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Project Portfolio Management Software: advice beyond the magic quadrant

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The market for project portfolio management (PPM) software is growing rapidly. However, there are few sources of independent advice to help organisations choose the most appropriate software for their needs. Many organisations turn to research from Gartner or Forrester to identify the PPM software leaders. However, Gartner and Forrester tend to present their research in the form of a ‘magic quadrant’ with leaders identified in the top right as vendors that “execute well against their current vision and are well positioned for tomorrow”. This type of recommendation may turn out to be unhelpful because it is self-referential and reports against the vision of the vendor. Wouldn’t it be more useful to report against how well the software helps clients meet their strategic goals? This research analyses the stated goals of 91 PPM software vendors and compares them with the PPM goals found in the academic and software literature. The research then goes on to suggest what goals PPM software should be helping organisations to achieve, and identifies the PPM software that is most likely to support strategic goals in the public and private sectors.

Keywords: Project Portfolio Management, PPM Goals, Software Goals

Project Portfolio Management Software: Advice Beyond the Magic Quadrant

Project Portfolio Management (PPM) is growing as a topic in the project management literature. A comprehensive literature review of PPM by Killen et al. (2007) showed an increase in PPM related journal articles from two in 2000 to 35 in 2004. More recently from 2014 to 2017 according to Science Direct 336 PPM journal articles were published in the top three major journals: International Journal of Project Management, (159), European Journal of Operational Research (146), and European Management Journal (31).

Organisations are attracted to PPM because of the claimed benefits (McDonald & Sarbazhosseini, 2013). In the Information Technology (IT) domain, Kersten and Verhoef (2003) and Verhoef (2002) report that firms using PPM reduce IT spending by 10 to 40 percent. Laslo (2010) claims that PPM allows an organisation to maintain agility while avoiding wasteful investments and Thorp (1999) argues PPM techniques are fundamental to getting value from IT projects.

However, Meskendahl (2010) claims that PPM becomes invaluable beyond the IT domain when it is more difficult to implement strategy than to develop strategy. The leading researchers in the field have defined PPM as an art and science that requires the application of a body of knowledge and set skills, tools, and techniques (Dye & Pennypacker, 1999), policies, practices, procedures and actions (McDonough & Spital, 2003) in order to meet the strategic requirements of organisation. PPM is therefore more important as a method to align projects with organisational strategy (Crawford et al. 2006; Maylor et al. 2006; Kaiser, 2015; Knock et al. 2016; Niknazar & Bourgault, 2017). PPM can be understood as a holistic approach that selects and prioritises projects/programs, optimises benefits, and aligns them with organisational strategy (Kendall & Rollins, 2003; Archer & Ghasemzadeh, 2004; Meskendahl, 2010; Niknazar & Bourgault, 2017).

PPM Software

As PPM has developed so too has the range of tools to support PPM processes. One consultant reports “Tools for PPM are evolving rapidly, and it is impossible to maintain a complete and up-to-date list of suppliers and capabilities” (Lee Merkhofer, 2017). Figure 1 shows graphically the confusing array of PPM software now available on the market.
To analyse PPM software, we have identified 91 PPM software available in market. Our analysis of 91 PPM software packages has identified a large number of features marketed by the different vendors (Sarbazhosseini & Young 2012). To collect the features, we have reviewed the information from the software vendors’ websites. Then we have cross-checked all the features against each piece of software. These features and the frequency with which they are mentioned are summarised in Table 1 based on the number of software packages that offered that specific feature. We find this list of features confusing for potential buyers because the primary feature, an enterprise view, should probably be expected as a given (rather than as a marketing feature). Many of the other features might be no more than marketing hype because it is difficult to see how PPM software will achieve these goals. Our analysis concludes with the finding that the features marketed by the PPM software vendors do not provide good guidance for potential buyers of the software.

**Table 1: PPM software features**

<table>
<thead>
<tr>
<th>Number of Software vendors</th>
<th>PPM Software Capability</th>
</tr>
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<tbody>
<tr>
<td>60</td>
<td>Enterprise view for advanced resource planning, managing, reporting and governance leads to better communication and teamwork</td>
</tr>
<tr>
<td>41</td>
<td>Increase ROI and reduce costs</td>
</tr>
<tr>
<td>39</td>
<td>Maximise the strategic value and alignment</td>
</tr>
<tr>
<td>33</td>
<td>Efficient and effective project management</td>
</tr>
<tr>
<td>33</td>
<td>Easy to use, maintain and a right tool for managers</td>
</tr>
<tr>
<td>Number of Software vendors</td>
<td>PPM Software Capability</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>13</td>
<td>Reduce risk</td>
</tr>
<tr>
<td>7</td>
<td>On-time and on-budget delivery</td>
</tr>
<tr>
<td>6</td>
<td>Achieve PPM success</td>
</tr>
<tr>
<td>5</td>
<td>Take timely correct actions</td>
</tr>
<tr>
<td>4</td>
<td>Increase competitive advantage</td>
</tr>
<tr>
<td>3</td>
<td>Increase agility in the management of projects</td>
</tr>
<tr>
<td>2</td>
<td>Reduce project failure</td>
</tr>
<tr>
<td>2</td>
<td>Improve customer satisfaction</td>
</tr>
</tbody>
</table>

To better understand what goals the PPM software and PPM academic literature are promoting, we compared PPM goals from these two perspectives in Figure 2. According to Sarbazhosseini and Young (2012), there are three main academic goals: strategic alignment, achieving the balanced portfolio, and maximising the value of the portfolio. They also identified four less emphasised goals: reducing cost, centralised source of information, selecting right number of projects and portfolio sufficiency versus overall product development.

Our matching and comparative analysis show that there are many goals that are emphasised in one perspective but not another, thus adding to the confusion. However, we identified a strong link between some of the goals. For example, there is a strong link between strategic alignment and reducing risks in both academic and software goals. Figure 2 shows the different PPM goals as a schematic diagram.
The first finding from this analysis is that the number of PPM software goals is much longer than the list of academic goals. We find some of the software goals are likely to be little more than marketing jargon. For example, some software vendors claim PPM will improve customer satisfaction, increase competitive advantage or lead to efficient and effective project management; none of which is likely to be achieved through the use of PPM software.

Most of the PPM software vendors (60 vendors) promise to deliver an enterprise view of portfolio for advanced planning, managing and reporting and governance to better communicate and teamwork. This goal only has a weak correspondence to a secondary PPM academic goal: centralised source of information. There may therefore be a major discrepancy between the goal of the software vendors and the academic literature.

The second most promised software goal (41 vendors) is increasing ROI and reducing costs. This goal seems to correspond to one PPM goal in the academic literature: maximising the value of the portfolio.

The third and sixth most claimed goals of PPM software (39 and 13 vendors respectively) are maximising strategic value and alignment and reducing risk. These are the only software goals that have a strong match with academic goals. The remaining nine software goals have either No relationship with the academic goals or a weak relationship.
Industry Advice – the magic quadrant

Organisations looking for a software tool to support their PPM initiatives commonly turn to research organisations such as Gartner or Forrester for advice to sort through the confusing array of options available to them. The Gartner Magic Quadrant for PPM project management software reports is considered by many to be “the global reference in our industry” (Berniz, 2016).

Figure 3 reproduces the 2016 Gartner Magic Quadrant for PPM project management software. Their analysis groups PPM software into four quadrants using two criteria: completeness of vision and ability to execute the vision. Their description of the four quadrants is as follows:

**Leaders** execute well against their current vision and are well positioned for tomorrow.

**Visionaries** understand where the market is going or have a vision for changing market rules, but do not yet execute well.

**Niche Players** focus successfully on a small segment, or are unfocused and do not out-innovate or outperform others.

**Challengers** execute well today or may dominate a large segment, but do not demonstrate an understanding of market direction.

Gartner explicitly notes that “focusing on the leaders’ quadrant isn’t always the best course of action. There are good reasons to consider market challengers. And a niche player may support your needs better than a market leader. It all depends on how the provider aligns with your business goals (Gartner Magic Quadrant 2017).” We would add that a vendors completeness of vision may not be the best criterion to use to segment the market. Vendors seem to be promoting all sorts of features simply to sell their software. The vendors vision may not be same as the buying organisations vision and we suspect it is highly unlikely to match the vision promoted in the PPM literature – to support the implementation of strategy. The next section provides an important critical context to justify our suspicion.

![Figure 3: Gartner Magic Quadrant for PPM Software (adapted from Berniz, 2016)](image)

**Critical Context**

In 2012, the Victorian Auditor General’s Office commissioned one of the authors to undertake a study in the state of Victoria to explore whether there was a systemic reason why projects were failing so often (Young et al. 2012). The findings of the study were that $100b had been invested on projects over a 10-year period without any evidence that strategic goals had been achieved. The strategic goals such as increased literacy, decreased crime and reduced hospital waiting times were quite stable over this period but no evidence was found that any of them had improved. The study was quite short in duration but a guiding principle behind the conclusion was the assumption that if the government had done something good, they would have reported it.
The findings of this first study were so confronting that a second study was performed in the state of New South Wales to see if they would be replicated. This second study (Young & Grant, 2015) used lower level metrics over another 10-year period and found largely the same result. Projects may be delivering the expected outputs but it appears that these outputs are not contributing significantly to the higher-level strategic outcomes that are the reason the projects were commissioned in the first place.

Further research is now being undertaken to see if these findings will be replicated in the US, Germany and the UK. However, there is enough evidence to suggest that strategic goals are not being consistently realised and this in turn suggests that the main rationale for PPM software may not be easily realised. PPM software may not be supporting the implementation of strategy.

**Advice Beyond the Magic Quadrant**

We find the basis of advice in Gartner’s Magic Quadrant for PPM software to be flawed. The vision of the vendor is not likely to be the most important criterion for an organisation undertaking a PPM initiative. We would go further and add that the understanding of PPM is evolving over time and conclude that it is more important for an organisation to be clear on what it is trying to achieve through its PPM initiative than to worry about the vision of the vendor. If as is likely, the objective is to implement strategy, then decision-makers need to be aware that there is a growing body of evidence that strategy is not being implemented through projects and they need to be especially careful not to fall for marketing hype that is not supported by evidence.

The feature that is marketed by almost all the PPM software vendors, an enterprise view, in our opinion is a minimum requirement and not suitable as a differentiator between products. We fear decision-makers may be caught by the trap of choosing their PPM support based on ‘pretty reports’. In contrast, what is important is how the PPM software clarifies the strategic importance of a project for decision-makers. For example, the PPM software should be able to highlight and test the logic of how a program of projects leads to a strategic goal perhaps in the way shown in Figure 4.

