office for example).

5.4 Provide universities with practical advice and recommend relevant support interventions

It is very difficult to provide practical advice based upon the findings from this research however the study itself along with the data should provide UK HEIs with intelligence around PM maturity and also how they fare against other institutions. The data itself will provide institutions with an idea of areas they might need to improve upon.

The findings do lend themselves towards a set of recommendations, listed below.

- There is a lack of academic debate around PM maturity, especially where UK HE is concerned. A relevant sector body should provide a space for this debate to take place and attempt to build upon the maturity model developed as part of this study.
- The author of this study is by no means an expert in statistics. The findings of this study should be viewed with some skepticism until the results can be verified. With this in mind it would be useful for the author to partner with a statistician to investigate the data in more detail.
- This study could be easily replicated and carried out annually. This would provide much greater intelligence as to the impact PM maturity has across the sector. However, if the survey was to be launched again greater emphasis should be placed on multiple responses per institution.
  - In addition, it would be beneficial for those responsible for the survey to review the likert scale currently being used. There is a lot of uncertainty around the midpoint being used.
- Professional PM organisations need to be clearer on their messages. PM maturity relates directly to an organisation’s ability to deliver successful
projects, often this is to deliver strategic objectives. Delivering successful projects is not a useful proxy for OP as a whole.

- Out of the five maturity statements indicated as having a negative effect on OP, one stood out: Project managers assess at the outset whether to acquire outside support, and if so, what to acquire, how much is needed, and when to acquire it. In essence, this statement relates to procurement. The actual issues are unknown and therefore this area may be worth investigating in more detail.

This study is the first attempt at benchmarking PM maturity across UK HE. The survey resulted in a strong response representing 58 UK HEIs and 114 individuals. It is also the first attempt at trying to assess what, if any, impact PM maturity has on OP. The evidence suggests that PM has no impact on OP. This does not mean PM is not important, the evidence does suggest that PM is a vital tool in delivering an organisation’s strategic objectives. For an organisation to be successful it must ensure it has the correct strategy otherwise work carried out at a project level will have very little effect.

However, there are some weaknesses with the research approach that could be addressed e.g. the statistical analysis used and ensuring multiple responses per organisation. It may also be worth running a longitudinal study to gather more data as benefits may not always be realised until some two or three years from after a project completes. This study should be considered a test bed for future PM research to build upon and discussed across UK HE.
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UK Higher Education Project Management Maturity Survey

1. About this research

Introduction

This survey has been designed to collect information regarding the maturity of UK Higher Education Institutions’ project management practices. As well as providing an overview of the current project management landscape the data will also be used to assess the impact that project management practices have on organisational performance. Preliminary findings will be made available to the sector via the author’s blog. The final dissertation will be made available late summer 2014 at which point the author will be happy to provide individual institutions with their own data.

This questionnaire focuses on your experience in the Academic Year August 2012 - July 2013.

A printable version of the survey is available if you’d like to think about the questions first before filling in the online survey which takes approximately 10 minutes to complete.

The closing date for this survey is Midnight, Friday 14th February 2014. More information about this research can be found on the author’s blog.

Data use

Any personal information submitted will not be published as part of this research. It is required to provide evidence you have been briefed about this project and that you agree to participate. If you give permission the author will notify you of the research findings when published. In accordance with Principle 5 of the Data Protection Act (DPA) 1998 your personal information will be destroyed 6 months after the final dissertation has been submitted.

Data submitted, that relates to your project management experience, will be compared with existing organisational performance data to see if there is a relationship between project management maturity and organisational performance. Data will be stored for a minimum of 6 years from September 2014. Organisational data submitted will be anonymised.

Survey Monkey was chosen because of its functionality and therefore the author hopes you find it a pleasant experience. In line with Principle 6 of the DPA 1998 Survey Monkey complies with US-EU and US-Swiss Safe Harbor Frameworks.

If you have any problems with the survey please contact Andrew Stewart.
UK Higher Education Project Management Maturity Survey

2. About you and your organisation

The following questions should be answered based upon your experience in the academic year August 2012 - July 2013.

* Q1. Which organisation did you work for in the academic year August 2012 - July 2013?

* Q2. In which of the following areas have you had experience of leading/taking part in projects? (Tick all that apply)

<table>
<thead>
<tr>
<th>Area</th>
<th>Within a department/service</th>
<th>Across a number of departments/services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business and community</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>engagement</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Learning and learning</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Management/business change</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Information Technology (IT)</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Relocation/refurbishment/consrtuction</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Research projects</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Other</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

If you answered 'other' please specify the type of project you were referring to below.

