Do Buildings and Estates Offices in Irish Third Level Institutions operate and provide value similar to Project Management Offices (PMOs)

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DECLARATION

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Where use has been made of the work of other people, it has been acknowledged and is fully referenced.

Signed: Tom Carey

Date: August 18th 2013
Abstract

Irish third level institutions are faced with the challenge of managing projects with the increasing constraints of the economic climate. Most research on PMOs has focused on private organizations with existing PMO structures. Little research has considered PMOs in government organizations and specifically Irish third level institutions. This study examines the Buildings and Estates Offices of two of the seven institutions in Ireland to confirm whether these offices are operating as PMOs and what the value of these offices is. The study provides an insight and greater understanding of PMOs in the Irish third level sector. Interviews were conducted with informants from two institutions. The findings are presented in two case studies. The study found that Buildings and Estates Offices in third level institutions are operating as PMOs and that their value is measured by the delivery of capital projects, management of the project process and oversight of ongoing projects on behalf of the institution. The study contributes to the gap in research in PMOs in the government / public sector and particularly PMOs in the Irish third level sector context.
Exec Summary

In today’s difficult economic times, organizations are faced with the challenges of competitive and changing environments to which they must adapt if they are to survive and prosper. Projects have become important instruments for change and development in organizations. In response to these challenges, many organizations have established a Project Management Office (PMO) to manage their projects in centralized and coordinated ways which will maximize value and success. Government organizations face similar challenges with constraints in funding and a demand for more value for money spent. The Irish government spends 17% of its annual budget on the educational sector which amounts to €8.7 billion euro. The amount spent directly in the third level sector amounts to €357 million with €48.5 million spent in 2012 on infrastructure within the seven universities. This study examines the Buildings and Estates Offices operating in two Irish third level institutions to determine if the offices are operating and providing value similar to project management offices.

Buildings and Estates Offices have the largest budget spend in third level institutions. The budget is allocated to operational costs and project costs. The highest spend is in capital project costs which involves the provision of new infrastructure. The study chose buildings and estates directors and project staff as informants for interviews to gain a greater understanding of how the offices operate. A comparative case study method was employed using a conceptual framework derived from literature to examine and compare the two offices. The framework examined the PMO by setting a definition for the study and examining the characteristics, organization context and value of the PMO. These concepts were then applied to Buildings and Estates departments in two institutions to determine if they were operating and providing value similar to a PMO. The study had six research objectives that were examined to address the overall research question. The first three were determined from an extensive review of the literature. The final three objectives were examined by gathering primary data from the informants and drawing conclusions using a case study design.

The research findings indicate that although there are no formal project management offices in third level institutions, the Buildings and Estate Offices are operating as the PMO for the institutions. Third level institutions have a two-tier organization structure which consists of an academic structure and an administrative structure. The challenge faced by Buildings and Estates Offices is to merge the needs of both structures in the delivery of projects set out by the strategic and physical development plans. The informants contend that the Buildings and Estates Offices are in essence operating as a PMO. The most important functions of the office are the monitoring, controlling and reporting of projects along with the strategic alignment. Organizational learning and development of project management methodologies are also seen as important. Organizational learning is conducted through post project reviews and customer surveys.
while project management methodology is developed using the Capital Projects Management Framework. The organizational structure in a third level institution is both functional and matrix. All projects other than capital projects are conducted along functional lines. For capital projects the organization adopts a strong matrix structure in which the power and authority is assigned to the buildings director. The buildings director becomes the PMO and has control of the decision making and resources. This is comparable to a ‘composite organization’ as outlined by the PMBOK.

The value aspect of PMOs and Building and Estates offices was explored in the study to determine the value of a PMO in a third level institution. The research showed that the value of a PMO in a third level institution is the ability of the office to deliver capital projects through project management, management of the process to ensure that the needs of the institution are met, and the ability to have oversight over all projects ongoing in the institution. The overall conclusion of the study indicates that Buildings and Estates Offices are operating and providing value similar to that of Project Management Offices when compared to the conceptual framework in this study.

However, further research is needed to examine the methodologies, maturity and frameworks that third level institutions employ in managing projects and PMOs. The study found that third level institutions follow the guidelines set out in the Capital Projects Management Framework for managing projects. This framework is very prescriptive in providing guidance on procurement, suppliers, tendering and EU directives for the awarding of government contracts. However there is no guidance for how third level institutions are to manage the process or on the use of PMOs. The value aspect of the PMO needs to be measured by analyzing the financial figures for a number of projects to see if the approach of the PMO in capital projects provides value.

This study adds to the extensive literature and research on Project Management Offices and provides a greater understanding of how these offices operate in a third level institution in Ireland.
1.0 Introduction

Projects have become important instruments for change and development of organizations (Dai & Wells, 2004). In the 1990’s organizations began to recognize that their strategies and initiatives were essentially implemented via projects. The recognition of project management as a critical competence has lead to the formal development of the organizational project office (typically referred to as a Project Management Office or PMO) (Hurt, & Thomas, 2009. Pg.55). Organizations are increasingly striving for more flexible forms of management to deal with the challenging environments and market changes (Crawford & Helm, 2009). Public service organizations face the same challenges in regards to adapting to economic conditions coupled with decreased funding and a focus on the delivery of value in projects.

The government context is characterized by “uncertainty, ambiguity, and stakeholder management issues that are multifaceted and complex” (Crawford, Costello, Pollack & Bentley, 2003 pg.433). The concept of PMO’s has been covered widely in literature with many researchers focused on: PMO value (Hurt & Thomas, 2009; Thomas & Mullally, 2008; Hobbs & Aubry, 2007), PMO performance (Aubry & Hobbs, 2011; Dai & Wells, 2004) and functions and characteristics (Hobbs & Aubry, 2007; Aubry, Hobbs and Thuiller, 2007; Crawford, L.H., 2010). Although much research has been conducted in the area of PMOs, there is a lack of research in the area of government organizations and the characteristics of PMOs (Crawford & Helm, 2009).

The importance of project and program management has been recognized by government agencies in various countries due to the increased scrutiny of public spending and the demand for value. In the United Kingdom the Office of Government Commerce (OGC) was established to “help governments to deliver value with its spending” and in particular “the delivering of projects, to time, cost and the realization of benefits” (Office of Government Commerce, 2008). Similar organizations exist in Australia DMO (Defense Material Organization) and CIU (Cabinet Implementation Unit) which are modeled on the OGC standards.

The Irish government spends 17% of its annual budget on the education sector amounting to €8.5billion. The amount spent directly in the third level sector amounts to €357million with €48.5 million spent in 2012 on infrastructure within the seven universities in Ireland (Expenditure Report, Dept of Finance as of the 4th of December 2012). A report commissioned by the HEA (Higher Education Authority) titled ‘The University Challenged: A Review of International Trends and Issues with Particular reference to Ireland’, (2001) highlighted the challenges facing Irish third level institutions. The report highlighted the need for third level institutions to “improve their institutional capability” and the need for “system wide planning and financial decision making, monitoring and reporting on performance in regards to budgets and capital spending”. Unlike the UK there is no national governing body which advises government organizations in the area of project
management. However there is a Capital Works Management Framework which has a prescriptive and detailed framework for Public organizations to follow in implementing projects. The University Act 1997 sets out the structure, functions and governance for Universities in Ireland. One of the functions outlined in this act in section 111.pt14 states:

(e) A University shall maintain, manage and administer, and may dispose of and invest, the property, money, assets and rights of the University.

(g) May purchase or otherwise acquire, hold and dispose of land or other property.

These two functions are within the remit of the Buildings and Estates Departments in Universities. The functions outlined here are executed through the completion of capital projects under the guidelines of the physical development plan. The Buildings and Estates departments account for the highest budget spend in Universities performing these functions. Given the apparent gap in the research into government organizations, the amount of investment into the third level sector and the lack of a government body like the (OGC) in Ireland; this study addresses the question:

Do Buildings and Estates offices in Irish third level institutions operate and provide value similar to project management offices?

In order to consider this question fully the researcher determined that the following research objectives were necessary:

1. Determine a definition from literature for the construct of a Project Management Office

2. Determine the characteristics of a PMO to be examined from an extensive review of the literature

3. Develop a conceptual framework for the study to examine PMOs in a third level institution

4. Examine two Buildings and Estates offices in third level institutions using the PMO framework to identify the similarities to a PMO

5. Identify the Characteristics of a PMO in a third level institution

6. Explore the Value aspect of a PMO in a third level Institution

The research approach to this study involved an extensive review of the literature to develop a conceptual framework to examine high ordered concepts in relation to a PMO. A conceptual framework is a system of concepts, assumptions, beliefs and theories that supports and informs the research and is a key part of the research design (Miles and
2.0 Literature Review

The objective of the literature review is to examine the literature deemed relevant to the topic of PMOs. The literature review begins with examining the current definitions of a PMO and then focuses on the characteristics, organization context and finally the value of PMOs. The review concludes with a proposed conceptual framework in which the PMO will be examined for the study.

2.1 Towards a working definition of a PMO

The earliest descriptions of a PMO vary among sources of literature. The true origin of the PMO is debated with some authors linking it back to the 1930s when the US Air Corps developed a ‘Project Office’ function to manage aircraft development (Wood, 2012; Dai&Wells, 2004; Morris, 1994). However it wasn’t until the 1990’s that the concept of the PMO expanded into the forms that we see today (Aubrey et al, 2008). The first known academic references of PMOs began to appear in 2003, starting when Harold Kerzner wrote the preface to Gerald Kendall and Steve Rollins book: ‘The use of a PMO is not new, but the use of PMO as a direct input to the strategic planning process is really new’. Kerzner had previously described the use of a ‘Project Office’ in his book, Project Management – a Systems Approach to Planning, Scheduling and Controlling which is considered to be the first bibliographic register of a PMO (De Valle et al, 2008). Organizational bodies such as the PMI (Project Management Institute), APM (Association for Project Management) and IPMA (International Project Management Association) include a definition of a PMO in their educational and certification material. (See table 1 definitions)

There is no clear consensus for a universal definition of a PMO (Dai, X.D, & Wells, G.W, 2004); (Hurt, M. & Thomas, J. 2009). PMOs are often established for a particular project (single project PMO) or to meet the needs of an organisation (multi project) and can categorized by their function. Research by Hobbs & Aubrey, 2008 found that PMOs are in a constant state of transition and restructuring. The average life span of a PMO is only two years. This can add to the confusion of defining the PMO. The P in PMO can stand for project, programme or portfolio and is used interchangeably or can mean all three depending on the focus of the PMO. PMO names range from Project Support Office (PSO), Project Management Support Office (PMSO), Enterprise Program Management Office (EPMO), Corporate Project Office (CPO) and Project Management Centre of Excellence (PMCOE). Often the PMO reflects its focus. The Project Support Office is typically support oriented versus a enterprise project management office which is more strategic in nature (Duggal, J., 2007).
(Desouza, C.K. & Evaristo R.J, 2006) believe that a universal definition of a PMO is not possible because developing a PMO that works for an organization is a custom exercise that requires sustained effort. Dai & Wells, 2004 prefer to define the PMO as a presence rather than use a universal definition. (A summary of some of the definitions found in relevant literature can be found in table 2)