![Figure 4: A PPM interface testing the logic between projects, programs and strategic goals](image)

We feel that the other PPM features are probably less important. Reducing costs for example will be achieved through the strategic selection of projects because funds that would otherwise have been allocated to less strategic projects will be conserved. Efficient project management and on-time on-budget delivery are not as important as realisation of strategic goals (Standards Australia, 2006). Ease of use is like an enterprise view, a minimum requirement and not suitable as a selection criteria because realisation of strategic goals is more important.

We would finish by pointing out that it is crucial that the PPM software supports the way your executive decision-makers think. We have had the experience of an executive group telling us “no bubble charts and pair-wise comparisons” because they made decision-making more complex, mechanical and taking away the opportunity for executive judgement.
Like Gartner and other consultants, we do not believe that it is necessary to select a leader in the PPM Magic Quadrant. We have not found a PPM software tool that fully meets the needs we have outlined in this paper. Microsoft Excel might be adequate in the short term. Our medium term advice is that the PPM software package should be able to produce a view similar to Figure 4. However, we expect the market to change quite quickly as the understanding of PPM matures.

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Storytelling: making sense of problems on projects
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Abstract
Using tools based on past experience, traditional project management defines problems progressively, first as risks, then problems and later issues. In this paper we argue that developing competence in storytelling can provide a new frame through which to view them.

Over the past decade Storytelling has been embraced widely in both management theory and practice. We distinguish between the popular notion of storytelling and a modern form that embraces uncertainty, change and emergence as the new norm. By turning away from the past and embracing the future, we can harness the emergent properties of stories in evolution to view problems in a new light, as emergent events.

Through this project teams have the potential to generate a new range of problem definitions, and related solutions, unlocking a door to solve those stubborn problems that plague projects in environments of uncertainty and unpredictability.

Stories from the International Development Sector illuminate the results of a storytelling study based on in-depth interviews with six project managers from the International Development sector. Told through the frame of firefighters, their stories provide insight into how the project managers currently make sense of, and tackle, problems.

INTRODUCTION
We live in an age of hyper-connectivity, part of a networked world in which we have also networked our problems into a complex tangle of relationships, economies and societies (Dorst, 2015). By association, the projects required to implement solutions to these problems have become more complex (Haas, 2009).

This paper contributes to an ongoing discussion about the growing need for more flexible and adaptive approaches to managing projects (Cicmil, Williams, Thomas, & Hodgson, 2006; Lauffer, Hoffman, Russell & Cameron, 2015; Remington & Crawford, 2004; Williams, 2002). For nearly 20 years, a stream of project management literature and practice has been dedicated to understanding the challenges of complexity (Snowden, 2000) and to developing approaches to tackle the stubborn problems it seems to generate. However, many project managers continue to face varying levels of uncertainty and unpredictability on a daily basis (Lauffer et al., 2015).

And the challenge is predicted to increase. In its scale, scope and complexity the 4th Industrial Revolution, projected to arrive in 2020, “will be unlike anything humankind has experienced before” (Schwab, 2016, p. 1).

Traditional project management still views concepts such as risks, and their resulting problems, as predictable events that can be planned for and managed. However, in unpredictable environments we
need new, and more agile, competencies to complement traditional planning approaches (Conforto & Amaral, 2010; Laufer et al., 2015; Snowden & Boone, 2007).

Language can play a powerful role in changing the way we view the world. Developing competence in storytelling can help make sense of problems by interpreting them in a new light, opening the door to alternative ways of solving them, proving a potentially valuable addition to the project manager’s toolbox.

**The Power of Storytelling**


Aside from this explosion of interest in popular culture, storytelling has also been embraced widely across management theory and practice, considered both an art and a tool for more than a decade. Story gathering, sharing, making and storytelling (McLellan, 2005) play an important role in the full spectrum of management practice and leadership functions (Taylor, Fisher & Dufresne, 2002) as a way to leverage human capital more effectively (McLellan, 2005).

Storytelling has been employed widely in leadership development (Ann & Carr, 2011; Maclean, Harvey & Chia, 2012), entrepreneurship (Garud, Schildt & Lant, 2014; Maclean, Harvey, Gordon, & Shaw, 2015), as well as being used to engage stakeholders, and manage their expectations through creating shared meaning (Amtoft, 1994; Griffin, 2015; Merla, 2009).

As a knowledge management tool storytelling can stem the outward flow of intellectual capital from organisations by capturing explicit and tacit information from people and projects (Kalid & Mahmud, 2008; Machado, Magnier-Watanabe & Petola, 2016; Snowden, 2000).

Innovation projects are a natural home for stories (Bartel & Garud, 2009; Enninga & van der Lugt, 2016; MacLeod & Davidson, 2007) used as imaginative tools to suspend belief and create visions of alternative futures (Petrick, 2014). As a creative innovation process, Design Thinking claims storytelling as a core tool (Brown, 2009; DeLarge, 2004; Lietka & Bennett, 2013; Reuther & Jetton, 2013), given its ability to reframe ideas to address ill-defined problems.

Traditionally soft skills had not received due attention in the project management domain (Creasy & Anantatmula, 2013; Hyvärä, 2006; Skulmoski & Hartman, 2009) however the recent Competency Standards for complex project management now include *storytelling* as an essential skill (ICCPM, 2012).

In this paper we make an important distinction between the popular notion of storytelling and a more recent form that is based on a complexity mindset (Boje, 2008), embracing uncertainty, change and emergence as the new norm, rather than trying to control it. By harnessing the emergent properties of stories that are still evolving, this modern storytelling enables us to view problems in a new light, as emergent events.

**Making Sense of Problems**

In an extensive research project on the practices of successful project managers which involved organisations such as NASA, IBM, Procter & Gamble and the U.S. Air Force to name a few, Laufer et al. (2015) determined that, despite implementing meticulous planning and risk management processes, a project manager’s key challenge is coping with frequent unexpected events. Even though in retrospect they were able to classify these events according to their level of predictability, all had the potential to develop into problems.

Following the traditional management approach, project managers currently define problems in their various states of being - in prospect to be identified as *risks*, in the present state as *problems* and in their eventuality to be registered as *issues*. The entire premise of this thinking is the assumption these
are events are predictable and can be planned for using strategies and tools based on past experience (Taylor & Watling, 1970). In practice, these events are unforeseen and, even if realised, we can’t predict how they will unfold within the context of an uncertain project environment.

So how do we manage something we can’t predict? We change our perspective, looking away from the past into the future where the problem is unfolding and seek out tools that harness the future as it emerges.

**Emerging Stories: Changing the Perspective**

The ante-narrative is a story in evolution, a living entity created by the unpredictable, emergent and collective action of storytelling inside organisations (Boje, 2008). It’s like a bet that a proper story will emerge in the future (Boje, 2008) from fragments of incomplete information like anecdotes, opinions and suggestions.

This living form of story is an alternative to the conventional view of narrative as a complete and coherent tale authored by one person or authority (Boje, 2001). These are dominant narratives, part of company culture, conveying accepted and expected attitudes and behaviours in organisations (Bartel & Garud, 2009). They exert a collective influence, providing a framework for decision making in processes such as problem solving.

Dominant narratives control the message through a traditional linear structure (beginning, middle, end) and plot. A story acquires meaning via its plot (Czarniawska, 2004; Polkinghorne, 1988) which emerges as the various elements, or events, are brought together into a meaningful whole (Czarniawska, 2004).

However, evolving stories have multiple authors and grow organically in real time (Whittle & Mueller, 2012). They speculate about emerging events that haven’t reached a conclusion yet (Bartel & Garud, 2009) and, as such, are still open to translation, with the potential to change direction. Like infamous butterfly of complexity theory, the ante-narrative has the capacity to set in motion transformations realising a potential future that otherwise would not exist (Boje, 2008).

**Framing the Future**

The human mind is constantly looking for ways to make sense of data through narrative (Griffin, 2015), collating loose ideas into complete stories. We use language to create meaning and, therefore, to define the frames through which to view the world. People translate narratives through their own cognitive frames, in turn shaped by their life experiences, belief systems or goals (Bartel & Garud, 2009).

Returning to the interpretation of problems, through our individual frames each of us translates the meaning of evolving stories differently, therefore within the project team we have the potential to generate a range of new problem definitions (Bartel & Garud, 2009). By catching the emergent events as they are unfolding, still in a pre-problem state, the project team can view them in a different light, translating and developing the story as it evolves to generate a new range of problem definitions, as well as their potential solutions (Bartel & Garud, 2009).

**RESEARCH DESIGN**

The aim of this research was to build on studies that explore the *lived experience* (Cicmil, Williams, Thomas & Hodgson, 2006) of projects, and in this case to provide insight into how project managers make sense of, and respond to, problems on complex projects.

*Actuality research* represents a shift away from model-based, to praxis-based, theory and research. It focuses on the empirical reality of project work, or expressed colloquially, “what is actually going on” in projects (Cicmil et al., 2006, p.676).
The proponents of project actuality believe that projects are managed through social processes such as “conversational relating” (Cicmil et al., 2006, p. 677). Given this, actuality research was the foundation for the study and a storytelling approach was adopted. Stories research crosses disciplines and has been particularly useful in understanding how people make sense of organisational experiences (Boje, 2008; MacLeod & Davidson, 2007; Rosile et al., 2013). To situate the study and attempt to mitigate bias, the Storytelling Diamond Model (Rosile et al., 2013) was applied to identify the researcher’s paradigmatic perspective (Diefenbach, 2009; Pratt, 2008).

Data Collection & Analysis

In-depth oral history interviews were conducted with six project managers from two organisations based in Europe, with offices in various countries. They managed complex international (cross-border) projects within the International Development sector (IDS).

For this study, international, or global, Development was viewed as multi-factor and cross-sectoral activity that aims to deliver desirable change in society, with a specific focus on developing countries and emerging economies (Millard, 2014).

The interviews began with the request to tell a story about a stubborn problem, with follow up with questions that followed the trajectory of the participants’ stories, drawn from concepts from the literature.

Interviews were recorded, transcribed and narrative thematic analysis supported by use of the qualitative data analysis software NVIVO for Windows. Thematic analysis focuses on themes that develop across stories and across a data set (Riessman, 2008 as cited in Squire et al., 2014) and it was assumed that the IDS would provide a rich and connected storyworld (Herman, 2004, as cited in Squire et al., 2014), of intersecting and linked narratives related to the sector.

FINDINGS

For brevity, only key findings have been outlined with quotes that illustrate the project managers’ stories in their own words.

The Frame of the Firefighter

When asked to provide a metaphor or description for being a project manager (no category prompts provided), a majority of the participants across the two organisations identified with being a firefighter, linked to the reactive nature of the role:

“Well the first thing that comes to mind is definitely the firefighter... (sic) has a team which needs to be co-ordinated and obviously, you have training, and you have a plan, you have your fleet,(and) you probably know which fire station responds to which problem. So there’s a bit of planning, yet you don’t know where the fire is going to be. So similar to a project ... there are some systems in place. They are more generic ... they can’t detail every single problem.”