* Q3. Which roles have you carried out in the projects you have been involved with? (Tick all that apply)

- [ ] Project Board (oversees the project, secures funding for the project)
- [ ] Project Manager (runs the project on a day-to-day basis)
- [ ] Team Manager (produces products as defined by the project manager)
- [ ] Team Member (carries out tasks assigned by the team manager)
- [ ] Project Assurance (covers the primary stakeholders' interests - gives them confidence)
- [ ] Change Authority (approves responses to requests for change)
- [ ] Project Support (provides the project manager with 'formal' support)
- [ ] Other (please specify)
UK Higher Education Project Management Maturity Survey

* Q4. Which project management methodologies have you used in the projects you've been involved with? (Tick all that apply)

- Agile approaches e.g. adaptive software development, Kanban, and Scrum.
- Association of Project Management’s Body of Knowledge
- PRINCE2 (Projects in a Controlled Environmen)
- Project Management Institute’s Body of Knowledge
- 4D (Define it, Design it, Do it, Develop it)
- You were not aware of the methodology being used
- Other, including methodologies developed in-house (please specify) [ ]

* Q5. What are the key drivers for project activity in your organisation? Please rank the drivers listed below in order of their importance – 1 being the most important and 7 the least important.

<table>
<thead>
<tr>
<th>Most Important (1)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Least Important (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement of strategic objectives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ensuring continuity of your organisation</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementing government policy</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Legislative/compliance drivers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To introduce new products and services</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To support organisational change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To develop information technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
UK Higher Education Project Management Maturity Survey

3. Project Management Maturity

The following statements relate to your involvement with projects that took place in the academic year August 2012 - July 2013, please indicate the extent to which you strongly agree/disagree with them.

**Q6: Making sense of the project context**

<table>
<thead>
<tr>
<th>Strongly agree (6)</th>
<th>Agree (4)</th>
<th>Neutral (3)</th>
<th>Disagree (2)</th>
<th>Strongly disagree (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects I have taken part in relate directly to my organisation’s strategic aims.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My organisation provides projects with relevant and effective senior management support (e.g. sponsorships).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My organisation manages projects as part of a wider portfolio/programme.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My organisation actively supports projects, for example, through a Programme Support Office.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My organisation adopts a common project management methodology across its projects.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you have any comments on this section, please provide them here:


**Q7: Defining the project**

<table>
<thead>
<tr>
<th>Strongly agree (7)</th>
<th>Agree (4)</th>
<th>Neutral (3)</th>
<th>Disagree (2)</th>
<th>Strongly disagree (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project teams baseline organisational context at the start of the project, which can be used to evaluate progress.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Projects are tailored to suit the culture of the department/service that it affects.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A defined set of roles and responsibilities are agreed upon for each project.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relevant stakeholders are consulted when defining the business case and project initiation document (or project charter) for each project.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A project initiation document (or project charter) is created and signed-off by a member of senior management before a project is undertaken.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you have any comments on this section, please provide them here:


**UK Higher Education Project Management Maturity Survey**

* Q8: Designing the project

<table>
<thead>
<tr>
<th>Strongly agree (5)</th>
<th>Agree (4)</th>
<th>Neutral (3)</th>
<th>Disagree (2)</th>
<th>Strongly disagree (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A clear project plan is discussed and developed, showing the major products, activities and resources required for each project.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>A risk strategy is developed for each project; risks are identified and categorised appropriately. Risk responses are discussed and logged.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>The success criteria of each project is discussed and clearly defined.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Project managers assess at the outset whether to acquire outside support, and if so, what to acquire, how to acquire it, how much is needed, and when to acquire it.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Complex projects are managed in stages, and the plan is reviewed to ensure the outputs are still in line with the organisation’s strategic aims.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

If you have any comments on this section, please provide them here.