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<thead>
<tr>
<th>Organizational Body</th>
<th>Definition</th>
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<tr>
<td>PMI (Project Management Institute)</td>
<td>According to the PMI ‘A Project Management Office (PMO) is an organizational body or entity assigned various responsibilities related to the centralised and coordinated management of those projects under its domain’. The responsibilities of a PMO can range from providing project management support functions to actually being responsible for direct management of a project. PMBOK, 4th Ed, pg11, 2004). The projects supported or administered by the PMO may not be related other than by being managed together. The specific form, function and structure of a PMO is dependent upon the needs of the organization that it supports (PMBOK, 4th Ed, 2004, pg11).</td>
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<tr>
<td>APM (Association of Project Management)</td>
<td>The APM defines a project office as an office that serves the organizations project management needs. A project office can range from simple support functions from project manager to being responsible for linking corporate strategy to project execution. A project office provides support for project management services. Not all organizations or projects will have a project office. Where a project office does not exist the services it provides must be taken on by project managers.</td>
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<tr>
<td>IPMA (International Project Management Association)</td>
<td>The IPMA contends that a project management office or Programme Management Office is part of a permanent organization. Its roles are typically to support, to set standards and guidelines for the managers of different projects and programmes, to collect project management data from the projects, to consolidate it and to report to some governing body. It has to ensure that the projects are aligned to the organizations strategy and views. (IPMA, 2006, pg 212).</td>
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Table 1. PMO definitions from Organizational bodies
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<tr>
<th>Author</th>
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<tr>
<td>Neaver, 2012</td>
<td>A project management office is a unit or department that specialises in project management concepts and uses those concepts to improve the overall project capability of an organization. Typically the primary goal of a PMO is to improve project performance through standardization and process. Additionally a PMO can provide project support, information guidance and oversight to an organization.</td>
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<td>Santos de Valle et al, 2008</td>
<td>Santos de Valle et al, 2008 state that the PMO is related to the overall project management and is responsible for the portfolio of the organization. The PMO has professional experience in PM, and oversees all projects and programs. The PMO has the overall responsibility for the success of all projects in the organization.</td>
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<tr>
<td>Kendall and Rollins (2003)</td>
<td>According to Kendall and Rollins (2003) a PMO is a center of intelligence and coordination which allows a link between the strategic objectives and the related practical results through organizational portfolio, program and project management.</td>
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<td>(Kwak, H. Yong and Dai Yi Xiao Christine, 2000).</td>
<td>A PMO can be defined as an organizational entity with fulltime personnel to provide and support managerial, administrative, training, consulting and technical services for a project- driven organization. Establishing a PMO in the organization is one approach toward improving overall project management effectiveness that leads to successful project outcomes. (Kwak, H. Yong and Dai Yi Xiao Christine, 2001).</td>
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Table 2. PMO definitions found in literature

A comparison between both tables shows that common themes associated with the definition of a PMO are: (1) It is an organization entity (2) It is a centralized and coordinated approach, and (3) It has various responsibilities which include support functions, strategic alignment of projects through portfolio, program and project management. It is not possible to include every type of PMO in a single definition as every PMO and every organization is unique (Hobbs, 2009). However it is important to define the basic concept of a PMO in terms of a definition for this study. This will help to determine how PMOs are operating in a government organization such as an Irish third level institution. A definition will serve as a starting point of reference in looking for the existence of a PMO in an Irish third level
Institution. A clear definition will allow for a comparison between a PMO defined by literature and a PMO from the viewpoint of a practitioner within a government organization. For this study, the researcher has chosen the PMI definition as a guideline definition. The researcher feels this definition encompasses the breadth of the topic of PMOs given both the definitions of the organizational bodies and the literature reviewed. The importance of a standard definition will help clarify the type of PMO which may operate in Irish third-level institutions and is crucial for addressing objective one of the research question.

2.2 Characteristics of a PMO

The term characteristic is used in this study to describe the common attributes related to the construct of a Project Management Office. It is not possible in this study to examine every aspect of a project management office. The aim of the study is to examine the main characteristics as determined by literature to provide a conceptual framework to study PMO’s in the context of Irish third-level educational institutions. The section of the literature examines the type of PMO, Roles, Functions, and Authority.

2.2.1 Type of PMO

The type of PMO varies from organization to organization but is often determined by the business needs of the organization (Hobbs & Aubrey, 2007). The types of PMOs have changed greatly since their inception in the early 90s (Kerzer, 2003). Early PMO’s were usually set up for a specific purpose and for many organizations the PMO consisted of a ‘war room for projects’. Since then the PMO has evolved to an entity that can exist in various departments including HR, IT, and Finance. Crawford and Cabanis-Brewin classify PMOs into three types. (see figure 1).

Figure 1.Types of PMOs adopted from Crawford, J.K. (2011), ‘The Strategic Project Office’, second edition, Boca Raton, Florida: Auerbach / CRC Press. pg.30

Other authors have also categorized PMOs into various types. Duggal, J 2007 contends that there are two types of PMO: (1) A PMO for a particular project or programme, and (2) an
organisational PMO. The PMO for a particular project or programme is referred to as Project Office or Project Support office. It deals with the day to day project or programme issues, similar to the military concept of a ‘war room’. The organizational PMO focuses on improving overall Project, Programme or Portfolio Management practices in the organization (Duggal, J. 2007, pg 163). In examining PMOs in the IT and knowledge management context Desouza, C.K. & Evaristo R.J, 2006 classify PMOs into two types: (1)Administrative, and (2)Knowledge-intensive.

Administrative PMOs provide project managers with administrative support. The focus of these PMOs is on the management of information about projects. The knowledge-intensive PMO is focused on developing the maturity of Project Management in the organization through the practice of lessons learned and knowledge management. The right choice of PMO in this case is based on the PM maturity of the organization. Administrative PMOs are often found in organizations with low levels of maturity and where the organization has difficulty integrating multi-projects within the management hierarchy. (Desouza, C.K. & Evaristo R.J, 2006). Kendall & Rollins classify PMOs into four types: (1) Strategic: SPO (2) Directive: Program Management Office, (3) Support: Project Support Office, and (4) Hybrid – combination of two or three of the above mentioned classes of PMO.

Hill, 2004 lists five types of PMOs which are aligned with PMO competency and maturity. As the PMO increases in competency it moves through the five stages and types. This PMO competency continuum provides a series of PMO stages that can be examined for application in an organization. (See Figure 2).

Figure 2.

After reviewing the literature in relation to the different types of PMOs it is possible to represent the type of PMOs considered for this study graphically by grouping the similar
themes from literature into three types. The three types are drawing on Crawford’s concepts of PMO classifications and aligning them with the concepts of the literature to narrow the focus of this study so that a type of PMO can be identified in the context of an Irish third level institution.

Type 1 Project Support Office

Type 2 Project Management Office

Type 3 Strategic Project Management Office

Figure 3. PMO classification based on literature concepts.

The type of PMO can often depend on the purpose, role or function for which it has been set up. Primarily a PMO is established to meet the needs of an organization (Hobbs & Aubry, 2007; Duggal, J. 2007; Pinto, 2010). This study aims to use the conceptual classification of PMOs to identify the type of PMOs that exist in the Irish third level context.
2.2.2 Roles of the PMO

The term role is used interchangeably with focus, purpose and aim to describe what a PMO does in an organizational context. Hobbs & Aubrey, 2010 make the distinction between role and functions by describing the role of a PMO as ‘any activity outside the project management functions it provides’. The role of the PMO can be considered in a number of contexts including the project and organizational context (Hobbs & Aubrey, 2010 pg65). Duggal, J. 2007 contends that the role of the PMO has evolved over the years from a tactical to a strategic level. Desouza, C.K. & Evaristo R.J, 2006 segment the roles of a PMO into strategic, tactical and operational. At the strategic level the role of the PMO is to ensure that projects are aligned with the strategic objectives of the organization, contribute to the growth of the organization and ensure that there are efficient knowledge management processes in place. At tactical level the role of the PMO is to ensure that there is close integration between project initiatives, consistent quality of products and services generated by projects and knowledge sharing among members to ensure clear communications between teams. At the operational level the PMO is responsible for conducting project evaluations, serves as a repository for expert knowledge on project management and provides consistent monitoring of customer satisfaction.

PMOs have also been defined into three alternative roles: 1) weather Station, 2) control tower, and (3) resource pool (Casey & Peck, 2001; Pinto, 2010). The strategic roles described by Desouza & Evaristo, 2006 are similar to that of the weather station and resource pool roles of Casey & Peck, 2001 and Pinto, 2010. The tactical role outlined is also aligned with that of the control tower approach of Casey & Peck, 2001 and Pinto, 2010.

The PMO role has changed significantly since its inception in the early 90’s( Kerzner, 2001). Originally the PMO was set up handle specific initiatives or projects. However as organizations evolved and recognized the need for project management to execute complex projects, the PMO became linked with the evolution of the organization (Aubrey et al, 2007). A PMOs role has been described as a gateway for project management in an organization (Aubrey et al, 2010; 2007), and also as an organization innovation in which the PMO influences the organization through innovation and change (Hobbs et al, 2008; Thiry, 2008).

The PMO has been added to the systems theory field as its relationship to organizations and structure has led to a rethinking of project management (Aubrey & Hobbs, 2010). However this research has been based on existing visible PMOs in organizations. The study of PMOs in a government organization context without an established visible PMO cannot assume that the PMO is performing the organization context roles. The study aims to examine the role of a PMO in a third level institution as part of the characteristics of a PMO which pertains to the fourth research objective.
2.2.3 Functions of PMO’s

Many authors have described the basic functions of a PMO. A PMOs effectiveness and success depends on choosing the correct functions and adapting them to the organizations needs (Hill, 2004; Hobbs & Aubrey, 2007 pg.81; Hurt & Thomas, 2009). Organizational bodies such as the PMI and APM have provided guidance in terms of the functions that a PMO should provide. (See table 3)

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<tr>
<th>Organization Body</th>
<th>Functions</th>
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<tr>
<td>PMI (Project Management Institute)</td>
<td>The PMI defines that the primary function of a PMO is to support project managers in a variety of ways which may include, but are not limited to:</td>
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<td></td>
<td>1. Managing shared resources across all projects administered by the PMO:</td>
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<td></td>
<td>2. Identifying and developing project management methodology, best practices, and standards;</td>
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<td>3. Coaching, mentoring, training, and oversight;</td>
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<td></td>
<td>4. Monitoring compliance of project management standards, policies, procedures, and templates for project audits;</td>
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<td></td>
<td>5. Developing and managing project policies, procedures, templates, and other shared documentation (organisational process assets); and</td>
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<td>6. Coordinating locations across projects.</td>
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<td>A guide to the project management body of knowledge PMBOK 4th edition, 2008,pg.11</td>
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<td>APM</td>
<td>As a minimum the project office should provide:</td>
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<td></td>
<td>1. Administrative support and assistance of project managers;</td>
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<td></td>
<td>2. Collection, analysis and reporting of project information;</td>
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<td></td>
<td>3. Assurance of project management processes.</td>
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Table 3 PMO Functions

Research by Dai & Wells, 2004 examined PMOs and determined six categories of functions. These categories are: (1) Developing and maintaining PM Standards and Methods (2) Developing and maintaining project historical archives (3) Providing project administrative support (4) Providing human resource staffing assistance (5) Providing PM consulting and mentoring, and (6) Providing or arranging PM training. Hill, 2004 has defined twenty functions in which a PMO has responsibility for establishing. These functions are expanded as the capability of the PMO increases. (See table 4)

Duggal, J. 2007 also categorizes the functions of PMOs into six areas of focus as part of his PMO framework. The areas of focus include: (A) Execution and Project performance (B) Decision-Support and Portfolio Management (C) Governance (D) Performance Monitoring and Reporting, and (E) Communication and Relationship Management. The PMO will not adopt all functions at once but can select them based on the specific needs of the organization at any time (Duggal, J. 2007 pg.171 ).