Therefore, our project managers are interpreting their problems, and seeking solutions, through the frame of the firefighter. The following three questions have been used as a sensemaking framework to structure the key themes from the data:

What is a problem?

The issues discussed most by the participants were the challenges of operating within a politicised environment and concern for long-term sustainability of the project efforts. Related to this was the complexity of the projects due to the number of stakeholders, mainly governments, and their varying levels commitment to the project.
“This would justify an entire essay, however... a lot of our projects are donor funded with donors (often government related) being under tremendous pressure to justify foreign aid, particularly towards the end of a voting cycle. This, in fact, applies to both donors as well as host countries, where projects are also tied to the government. The outcome is that projects are expected to show immediate results which, dependent on the business case and design of the programme, is not always feasible.”

Why solve the problem?

Fear of project cancellation was the driving force behind finding solutions. Other reasons were operational, related to the long-term sustainability of the project, reputation of the project or sponsor organisation or the potential impact on budget.

“From a corporate perspective, it’s obviously a big risk, a reputational risk as well as financial. You don’t want to start a project and then not be able to assist the client in negotiating this (agreement) and have the project canned, which wouldn’t look very good.”

How to did you solve the problem?

A majority of the participants focussed their discussion on in-field, practice-based approaches to unexpected problems. They believed that due to the uniqueness of their projects standardized approaches were not effective and solutions had to be developed based on previous knowledge, or by asking colleagues. However this approach was complemented by traditional planning.

“It’s a mixture of having systems in place and using the project manager’s, or project director’s, experience as to how did we handle similar problems on other projects or in the past, and then to just come up with a solution, and a lot of times by definition that is reactive to some extent. You can use some tools but it will have to be a tailored approach. I don’t think a one-size-fits-all approach would be any good to address very specific problems.”

DISCUSSION AND CONCLUSION

The study provided insight into how the IDS project managers currently interpret problems and the resulting approaches they chose to respond to them.

Reframing Problems

The project managers assumed the frame of a firefighter, with its inherent belief in the value of preparedness to respond to urgent and unforeseen events where much is at stake. Therefore, this is how they made sense of problems – to define what is a problem, why it should be solved and how to tackle it.

Themes such as politics and sustainability emerged from the project managers’ problem definitions. As outlined in the discussion, we make sense of the world through our individual cognitive frames which are influenced by personal, organisational and sectoral experiences. Through a traditional project management frame of past experience we interpret events as risks, problems and issues. To generate a new range of problem definitions and relevant solutions, we need to change the frame to translate events in a new way.

Agility not Stability!

The project managers’ saw themselves firefighters in the field, supported by traditional project planning. This mirrors the conclusion made by Laufer et al. (2015) that project success depends on flexibility rather than the stability which underpins traditional approaches, and that successful project managers cope with unexpected events through a combination of traditional and more agile methods.
The Storytelling Tool

The project managers used planning tools based on past experience, but relied on their wits and advice of peers to deal with the immediacy of problems in-field. Tools and competencies which focus on the future rather than the past, and are based on emergence, could assist with understanding the operative context (Snowden & Boone, 2007) and embracing the change inherent in uncertain environments, rather than trying to control it.

The project managers defined the IDS projects as complex. Beefing up our competence in storytelling, and developing our understanding of how evolving stories work, has the potential to contribute to the complex project management competency Standards (ICCPM, 2012).

Contributions and Limitations

This paper makes a contribution by building on actuality research in projects through presentation of the lived experience of six experts operating in the Development sector; by using storytelling as a research method on complex projects, and through its recommendation to develop the storytelling prowess of project managers dealing with uncertainty and change on projects.

The findings are limited by the sample size and timeframe of the study, the single domain of the IDS, and the researcher’s bias in the way the data was coded and results interpreted. Recommendations for future research would be to address these limits, as well as the applicability of the underlying theory in the argument that evolving stories are the key to changing frames to enable generation of different problem definitions, and their associated solutions.

The project managers’ in the study adopted the frame of firefighters, responding to urgent and unforeseen problems in the field. Through the traditional project management frame of past experience, events are interpreted as risks, problems and issues. To generate a new range of problem definitions and relevant solutions, we must adapt the frame to translate emerging events in a new way. Through tools which focus on the future, and are based on emergence, we can embrace change inherent in uncertain environments, rather than trying to control it. Developing our competence in storytelling, and our understanding of how evolving stories work, has the potential to contribute to the complex project management competency Standards (ICCPM, 2012).

References


Curiosity: the kryptonite of cats and the superpower of the project manager

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Abstract

As project managers we are good at decomposing scope to create work breakdown structures, we unpack and prioritise hard requirements. Yet we constantly face the near inevitable budget blow out and schedule overrun, even worse our projects may become insignificant prior to or just after implementation.

With changing environments and shifting expectations how does the project manager stay relevant? What skills do we strengthen?

Technical skills will get you shortlisted, demonstrating highly developed interpersonal skills may get you an interview, presentation and stealth self-marketing may get you hired. But what gets you rehired and provides better project outcomes?

Curiosity killed the cat but can it keep you relevant and competitive?

Unrestrained curiosity becomes an annoying time waster, however, if targeted it can become the project managers’ superpower.

Best of all we all have it, we just have to harness it.

Project managers can harness curiosity as a valuable addition to their project management toolkit. Embracing productive curiosity can lead to better project outcomes for customers and renewed contracts for the project manager. Through an exploration of the extant literature, this paper aims to investigate the linkage of curiosity to both the technical and interpersonal skills required by the contemporary project manager

Introduction

Project managers are valued for their ability to deconstruct scope, prioritise requirements, manage project execution and deliver an end product, service or result. Curiosity is not recognised widely as a valued attribute within the profession. It has also been found that professional training can dampen curiosity (Dyche & Epstein 2011) placing the project management profession at risk of decreased benefits seen through leveraging curiosity. Curiosity is correlated to competence and expertise (Silvia & Kashdan 2009) and is now recognised as a key trait that employers seek in job applicants (Fifer 2013).
Despite research studies on the skills required by project managers, there is an apparent scarcity of literature that delves into the importance of curiosity as a key skill for project managers. This review aims to address the gap by providing a holistic overview of curiosity as a vital trait for project managers and outlines why project managers need it.

**Research Method**

This paper provides a narrative literature review, more specifically a narrative overview. Narrative overviews or unsystematic narrative reviews report previous findings in a shortened format, provide information from different sources together and stimulate thoughts (Green, Johnson & Adams 2006). The comprehensive nature of narrative literature reviews makes it appealing for this study. This review challenges current ways of thinking and contributes to the literature by advancing the knowledge of curiosity as a desirable skill to develop and leverage in the project management arena.

**Why do project managers need a superpower?**

Project managers face significant diversity within their career, whether it is the uniqueness embedded in each project, or the diversity of the role itself. This career diversity is likely what draws the project manager to the discipline. An interest in career diversity has been termed career curiosity (Van der Horst, Klehe & Van der Heijden 2017). An example of a change that a project manager may face is moving from local projects to managing global projects and curiosity can assist in bridging the gap of this career transition (Harvey et al. 2007). The nature of work is constantly changing and adaptability is essential for those facing job transitions and for project managers too. Hence, a superpower or skill in the form of curiosity could assist.

**Curiosity: Kryptonite or Superpower?**

**What is curiosity?**

Curiosity is essentially the desire for new information and has been reported from ancient philosophers such as Plato and Aristotle (McLeod 2011). This consumes a lot of time and energy for intelligent animals (Gottlieb et al. 2013) as they search for and explore information. Yet even the nematode Caenorhabditis elegans, a 1mm long worm exhibits curiosity (Kidd & Hayden 2015).

Curiosity, cooperation and creativity were identified as the three virtues of participatory design (Steen 2013) and it has been recognised that curiosity-based research drives innovation (Amon 2015). This understanding of the importance of curiosity has transferred to other industries and is identified as a key attribute to target when recruiting (Harrison, S. 2009).

**Kryptonite of Cats**

Up until the start of the seventeenth century, curiosity was seen as a vice in early modern England, with the focus previously being on the morality of the teacher or investigator rather than the integrity of the knowledge (Harrison, P. 2001). Curiosity similar to other drives can be satisfied with repeated exposure to the stimulus. The curiosity drive is object oriented therefore one may lose curiosity about one object but retain curiosity over something else (Loewenstein 1994). This could be an issue if the object of curiosity is still project relevant. However the temporary and shifting nature of projects could enable the reinvigoration of curiosity.

However, as the perceived appropriateness of curiosity-led behaviours may differ between cultural groups (Strong 2013), the project manager should be conscious of how curiosity is utilised in the project management context. A lack of or inappropriate use of curiosity may lead to systemic issues which may not be evident in the short term, only to be identified later in the lifecycle where recovery may be difficult and costly.
Superpower of the Project Manager

Curiosity has been correlated to good health and longevity (Swan & Carmelli 1996) and with project managers reporting increasing levels of occupational stress (Peter & David 2005), proactive health maintenance is beneficial. Curiosity can also assist project managers to identify and address the tacit assumptions that seem to plague projects. Therefore prima facie it should be good to increase it for any occupation. In occupations, such as project management, whereby the very nature is to bring together multidiscipline skills, knowledge and resources to create something unique, curiosity can be very powerful.

Research has shown that higher adaptability is correlated with broad interests and higher quality of life; it also correlates with lower perceived barriers to achieving goals. Broad interests correlate with both higher curiosity and improved quality of life (Soresi, Nota & Ferrari 2012). This leads us to consider how curiosity fits in with the various project management skills.

Linking Curiosity to other Project Management skills

When managing project integration, one issue with projects is failure to identify issues that are present, whether that is political blindness, following a leader off a cliff or simply sticking ones head in the sand, human nature is to avoid information that may not support our view and cause regret. It has been found that curiosity may overcome this avoidance of regret-inducing information (van Dijk & Zeelenberg 2007). Minimising this tendency to avoid regret-inducing information is extremely important in decision making in business and in projects especially where there is likely to be a high level of uncertainty.

Effective problem framing can reduce uncertainty and is cornerstone of project initiation and planning. Problem framing should be based on a deep understanding of the problem space. This requires the project manager to shift from the expert stance to the relational. Empathetic listening (Marques, Dhiman & King 2011) and questioning based on curiosity is likely to be perceived as authentic and encourages collaborative problem solving (Gerardi 2015).

When considering the cross-functional nature of projects, the issue of conflict management can predominate human resource management. To resolve conflict effectively, the project manager needs to inspire reflective behaviours (Gerardi 2015). Project managers should consider empathetic questioning which has been found to cultivate relationships to minimize the likelihood of project failure associated with poor relationships (McEvoy & Plant 2014). Managing relationships is the essence of stakeholder management and cultural understanding is critical to this process. Asking simple questions can improve the ability to assess cultural norms (Somani 2005). When exploring communication channels, cultural norms should be a key consideration. If communications breach underlying cultural norms, the relationship between the project and stakeholder could be compromised. Conversely if time is taken to unpack these aspects, it can lead to effective information sharing, stakeholder buy-in and increased likelihood of project success.