* Q9: Doing the project

<table>
<thead>
<tr>
<th>Strongly agree (5)</th>
<th>Agree (4)</th>
<th>Neutral (3)</th>
<th>Disagree (2)</th>
<th>Strongly disagree (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project managers within my institution have excellent leadership skills.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Project managers consistently apply a project management methodology to their projects.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Time (e.g. to complete specific task), cost (e.g. staff costs) and performance (e.g. customer satisfaction) data are regularly recorded and reported.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Project risks are regularly monitored, and the appropriate measures are taken where a change is required.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Project managers regularly communicate with key stakeholders.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

If you have any comments on this section, please provide them here.
### UK Higher Education Project Management Maturity Survey

**Q10: Developing the project**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree (5)</th>
<th>Agree (4)</th>
<th>Neutral (3)</th>
<th>Disagree (2)</th>
<th>Strongly disagree (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time and support is provided for a project's outputs to become embedded</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in the organisation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My organisation has a clear benefit measurement and realisation process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>in place.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My organisation regularly undertakes strategic reviews to track the</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>benefits realised.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A project completion and review exercise is undertaken for each project.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Recommendations, typically from a lessons learned report, are followed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>up by the senior management team and are visible for future projects.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you have any comments on this section, please provide them here.
UK Higher Education Project Management Maturity Survey

4. Optional information

The following questions are optional, however, the data will be useful in providing a good overview of the current project management landscape across UK Higher Education. The information you provide will not be attributed to your organisation. Please remember, your answers should relate to your experiences of the Academic Year August 2012 – July 2013.

Q11. Did your organisation have a Project/Programme Management Office (PMO) during the academic year August 2012 - July 2013?

☐ Yes
☐ No
☐ Don’t know

Q12a. In the academic year August 2012 - July 2013 did you experience a failed project i.e. the project did not deliver the expected outputs and/or benefits were unrealised?

☐ Yes
☐ No

Q12b. If you did experience a failed project, why did it fail? (Tick all that apply)

☐ Customers and end users are not engaged
☐ Failure to plan
☐ Insufficient team skills
☐ Lack of organisational/strategic support (Governance)
☐ Poor change management
☐ Poor communication
☐ Poor cost and scheduling estimation
☐ Poor risk management
☐ Resources limited
☐ Scope changes
☐ Uncertain dependencies
☐ Unclear objectives
☐ Unrealistic deadlines
☐ Other (please specify)

☐ [ ]
UK Higher Education Project Management Maturity Survey

Q13. Please add any further comments you might have in this box. It doesn't have to relate to a previous question or statement.

Q14. If you would like to be notified of the findings from this research please provide your current email address below.

* Q15. Please provide your name below to confirm that you have been briefed about this research project and its purpose, that you understand any personal information submitted will not be published, and that you agree to participate.

First name:
Surname:

If you'd like to contact the author of the survey for any reason please do so using the email address andrew.stewart@northumbria.ac.uk.

I really appreciate the time you've given up and the effort you've made to provide me with data for my research.

Thank you

Andrew Stewart
@andrewstewart
## Appendix B: UK Higher Education Project Management