However, Hobbs and Aubrey’s (2007) empirical research provides the most grounded exploration of the functions PMOs perform in organizations today (Hurt and Thomas, 2009 pg.55). A study conducted by Hobbs and Aubrey used a comprehensive list of functions derived from literature and examined 500 PMOs. The respondents were mostly project managers or had a significant role in the PMO. This study identified 27 functions which PMO’s perform (See Figure. 4). Not all functions are performed by every PMO, but all of the functions identified were found to be important for a significant number of the PMOs surveyed, and 21 of the 27 functions are important for at least 40% of PMOs (Hobbs & Aubry, 2007, p.80).

These functions were then grouped using factor analyses into six areas: (1) Monitoring and Controlling Performance (2) Development of Project Management Competencies and

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<th>Practice Management</th>
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<td>2. Project management tools</td>
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<td>3. Standards and metrics</td>
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<td>4. Project knowledge management</td>
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<td>5. Project governance</td>
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<td>7. Organization and structure</td>
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<td>8. Facilities and equipment support</td>
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<td>9. Resource management</td>
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<td>10. Training and education</td>
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<td>11. Career development</td>
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<td>12. Team development</td>
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<td>13. Mentoring</td>
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<td>14. Planning support</td>
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<td>15. Project auditing</td>
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<td>17. Project portfolio management</td>
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<td>18. Customer relationships</td>
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<td>19. Vendor/contractor relationships</td>
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<td>20. Business performance</td>
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Methodologies (3) Multiproject Management (4) Strategic Management (5) Organisation Learning, and (6) Other Functions (not in any group).

The six categories of functions outlined by Hobbs and Aubrey are very similar to those of Dai and Wells. The twenty functions outlined by Hill, 2004 are specific to stage three PMOs and not all PMOs. The functions outlined by Duggal, 2007 are dependent on the focus of the PMO and are not common to all PMOs. The functions outlined by the APM and PMI are broad in nature but are similar to Dai & Wells, Duggal and Hobbs & Aubry. The research by Hobbs & Aubry, 2007 examined functions related to multi-project PMOs and although not all functions were noted as important, 40% of PMO’s deemed that the six categories of functions were important. It is not possible to capture all functions that a PMO can provide for every organisation context. However the researcher chose to use Hobbs & Aubry’s categories as a framework for examining the functions of a PMO in an Irish third level institution. Other researchers such as Hurt & Thomas, 2009, have acknowledged the value of Hobbs and Aubry’s research in this area. The functions of a PMO are central to examining the characteristics of a PMO particularly in relation to the functions provided by a PMO in a third level institution. The study aims to examine the functions of a Buildings and Estates Office to determine if they are similar to that of a PMO.
2.2.4 PMO Authority

An important characteristic of a PMO is the decision-making authority it has in projects and in the roles and functions it provides. The PMO needs some authority to fulfill its role and functions within the organization. One approach to categorize PMOs is by level of authority (Bridges & Crawford, 2001). A PMO with authority is considered empowered while one without authority is deemed passive. Bridges and Crawford, 2001 outline the different authority within the levels of PMOs in an organization. This is similar to Hill, 2004 who suggests that most organizations establish a Stage 3 PMO which implies some level of authority. Research by Hobbs and Aubrey, 2010 found that many PMO’s are in a passive or supportive role with little or no decision making authority, while others have considerable authority to make decisions, allocate resources and to cancel projects. Duggal, J 2008 contends that the type of PMO can influence its authority in organizations.

Supportive or consultative PMOs have more of an advisory influence limited to the recommendations of policy and procedures, compared to monitoring and controlling PMO’s which have more formal authority. The PMOs authority is increased as its maturity increases and it begins to report to higher levels within the organization (Duggal, 2007 pg177). Hobbs and Aubry, 2007 found that around 40% of PMOs are in a supporting role with little or no decision making authority while around 60% have at least some authority to make decisions to allocate resources or initiate change or cancel projects. This illustrates the great variety of authority roles that different organizations assign to their PMOs.

![Figure 5. Decision Making Authority, adopted from Hobbs and Aubry, PMO: ‘A Quest For Understanding’ PMI, 2010 pg.55](image)

Authority is seen as a characteristic in terms of how a PMO operates in relation to decision making, significance of role and the functions provided. Although the PMO itself is empowered by its staff, a PMO may exist as a person, group or in virtual form (Aubry et al,
2010). For these reasons it is included as an important characteristic of a PMO for this study. The study will focus on the authority of PMOs in a third level context in terms of the type of authority a PMO has and how it compares to that in the literature. This is seen as an important factor for determining the characteristics of a PMO.

3.0 Organisation Context

The organization context considers the organizational structure, culture and project type. Similar variables have been used by Aubry et al, 2011; Hobbs & Aubry, 2010 to examine the organization context in relation to PMO’s. Third level institutions have a two-tier organization structure which consists of an academic structure and an administrative structure. The challenge faced by Buildings and Estates Offices is to merge the needs of both structures in the delivery of projects set out by the strategic and physical development plans. It is not possible to cover all elements in relation to the organization context; however the researcher contends that these elements were sufficient to examine PMOs in the context of third level institutions.

3.1 Organisation Structure

There is no single recognized construct for a PMO and its use in an organization. A PMO’s structure and functions can be dependent on its purpose and where it is deployed in an organization. The structure and type of the PMO can be dependent on the type of organization structure (Duggal, 2007).

Organizational structure consists of three key elements:

1. Organizational structure designates formal reporting relationships which include the number of levels in the hierarchy and the span of control of managers and supervisors.

2. Organizational structures identify the grouping of individuals into departments and departments into an organization. E.g. groups are defined by function, geography, product and project.

3. Organizational Structure includes the design of systems to ensure effective communication, coordination and integration across departments.

The third element is related to the supporting mechanisms that a firm relies on to support its structure. This can be mandated through the use of procedures and rules for communication or through the establishment of Project offices or PMOs. The creation of logical structures is not sufficient unless it is supported by systems that ensure clear communication and coordination. There are two contexts in which project management operates within the organization. Firstly the overall organization structure in which the arrangement of units, departments or interest groups participate in the project. It includes the project team, the client, top management, functional departments and other relevant
stakeholders. The second context is the structure in which the internal project team operates. This specifies the relationship between managers and the project team, the roles and responsibilities and the interaction between the project manager and team (Pinto, 2010 pg.43).

Research conducted by Price Waterhouse Cooper (PWC), 2004 found that ‘the way an organization is structured is fundamental to the outcome of their project management performance’. Factors included in this study analysis were the 5 types of organizational types: functional, weak matrix, balanced matrix, strong matrix and projectised. Research by Gobeli & Larson, 1987 has also highlighted the fact that the type of structure a firm has when it runs projects will either have a detrimental or beneficial effect on their viability. Implementing a PMO in an organization requires significant organizational structures changes (Hobbs and Aubry, 2010; Duggal, J 2007). There is no right organizational structure for project management only an appropriate one (Kezner, 2001 pg.135). Organizations can be structured in a variety of ways. The structure of an organization does not happen by chance. Organizational structures are influenced by both external factors and operating environment. The combinations of these factors have a strong impact on the manner in which projects are managed in an organization (Pinto, 2010 pg. 43). The PMO as defined earlier is an entity which operates within the organization responsible for a variety of functions related to the centralized and coordinated management of those projects under its domain. The type of organization has an effect on how projects are managed and thus the PMO as its mandate can be the management of projects (Pinto, 2010; Hobbs and Aubrey, 2010).

There are three structural types that classify the majority of firms.

1. Functional organizations – Companies that are structured by grouping people who perform similar activities into departments.

2. Project organizations – Companies that are structured by grouping people into project teams on a temporary basis for projects.

3. Matrix organizations – Companies that are structured with a dual hierarchy in which the functions and projects have equal status. There are two forms of matrix structures: the weak matrix / functional matrix and the strong matrix / project matrix. In a weak matrix, functional managers maintain control of resources and are responsible for managing their aspect of the project. In strong matrix, the balance of power is with the project manager who will control the resources and has key decision-making authority. The strong matrix is closest to the project organization operating within a matrix structure (Pinto, 2010; Kerzner, 2001).

The PMBOK makes a clear distinction on how the organizational structures can effect resources and influence how projects are conducted. It also states that organizations may
involve all these structures at certain levels in what it deems as the ‘composite organization’. An example of this is a functional organization which creates a special project team to handle a critical project.

This study looks at the Irish third level organization structure to determine the type of structure that exists and how the PMO fits into that structure. An organization chart of the institutions is included in the appendix which was used in conjunction with primary data collection to determine the structure and its relationship to the PMO. Organizational structure is important in determining how projects are conducted in an organization as well as identifying the PMO’s role in both projects and the organization context.

3.2 Organization Culture

Organizational culture is key to understanding how projects are managed effectively in organizations (Pinto, 2010; Henrie & Souza-Posa, 2005; kerzer, 2001). Every organization is unique and develops its own outlook, procedures, processes, patterns, attitudes, norms and behaviors. Schein, E. (1985) describes culture as “the solution to external and internal problems that has worked consistently for a group and is therefore taught to new members as the correct way to perceive, think about, and feel in relation to these problems”. The PMBOK addresses culture from the perspective of helping the project manager in conducting successful projects. A project manager needs to be aware of political and cultural norms in organizations and how they can influence decision-making, the speed of work and conflict within the project team. Pinto, 2010 contends that organizational culture affects project management in four ways: 1) how departments interact with each other (2) employees commitment to the goals of the project and organization (3) project planning and (4) performance evaluation.

A culture can powerfully affect the manner in which departments view project management in an organization. In an organization which supports cross functional departmental cooperation for projects; a supportive culture of project management is crucial to the success of projects (Pinto, 2010). Research by Hobbs & Aubry, 2010 has shown that supportiveness of organizational culture is a significant characteristic of PMO’s. Hobbs and Aubry relate the supportiveness of organizational culture to both the decision making authority of the PMO and project management maturity. The more supportive the organizational culture is of the PMO the more authority it has. The organization supportive culture is also a facilitating factor for a PMO to be more active in all its roles and functions particularly for organizational learning (Hobbs and Aubry, 2010 pg.78).

Pinto, 2010 sees organization culture as a key success factor in projects. The supportive culture drives projects and projects drive strategy so the two are interlinked and must work in harmony for organizations to get better results from project management.
This study examines the organization culture supportiveness in third level institutions as part of the organization context. The objective is to learn whether third level institutions are supportive of the PMO and how this affects the role and functions of the PMO. It is seen as important in addressing the third research objectives in terms of defining the framework for examining the PMO.

3.3 Public and Private Projects

Research by Hobbs & Aubry, 2007 found that there is little difference between PMOs in private sector organizations and public in terms of performance. This study aims to look at the difference between public and private projects. While there may be little difference between the performance of PMOs in the public and private sector, the researcher intends to examine the difference between public and private projects as a factor in PMOs operating in third level institutions. The UK, Australian and Canadian governments have recognized the importance of project management and its link to the government organizations. The UK has established the Office of Government Commerce (OGC), Australia has established the Australian institute of Project Management (AIPM) and Canada has the Ministry of Government services. These governing bodies have been established in recognition of the difference between public and private projects. The difference between public and private organizations and projects is highlighted in Table 4.

<table>
<thead>
<tr>
<th>Private Sector Organization Factors</th>
<th>Public Sector Organization Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funded by profits to provide service to customers</td>
<td>Funded by the public to provide service to the public</td>
</tr>
<tr>
<td>Ranges of Businesses</td>
<td>Government</td>
</tr>
<tr>
<td>Market Driven</td>
<td>Health care</td>
</tr>
<tr>
<td>Profit seeking</td>
<td>Education</td>
</tr>
<tr>
<td>Utilities</td>
<td>Charities</td>
</tr>
<tr>
<td>Industry / Manufacturing</td>
<td></td>
</tr>
<tr>
<td><strong>Private Sector Projects</strong></td>
<td><strong>Public Sector Projects</strong></td>
</tr>
<tr>
<td>Capital Investment based on market</td>
<td>Fixed pot for projects</td>
</tr>
<tr>
<td>Time to market</td>
<td>Legislated deadlines</td>
</tr>
</tbody>
</table>

The study looks to examine the difference between public and private projects as an organization factor and whether it influences the PMO.