Having the innate curiosity to question assumptions in a culturally appropriate way is helpful even when considering the more technical skills required in project management. There are many assumptions embedded in schedules and the ability to question these can far outweigh the benefits of having the most sophisticated scheduling software. Reports from one scheduling software can differ from other scheduling programs (Basu 2008). However more concerning is the propensity to input data based on erroneous assumptions. This need to question data calls for project managers to look beyond traditional triple constraint paradigms. An example of challenging cost paradigms and finding new ways to reduce costs is the foldscope, a development of Stanford’s, Manu Prakash, Assistant Professor of Bioengineering and frugal science advocate. Described as merging ‘the principles of origami and optical design’ (Anonymous 2014) this fifty cent microscope assists disease
diagnosis in the developing world, a challenge hindered by the lack of affordable portable diagnostic tools (Brown et al. 2011).

For the cost of a coffee, the hand-powered centrifuge is another product of Prakash’s projects. At a health clinic in rural Uganda, Prakash witnessed an expensive centrifuge used as a doorstop, repurposed due to lack of electricity (Ahuja 2017). A lack of curiosity can lead to many project management issues such as the quality issue realized as lack of fitness for purpose, as highlighted in the doorstop centrifuge example. How can project managers cultivate curiosity to minimize issues and enhance projects?

How do we cultivate curiosity?

Curiosity like many traits can be developed (Jacobs 2015). For the project manager there is a dual role in the cultivation of curiosity, including encouraging the team to cultivate their curiosity and secondly to cultivate their own curiosity.

Encouraging others to cultivate curiosity: Advocate, model, build trust and challenge

As leaders, project managers must model curiosity-led behaviours and advocate the importance of curiosity within the context of project management. This must be accompanied by developing a sense of purpose within the team and linking curiosity as a legitimate mechanism to realise that purpose. Promoting a fail-safe environment where a level of trust is developed and assumptions can be challenged is vital (Jacobs 2015). Encouraging invention is positively associated with increased curiosity and gaining awareness of knowledge gaps (Glogger-Frey et al. 2015). The realisation that assumptions are incorrect creates a desire to fill a knowledge gap leading to increased curiosity (Wilson et al. 2003).

Challenge yourself, reflect and embrace novelty

Project managers can utilize reflective practice to improve self-awareness and the ability to identify any knowledge gaps. Nurture comfort with uncertainty (Hulme, Green & Ladd 2013) and engage in novel experiences (Svoboda 2006). Set challenging goals for yourself and tinker with invention (Glogger-Frey et al. 2015). There will always be parts of a role where interest wains, in these times consciously attempt to align the task to the overarching purpose of the role or if possible add variety to the task (Green-Demers et al. 1998).

Discussion

Curiosity is a desire for new information or experience, however there is no single agreed definition. It is considered to be a multidimensional construct that has been reported as being either intrinsically or extrinsically motivated. There are a number of skills that are required of a project manager, which require a conscious search for new information. A greater focus on curiosity may enhance the effectiveness of these skills and could lead to a greater likelihood of project success.

A culture of curiosity can be fostered through continuous learning and supporting educational growth (Eason 2010). There are many studies looking at correlations between curiosity and personality traits (Silvia & Kashdan 2009). However there are fewer empirical studies that explore the effectiveness of mechanisms to increase curiosity especially in the project management context.

A strong focus on adopting project management practices is recommended (Chugh 2011) but curiosity should be seen as an essential workforce development skill for project managers in the 21st Century.
Conclusion

The paper furthers our limited understanding of curiosity. Curiosity, as a key skill, should make better project managers and lead to improved project outcomes. It is worth contending the inclusion of curiosity in project management curriculum and also scouting for it when hiring project managers. Through this paper, the implications for theory and practice are emerging. In particular, the fostering of curiosity should take place in educational and organisational settings at different levels.

The primary limitation of this paper is the use of unsystematic narrative review method which is subjective. The approach does not lead to probabilistic generalisability. Further research is needed in testing the effectiveness of methods to increase curiosity and impacts of adding it into the project managers’ toolkit. It would also be useful for further studies to carry out empirical research to explore the usage of curiosity by project managers in their work settings.

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Embracing Paradox: utilizing design thinking in project management

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Abstract

Project Management is a discipline that has traditionally utilized strong mechanistic control systems and detailed planning. These tools and systems were borne from the discipline's theoretical foundations in production management, which were originally develop over a century ago. This paper takes a look at the practice of project management through the lens of paradox theory and finds that practitioners may in fact be 'Designers'.

This paper utilizes a grounded theory methodology to explore how a cohort of ten consultant project managers address a particular paradox within the project management construct. This is the control/flexibility paradox.

From the research undertaken, this paper identifies three characteristics of project management practice that appear to be contradictory to the traditional theoretical foundations of project management. Characteristics which are better explained through the theory of 'Design Thinking'. Our research finds that project management practitioners may benefit from looking outside the traditional theoretical boundaries of project management in order to seek out frameworks, tools and processes that can assist them to successfully deliver their projects.

1.0 Introduction

This paper investigates how practitioners address particular tensions within the project management construct. These tensions are created by paradoxical forces that are inherent within construction projects. Due to their paradoxical nature these tensions cannot be ignored, they cannot be circumvented and most importantly they cannot be resolved – they can only ever be managed.

Our research used a grounded theory methodology to explore how project management practitioners addressed these paradoxes. Interestingly our findings indicated that project management practitioners applied Design Thinking practices to manage these tensions. Perhaps even more interesting is that some of these practices appeared to be contrary to traditional project management methods and processes.

Our research found that project management practitioners see project work as having multiple pathways available to achieve successful project completion; regularly used an action-as-planning approach to project challenges; and manage ambiguity and information gaps through the use of a Knowledge Funnel.

We believe our research has implications for both researchers and practitioners. Our findings appear to indicate that while traditional project management theory would have us believe that project management is a controlled, deterministic and linear process, the lived experience of project management practitioners demonstrates a discipline that is regularly faced with dynamic, emergent and paradoxical challenges; and which addresses these through the application of Design Thinking.
2.0 Literature Review

2.1 Paradoxes

Tensions are created by dualities that exist within a particular construct (Evans and Doz, 1992; Sutherland and Smith, 2011). The literature identifies three categories of dualities. These are: (i) dilemmas; (ii) dialectics; and (iii) Paradoxes (Gaim and Wåhlin, 2016; Smith and Lewis, 2011; Poole and Van de Ven, 1989). Janssens and Steyaert (1999) succinctly explain the differences in these three categories, noting “... dilemmas refer to the impossible choice... dialectics stress complementarity... paradoxes stress the simultaneous existence of contradictory elements...” (P.122).

Within the extant literature the ‘paradox’ has been used to describe any phenomenon that theorists have trouble explaining within their research (Poole and Van de Ven, 1989). As Lewis (2000) highlights, the term paradox has been used to describe any “… element, perspective, feelings, messages, demands, identities, interests or practices…” (p.76) that are contradictory but interrelated. Various authors have even challenged the requirement for paradoxical forces to be contradictory (Janssens and Steyaert, 1999; Sutherland and Smith, 2011; Samset and Volden, 2016; Putnam et al., 2016). However, notwithstanding these differences of opinion regarding paradoxes, for the purpose of this paper we have adapted Lewis’s (2000) definition of paradoxes and define these as persistent tensions created by contradictory, yet interrelated, elements.

One of the defining characteristics of a paradox is that these tensions are ‘persistent’ within the construct that created them. That is, as long as the construct exists, so too will the paradoxical tensions. As a result the tensions that create the paradox can never be ‘resolved’ as long as the construct exists, these tensions can only ever be ‘managed’ (Achtenhagen and Melin, 2003; Beech et al., 2004; Söderland et al., 2012).

One example of the tensions that can exist within a construction project is the ‘control/flexibility’ paradox. Traditionally, project management is a discipline that relies on mechanistic control systems and detailed planning (Bryson and Bromiley, 1993; Baker et al., 2008; Usher and Whitty, 2017a). A construction project is often planned out in detail using logically and rationally developed plans based on explicit and tacit knowledge of how construction projects should progress. This type of detailed planning can occur because the ‘system’ utilized to design and deliver construction projects allows for a high degree of certainty about the project’s outcomes (Gudienė et al., 2013; Usher, 2013). For example, a hospital project will always deliver a hospital; not a car wash or a shopping centre. However, simultaneously within that apparently stable and deterministic construct, construction projects often behave in an illogical, irrational and often unpredictable manner (Bertelsen and Emmitt, 2005; Bertelsen et al., 2007; Fernandez-Solis, 2013). Unexpected events regularly occur which require the project management practitioner to abandon the predefined program for a time, in order to respond to emerging information, threat, risk or opportunity (Aritua et al., 2009; Artto et al., 2008; Lewis et al., 2002).

These contradictory forces require the project management practitioner to balance the requirement to control the project outcome using accepted, deterministic practices; while simultaneously ensuring the system maintains sufficient flexibility to respond freely to emergent forces and influences (Usher, 2014). These contradictory forces will remain within the project management construct from the commencement to the completion of the project. The management of these forces at one temporal location will not ensure that the tension does not occur again at another time. The persistent and contradictory nature of these tensions within the project management construct exposes this relationship as a paradox that project management practitioners must manage.
2.2 Design Thinking

Martin (2009) has suggested that one method for managing paradoxical tensions is the application of ‘Design Thinking’. Design Thinking can be thought of as a particular approach to problem solving that allows practitioners to switch between inductive, deductive and abductive thinking to come up with innovative solutions to emergent and wicked problems (Jahnke, 2013; Johansson-Sköldberg et al., 2013).

Simon (1996) suggests that anyone who attempts to create a course of action aimed at changing the existing situation into a preferred one utilizes Design Thinking. Brown (2009) states that anyone who “... attempts to match people’s needs with what is technologically feasible...” (p.86) is utilizing Design Thinking.

Employing Design Thinking requires the intellectual ability to blend both analytical thinking and intuition. It requires practitioners to be willing and able, to create improvised solutions using an action-as-planning approach (Beech et al., 2004; Gabriel, 2002). Design Thinking requires practitioners to be able to accept that there is no ‘one set way’ for achieving a required outcome (Usher and Whitty, 2017b). Design Thinking requires the ability to work collaboratively with other disciplines to develop innovative approaches to complex problems (Martin, 2009; Clegg et al., 2002).