### Survey tweets

<table>
<thead>
<tr>
<th>User</th>
<th>Tweet</th>
<th>Time creates</th>
<th>No. of Followers</th>
</tr>
</thead>
<tbody>
<tr>
<td>pauldhobson</td>
<td>RT @andystew: Some basic findings from the #ukhepm survey I ran – still a lot to do but wanted to share what I had <a href="http://t.co/hPdrlGA1rd">http://t.co/hPdrlGA1rd</a> ...</td>
<td>21/02/2014 16:35:17</td>
<td>271</td>
</tr>
<tr>
<td>jwt23</td>
<td>RT @andystew: Some basic findings from the #ukhepm survey I ran – still a lot to do but wanted to share what I had <a href="http://t.co/hPdrlGA1rd">http://t.co/hPdrlGA1rd</a> ...</td>
<td>19/02/2014 13:27:37</td>
<td>355</td>
</tr>
<tr>
<td>markrstirling</td>
<td>RT @UCISA_PCMG: Initial findings from the UK HE Project Management Survey - thanks to everyone who participated! <a href="http://t.co/pJJPtF9R9">http://t.co/pJJPtF9R9</a> @an...</td>
<td>19/02/2014 09:01:44</td>
<td>41</td>
</tr>
<tr>
<td>UCISA_PCMG</td>
<td>Initial findings from the UK HE Project Management Survey - thanks to everyone who participated! <a href="http://t.co/pJJPtF9R9">http://t.co/pJJPtF9R9</a> @andystew #ukhepm</td>
<td>19/02/2014 09:00:30</td>
<td>33</td>
</tr>
<tr>
<td>UCISA_PCMG</td>
<td>Initial findings from the UK HE Project Management Survey - thanks to everyone who participated! <a href="http://t.co/pJJPtF9R9">http://t.co/pJJPtF9R9</a> @andystew #ukhepm</td>
<td>19/02/2014 09:00:30</td>
<td>33</td>
</tr>
<tr>
<td>andystew</td>
<td>Some basic findings from the #ukhepm survey I ran – still a lot to do but wanted to share what I had <a href="http://t.co/hPdrlGA1rd">http://t.co/hPdrlGA1rd</a> /cc @UCISA_PCMG</td>
<td>19/02/2014 07:41:10</td>
<td>727</td>
</tr>
<tr>
<td>DonnaLanclos</td>
<td>RT @andystew: MT @InterfaceOnline: Got a view on UK HE Project Management for knowledge exchange? Complete the survey <a href="https://t.co/QzMoEBG3%E2%80%A6">https://t.co/QzMoEBG3…</a></td>
<td>14/02/2014 13:54:25</td>
<td>397</td>
</tr>
<tr>
<td>jiscinfonet</td>
<td>RT @andystew: Also interested in views from teaching and learning, research, business/management backgrounds <a href="https://t.co/QzMoEBG3KB">https://t.co/QzMoEBG3KB</a> #ukhep…</td>
<td>14/02/2014 13:20:01</td>
<td>1984</td>
</tr>
<tr>
<td>jiscinfonet</td>
<td>RT @andystew: Also interested in views from teaching and learning, research, business/management backgrounds <a href="https://t.co/QzMoEBG3KB">https://t.co/QzMoEBG3KB</a> #ukhep…</td>
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<td>1984</td>
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<tr>
<td>dc86</td>
<td>RT @andystew: Does the maturity of a HEI's project management practices affect its overall performance? Help me find out <a href="https://t.co/QzMoE%E2%80%A6">https://t.co/QzMoE…</a></td>
<td>14/02/2014 13:07:18</td>
<td>147</td>
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<tr>
<td>andystew</td>
<td>Also interested in views from teaching and learning, research, business/management backgrounds <a href="https://t.co/QzMoEBG3KB">https://t.co/QzMoEBG3KB</a> #ukhepm pls RT</td>
<td>14/02/2014 12:13:13</td>
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<tr>
<td>andystew</td>
<td>Also interested in views from teaching and learning, research, business/management backgrounds <a href="https://t.co/QzMoEBG3KB">https://t.co/QzMoEBG3KB</a> #ukhepm pls RT</td>
<td>14/02/2014 12:13:13</td>
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</tr>
<tr>
<td>andystew</td>
<td>MT @InterfaceOnline: Got a view on UK HE Project Management for knowledge exchange? Complete the survey <a href="https://t.co/QzMoEBG3KB">https://t.co/QzMoEBG3KB</a> #ukhepm</td>
<td>14/02/2014 12:07:13</td>
<td>726</td>
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</table>
peppermint_cat RT @andystew: Does the maturity of a HEI's project management practices affect its overall performance? Help me find out https://t.co/QzMoE… 14/02/2014 11:22:51 290

peppermint_cat RT @andystew: Does the maturity of a HEI's project management practices affect its overall performance? Help me find out https://t.co/QzMoE… 14/02/2014 11:22:51 290

jiscinfonet RT @andystew: Does the maturity of a HEI's project management practices affect its overall performance? Help me find out https://t.co/QzMoE… 14/02/2014 10:58:47 1985

andystew Does the maturity of a HEI's project management practices affect its overall performance? Help me find out https://t.co/QzMoEBG3KB #ukhepm 14/02/2014 10:30:13 726

andystew Does the maturity of a HEI's project management practices affect its overall performance? Help me find out https://t.co/QzMoEBG3KB #ukhepm 14/02/2014 10:30:13 726

andystew Involved in a #highered project 2012/13, in any way shape or form? Please share your experience https://t.co/QzMoEBG3KB #ukhepm 14/02/2014 08:36:13 726

andystew 112 complete responses received so far for the #ukhepm survey. Still time to contribute, survey closes midnight http://t.co/JUr1guBVPA 14/02/2014 07:35:13 726

JISC_Techdis @andystew is assessing impact of project mgt maturity on org performance. See http://t.co/OALg4B6cYd #ukhepm 07/02/2014 12:16:15 2396

JISC_Techdis Involved in a UK #highered project in 2012/13? Complete @andystew’s survey: https://t.co/iULpJ3y8kC #ukhepm 07/02/2014 11:35:30 2396

HICreates RT @InterfaceOnline: Got a view on UK Higher Education Project Management for knowledge exchange? Complete the survey https://t.co/SgpMnw4… 07/02/2014 09:16:37 349