4.0 Value of PMOs

PMOs have become prevalent in organizations with at least 50% of organizations reporting to having a PMO in 2004 (CIO survey, 2004) growing to 63% in 2011 (PMI, Pulse on the profession survey, 2011). However 50% of Project Managers surveyed stated in those surveys that the value of the PMO had been questioned by the organization. The value of PMOs is a contentious issue in terms of proving value across all organizations contexts. The literature themes have focused on value through project performance, financial measures such as ROI and cost benefits analysis. However other researchers believe that the quantifiable measures are inadequate at measuring the value of a PMO. The argument is that once a PMO becomes efficient at the delivering of projects, the value of the processes becomes integrated into the organization and hence invisible outside of the standard operating procedures. This then calls into question the very value of the PMO’s existence.

Thomas and Mullaly, 2008; Hurt & Thomas, 2009 have done extensive work on researching the value of PMOs. Value is often measured in terms of financial performance (tangible) and organization performance which is often intangible. Hurt and Thomas use a value framework and use concepts from Collins to interpret value. Kendall and Rollins, (2003) suggest the main indicators for measuring value are:

- Reduction of the life cycle
- Completion of more projects during the fiscal year with the same resources and
- Tangible contribution for reaching goals in terms of cost reduction, revenue increase and a better return on investment.
Oliveria & Muyler, 2012 take aspects of Mullaly’s framework and use it to test value in government agencies. Their contention is that value is achieved through:

**Organisation Context**: the degree in which an organization “does the right things” in terms of project management and is appropriate to itself and the types of projects managed.

**Implementation of project management**: to what degree does a working model of PM influence the delivery of projects? Is it more effective, reliable etc

**The type of value considered by the organization that produces project management**: This is the degree to which PM influences organizational goals and cost reduction.

This study aims to examine value using concepts from both Hurt and Thomas, 2009 and Oliveria and Muyler, 2012. It would not be possible to examine all aspects of value in this study but the author chose the concepts for Oliveria and Muyler in terms of PM implementation and perceived value as ones that were achievable in the context of this study. This is crucial to assessing the value of the PMO in a third level institution context.

### 5.0 PMO Conceptual Framework

A conceptual framework is a system of concepts, assumptions, beliefs and theories that supports and informs the research and is a key part of the research design (Miles and Huberman, 1994; Robinson, 2002). The conceptual framework can be used to examine a PMO and is similar to approaches used by Aubry et al, 2011; Crawford, 2012; Aubry & Hobbs; 2007. This approach involves the examination of a term by examining the components (Van de Ven, 2007). After reviewing the literature and the main concepts of a PMO, the researcher is proposing a conceptual PMO framework for examining a PMO in the context of a third level institution.
6.0 Summary of Literature Review

The objective of the literature review was to examine the important concepts related to a Project Management Office. The result of the literature review has led to a proposed framework which will be used in the study to examine a PMO in the context of a third level institution in Ireland. The literature review examined the accepted definitions of a PMO from literature and organizational bodies. The results of this section led to an accepted definition of a PMO for the framework and study. The characteristics of a PMO are examined from literature and, although all characteristics cannot be included, the researcher concluded that the characteristics of PMO type, role, functions and authority are consistent with other characteristics of PMOs in literature. This is essential in addressing the fifth objective outlined for this study, defining the characteristics of a PMO in a third level institution. The organizational context is also examined in terms of the structure, culture and public and private projects. This is seen as vital element in addressing the sixth research objective of accessing the value of the PMO in the organization. The use of the PMO framework to address the research objectives should provide a sufficient answer to the overall research question.

7.0 Research Philosophy

According to Easterby-Smith et al (2008) there are three reasons why an understanding of the researcher’s philosophy is important:

1. It can help to clarify the research design
2. It can help the researcher to recognize which design will work and which will not work
3. It can help the researcher identify, and even create designs that may be outside his or her past experience.

Consequently, before going into detail on the research methodology it is important to outline the research philosophy. The way the topic is viewed and the inherent assumptions about it are reflected in the researcher’s own philosophy. The researcher’s philosophy is aligned with that of social constructionism. Social constructionism stems from the view that “reality” is not objective and exterior, but is socially constructed and given meaning by people (Easterby-Smith, 2008). The researcher believes that a PMO can be viewed as a social construct and is given meaning by people who are in it.

7.1 Methodology

The term methodology refers to the theory of how research should be undertaken. The term method refers to techniques and procedures used to obtain and analyse data.
A case study approach is not a research method but a collection of methods so is more appropriately referred to as a research strategy (Yin, 2009). It is a way of investigating an empirical topic by following a set of prespecified procedures (Yin, 2009 pg 21). A case study is an empirical inquiry that investigates contemporary phenomenon, like a PMO, in depth and within its real-life context, especially when the boundaries between the phenomenon and the context are not clearly evident (Yin, 2009 p. 18). The interest is in the process rather than the outcomes, in context rather than specific variables, in discovery rather than confirmation. It allows the investigator to get the holistic and meaningful characteristics of real-life events, such as organizational and managerial processes that this research will focus on. In other words, the case study provides the opportunity to collect data as well as receive deeper understanding of both the PMO in real-life and the host organizations, but such understanding encompassed important contextual conditions (Yin, 2009 p.22). The concept of a PMO encompasses many broad topics. A qualitative research design was employed in order to examine a PMO in specific context to gain greater understanding. The study is exploratory and descriptive in nature. A case study is pertinent when the researcher addresses either a descriptive question –“What is happening?” –Or an explanatory question-“ How did something happen?” (Yin, 2009 p.5).

### 7.2 Rationale for case study approach

The researcher has chosen a comparative case study approach for this paper. This involves looking at the same event or processes in different settings or situations (Easterby & Smith, 2002 p.46). The situation in these cases is the Building and Estates departments within Irish third level institutions and in particular two institutions. The researcher believes this is the best approach for examining a PMO in Irish third level institutions given the restriction on time and resources. The intensive analysis of a few cases may be more promising that the superficial statistical analysis of many cases (Lijphart, 1971 pg.685). The comparative method can be useful in generating formal theories about an area of study (Easterby & Smith, 2002 p.46)

### 7.3 Research Design

The research design is the logical sequence that connects the empirical data to the study’s initial research questions and, ultimately, to its conclusions (Yin, 2009. P26). In essence it can be described as a “blueprint” for the researcher dealing with at least four problems:

What questions to study, What data are relevant, what data to collect and how to analyse the results (Philliber, Schwab, & Samsloss, 1980). The purpose of the research design is to avoid the situation where the evidence does not support the initial research question

The case study questions have been outlined in this paper along with the purpose of the study. In the case of an exploratory study the purpose of the study should be outlined if there are no propositions (Yin, 2009 pg.28). The unit of analysis for this study is the Buildings and Estates office in universities in Ireland.
7.4 Sample

The informants chosen are the Directors of Buildings and Estates and Project Staff working within Buildings and Estates. The Buildings and Estates department was chosen as it is visibly involved in projects within a third level institution. The University Act 1997 outlines the functions of a University. One of the primary functions of a University is to purchase and develop its land. This function is under the remit of the Buildings and Estates department and it is achieved through capital projects. Directors were chosen as informants to capture the strategic element of PMOs and projects while project staff or equivalents were chosen for the tactical and strategic perspectives. Two institutions were chosen for a comparative study based on their size and structure. The Director of Buildings and Estates and the Project Officer or equivalent was chosen from each institution. A conceptual framework has been developed from the relevant literature as a base for designing the research questions. The advantage of case study inquiry is that it benefits from the prior development of theoretical propositions to guide data collection and analysis (Yin, 2009, p.18). The theory will provide strong guidance in determining the data to collect and the strategies to analyse the data. Therefore before the actual data collection is executed it is important to develop a theory (Yin, 2009, p.36). A pilot study was conducted on a third institution and semi-structured interviews were conducted to test the validity of questions.

7.5 Limitations

There are some concerns in using a case study as a research design. According to (Yin, 2002) the main concerns with case studies are the following:

- Case studies do not have the rigour of natural scientific designs
- They rarely allow generalized propositions to apply to a larger population
- They produce large amounts of data that allow researchers to make any interpretation they wish.

In order to avoid these pitfalls (Yin, 2002) suggests that the researcher should ensure that they have a clear research design before any data is collected which includes the unit of analysis, clear links between data and propositions and procedures for interpretation of data. The researcher has followed a rigorous design method in order to avoid these pitfalls. The propositions, questions and unit of analysis have been defined along with the data collection methods.
7.6 Data Collection

The data collection is an important aspect of any case study. According to (Yin, 2009 pg.101), there are six sources of evidence commonly used in case study research. They are:

1. Documentation
2. Archival records
3. Interviews
4. Direct observations
5. Participants-observation
6. Physical artifacts

There is no single source that has complete advantage over another one and a good case study should aim to use as many sources as possible (Yin, 2009). The two sources of data pertaining to research are primary data and secondary data. When considering how to answer a research question it is important to understand the sources of data needed. Primary data is the data required to be collected or analysed to answer the specific research. It is data that has not been collected. Secondary data is information or sources of information that have been collected already for some other purpose. The researcher has chosen to use documentation, direct observations and semi-structured interviews as data collection methods. The author chose these methods due to the complexity and uniqueness of PMOs in Irish third level institutions.

7.7 Rationale for the interview method

Primary data was collected using semi structured interviews. This type of interview is often referred to as a qualitative interview (King, 2004). In semi-structured interviews the researcher uses a list of themes or questions to be covered. They may change from interview to interview given the organization and context. The researcher may choose to ask additional questions to probe themes further if necessary (Saunders et al, 2007). Semi-structured interviews can be very useful in exploratory studies in terms of finding out ‘what is happening and to seek new insights’ (Saunders et al; Robson, 2002). Easterby-Smith et al (2008) contend that the ‘qualitative interview’ is appropriate when it is necessary to ‘understand the construct that the interviewee uses as a basis for their opinions and beliefs about a particular matter or situation’ and ‘develop an understanding of the respondent’s world’. The researcher contends that interviews were a correct method to gain an understanding of what is happening in Irish institutions and to gain new insights. These insights will enable the author to answer the propositions put forward in this study.

7.8 Limitations of the interview method

There are a number of limitations of employing the interview method. King (1994) notes that one of the disadvantages to the qualitative interview is the enormous quantity of time required in designing interview guides, conducting interviews and analyzing the data. Robson (1993) identifies the wording of questions, memory difficulties in capturing interview data, and getting consent from potential interviewees as possible disadvantages. Saunders et al, 2007
highlight the number of data quality issues related to: 1) reliability (2) forms of bias, and (3) validity and generalisability. The lack of reliability is related to the lack of standardization of the qualitative interview. The concern is whether alternative researchers would reveal similar information (Easterby-Smith et al., 2002; Healy and Rawlinson, 1994). There are also concerns with regard to the bias from the interviewee and the interviewer. The reliability of the interpretation of both the questions asked and the interpretation of the answers is open to bias. The researcher in this study took every precaution to structure the interview questions and conduct the interviews without inferring any bias. The validity and generalisability of data concerns refers to the extent to which a researcher gains access to a participants' knowledge and experience and is able to infer meaning from the language used by the participants (Saunders et al, 2007). The value of non standardized interviews is the flexibility allowed to explore the complexity of the topic. It is not possible then to create a replicable design of this non standardized approach without weakening the value of the research (Saunders et al, 2007). Marshall & Rossman (1999) advise researchers when using this approach to make clear that although the ability to replicate the research findings may be a weakness, the reasons underpinning the choice of a non standardized interview approach can be used by other researchers to re-analyze data collected or justify a similar approach.