The Design Thinking literature utilizes the concept of a Knowledge Funnel (Fig 1) to explain how practitioners move through a problem solving process (Martin, 2009). At the commencement of the Design Thinking process practitioners are often faced with vast amounts of information pertaining to the problem at hand. Oftentimes there appears to be little correlation between the information currently available and the way to move forward. Any solution to managing the problem is shrouded in mystery. To overcome this a Design Thinker draws on both technical and analytical skills. They use their experience and intuition to help define, refine and narrow the field of inquiry. As the Design Thinker moves through this process they develop a heuristic understanding of the problem. As Martin (2009) explains, a heuristic understanding “…represents an incomplete, yet distinctly advanced, understanding of what was previously a mystery…” (p.12). A heuristic understanding of the problem provides the Design Thinker with organised possibilities from which the innovative solution will finally emerge (Martin, 2009). From this heuristic understanding, the Design Thinker develops the final algorithms through which the solution will be implemented. Martin (2009) describes an algorithm as a codified and structuralized process that anyone with access to the algorithm could utilize to resolve the problem.

![Figure 5: The Design Thinking Knowledge Funnel](image-url)
3.0 Research Question

Our experience in delivering construction projects over the last twenty years allowed us to identify the control/flexibility paradox that exists within the project management construct. We are aware that this may not be the only paradox that exists, however due to the word limits associated with academic papers we decided to focus our paper only on an exploration of the control/flexibility paradox. We felt this paradox was the one most recognisable to project management practitioners. Based on these decisions, our research question became:

*RQ1: How do project management practitioners manage the ‘control/flexibility’ paradox that exists in the project management construct?*

4.0 Research Methodology

Our research is exploratory in nature and required a methodology that could be guided by emergent themes within the research data. For this reason we selected a Grounded Theory methodology which Bryant and Charmaz (2007) and Glaser (2014) note is particularly suited to developing theory from social processes.

The data for this research was collected while undertaking a separate research project which was focussed on how project management practitioners managed unexpected events. The concepts arising from within that existing data begged questions regarding the management of paradoxical tensions within construction project work. Thus, this research is derived from existing archival data.

The original data was collected using semi-structured interviews with a theoretical sample of ten consultant project management practitioners who were working in the Australian construction industry. All of the participants were male, with experience ranging from 3-18 years in the industry. The interviews were digitally recorded and transcribed into a qualitative research program (Nvivo 11).

The data was analysed using a three phase coding process similar to that outlined by Wastell (2001), Algeo (2012) and Flipp (2014). Our research resulted in the identification of 11 concepts that emerged from the data. As is the established practice in a Grounded Theory methodology we returned to the literature with our identified concepts in search of an existing theoretical framework to help us understand our findings. Through this process we identified Design Thinking theory. Using the Design Thinking literature as our framework we re-coded our identified concepts into existing Design Thinking categories. The results of this process is provided in Table 1.

*Table 1: Design Thinking categories and Transcript Data Concepts*

<table>
<thead>
<tr>
<th>Design Thinking Category</th>
<th>Transcript Data Concepts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Pathways</td>
<td>No ‘one’ way.</td>
</tr>
<tr>
<td></td>
<td>Multiple possibilities.</td>
</tr>
<tr>
<td></td>
<td>Always another path.</td>
</tr>
<tr>
<td></td>
<td>Designing the path.</td>
</tr>
<tr>
<td>Knowledge Funnel</td>
<td>The Funnel.</td>
</tr>
<tr>
<td></td>
<td>Narrowing/reducing options.</td>
</tr>
<tr>
<td></td>
<td>Working from ‘big’ ideas to ‘small’ ones.</td>
</tr>
<tr>
<td>Action-as-planning</td>
<td>Improvisation.</td>
</tr>
<tr>
<td></td>
<td>Changing/adapting the plan.</td>
</tr>
</tbody>
</table>
5.0 Research Findings

We now discuss our research findings in terms of the categories identified through the data analysis and with specific regard to our research question.

5.1 The existence of Multiple Pathways

One of the indications that a Design Thinking approach is being applied is a belief by the practitioner that there is no 'one right way' for achieving the desired outcome (Martin, 2009). With this in mind we approached the data looking for indications that the research participants considered project outcomes to be achievable through more than one, set course of action.

“…you’re always faced with a number of ways to go… Our job is to navigate that course, to identify the best possible outcome for the client from those that are available…” (PM05)

“…you have the best intentions of heading down a certain direction but then other factors come into plan and it’s not going to work anymore and you need to go in a different direction…so you have to understand that there are multiple ways to achieve what they are looking for…It’s actually more of a thing that needs to be massaged and worked through and it may require some deviation from where you thought you would go…” (PM08)

These responses indicate that project management practitioners believe there is no 'one set way' for achieving the required project outcomes.

5.2 The Knowledge Funnel

We were particularly interested in the existence of the Knowledge Funnel within the practice of project management, as this is one of the key indicators that Design Thinking is being utilized. We approached the transcript data for indications that this process was being utilized by the project management practitioners.

“…[the whole process is] like a funnel…the mouth of the funnel and the constraints you have to work in, actually ends up in some way defining where you can come out. So as the project manager, in the first instance you need to define how wide the funnel is…then you need to define the sidelines, and from that you will get a glimpse of the tryline. Where the actual goalposts are is almost unimportant at the start you just need to start running in the right direction, stay within the sidelines, and adjust your run as you get closer to the goalposts....” (PM07)

“…So essentially [you keep] reducing the number of options as you go so you end up with the one you eventually deliver…you’ve got to narrow your focus…you’ve got to define the funnel to make sure the project ends up a point inside that funnel that matches what they [stakeholders] are thinking they are getting…that’s the real job…” (PM08)

In these instances the research participants explicitly stated their problem solving process was a funnel. We felt this strongly indicated the application of Design Thinking.

5.3 Action-as-planning

One of the interesting concepts that occurred to us when reviewing the transcript data was how a project management practitioner manage the paradox of having deliver a set project outcome in the face of multiple pathways to achieve that outcome. We returned to the data specifically looking for indications of what the Design Thinking literature terms ‘action-as-planning’.
“...The statement that helps me with some complex projects is 'fix it as you go'. Plan what you've got, you'll have external influences - you deal with them as you go. Progress as best you can and then reorient and start working through it again as you get the external inputs...” (PM02)

“...You just keep working through the process, and as you go ...you keep thinking, What's the next step I need to resolve? What can stop that? What can change that? What can impact that? Where am I right now? What are the decision points coming up?...you just sort of plan it as you go...” (PM10)

These responses indicate that project management practitioners do not necessarily adhere to the detailed plans that they create. When emergent events arise, the practitioners describe a process of ‘working the plan out’ and ‘designing the path’ as they move forward, with the actions that are taken at one point in time helping to define what the future plan will be. In this we saw the process of ‘action as planning’ as explained within the Design Thinking literature.

6.0 Discussion

Our research indicates that project management practitioners appear to apply Design Thinking when addressing unexpected or emergent events within the project management construct. Through our research we found evidence of project management practitioners accepting that there was no ‘one set way’ for achieving a particular project outcome. This appears to demonstrate the Design Thinking belief that there are multiple pathways available to overcome a problem or reach a goal. This belief in the multiple pathways appeared to be one of the ways the control/flexibility paradox was managed by the project management participants. By understanding that the solution did not have to fit within a particular method for completion, the practitioners were free to explore innovative and creative pathways to achieve the required final outcome. The concept that there is no ‘one set way’ to achieve a particular outcome appeared, at least to us, to be contradictory to the traditional project management process of developing detailed programs at the commencement of the project.

We also found evidence of a Knowledge Funnel within the project management construct. Working within defined project parameters, the project management practitioners were able to progress the project forward despite uncertainty and ambiguity. The research participant’s detailed a process of moving through a mystery, into a heuristic understanding and finally to algorithm creation to help the project towards an acceptable final outcome or to move past a particular problem. Once again this appeared to us to run contrary to the traditional project management processes of detailed planning at the commencement of a project.

Our research found evidence of project management practitioners adopting an ‘action-as-planning’ approach to problem solving. We found this interesting as, once again, it challenged the traditional project management concept of detailed project planning.

7.0 Conclusion

Our research has explored how project management practitioners manage a particular paradoxical tension within the construction project framework. Our research indicates that these practitioners may apply Design Thinking techniques to manage this tension. We found evidence of:

- Practitioners accepting the possibility that multiple pathways to success might be available to them;
- Practitioners progressing through the Design Thinking Knowledge Funnel; and
- Practitioners adopting an ‘action-as-planning’ approach to progressing their projects.

We found this interesting because this evidence appears to challenge some of the traditionally accepted practices adopted by project management practitioners. The fact that this evidence emerged from the lived experience of project management practitioners raises significant questions
regarding the current theoretical foundations of the discipline; questions that be worthy of future research. Our findings should also encourage practitioners to look beyond the traditionally accepted boundaries of project management theory and practice into different disciplines, and ask what can be learnt from the tools and knowledge these other disciplines adopt and utilize.

References


Investigating Functions and Capabilities of Australian Project Portfolio Management Offices

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Abstract

Project Portfolio Management (PPM) consists of the practices that allow organisations to coordinate and manage their portfolios to achieve organisational goals and objectives. The functions of Project Portfolio Management Offices (PPMOs) not only support implementation of organisational strategic management and investment decisions but also ensure that organisational benefits are realised and successfully delivered by projects and programs. Nevertheless, PPMO functions and practices remain under-researched. The aim of this study is to investigate functions and capacities of PPMOs and to report their current states from Australian perspectives. Fifty-two PPMO functions were cross-examined against nine capabilities to determine the status of PPMO functions performed to achieve Enterprise Project Management Office (EPMO) defined by the Project Management Institute (PMI). Sixty-four PPM professionals from 11 Australian sectors participated in the questionnaire survey conducted in this research. Statistical analysis was carried out to deliver the research results. The findings show diverse combinations of PPMO functions performed in differing Australian sectors.

Introduction

Project Portfolio Management (PPM) focuses on the alignment of the organizational goals and objectives with planned investments in projects by measuring, ranking and prioritizing the investments for the shared organizational resources (PMI, 2013). Hobbs and Aubry (2007) conducted a three phase research program to better understand PMOs and their functions. The first phase was a descriptive survey of 500 PMO’s which identified 27 PMO functions that have been accepted as a baseline and well cited by the academic community. Pinto, Cota and Levin (2010) extended this study in the area of PMOs and outlined a PMO maturity model that covered the 27 functions identified by Hobbs and Aubry (2007). Their research identified different types of PMOs including Enterprise, Departmental and Program-Project through an examination of scope of services performed within their respective offices. As a result, the 27 functions previously identified were extended to the area of maturity modes for PMOs.