InterfaceOnline Got a view on UK Higher Education Project Management for knowledge exchange? Complete the survey https://t.co/SgpMnw4TvB #ukhepm 07/02/2014 08:36:46 1603

jwt23 RT @andystew: Just hit 100 responses to the #ukhepm survey with a week to go! http://t.co/gVGiyZBY8y #lovehe #highered /cc @APMProjectMgmt … 06/02/2014 18:33:53 346

andystew Just hit 100 responses to the #ukhepm survey with a week to go! http://t.co/gVGiyZBY8y #lovehe #highered /cc @APMProjectMgmt #pmot 06/02/2014 17:28:23 726

gillferrell RT @andystew: 67 respondents, and counting, to the UK #highered Project Management survey so far! Have your say: http://t.co/j8buKLPGTM #uk… 06/02/2014 07:46:14 409

paulineww RT @markrstirling: Work in UK HE? Involved in project or change management? Take the Project Management Maturity Survey http://t.co/uVUfhuVu… 05/02/2014 21:32:44 20

NTUDigital RT @andystew: 67 respondents, and counting, to the UK #highered Project Management survey so far! Have your say: http://t.co/j8buKLPGTM #uk… 05/02/2014 14:11:17 92

arkarnad RT @andystew: Ps, I'm interested in the experiences of anyone *involved* with a project 05/02/2014 13:45:44 70
<table>
<thead>
<tr>
<th>User</th>
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<th>Date</th>
<th>Retweets</th>
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<tbody>
<tr>
<td>jiscinfonet</td>
<td>RT @andystew: Ps, I'm interested in the experiences of anyone <em>involved</em> with a project across #highered, not just managers <a href="http://t.co/j8b%E2%80%A6">http://t.co/j8b…</a></td>
<td>05/02/2014</td>
<td>1971</td>
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<tr>
<td>dc86</td>
<td>RT @andystew: Ps, I'm interested in the experiences of anyone <em>involved</em> with a project across #highered, not just managers <a href="http://t.co/j8b%E2%80%A6">http://t.co/j8b…</a></td>
<td>05/02/2014</td>
<td>147</td>
</tr>
<tr>
<td>markrsterling</td>
<td>Work in UK HE? Involved in project or change management? Take the Project Management Maturity Survey <a href="http://t.co/uVUhVuEyN">http://t.co/uVUhVuEyN</a> #ukhepm</td>
<td>05/02/2014</td>
<td>37</td>
</tr>
<tr>
<td>andystew</td>
<td>Ps, I'm interested in the experiences of anyone <em>involved</em> with a project across #highered, not just managers <a href="http://t.co/j8buKLPGTM">http://t.co/j8buKLPGTM</a> #ukhepm</td>
<td>05/02/2014</td>
<td>726</td>
</tr>
<tr>
<td>andystew</td>
<td>67 respondents, and counting, to the UK #highered Project Management survey so far! Have your say: <a href="http://t.co/j8buKLPGTM">http://t.co/j8buKLPGTM</a> #ukhepm pls RT</td>
<td>05/02/2014</td>
<td>726</td>
</tr>
<tr>
<td>andystew</td>
<td>67 respondents, and counting, to the UK #highered Project Management survey so far! Have your say: <a href="http://t.co/j8buKLPGTM">http://t.co/j8buKLPGTM</a> #ukhepm pls RT</td>
<td>05/02/2014</td>
<td>726</td>
</tr>
<tr>
<td>andystew</td>
<td>Ever been involved with a L&amp;T, #research or #bce project in UK #highered? Pls share your experience <a href="http://t.co/JUr1guBVPA">http://t.co/JUr1guBVPA</a> #ukhepm #ukedchat</td>
<td>01/02/2014</td>
<td>718</td>
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<tr>
<td>jwt23</td>
<td>RT @andystew: Calling past @Jisc projects! Help needed to understand how project mgt maturity affects org performance <a href="http://t.co/JUr1guBVPA%E2%80%A6">http://t.co/JUr1guBVPA…</a></td>
<td>31/01/2014</td>
<td>345</td>
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<td>torstenreimer</td>
<td>RT @andystew: Calling past @Jisc projects! Help needed to understand how project mgt maturity affects org performance <a href="http://t.co/JUr1guBVPA%E2%80%A6">http://t.co/JUr1guBVPA…</a></td>
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<td>CriticalSteph</td>
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<td>jukesie</td>
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<td>31/01/2014</td>
<td>1789</td>
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Appendix C: Survey data

The anonymised data from this survey can be found at:

http://figshare.com/articles/MSc_Data_i3_xlsx/1004939