7.9 Use of Audio-recording equipment

Permission was sought to use audio recording equipment for all interviews. All interviews were recorded using a Dictaphone where permission was given to do so, which was a total of five interviews including the pilot study. By recording the interview, the interviewer can concentrate and listen attentively to what is being said and notice the non verbal cues which the interviewee expresses when answering the questions (Saunders et al, 2007). Patton (2002) notes that recording an interview allows the researcher to obtain more data than otherwise could be obtained by having to recall the interview from memory. Other advantages include: (1) the provision of an accurate and unbiased record (2) allows direct quotes to be used, and (3) it provides a permanent record for others to use. The disadvantages include: (1) it may affect the relationship between interviewee and interviewer (2) it may inhibit responses (3) there is a risk of a technical problem, and (4) the time required to transcribe the audio recording (Easterby-Smith et al, (2002); Ghauri and Gronhaug , (2005); Healey and Rawlinson , (1994). The decision to record the interviews was made on the merit of being able to obtain a more accurate record of the interview and the ability to concentrate freely on the dialogue and note-taking. It must be noted that the interview did not replace note-taking as this took place both during and after the interviews. The interviewees were informed upfront about the recording of the interviews and all practical advice was followed in terms of using a small device, good recording quality, careful positioning of the device, having sufficient spare (sd cards and batteries), and pretesting of the equipment (Adam and Healy, 2000).

8.0 Research Process Ethics

Approval was sought from each of the informants and Directors to use their department as a case study subject. It was stressed in the request for access and approval that confidentiality
would be respected. The researcher acknowledges the ethical responsibility not to publish or circulate any information that could potentially harm the interests of the informants (Easterby-Smith et al, 2008). Each informant and institution was assigned a key letter to protect the identity of both (E.g. Institution A, Director A).

8.1 Data Analysis

In doing qualitative analysis, the researcher will follow the advice from Miles and Huberman (1994) of three concurrent flows of activity (See fig 7). These are:

- Data reduction
- Data display
- Conclusion drawing and verification


Data reduction refers to the process in which the researcher selects, organizes, summarizes, simplifies and reduces the data for an initial area of focus. The data reduction process is ongoing and involves writing summaries, coding, teasing out themes, making clusters, making partitions and writing memos. The data reduction is not something separate from analysis; it is part of the analysis. The researcher’s decisions on which data chunks to use are
analytic choices (Miles & Huberman, 1994). This process is also described as “data condensation” (Tesch, 1990).

Data display is the second major activity which the researcher undertakes. This involves taking the reduced data and displaying it in organised, compressed way so that conclusions could be drawn easily. Miles and Huberman (1994) believe that good data displays are “a major avenue” to valid qualitative analysis. In displaying the data, the researcher aims to further reduce it so that conclusions can be drawn. The most frequent form of display for qualitative data in the past has been extended text. This method however is extremely cumbersome and can often lead the researcher to draw unfounded conclusions. Designing a data display is an analytical process in deciding what rows, columns and data to display. It is an activity that demands a systematic process and involves careful planning and selection of data.

The researcher proposed the use of conceptual ordered displays for the comparative case study. Multi-case displays may be centrally organized by variables or contexts (Miles and Huberman, 1994). This involves designing content analytic tables for each case using elements of the proposed conceptual framework for examining a PMO. The researcher will then look for characteristics that occur in more than one case which will form the basis for cross case analysis. From this analysis the researcher aims to draw conclusions about the propositions of the study.

Conclusions drawing and verification is the final analytical activity for the researcher. As suggested by Miles and Huberman (1994), the researcher achieves this by combining patterns and explanations through cross tabulation of research variables.

9.0 Case Study Findings

The analysis and findings are presented as suggested by Miles and Huberman, 1994 in terms of data reduction, data display and drawing conclusions. Firstly the analysis begins with a brief description of each of the case organizations context. The next section summarizes the responses from the informants in relation to the questions asked in the semi-structured interviews. This represents the data reduction stage of analysis. Next the researcher built individual case displays for each case using the variables from the conceptual framework outlined from the literature review. A comparative case display is presented after the findings of both case studies. This enabled the researcher to compare, contrast and draw conclusions from the data to answer both the research objectives and research question.
**Case study for the buildings and estates department in institution A**

**9.1 Organization Context, Institution A**

Institution A has approximately 17,500 students and 2,500 staff. The main campus is situated on 105 hectares of land, with over 140,000m² of accommodation spread over 90 separate buildings. It also has a number of off-campus facilities located along the west coast of Ireland. The Buildings Office is the largest of a number of administrative service support units and is charged with the planning, development and management of the entire university estate. The Director of Physical Resources heads the office. The Director reports to the Executive Director of Operations who is a member of the University Management Team. The work that the buildings office carries out can be categorised into projects and business-as-usual activities, and are summarised as follows:

1. Capital Projects: These are large infrastructural projects with involve the provision of a new building.

2. Recurrent Projects: These include projects which occur annually to prepare for the academic cycle, undertaken by the FM (Facilities Management) sub team.

3. Planned Projects: These projects include planned refurbishments and upgrades, undertaken by the Buildings Engineering and Building Services teams.

4. Request Projects: These projects are requested by departments and may include upgrades and moves and small refurbishments, undertaken by the FM services teams with input from the Building Engineering and Building Services sub teams as required.

5. Business As Usual i.e. all other operations required to maintain the regular functioning of the Institutions estate including small unplanned/reactive projects where an immediate response is required, undertaken by the FM, Building Engineering and Building Services sub teams.

The projects have lifecycles varying from a few weeks to several years and budgets ranging from a few thousand to many millions of Euro. Figure 8 (Buildings Office Systems Map) represents a view of the current structure from the perspective of the buildings office project management environment and interfaces.
9.2 The Buildings Office structure

The buildings office consists of a number of teams and experts who are responsible for the development, maintenance and usage of the physical infrastructure on campus. It is primarily a functionally structured office with projects conducted in regards to the core functions of each section. The functional sections are divided into: Buildings engineering, Buildings Services and Facilities Management. Projects in the buildings office are classified into larger capital projects, and smaller non-capital or recurrent projects.

9.3 Capital Projects

The planning and development unit (PDU) manage all the capital projects along with a small number of non-capital or recurrent projects. When a capital project is initiated, a project manager is assigned from the PDU. The project manager then acquires the services of external consultants which usually involves a design team and consultant project team. The internal project manager is referred to as a project administrator and the project management is outsourced to a PM consultant as required.
9.4 Non-Capital Projects

Non-Capital Projects are managed by the other functional departments. The director would assign these projects to the relevant functional manager. These projects may require cross functional department resources which is supplied when needed by the relevant functional department. Figure 7 is representative of the buildings office structure.

![Figure 7](image)

10.0 Case Study Findings

In the case of Institution A, two informants from the buildings office were interviewed. The first being the Director of Physical resources and the second was the project officer in the PDU. The Director of Physical Resources heads the office. The Director reports to the Executive Director of Operations who is a member of the University Management Team. The project officer is involved in the planning and delivery of projects within the PDU. The informants were supplied information packs which included a set of questions and themes to be explored in regards to the study and its context. The questions were based on the elements of the conceptual framework developed from the literature review. The following sections detail the responses from the informants in response to the questions from the framework. A conceptual case display is presented at the end of the individual case which summarizes the findings.
Q1. Determining if there is PMO in the organization

Third level Institution A

Both informants agreed that the institution doesn’t have a formal project management office but has what is considered to be a PMO without the name. It is not the “classical PMO like that defined by the OGC (Office of Government and Commerce) but the PDU is considered to be a hybrid version of the PMO”. It focuses on capital projects, has a classic PMO structure with a leader and groups of individuals with expertise and excellence. The PMO hires in extra expertise when needed and has four permanent members of staff. It has interactions with all departments within the institution however it’s only remit is to deliver on capital and non capital projects. The PDU is part of the buildings office structure and is considered the only PMO in the organization.

Characteristics of the PMO

Q2. The Type of PMO

The PMO type is described as being strategic in nature but not fully strategic, and also supportive and departmental. The PMO is not fully strategic in that the influence it has on strategic decisions is by accident rather than design. Projects are selected by funding and cost and the PMO develops the business case for the projects. Often when the cost benefit analysis is completed and the project estimated price is above the funding available a project may be scrapped. The director described it as “accidentally influencing strategy” or “influencing strategy by the questions that are asked”.

Q3. The role of the PMO

The role of the PMO is seen as delivering capital projects as part of realizing the goals of the strategic plan for the University as a whole. Both the director and project officer noted that the main role is the delivery of sustainable projects which differs from the normal role of a PMO. The aim is to deliver projects that have “longevity” and that are sustainable into the future. A normal PMO may be set up to run a specific programme which has a life span or an ending whereas the project office here has to plan to deliver capital projects that last a lifetime through the servicing and operational challenges they bring.

Q4. The functions of the PMO

Both informants were asked about the importance of the functions of a PMO outlined by Hobbs & Aubry, 2007. Of the six categories, monitoring and controlling project performance, performing project management, strategic project management were accepted as being very important with development of Project Management competencies and methodologies and organizational learning being important as well. Both the director and project officer noted that organizational learning was something that they had only recently incorporated into their projects.
Q5. The authority of the PMO

The PMO has authority in projects in regards to the amount of money spent. As long as the money spent is within the cost plans proposed then the PMO has authority to make decisions within projects. If there is a decision that requires money outside of the cost plan then this is usually made by the project board and executive management both of which the director is a member of. Both the Director and Project Officer noted that the executive management would base their decision off the advice given by the PMO. The PMO has the authority to “kill” a project in terms of both terminating it and rejecting it as a viable project for the organization. However both informants noted that projects rarely get rejected in a government organization. As the director put it “the do nothing option is not an option in a university”. Usually the HEA or health and safety can dictate the need for a new building or refurbishment which may not be feasible at the time. However the PMO works on the requirements and costing and the departments involved work on the funding to achieve a compromise which usually satisfies both parties.

Organization Context

Q6. Organisation Structure

The organizational is considered a matrix organization with functional managers with areas of expertise. Within the PDU there are seven fulltime employees, three of those are clerks of works officers who are also mini project managers. These mini-Project managers provide backup in capital projects. The PMO is described as being a low commitment model in terms of human resources perspective and private project managers and experts are hired in when needed. The PMO appoints project managers based on the type of project and the skills required to achieve project success. Projects are given to individuals “not because of their job title, but because they are the best people for the job”.

Q7. Organization Culture

Both informants described the organization culture as one that is supportive of the office. The advantage of having a supportive culture is that the executive management listens to the guidance given by the PMO in capital projects. The PMO is seen as housing expertise and when called upon has any number of people lining up to help out a project. This centralized expertise and the ability to throw a lot of resources at any time at a project when it is in trouble is linked to the attitudes of staff and their willingness to improve and help.

Q8. Public and private Projects

The informants agreed that projects in the public sector differ in many ways. The director pointed out that projects particularly in the university sector have to be built to last. The Director described the process as:
“we deliver projects that last for a hundred years...and the day it’s finished is the day it really starts ....because I can’t hand the crying child over to another one of my colleagues”.

He went further to say that:

“Private projects have a life span...say a hotel that will be ripped down in 20 years...once it’s completed whether it’s good or not the PMO or team is disbanded or moved on. We don’t have that here...