The role of Project Portfolio Management Office (PPMO) has been increasing recognized as a core unit to support the successful implementation of PPM. The aim of this paper investigates PPMO across 11 sectors in Australia into their current functions to determine their achievement as Enterprise Project Management Office (Enterprise PMO) and Centre of Excellence defined by Project Management Institute (PMI). The paper is structured into five main sections. The next section explains the capabilities required by the Enterprise PMO.

Enterprise Project Management Office

According to PMI (2013b, p. 13), an Enterprise PMO is “the highest-level PMO entity in an organization, often responsible for alignment of project and program work to corporate strategy; establishing and ensuring appropriate enterprise project, program, and portfolio governance; performing portfolio management functions to ensure strategy alignment and benefits realization; and related functions responsible for alignment of initiatives to corporate strategy”.

Martinsuo (2013) pointed that the lack of awareness of practices and context could be one of the key explanations why organisations still struggle with resource sharing and constant changes in their portfolios. As a result, the success of project portfolio management falls behind expectation. According to Voss and Kock (2013), success of PPM can be evaluated from overall business success, average project success, future preparedness, use of synergies, strategic fit, and portfolio balance. It was further suggested that portfolio value should be monetarily and non-monetarily taken into consideration. The larger a portfolio becomes, the better alignments with organisational objectives and PPM practices are required.

The recent *PMI’ Pulse of the Professional* (PMI, 2017) reveals that only 62% of strategic initiatives (organisation’s projects) met the goals. The report further states the most important factors for strategic initiative failure including lack of clearly defined and/or achievable milestones and objectives to measure progress, poor communication, lack of communication by senior management, employee resistance and insufficient funding. It was noticed that the report only demonstrates the worldwide results, not of individual countries.

The key roles of the Enterprise PMO have been stated in Al-Arabi and Al-Sadeq (2008) as an ongoing project center of excellent to oversee execution and control with multiple-project perspectives and shared resources orientation. In *PMO Quick Tip Guide* (PMI, n.d.), nine capabilities are addressed. Each capability indicates its significance to Enterprise PMO ranging from critically required to moderately important as in Table 1.

<table>
<thead>
<tr>
<th>Capabilities</th>
<th>Enterprise PMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards, Methodologies &amp; Processes</td>
<td>Critically Required</td>
</tr>
<tr>
<td>Project/Program Delivery Management</td>
<td>Moderately Important</td>
</tr>
<tr>
<td>Portfolio Management</td>
<td>Critically Required</td>
</tr>
<tr>
<td>Talent Management</td>
<td>Critically Required</td>
</tr>
<tr>
<td>Governance/Performance/Benefits Realization Management</td>
<td>Critically Required</td>
</tr>
<tr>
<td>Organization Change Management</td>
<td>Critically Required</td>
</tr>
<tr>
<td>Administration and Support</td>
<td>Moderately Important</td>
</tr>
<tr>
<td>Knowledge Management</td>
<td>Critically Required</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>Critically Required</td>
</tr>
</tbody>
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**Research Methodology**

The research data was obtained from 64 respondents from differing sectors in Australia via a questionnaire survey. These respondents have practiced components of project portfolio management (PPM) for at least 2 years. To accomplish the research aim, the data analysis was conducted to present both the demographic information of the research respondents and PPMO functions performed by the Australian sectors using descriptive statistical analysis. Fifty-two functions obtained through exhaustive literature review were identified and grouped according to their linkages to the nine capabilities classified according to *PMO Quick Tip Guide* (PMI, n.d.) as listed
in Table 2 below. Color coding was applied to demonstrate different levels of performance ranging from Critically performed, Moderately performed, and Poorly performed.

**Table 2 Capabilities of Enterprise PMO and PPM Functions**

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<th>Capabilities</th>
<th>PPMO Functions</th>
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| **C1: Standards, Methodologies & Processes** | FN2: Develop and implement a standard methodology  
FN19: Provide a set of tools with an effort to standardize  
FN39: Define and maintain project portfolio policies and frameworks  
FN45: Develop and improve portfolio templates and checklists  
FN46: Monitor compliance to portfolio policies |
| **C2: Project/Program Delivery Management** | FN8: Develop and maintain a project scoreboard  
FN10: Monitor and control performance of project management office  
FN16: Manage one or more programs  
FN17: Conduct project audits  
FN18: Management customer interfaces  
FN22: Conduct post-project reviews  
FN50: Directly manage projects within the portfolio |
| **C3: Portfolio Management** | FN13: Manage one or more portfolios  
FN14: Identify, select and prioritize new projects  
FN21: Allocate resources between projects  
FN28: Assist with business case development and review  
FN29: Management portfolio dependencies  
FN30: Setup project portfolio systems and software  
FN31: Assist with the categorization and prioritization of projects within the portfolio  
FN33: Maintain the project portfolio inventory  
FN34: Perform project portfolio analysis  
FN35: Perform project portfolio planning  
FN36: Manage the tracking of portfolio resources  
FN37: Track the alignment of projects with strategy  
FN38: Manage the optimization of the portfolio  
FN42: Identify and manage portfolio risks  
FN43: Identify and manage portfolio issues  
FN44: Conduct and manage portfolio communications  
FN49: Manage portfolio stakeholders |
<p>| <strong>C4: Talent Management</strong> | F4: Develop competency of personnel |</p>
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<th>Category</th>
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| **FN1: Report project status to upper management** | FN12: Provide mentoring for project managers  
FN20: Execute specialized tasks for project managers  
FN27: Recruit, select, evaluate and determine salaries of PMs  
FN51: Conduct training in portfolio management skills and tools |
| **C5: Governance/Performance/Benefits Realization Management** | FN3: Monitor and control of project performance  
FN25: Benefits management  
FN32: Track the portfolio benefits and dependencies  
FN40: Provide project portfolio reporting |
| **C6: Organization Change Management** | FN24: Implement and manage risk database  
FN26: Networking and environmental scanning |
| **C7: Administration and Support** | FN7: Coordinate between projects  
FN48: Support the operations of systems that provide portfolio management  
FN52: Support project portfolio software |
| **C8: Knowledge Management** | FN5: Implement and operate a project information system  
FN9: Promote project management within organization  
FN15: Manage archives of project documentation  
FN23: Implement and manage database of lessons learned  
FN47: Provide project portfolio knowledge management |
| **C9: Strategic Planning** | FN6: Provide advice to upper management  
FN11: Participate in strategic planning  
FN41: Negotiate and coordinate enterprise resources |

- Critically required  - Moderately important

**Research Findings**

This research contains collected data from 64 participants working in 11 different Australian sectors. The highest number of participants was from the telecommunication sector. The ratios of participants classified according to sectors are shown in Figure 1.
To understand the performance of PPM functions by sector, the data obtained from the questionnaire survey was carefully examined using descriptive statistical analysis. The results, then, were plotted into nine categories of capabilities suggested in the PMO Quick Tip Guide (see Table 3). It is to be noted that not all PPMO functions were fully acknowledged by all sectors. For example, only 29 out of 52 PPMO functions were acknowledged by the respondents from the Transport & logistics sector. It was reported by all respondents from the Construction and Engineering sector that all PPM functions were critically performed. On the other hand, respondents from the Transport & logistics sector reported poor performance in most of the PPMO functions. While the PPMO functions supporting C1 were critically performed in the Healthcare and Pharmaceutical sector, the sector seemed to poorly perform in C2 and C3. In the Defense sector, almost all PPM functions were between critically performed and moderately performed except in C2 where Directly manage projects within the portfolio (FN50) was poorly performed. The results show that the Education, Energy and Utilities, Government and Telecommunications sectors strongly demonstrated moderate to poor performance of PPMO functions linking to C3.

According to the average performance of PPMO functions by the sectors as in Table 4, the results show that the Construction and Engineering, and Defense sectors significantly demonstrated high performance in the studied functions whereas the Consulting, Education, Energy and Utilities, Government, Information Technology and Telecommunications sectors performed at moderate level. On the other hand, the Banking and Insurance, and Transport & logistics sectors demonstrated poor performance at many PPMO functions related to Enterprise PMO capabilities.
Table 3 Capabilities of Enterprise PMO and PPM Functions by Sector (in % of Sector Responses)

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Table 4 Average Enterprise PMO Capabilities by Sector

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Conclusion

Project Portfolio Management (PPM) consists of the practices that allow organisations to coordinate and manage their portfolios to achieve organisational goals and objectives. The functions of Project Portfolio Management Offices (PPMOs) not only support implementation of organisational strategic management and investment decisions but also ensure that organisational benefits are realised and successfully delivered by projects and programs.

This paper has demonstrated differing criticality of functions and performance levels of these functions within nine groups of capabilities for a PPMO in eleven different industry sectors within Australia. Fifty-two PPMO functions were cross-examined against nine capabilities to determine levels
of performance and which functions were more important than others in a given sector. Organisations can use this information as a source to baseline and prioritise functions performed to improve PPMO capabilities and levels of maturity thereby increasing the value of the PPMO. Amongst the options for consideration will be the PPMO mission and functions, the size and type of PPMO in relation to the governance approach and measurement of success. The size of the organisation and the pipeline of incoming projects will also determine how to best setup the PPMO.

An important factor for the realisation of benefits from a PPMO will be the ongoing communications, simplification of structure and ongoing monitoring of performance. The levels of performance can be increased through the prioritisation of PPMO functions, clarity of mission, use of consistent terminology and ongoing education to improve maturity for both the organisation and the PPMO. Having a common understanding within an organisation of the importance of a PPMO, practices and functions being performed will improve PPMO and organisational performance.

References


Pinto A, Cota M, Levin G (2010), The PMO Maturity Cube, a Project Management Office Maturity Model, Project Management Institute, Project Management Journal


Legitimising the Professional Identity of Project Managers: knowledge influencers in the project management community

Authors: Dr Chivonne Algeo and Thomas M. Algeo

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Abstract

This paper explores professionalisation concepts and diffusion of research within the project management knowledge community (PMKC) with a focus on the professional identity of project managers. The PMKC consists of academics; consultants; teaching institutions; professional organisations; publishers; and project managers in roles as producers, consumers, diffusers, and brokers of project management knowledge. Exploring professional identity perspectives can contribute to contemporary knowledge beyond the use of isomorphic conventional traits and institutionalised processes.

Introduction

The project management knowledge community (PMKC) influences what is researched, published, discussed and adopted into practice, and in doing so, shapes the identity of project managers. The community consists of academics; consultants; teaching institutions; professional associations; publishers; and project managers who serve in competitive and complimentary roles. These roles can act as producers, consumers, diffusers and brokers of project management knowledge aligned to recognised Bodies of Knowledge (BOKs). As project management developed globally in the last half century a considerable number of BOKs have been developed, tested and adopted into practice. The result is a set of rational codes, beliefs and methods which ‘... allows it [knowledge] to be diffused widely’ (Clegg & Courpasson, 2004, p. 543). The growth in the number of project managers, coupled with ‘non-traditional’ occupations utilising project management techniques, has led to the application of these BOKs in contexts not originally envisaged.

The expanded application of project management techniques involves increased levels of complexity in environments of rapid change. Traditional techniques used to manage projects may be ‘stuck’ in a limited paradigm without the ability and agility to adjust and develop. Can rationalist, positivist, mechanistic processes pervade as they are ‘...suited to specific contexts; those where efficiency and control are paramount, and where goals are predetermined, uncontested, and are expected to remain that way’ (Pollack, 2007, p. 270)? If not, how do we create an inclusive environment where differing views and approaches are encouraged, and new knowledge is generated, adapted, and applied to advance contemporary project management?

A bibliographic review of over three hundred papers was conducted in four recognised project management journals to generate an understanding of the key areas of accepted research and thought leadership. The primary purpose of the bibliographic review was to capture and analyse discourse in project management-focused academic journals to identify topics related to knowledge diffusion and the development of a professional identity for project managers.
Knowledge Diffusion

The PMKC serves as a network to generate and regulate the development and transfer of project management knowledge. This community exists in order to develop and share knowledge; linking theory and practice. Referring to research in organisation culture, new ideas, research, fashion, and practices may be generated through multiple sources, such as academic researchers and practitioners. Knowledge may advance through the actions of such sources, be fragmented, and then move toward congruence (Barley, Meyer, & Gash, 1988).

The PMKC consists of project management academics; consultants; universities teaching project management; professional associations; project management publications and other media; private education entities; and individual project managers. Members of the community serve in single and multiple competitive and complimentary roles as producers, consumers, diffusers, and promoters of knowledge. These PMKC actors may also be brokers of knowledge, engaging other actors, spanning boundaries, creating tensions, and engaging actors who ‘...resist the introduction of new knowledge when it has the potential to undermine the expertise of members, despite the efforts of brokers’ (Roberts, 2011, p. 121). Diffusion of a wide array of ideas, sourced from academic researchers; project managers; consultants; and gurus, are presented, adopted, exchanged, or rejected. Discourse generated by academic researchers may become part of the range of choices adopted and adapted, in whole, in pieces, or in combination with other ideas, which project managers seek to use when solving challenges in their particular settings. However, practitioners influence upon academic views and research may ‘...be welcomed or lamented’ (Barley et al., p. 55). Within this PMKC, communications are not homogeneous or often clearly received by users, resulting in a patchwork of awareness and adoption.

Knowledge adoption requires the combination of multiple factors. First, project managers need to view the knowledge as useful. Usefulness has been addressed in this context as ‘...transferrable to [the] current reality’ (Saari, 2007, p. 1043) of project managers. Second, the ideas must be viewed as having validity. Here, academic researchers have the advantage of credible research history and reputation, albeit with some communications challenges. Finally, applicability must be present when the technique or knowledge is perceived as applicable to the specific circumstances of the project manager. In this situation, knowledge which might be viewed as somewhat vague by the rigorous academic researcher may present an advantage of perceived flexibility to fit multiple circumstances by the project manager. Delivering on these three factors often requires a combined approach to be relevant to this knowledge market. The diffusion of project management ideas and knowledge through a knowledge market (Roberts, 2010) represents a variety of actors functioning in both competitive and complimentary ways. Within a project management knowledge market, knowledge may be created, shared, modified, framed, and diffused (Roberts, 2010) to facilitate ongoing systemic relevance and improvement.

Diffusion of a range of project management-related discourse through academic actors may provide comprehensive safeguards for objectivity, originality, and rigor through academic culture, and from peer reviewed published research. Academic publishing is primarily concentrated in serving academics, and may reach other audiences, such as practitioners, students, and those engaged in consulting activity. The diffusion of project management research also extends into journals serving specialty markets, such as engineering, construction, IT, HR and other fields (Turner, 2010). Books provide another channel for publishing research, and serve a wide audience but at a slower diffusion speed than journals. Together, project management-focused journals, journals focused on other social, managerial and technical markets with project management related content, and books, form a significant medium for project management knowledge diffusion. Journal publishing is complemented by an established range of conferences, each providing a forum for networking, dialogue, and diffusion of ideas. Teaching institutions offering project management study have
developed project management curricula through integrating available research with modern learning practices. In addition, some teaching institutions agree to external scrutiny in association with accrediting bodies, such as the Project Management Institute’s (PMI) Global Accreditation Centre (GAC) (2011).

In the PMKC, consultants produce and diffuse project management knowledge through work with their clients, often translating research for practitioners. Consultants can also be a conduit for project management knowledge, however, unlike academics, the consulting process is less collaborative, and offers rapid and efficient diffusion of knowledge through their clients. Such speed in the diffusion of ideas may generate knowledge and ‘...serve as a technical learning process’ (Abrahamson, 1996, p. 255). This knowledge-learning-feedback cycle can generate rapid innovations and further knowledge, often serving as a valuable link in evaluating the understanding, relevance, and acceptance of emerging knowledge by project managers. Consultants are also commercially motivated in their role as diffusers of project management knowledge, and may perpetuate “fashion” to project managers. These fashions are not trivial, and are often influenced by societal norms encapsulating ‘... expectations that, over time, ... will use new and improved management techniques’ (Abrahamson, 1996, p. 257). Such consultant-initiated fashions have inspired significant activity in project management, as well as other communities, such as ‘...strategic-planning units… job enrichment… quality circles… decentralization...’ (Abrahamson, 1991, p. 588).

Finally, the “guru” in the project management knowledge market is expected to ‘...legitimize certain types of managerial practices by translating them into the mainstream business press, presenting these ideas at practitioner and academic conferences, and promoting such practices through their own consulting firms’ (Morris, Crawford, Hodgson, Shepherd, & Thomas, 2006, p. 716). In the PMKC it appears this role is less centred on individuals and, at least in part, is fulfilled by the professional associations.

Bodies of Knowledge

As project management has developed globally in the last half century a considerable body of knowledge (BOK) has developed through professional associations, who maintain standards, certifications, and training aligned to their BOKs. While this institutionalised approach has organised related knowledge and techniques into mainstream thought within the extended international project management community, bringing increased harmonisation of expectations, behaviours and performance globally, it is not universally embraced.

The largest professional associations, such as the Project Management Institute (PMI); the International Project Management Association (IPMA); the Association of Project Management (APM); and the Australian Institute of Project Management (AIPM), generate differing approaches to manage projects. These associations, and smaller counterparts globally, have been influential in the PMKC. They have facilitated the development of research and adoption of popular “fashions” within project management, as well as acting as gate-keepers for new knowledge. While these associations have developed BOKs and similar certification regimes, there is competition for membership and leadership, and local and global adoption of their doctrines. Acceptance of research-led innovations varies between these associations according to their own needs, processes, orientations, and views. This variation creates tension and contributes to differences in the BOKs, impacting on the advancement of project management innovation (Morris et al., 2006).

The dominance of the PMI/IPMA/APM BOKs, and ties to contemporary training and occupational certification for members, also creates boundaries and barriers to incorporating new thought within this complex and interdependent system (Shepherd & Atkinson, 2011). Educational offerings at both undergraduate and postgraduate levels serve as diffusers of knowledge primarily through students engaged in the programs. Unfortunately, such processes intended to provide consistency and
improvement can lead to ‘...serious pressure for educational institutions to incorporate the BOKs into ...curriculum’ (Morris et al., 2006, p. 716).

Technical Innovation

Project management practice may be viewed as an amalgam of what exists across a range of individually specific organisational contexts. This form of practice exists in many forms and can be used in many ways, forming a composite project managerial experience. The often lamented observation of project managerial practice not utilising valuable academic research may, in part, be the result of complexity; a variety of contexts; piecemeal take up across the spectrum of project management practices; a cacophony of messages from knowledge producers; as well as some notion of organisational resistance. Fundamentally, for research to be “applied” it needs to be recognised by knowledge diffusers as “applicable” to their circumstances.

Over several decades the number of people identifying themselves as project managers has grown rapidly around the world (Project Management Institute, 2013). While this growth serves as an indication of the presence and viability of a large, complex knowledge market, increasingly project managers are tasked with managing new types of projects. These projects involve an array of technical, administrative, and other services. As project managers act as knowledge consumers, they ‘...adopt management fashions in a desire to learn about...techniques that would help them respond to organizational performance gaps opened up by real technical and economic environmental changes’ (Abrahamson, 1996, p. 255). The opportunity for innovation through applied techniques is reliant on the PMKC diffusing appropriate knowledge in a rapidly changing and complex environment.

Professional Project Managers

The creation of ‘professional’ identities for project managers has been welcomed by the practitioner community, as it gives the perception of status and legitimacy, and ‘...reflects the material and symbolic benefits that such a term can bestow on the recognized holder [and]... carry substantial normative power’ (Muzio, Kirkpatrick, & Kipping, 2011, p. 806). Beyond project management, the acceptance of what constitutes a professional is mixed. Terminology is fluid and descriptions can vary from “occupational experts” (Abbott, 1988) to “knowledge experts” (Brint, 1994). In 1964, Wilensky (1964) observed there was a loose application of the label “professional” across a wide range of occupations. Further, Wilensky (1964) noted common assertions and aspirations of status were driven by power struggles in the workplace, and did not incorporate the elements differentiating traditional “professional” occupations. These groups often had a narrow technical base, and lacked a formal knowledge base. Wilensky (1964) noted the ‘... job of the professional is technical based on systematic knowledge or doctrine acquired only through long prescribed training [and]... adheres to a set of professional norms’ (Wilensky, 1964, p. 138).

Within project management there has been limited exploration of professional identity in the literature. Professional traits and characteristics have been examined at the individual and occupational level (Morris et al., 2006), however, the focus has been on professionalising the occupation. This debate suggests project management is not a profession due to not meeting independence and legitimacy hurdles and licensing (Twyford, 1999). In addition, project management has also been described as immature, requiring a fiduciary ‘...relationship between the project manager and principal, encourage[ing] tertiary education and mentoring and finally punish[ing] transgressions’ (Algeo, 2008, p. 8). Control of one’s professional identity is central to legitimacy for project managers, and it can be complex with key influences from employers and clients, as well as professional associations. It appears:
...professions are occupations which tend to exercise a high degree of control over both ‘the production of producers’ (who has the right to produce certain services or more simply to hold a certain title, i.e. solicitor or chartered accountant, and how you acquire such title) and ‘the production by producers’ (how certain services ‘are produced, distributed and consumed’). Thus control over work and who exercises this control are the key issues (Muzio et al., 2011, pp. 806-807).

Gaining status as a professional has been an aspiration of many emerging knowledge-based occupations, and as such ‘...project management has been subject to the classical strategy of professionalization as social closure, in accord with Weber’s model’ (Clegg & Courpasson, 2004, p. 527). Attainment of a professional label can be elusive as ‘...skepticism persists regarding the depth and breadth of project management’s institutionalized knowledge base’ (Hodgson & Muzio, 2011, p. 107).