Projects are more visible in terms of the buildings that are provided. The projects are dependent on funding and while a private organization can alter its asset value by adding or removing features; the university projects are restricted by procurement, funding and the procedures outlined in the capital works management framework. In terms of procurement government sector projects are restricted on the contractor and supplier arrangements for projects. If a contractor or supplier performs poorly on a project, the government organization cannot exclude them for further tendering for projects. In the private industry poor performance by both supplier and contractor would lead to loss of future contracts.

Value

Q9. PM implementation

PM implementation was considered very important by both informants when considering the value of the PMO. The PM implementation process is a hybrid form of what is in the capital projects management framework and what is needed by the institution itself to conduct projects. Both informants described the implementation of project management through the three Ps of: program, portfolio and project management. The director described it a P cubed but added that they perform a fourth P which is process. The value is in the process that strings all the three Ps together.

Q10. Perceived value

The value of the PMO has never been questioned but the effectiveness and efficiencies have been questioned when projects “go south”. The value of the PMO to the university has never been questioned because people generally see good buildings going up in difficult circumstances. It is very difficult to get buildings done these days because the market is a circus. Nobody wants to follow the procurement and contract rules and this is where the PMO adds value. The PMO is able to advise on procurement, define the requirements and manage the process to provide value for money in government projects. It also has longevity in terms of the expertise and sustainability. The PMO has permanent staff members that have excellence and can be called upon whenever a project runs into trouble.
11.0 Case Display

The case display is the second stage of the analysis in which the data is reduced and analyzed in accordance with the research questions. The first case display is an Informant by Variable case display in which each variable from the conceptual framework is examined with the informant’s responses from the interview questions. The next case display examines the responses from the informants in comparison to the concepts from the literature and framework. This will enable the researcher to do a cross case analysis comparison of the two institutions.
<table>
<thead>
<tr>
<th>Informants</th>
<th>PMO Defined</th>
<th>PMO Characteristics</th>
<th>Organisation Context</th>
<th>PMO Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director A</td>
<td>The Project development office is essentially the PMO within the Buildings Office. It is the only one in the University.</td>
<td>The type of PMO is not fully strategic but can influence strategy through its involvement in projects. It can be strategic, operational, advisory or supportive depending on what is needed. The role of the PMO is to deliver capital projects or projects set out in the strategic plan. The Director considered the functions of Monitoring, Control and Reporting on projects, performing project management and strategic alignment and benefits management as the most important functions of the PMO. PMO authority is defined by budget spend.</td>
<td>Org Structure is matrix with functional managers. Org culture is described as supportive. Public projects are seen as more sustainable but more restricted by budget and procurement.</td>
<td>Delivering projects for value for money, advising on procurement and defining the correct requirements. Having permanent expertise that can be called on to rescue projects.</td>
</tr>
<tr>
<td>Project Officer A</td>
<td>The Project Development Unit is the PMO within both the university and the buildings office.</td>
<td>The type of PMO can be both tactical and strategic at times depending on the projects we have on. Every Project we do we ask ourselves “is this in line with our strategy and the university strategy”.... “Our role is essentially to deliver on that plan... The functions of monitoring controlling reporting and performing project management were considered the most important functions.</td>
<td>Org Structure is matrix with functional managers. Org culture is supportive and team orientated. Public projects are unique as they are required to be more sustainable.</td>
<td>Value is in delivering projects for the university.</td>
</tr>
</tbody>
</table>
Institutional A, Conceptual Case display using the PMO framework

<table>
<thead>
<tr>
<th>Framework Variable</th>
<th>Institution A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Defining the PMO</strong></td>
<td>Single PMO operating in the university, responsible for project management and capital projects.</td>
</tr>
<tr>
<td><strong>Characteristics of the PMO</strong></td>
<td></td>
</tr>
<tr>
<td>PMO Type</td>
<td>It can be Type 1, 2, or 3 depending on the needs of the project and organization.</td>
</tr>
<tr>
<td>PMO Role</td>
<td>Strategic and tactical similar to the weather station and resource pool roles.</td>
</tr>
<tr>
<td>PMO Functions</td>
<td>Monitoring, controlling and reporting on projects, project management implementation and strategic alignment of projects seen as the most important functions.</td>
</tr>
<tr>
<td>PMO Authority</td>
<td>Can be empowered or passive depending on funding and budget decisions within projects.</td>
</tr>
<tr>
<td><strong>Organisation Context</strong></td>
<td></td>
</tr>
<tr>
<td>Organisation structure</td>
<td>Matrix, functional, reports to senior management.</td>
</tr>
<tr>
<td>Organisation culture</td>
<td>Highly supportive.</td>
</tr>
<tr>
<td>Public and Private Projects</td>
<td>Differ largely on constraints, procurement and durability.</td>
</tr>
<tr>
<td><strong>Value</strong></td>
<td></td>
</tr>
<tr>
<td>PM implementation</td>
<td>Delivery of the right projects, managing the process.</td>
</tr>
<tr>
<td>Perceived value</td>
<td>Value for money by doing projects right and defining the requirements correctly.</td>
</tr>
</tbody>
</table>
12.0 Case Study B Buildings and Estates Office in institution B

Organisation context

Institution B has approximately 12,500 students and 1,500 staff. The main campus is situated on 137 hectares of land, with over 203,000m² of accommodation spread over 40 separate buildings. The Buildings Office is the largest of a number of administrative service support units and is charged with the planning, development and management of the entire university estate. The Buildings Director heads the office. The Director reports to the Director of Finance who is a member of the University Management Team. The work that the buildings office carries out can be categorised into minor works projects, small works projects and large capital works projects.

Minor works projects: refer to changes, upgrades, additions and alterations to buildings structures. The department handled 177 of these projects for 2012.

Small capital projects: are classified within the E.U. procurement value threshold and are carried out annually by the buildings department. These projects are essential building upgrades and are usually categorized into Health and Safety; Energy / Money saving; Building re-organisation / refurbishment and Customer Project requests. The total spends on these projects for 2012 was €4.4m.

Capital projects: These projects involve the development and delivery of new buildings on campus. There are currently 6 capital projects in the concept phase and four capital projects completed in the last year.

Buildings Office Structure

The Director of Building and Estates is the head of the buildings office. The office consists of a number of experts who are in charge of the development, maintenance and usage of the physical infrastructure on campus. These experts work together on projects or may work individually depending on the core function needed in a project. The decisions process for projects occurs at the top level between the Director, Engineering Services Manager, Buildings Officer and Buildings Maintenance Engineer. Minor works projects are often conducted by functional managers who act as project managers. There is a designated project manager who handles the small capital projects while expertise is hired in for the larger capital projects. The larger capital projects are lead by the Buildings Director in consultation with the staff of the buildings office. The following fig 9 represents the buildings office structure and the coordination between functional areas on minor works, small capital projects and large capital projects.
Fig. 9 Buildings and estates Org structure for Institution B

Buildings Director

- Engineering Services Manager
- Buildings Officer
- Buildings Maintenance Engineer
- Buildings superintendent
- Facilities Manager

- Functional services manager
  - Staff

- Functional Electrical Manager
  - Staff

- Functional Plumbing Manager
  - Staff

- Functional Grounds Manager
  - Staff

- Coordination for capital projects
- Coordination for small capital works projects
- Coordination for Minor works projects

Project Manager
13.0 Case Study Findings

In the case of Institution B, two informants from the buildings office were interviewed. The first being the Director of buildings and estates and the second was the buildings officer. The Director is the head of the office and is heavily involved in the delivery of capital projects. He reports to the director of finance and the executive management committee. He is also a member of all building management committees. The buildings officer reports to the director and is involved in the delivery of minor works, small capital works and capital works projects.

Q1. Determining if there is a PMO in the organization

The Director views the buildings office as one that takes the lead in managing projects in the university and the buildings officer acknowledges the same. The informants see the buildings office as having complete control over a project from its conception to completion in that there is one person or a group of persons overseeing the whole process. Both informants agreed that there isn’t a dedicated PMO in the organization with a title over the door but that the buildings office is performing the duty of project management for the university. The buildings officer stated that:

“The buildings office is without doubt the only PMO in the organization as such, the Buildings and Estates office is given the task of managing the campus and the environment and I think regardless of the other occupants, it is the buildings office that control what to do with the physical campus really and the decisions and especially on the day-to-day stuff”

In terms of capital projects the buildings officer described the director as “being the PMO”.

“The director would assume the role of PMO in dealing with capital projects and would handle the process with external consultants and experts”.

Characteristics of the PMO

Q2. The type of PMO

The type of PMO is described by the director as being strategic, tactical and operational. In terms of capital projects, the Director takes the lead and in essence becomes the PMO in leading managing and advising on projects. The director described the PMO as “being the go between...acting on behalf on the behalf of a department here and the university for what they want built...we would be the vehicle to make it happen”. The buildings director is a member of all buildings committees and on the executive management committee. The PMO would play an advisory role in advising the executive committee on projects. Outside of the capital projects the type of PMO is described by the buildings officer as being tactical and departmental.

“I suppose in many ways we are project management offices when you look at the capital projects. If you move down the line to the other projects we look at the minor works projects, we would run those ourselves. I suppose anything below half a million or so we would run ourselves in-house. So really depends on people’s schedules and stuff like that,
but the Buildings and Estates office is ultimately responsible for all projects on campus. And we will decide whether we need to bring in extra resources to assist us with that. Or when we can manage within our own schedules and timeframes we would run them ourselves, but ultimately we are a project management office. I suppose is just a section of the buildings and estates function on campus. Project management is part of any the senior manager’s roles to run with things if they can”. Buildings Officer

Q3. The role of the PMO

The role of the PMO is seen as implementing projects for the University. The PMO was described as being the ultimate “landlord of the university” and the custodians of the physical development plan. The buildings Director described the role as:

“Our role is: we take ownership of the implementation, or the execution, of any project that the University wants implemented right? So we would drive that from a cost, quality, safety and time perspective. And that’s definitely our role, and we’re held accountable to that role to be honest to make sure it’s done in accordance with best practice in planning you know”.

The buildings officer described the main role of the PMO:

“We are producing the master plan for the campus to highlight where you know future buildings may ideally go, some are strategic in nature in the way it’s all about thinking down the line and how to get around things”.

Q4. The functions of the PMO

Both informants acknowledged that Monitoring and Controlling project performance and strategic management are the most important functions of the PMO. The performing of project management, development of project management competencies and organization learning were also deemed important. The director acknowledged that organizational learning is a priority for the PMO but has only recently become one.

“We have recently become more active in this area, where we do lessons learned and customer satisfaction surveys with occupants of the buildings” (Buildings Director).

The buildings officer agreed with the importance of organizational learning but added that:

“The process needs to be integrated into the project from the start and not only that but conducted with the external consultants as well”. Both informants agreed on the importance of the development of project management competencies and methodologies with the buildings officer commenting:

“We work on creating a process but its needs more standardization in terms of how our external consultants engage in it, because we outsource our project management on capital projects, we find that the different consultants have different methodologies and can affect project performance and how we engage with them”.
Q5. The authority of the PMO

The Director has full control and authority in relation the PMO. On minor works projects and small capital projects the functional manager and project manager would have full authority. However in capital projects the director has full authority with the limits of funding and budget. The director described his authority as:

“I would have contractual authority acting as an agent for the department, the buildings committee and can instruct the design teams, member teams and contractors on the ground”.

The PMO has authority to “kill” projects when it is outside the allotted budget or when they believe the price is too high.

The buildings officer noted that:

“Absolutely we have the ability to kill a project, we have had projects that have gone out to tender for which we have prices from local contractors for X amount and then we send out to the contractors on our framework and we find out that is, costing twice the amount. So in that case we shelve the project for the time being. We know it should be about half the price. So if you go back and look and see if we can do it someway differently either by direct employment or through local contractors piece by piece. We don't spend money just for the sake of spending it”.

The buildings officer agreed that the director has overall authority in capital projects.

Organization context

Q6. Organizational Structure

The PMO is described as a functional structure in which projects are designated to functional managers based on their expertise. There is a designated project manager for small capital works who may call on the resources of the other functional units. If a project requires a certain area of expertise such as mechanical or engineering then it would be delegated to the mechanical services engineer. The Director and Buildings Officer also stated that outside expertise may be hired in if necessary on the smaller capital projects and on the capital projects. In terms of the capital projects the director acts as the PMO and works with outside consultants and project management teams to bring both the expertise of the buildings department and the consultants together.

Q7. Organization Culture

The organization culture is viewed as supportive towards project management and the PMO. The PMO advises the executive management team on projects and is well respected within the organization.
Q8. Public and Private Projects

Both informants acknowledge the difference in public and private projects. According to the Buildings Officer:

“Public organization projects are different in that we are constrained by procurement, long lead in times, the amount of consultation with stakeholders and committees and the wait for funding before we can actually get something done”.

The buildings director noted:

“Projects in the public sector are carried out for higher standard because there is a higher expectation level of perception and we have all the resources available to us so comprises are not tolerated. Where as if you were in the private-sector, shortcuts are definitely taken with short-term views on their work, on six-month turnarounds and ROI and stuff like that”....My view is likewise in University, one of the things I was told was universities don’t go out of business. So what we do, we do right and not adhoc. We don't do knee-jerk and a lot of thought goes into what we do....More so than in the private industry, because the private sector is dollars inc, first to market, right and that’s speed. Sometimes a lot of time consideration is not given to the life cycle of the outcome or the endgame and problems are probably dealt with differently get the thing built and we will solve it.”

Value

Q9. PM implementation

PM implementation was considered very important by both informants when considering the value of the PMO. The Buildings officer viewed the value of the PMO in terms of the PM process and being able to explain and guide people through the process of doing projects. The Director viewed the PM implementation as being very important in capital projects.

Q10. Perceived Value

The value of the PMO is its ability to maintain and support teaching and learning spaces on campus through the provision of capital projects and the ability to meet the future needs of university. The buildings director also noted that the ability to bring in expertise to run projects in which the PMO has no expertise in was valuable.

“While University is growing we have tons of expertise but if funding was to stop, so if we had a static state five years we could lose a level of momentum and expertise for sure on delivery of major capital projects. But I don't see that day happening any day soon but you can never say ever right, we have made application to other funding from other sources to keep the current roadmap for projects. In the context of the buildings office we buy in expertise and of course risk, you might lose some expertise by buying it in. The need is not always there for that expertise. You can source better brain expertise
because getting better value in my opinion to bring in guys who have done projects like this before.”

The Buildings Officer considered the value of the PMO as being able to have complete overview of what is going on in the university. The office can access projects on what their impact will be to other areas and what benefit they will have to the overall function of the university. The buildings officer also noted that having a centralized area of expertise that allows everything to filter down from the various departments in regards to the strategic plan and being that centre for advice is very valuable for the University.

**14.0 Case Display**

The case display is the second stage of the analysis in which the data is reduced and analyzed in accordance with the research questions. The first case display is an informant by variable case display in which each variable from the conceptual framework is examined with the informant’s responses from the interview questions. The next case display examines the responses from the informants in comparison to the concepts from the literature and framework. This will enable the researcher to do a cross case analysis comparison of the two institutions.
Informants by Variable Display for Institution B

<table>
<thead>
<tr>
<th>Informants</th>
<th>PMO Defined</th>
<th>PMO Characteristics</th>
<th>Organisation Context</th>
<th>PMO Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director B</td>
<td>The Buildings Office takes the lead in managing Projects, The Director is the PMO in Capital Projects.</td>
<td>The type of PMO is described by the director as being strategic, tactical and operational. The role of the PMO is to deliver capital projects or projects set out in the strategic plan for the University. The Director considered the functions of Monitoring, Control and report on projects, performing project management and strategic alignment and benefits management as the most important functions of the PMO. The Director has full authority on capital projects, while on minor works and small capital projects authority is shared or delegated in the PMO.</td>
<td>Org Structure is Functional. Org culture is described as supportive. Public projects are seen as delivered at a higher standard.</td>
<td>Delivering capital projects to support the teaching and learning spaces in the university. Having expertise that can be called on to do projects but also the ability to buy in expertise when needed.</td>
</tr>
<tr>
<td>Buildings Officer B</td>
<td>The Buildings Office is the only PMO in the university.</td>
<td>The type of PMO can be both tactical and Departmental. The functions of monitoring controlling reporting and performing project management were considered the most important functions. The Director has full authority on capital projects and the PMO has authority to kill projects if necessary.</td>
<td>Org Structure is functional. Org culture is supportive. Public projects are different in that there are constrained by procurement, long lead times, slow decision making and funding.</td>
<td>Value is in having complete overview of what is going on in the university and a centre of expertise to conduct projects.</td>
</tr>
</tbody>
</table>
### Framework Variable

<table>
<thead>
<tr>
<th>Institution B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Defining the PMO</strong></td>
</tr>
<tr>
<td><strong>Characteristics of the PMO</strong></td>
</tr>
<tr>
<td><strong>PMO Type</strong></td>
</tr>
<tr>
<td><strong>PMO Role</strong></td>
</tr>
<tr>
<td><strong>PMO Functions</strong></td>
</tr>
<tr>
<td><strong>PMO Authority</strong></td>
</tr>
<tr>
<td><strong>Organization Context</strong></td>
</tr>
<tr>
<td><strong>Organization structure</strong></td>
</tr>
<tr>
<td><strong>Organization culture</strong></td>
</tr>
<tr>
<td><strong>Public and Private Projects</strong></td>
</tr>
<tr>
<td><strong>Value</strong></td>
</tr>
<tr>
<td><strong>PM implementation</strong></td>
</tr>
<tr>
<td><strong>Perceived value</strong></td>
</tr>
</tbody>
</table>

Institutional B, Case display for conceptual framework
15.0 Cross Case Analysis

Conclusions drawing and verification is the final analytical activity for the researcher. As suggested by Miles and Huberman (1994), the next stage in the research analysis is to create a comparative Case Display. A comparative method allows the researcher to analyze multiple cases using key variables, preserving their configuration case by case (Ragin, 1987). The comparative case display is a conceptually ordered display for both institutions using the concepts from the framework purposed to examine the PMO in this paper. This will help in to draw conclusions and verify the data to answer the overall research objectives and questions.
<table>
<thead>
<tr>
<th>PMO Framework</th>
<th>Institution A</th>
<th>Institution B</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMO defined</td>
<td>Single PMO in the university responsible for project management and capital projects</td>
<td>Buildings office is the PMO for minor works projects and small capital projects but Director is PMO for capital projects. In essence two PMO’s</td>
</tr>
<tr>
<td>Characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMO Type</td>
<td>It can be Type 1, 2, or 3 depending on the needs of the project and organization.</td>
<td>It can be Type 1, 2, for minor works and small capital projects, Type 3 for Capital Projects</td>
</tr>
<tr>
<td>PMO Role</td>
<td>Strategic and tactical similar to the weather station and resource pool roles</td>
<td>Strategic and tactical similar to the weather station and resource pool roles</td>
</tr>
<tr>
<td>PMO functions</td>
<td>Monitoring, controlling and reporting on projects, project management implementation and strategic alignment of projects seen as the most important functions</td>
<td>Monitoring, controlling and reporting on projects, project management implementation and strategic alignment of projects seen as the most important functions</td>
</tr>
<tr>
<td>PMO Authority</td>
<td>Can be empowered or passive depending on funding and budget decisions within projects.</td>
<td>The buildings office PMO is empowered on minor works and small capital projects whereas the Director is empowered on the capital projects and the buildings office PMO plays a more passive role.</td>
</tr>
<tr>
<td>Organization Context</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisation Structure</td>
<td>Matrix, functional, reports to senior management</td>
<td>Functional</td>
</tr>
<tr>
<td>Organisation Culture</td>
<td>Highly supportive</td>
<td>Highly supportive</td>
</tr>
<tr>
<td>Public and Private Projects</td>
<td>Differ largely on constraints, procurement and durability</td>
<td>Differ largely on constraints, procurement and decision making, delivered at higher standard</td>
</tr>
<tr>
<td>Value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMI Implementation</td>
<td>Delivery of the right projects, managing the process</td>
<td>Important in delivering capital projects, important for guiding people through the process of delivering projects</td>
</tr>
<tr>
<td>Perceived value</td>
<td>Value for money by doing projects right and defining the requirements correctly</td>
<td>Value is seen as being able to deliver capital projects, bring in expertise when needed and having complete oversight of what is going on in the university.</td>
</tr>
</tbody>
</table>

Comparative Case display for Institutions A and B
16.0 Analysis

The purpose of this study was to determine whether Buildings and Estate offices in Irish third level institutions operate and provide value similar to project management offices. The research employed a comparative case study approach which examined the buildings and estates departments in two institutions. The study started with six objectives which would enable the researcher to address the overall question. The first three objectives were addressed in the literature review. A conceptual framework was determined from the literature which enabled the researcher to design the questions for the qualitative interviews. Buildings Directors and Project Staff were interviewed in both institutions using questions determined from the purposed PMO framework. The researcher followed the case design as set out by Miles and Huberman, 1994. The results of the findings is a cross case conceptual display which summarizes the findings. The cross case display will help answer the following research objectives:

(4) Examine two Buildings and Estates offices in Third level institutions using the PMO framework to identify the similarities to a PMO.

(5) Identify the Characteristics of a PMO in a Third level institution?

(6) Explore the value aspect of a PMO in a Third level Institution?

16.1 Buildings and Estates offices operating as PMO?

According to the PMI ‘A Project Management Office (PMO) is a organizational body or entity assigned various responsibilities related to the centralised and coordinated management of those projects under its domain’. The responsibilities of a PMO can range from providing project management support functions to actually being responsible for direct management of a project. PMBOK, 4th ed, pg11, 2004). The study analyzed the Buildings and Estates departments in two institutions to determine if these departments were similar or the same as a PMO. The results of the case studies show that both institutions consider their buildings offices as being the PMO for the organization. The PMOs are organizational entities and follow a coordinated approach to the management of projects. Both institutions do not have what is described as a dedicated PMO within the organization; however both directors see their offices as operating as a project management office. This is in line with the research done by Hobbs, 2007 which found that PMOs have a variety of names and that 53% of organizations only have one PMO. The Buildings and Estates departments were examined using the PMO conceptual framework to determine if they were operating as a PMO. The researcher observed from the informants that both institutions perceive the Building and Estate offices as being a PMOs but do have a PMO framework in place. The framework followed for projects is the Capital Works Management Framework. This framework is a descriptive framework that outlines the procedure for managing capital projects but does not include any guidance in terms of project management offices.
16.2 What are the Characteristics of a PMO in a third level institution?

The term characteristic was used in this study to describe the common attributes related to the construct of a Project Management Office. The study examined PMO characteristics in terms of PMO Type, role, function and authority. The PMO classification model derived from the literature review and based on Crawford, 2011 classification of types of PMOs, categorizes PMOs into three types. The type of PMO found in third level institutions can be type 1, type 2 or type 3 depending on the project. The PMO operates similar to a type 1 and 2 PMO for all projects except capital projects. The PMO operates as a type 3 PMO for capital projects in both institutions. Capital projects are considered to be larger and more strategic in third level institutions. The role of the PMO in third level institutions is both strategic and tactical. The PMO plays a strategic role in capital projects and a tactical role in the provision of all other projects. This is similar to the roles described by Desouza, C.K. & Evaristo R.J, 2006 in terms of PMO’s having strategic, tactical and operational roles. The role of PMOs in the third level sector is also similar to the roles identified by Casey & Peck, 2001; Pinto, 2010 where the PMO’s role is that of a weather station and control tower. The PMO assumes the role of weather station in capital projects and control tower when dealing with other projects. Both the type of PMO and role of the PMO change depending on the organizations needs. This is consistent with research by Hobbs and Aubry, 2008 which suggests that PMOs are in a constant state of transition. The researcher proposes that the state of transition in third level institutions is the transition between projects.

The most important functions of a PMO in a third level institution are the monitoring, controlling and reporting on projects, project management implementation and strategic alignment of projects. This appears to be consistent with the type of PMO and the role of the PMO in third level institutions. Research by Hobbs and Aubry, 2007 into PMO functions also found that monitoring and controlling projects is ranked as the most important function of PMOs. The case study also showed that the function of defining requirements and business case are very important functions for the PMO in the third level context.

The PMO’s authority was examined in the case studies. The results showed that the authority of the PMO can be passive or empowered depending on the type of project. It was also noted that decision-making and authority in projects is related to the financial budget of the project. Both sets of informants from the two institutions were in agreement that if a decision has an adverse effect on the budget then it would involve a process outside the PMO’s authority. This reflects the research of Hobbs and Aubry, 2007 which shows that at least 60% of PMOs have some decision making authority. The results showed that the PMO is empowered fully on other projects other than capital projects. PMOs in third level institutions have the authority to “kill” projects if they are not in accordance with the strategic plan. However both institutions acknowledged that it is rare that a project would
be turned down or terminated. The informants acknowledged that the “do nothing”
scenario doesn’t exist in the third level context. This is due to the funding and the nature of
projects in the third level sector. Funding is allocated from different sources such as
government, European and philanthropic individuals. There is a perception that the funding
should be used for something which often results with a compromise of the original project.

The organization context was examined in the study in relation to the organization
structure, culture and public and private projects. The results showed that the organization
structure in third level institutions is both functional and matrix. Both institutions reported
that there was a supportive culture towards the offices and project management in the
organization. The results also highlighted that projects in a public organization are different
to those in a private organization. The main differences highlighted were the constraints of
budget, procurement, decision making and the high standard required. There is no right
organizational structure for project management only the appropriate one (Kerzner,
2001.pg.135). The organizational structure in a third level institution is both functional and
matrix. All projects other than capital projects are conducted along functional lines. For
capital projects the organization adopts a strong matrix structure in which the power and
authority is assigned to the buildings director. The buildings director becomes the PMO and
has and controls the decision making and resources. This is comparable to a ‘composite
organization’ as outlined by the PMBOK. This organization structure effects the PMO’s role
and function as it switches to a strategic PMO with a control tower role. Organization
culture is a key in how projects are managed effectively in organizations (Pinto, 2010;
Henrie & Souza-Posa, 2005; kerzer, 2001). Every organization is unique and develops its own
outlook, procedures, processes, patterns, attitudes, norms and behaviors. The study found
that the organization culture towards the PMO and its role and function was described as
supportive. The executive management is supportive of the PMO and its role in the
organization.

The authority of the PMO is only limited in capital projects when major decisions
concerning the budget are to be made. In this instance the PMO advises the director of
finance on the best decision to take. The director of finance and the buildings director then
inform the executive management committee who refer the decision to the president.
Pinto, 2010 contends that organizational culture effects project management in four ways:
1) how departments interact with each other (2) employees commitment to the goals of the
project and organization (3) project planning and (4) performance evaluation.

The other projects outside of capital projects require a supportive culture given the
organization structure. These projects operate along functional lines and require the
resources of other functional managers. The supportive culture within the PMO and from
the executive management ensures that these projects are a success. The organization
supportive culture is also a facilitating factor for a PMO to be more active in all its roles and
functions particularly for organizational learning. (Hobbs and Aubry, 2010 pg.778)
Pinto, 2010 sees organization culture as a key success factor in projects. The supportive culture drives projects and projects drive strategy so the two are interlinked and must work in harmony for organizations to get better results from project management. The organization culture is described as supportive in a third level institution. It works in harmony to deliver on the strategic plan for the institutions. The PMO delivers capital projects to enable the institution to expand its teaching and learning capability. It is unclear whether the PMO influences the strategy directly or just follows the strategic plan laid out by the executive management. The informants described the PMO’s role as supportive in this aspect rather than directive.

An Irish third level institution is classified as a public organization. The projects conducted by third level institutions are funded from various sources but involve some amount of government funding. The research aimed to examine projects in a public organization to determine if projects were the same in public service organization as a private organization. The results of the case study showed that projects are different in third level institutions in comparison to private industry. The research showed that capital projects in public organizations are expected to be delivered to a higher standard but are constrained by funding, long lead in times, procurement and slow decision making.

16.3 The value of a PMO in a third level Institution

The value of a PMO in a third level institution is its ability to deliver projects that support the needs of the organization. All the informants interviewed were in agreement that the ability to manage projects by the PMO was an important factor in measuring the value of the PMO. The value of the PMO is the ability to manage the process in executing projects. The challenge facing third level institutions is that of capturing the needs of the academic structures and the service and management of the physical environment. The informants agreed that implementing project management was a contributing factor in achieving this goal. The informants were asked about the perceived value of the PMO. The results showed that the perceived value of the PMO is the ability to deliver on projects, have a wider view of what is going on in the university and the ability to hire in expertise for projects. These findings are similar to those found by Oliveria & Muyler, 2012 in which the organization context of “doing the right things” in terms of project management and project management implementation are significant variables in determining the value of PMO’s in government organizations.

In third level institutions the value of a PMO is twofold in that firstly it is measured by the capital projects that are delivered. This would be similar to the findings by Oliveria & Muyler, 2012 in which capital projects represent the organization context and the project management implementation influence on projects that influence the organization’s strategic goals. The second aspect of the value of the PMO in third level institutions revealed in the study is that it has expertise and can bring in external expertise when needed in projects. It can also give a complete oversight to what is actually happening in the institution in regards to projects. The sustainability of the PMO is seen as another element
of value by the informants. The Buildings and Estates Department is seen as a permanent department within the institutions. The informants noted that as long as there was funding for projects then the Buildings and Estates Departments would operate as a PMO. This sustainability allows the Buildings and Estates offices develop their capability and expertise in delivering projects similar to that of a sustainable PMO.

16.4 Research Limitations

It is important to consider the limitations of this research. This study examined third level institutions and the offices of Buildings and Estates. As outlined earlier in this paper the buildings and estates office were chosen for their involvement in projects in third level institutions. The informants chosen included buildings and estates directors and staff who are directly involved in projects. This choice of these informants could be considered disadvantageous in terms of limiting the generalisability of the results. The results may only represent the Buildings and Estates Departments and not give a clear indication of the institution as a whole. However the Buildings and Estates Offices are the only visible department within these institutions whose mandate is to manage projects. The researcher believes that by examining these departments as a unit of analysis, the study can provide generalizations for third level institutions. The informants selected are consistent with the specific focus and nature of this study. A smaller but focused sample allows for a more detailed exploration of the research questions. The exploratory nature of this study meant that the main aim is not to prove some general proposition; rather it is to seek a better understanding of PMOs in third level institutions and to establish the existence of a PMO and its value in a third level institution. The existence of a large body of literature on PMOs also helps minimize the difficulty in generalizing the results with a small sample size.

16.5 Conclusions

The objective of this study was to determine if Buildings and Estate offices are operating and providing value similar to a PMO. A literature review was conducted which examined the main concepts and themes from literature relating to a PMO. This resulted in a purposed PMO framework which was then used to examine a PMO in two third level institutions. A comparative case study was conducted to examine the same event or processes in different settings or situations. The results show that the Buildings and Estates offices are perceived to be acting as PMO’s in third level institutions. The study adopted the PMI definition of a PMO to compare the buildings offices to. Third level institutions do not have a formal or dedicated PMO office with a title over the door but the directors and staff view their office as a PMO. The Buildings and Estates office is the only PMO in third level institutions.

The type, role functions and authority of a third level PMO were examined in the study. The research showed that these factors varied based on the type of projects. The PMO acts as a type 3 on capital projects as they are more strategic. On all other projects the PMO acts as either a type 1 or type 2 PMO. The organization context of third level institutions was considered in
terms of structure, culture and public and private projects. The research found that third level institutions are either functional or matrix structured with a supportive culture towards project management and the PMO. Projects in public organizations such as third level institutions are restricted by factors such as procurement, funding, slow decision making and long lead in times.

These factors are associated with capital projects which are more strategic in nature, have many stakeholders, sources of funding and larger budgets. For these projects the buildings director assumes the role of PMO and is supported by the PMO staff. The role of the PMO in a third level institution is consistent that of a weather station or control in which it monitors and controls projects, ensures strategic alignment and reports to upper management the status of projects. The value of the PMO is its ability to manage the process of delivering projects for the institutions and the ability to have complete oversight of projects in the institution.

16.6 Recommendations for Future Research

This research study examined the existence of a project management office in a third level institution in Ireland. Specifically it looked at the Buildings and Estates offices to gather information via a specific population i.e. Buildings and Estates Directors and Project Staff. The study looked at two of the seven institutions in Ireland. Further research is recommended to examine the other institutions in Ireland to build up a greater picture of PMO’s in the third level sector. From the researchers perspective the logical progression for this work would be to examine the PMO in third level institutions in terms of maturity and methodology employed in these institutions. An assessment tool such as the P3M3 guide used by the OGC (Office of Government Commerce UK) would give a clear indication for third level institutions to what their project management capability and awareness. From this assessment the institutions could evolve the existing PMOs to address the capability gaps and create more value from the project management process. The value aspect of the PMO needs to be measured further by analyzing the financial figures for a number of projects to see if the approach of the PMO in capital projects provides value.
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Appendices

Organisational Structure of Institution A

Organisation structure of Institution B
Section of the Universities Act 1997

[No. 24.]  
[1997.]

Pr.III S.13

(a) shall provide courses of study, conduct examinations and award degrees and other qualifications,

(b) shall promote and facilitate research,

(c) may establish by incorporation in the State or elsewhere, or participate in the establishment of, such trading, research or other corporations as it thinks fit for the purpose of promoting or assisting, or in connection with the functions of, the university,

(d) may collaborate with educational, business, professional, trade union, Irish language, cultural, artistic, community and other interests, both inside and outside the State, to further the objects of the university,

(e) shall maintain, manage and administer, and may dispose of and invest, the property, money, assets and rights of the university,

(f) may collaborate with graduates, convocations of graduates and with associations representing graduates of the university both inside and outside the State,

(g) may purchase or otherwise acquire, hold and dispose of land or other property, and

(h) may accept gifts of money, land or other property on the trusts and conditions, if any, not in conflict with this Act, specified by the donor.

Academic freedom.

14.—(1) A university, in performing its functions shall—

(a) have the right and responsibility to preserve and promote the traditional principles of academic freedom in the conduct of its internal and external affairs, and

(b) be entitled to regulate its affairs in accordance with its independent ethos and traditions and the traditional principles of academic freedom, and in doing so it shall have regard to—

(i) the promotion and preservation of equality of opportunity and access,

(ii) the effective and efficient use of resources, and

(iii) its obligations as to public accountability,

and if, in the interpretation of this Act, there is a doubt regarding the meaning of any provision, a construction that would promote that ethos and those traditions and principles shall be preferred to a construction that would not so promote.