Knowledge Diffusion Literature

Methodology

The bibliographic review captured discourse in project management-focused academic journals to identify topics related to knowledge diffusion in project management. In reviewing the bibliographic data for this study, it was determined details of papers, such as keywords, would be examined and compared to construct a view of emerging research, and post Turner’s (2010) review of published research in project management. Examining recent articles on the professional identity of project managers, compared to other project management areas, provided an indication of the research chosen to be published. Given the issues raised by Turner (2010) regarding the state of project management publication, and potential lag-time for a response to the observations, project management literature emerging in 2012 and 2013 was representative of contemporary thought.

Organising the publications involved developing a process to extract and categorise key information. Articles were gathered through electronic library sources, and assembled for analysis as a data set. The information captured excluded editorials or book reviews. There were 43 publication issues, with 306 papers containing a total of 2,079 keywords. These keywords were the core determinant in identifying research subject-types. Key information used to analyse each paper included: journal identifiers (journal, year, volume, issue); paper title; author information (lead author, number of authors, and geographic location of affiliated institutions); keywords (from two to 45 per paper); and coded categories for keywords representing similar groupings. The output was analysed for patterns to identify frequency of themes in the chosen publications.

Analysis

The literature was analysed in two ways. First, keywords were examined and compared within the extensive keyword list. A second perspective was generated where articles were coded with any keyword associated with “professional”, or a related term associated with an article, deeming the article to be in the “professional identity” category. A third step involved the removal of articles not reflecting professionalisation. As the information was assembled for review and interpretation, indications of author’s views and intentions to communicate views of their work was considered more important to the examination than a quantitative focus. Interpretations of the literature were also described in terms of prevalence of certain subjects compared to others, potentially indicating relative importance of themes in the publications.

The keyword data analysis results indicated much of the publication activity; 828 keywords (40 per cent), focused on traditional PMI knowledge areas. In addition, articles relating to other project management research was significant; 442 keywords (21 per cent). Understandably, these two categories together formed a majority of the articles; 1,270 keywords (61 per cent), indicating a close link to traditional project management subjects. Perhaps surprisingly, a significant number of articles
related to “other” subjects, dominated by those closer to organisational and social issues. Given the calls for research to relate to subject areas not of historical focus in project management (Winter & Smith, 2006) it is perhaps an indication of research investment in new areas.

The literature was further examined to understand the visibility of project manager’s professional identity in project management journals; a core focus of this research. With 2079 keywords to examine, none (after data cleaning) were directly linked to professional identity, using a search for keywords such as: identity; professional/ism; occupation; image; self; boundary/ies; and persona, indicating a limited focus on the professional identity of project managers.

Conclusion

This paper explored the role of the PMKC in diffusing knowledge and legitimising professional identity. There remains an imbalance in types of knowledge recognised as important in the BOKs, resulting in a limited level of professional recognition. The breadth and diversity of the actors in the PMKC provides opportunities to cultivate and deliver new ways of developing the professional identity of different actors, and in turn the “profession”. This paper proposes the direction and content of a shared research agenda is an appropriate issue for debate, and the PMKC, in particular researcher-actors, should consider the importance of under-researched sociologically-oriented topics, such as the professional identity of project managers. For project management to advance there needs to be more consistent and inclusive BOKs so the PMKC can move beyond the current fragmented technically-focused knowledge base. Researching social aspects of project management may present an opportunity for a more reflexive view of the experience of project managers as individual actors in their own professionalisation process. As the PMKC generates, influences, limits, and regulates the development and transfer of knowledge it may be represented as an interconnected system where knowledge flows to, from, and through its actors. The cumulative effect of differences in the orientation and approaches of actors in the PMKC leads to variance in what is emphasised, researched, published, taught, certified, and shared. Such differences in perspectives, motivations, and interests leads to divergence in the way people, pathways, and power shape the nature of project management knowledge and ultimately, project management practices.

References:


Effects of Organisational Project Management Maturity on Competitive Advantages: a quantitative descriptive study

Author: Dr Garry Huang

Dr Garry Huang
University of Phoenix

Abstract:
This quantitative descriptive study examined the connection between organizational project management maturity and competitive advantages in the Australian project management consultancy industry. Understanding the connection is an important factor for organizational leaders that desire an increased customer satisfaction and competitiveness of the organization. The scope of this study was based on project management consultancy firms in Australia using quantitative survey data from current and former members of a professional project management association. The results from this quantitative descriptive study determined the effects of organizational project management maturity on competitive advantages as well as the ability to make more informed strategic decisions by organizational owners based on the perceptions of competitive advantages by the organizational project managers. With the exploration of the lived experiences of the project managers, the results of this study rejected the null hypothesis of $H_0$: Organizational project management maturity has no effect on competitive advantages as perceived by the project managers with a p value of <.0001 (99.99%). Therefore, suggesting that there is a perceived connection between the level of organizational project management maturity and competitive advantages. Furthermore, the results of this study identified a high degree of connection between project managers’ soft skills and project management towards perceived competitive advantages across all levels of organizational project management maturity.

Background:
Project management is defined as the practice of implementing a new program in the form of system changes – as in information technology projects, building projects, new automotive products, airplanes, or weapons systems (Cleland, 1999; Morris, 2001; Turner & Cochrane, 1993). An organization that has a standardized method of project management delivery has a higher chance of delivering their projects in accordance to the project plan (Barber, 2004; Bolles, 2002) and ultimately to the client’s satisfaction.

Since its modern form inception around the 1950’s (Dorouin & Jugdev, 2014; Fondahl, 1987; Morris, 1994, Packendorff, 1995), project management has been traditionally a skill that is acquired by the individual, and there are various certifications and competency guidelines that are available to validate the individual’s capability/competency. Examples include the Project Management Professional (PMP) certification by the Project Management Institute, the Registered Project Manage (RegPM) certification by the Australian Institute of Project Management. Studies by Kathawala, Elmunti, and Toep (1991); Barber (2004) and further supported by Milosevic and Patanakul (2005) affirmed that organizations with standardized project management practices as opposed to individual skill sets experience improved overall organizational project management performance as measured by the frequency of projects that meet the scope, time and cost contained in the project plan.
Problem Statement:
The specific problem was that the lack of understanding between organizational project management maturity as defined by various maturity models and its effects on the perceived competitive advantages. Competitiveness in this study refers to the ability to be able to secure contracts by project management organizations as they submit tenders. This study examined the effects of organizational project management maturity on competitive advantages for organizations based in Australia. By properly identifying the organizational project management maturity and its effects on the competitive advantages of an organization, the stakeholders may become more informed on the strengths and perhaps the weaknesses of the organization therefore allowing the organization to continue to evolve and develop.

Purpose Statement:
The purpose of this quantitative descriptive study was to analyse the effects of organizational project management maturity level on competitive advantages for project management consultation organizations based in Australia by surveying 130 project managers.

Research Methodology:
While there are many potential research methods that are capable of completing this research study, the method of choice was quantitative. While other research methods such as a qualitative study may also be a valid method, only a quantitative method can use statistics to interpret the large amounts of data (Vance et. al, 2013). A qualitative method has no provision to capture the amount of data required to validate the specific research questions. In contrast, a quantitative research allows for the testing of hypotheses from large amounts of data through precise measurement (Cooper & Schindler, 2012). In this study, a quantitative approach is an appropriate research method due to the specific nature of the research questions. The main focus of this study was to collect empirical evidence of the experiences of the organizational project managers. Vogt, Paul, Dianne and Haeffele (2012) as well as Ingham-Broomfield (2014) presented that quantitative research seeks to explain and predict the solution to a problem that may be able to be generalized to other person or places and that there should be a clear objective reality that can be measured and quantified.

Research Design:
This research contains two components; an organizational project management maturity model self-assessment tool and a questionnaire that uses a five point Likert-Type survey to examine the perceptions of the projects managers on organizational project management maturity levels and its connection towards competitive advantages. The purpose of this particular design is to allow the survey participants to document their perspectives on whether organizational project management maturity is a source of competitive advantages when tendering for contracts. The survey contained two components that required the participants to complete. The first component was the Portfolio, Programme, Project Management Maturity Model (P3M3®) self-assessment tool with the emphasis around project management maturity. The second component was a five point Likert-type survey asking the participants to describe their attitude, perception and perspectives on the organizational competitive advantages associated with organizational project management maturity.

The chosen quantitative descriptive design allowed for a systematic analysis of organizations across multiple levels suggesting that multiple factors may contribute to the overall perception of the surveyed individual (Miller et al., 2011) and was able to provide a repeatable, and statistical significant data to the variables (Powers & Knapp, 2006) such as the perceived connection between organizational project management maturity and competitive advantages outlined in this study. By collecting the quantitative descriptive data of the project managers, it was possible to obtain a
deeper understanding about a possible connection between organizational project management maturity as defined by various maturity models and competitive advantages as experienced by the project managers.

**Population:**

The total research population consisted of the project managers who are current or former members of a professional project management association and may include the Australian Institute of Project Management, the Project Management Institute, and the International Project Management Association.

**Sampling:**

A sample size target of 125 was suggested by Cooper and Schindler (2012) as they articulated that as population size approaches 125, a reasonable statistical estimate could be achieved from the standard deviation and is therefore a meaningful result. Therefore, for the purpose of this study, a sample size target of 125 valid responses was required in order to obtain a meaningful result.

A convenience sampling method was used for this research study. This was an appropriate method because all the potential subjects can choose either to participate or not to participate in the study and is an effective method of choice due to the ease in collecting sample data, the relatively low cost of data collection (Salkind, 2010) as well as allowing for the study to be completed in a relatively short timeframe. Although a convenience sampling method may have a “coverage error” as described by Fricker and Schonlau (2002).

**Research Question and Hypotheses**

The research question and the hypotheses for this study were:

RQ 1 What is the effect of organizational project management maturity on the perceived competitive advantages by the project managers that are current and former members with various professional project management associations?

H₀: Organizational project management maturity has no effect on competitive advantages as perceived by the project managers.

H₁: Organizational project management maturity has an effect on competitive advantages as perceived by the project managers.

**Data Analysis**

The Likert-type survey consisted of 20 questions with the first nine questions aimed at determining the level of organizational project management maturity. These questions were based on the P3M3® project management self-assessment originally developed by the Office of Government Commerce. The remaining 11 questions were developed by the researcher and the emphasis centred around the experiences of the participants on competitive advantages provided by the organizational project management maturity. The level of organizational project management maturity was measured by the P3M3® project management self-assessment. The competitive advantages of the organization cannot be directly measured and is also considered as a latent variable (Field, 2013); that is, a single variable such as organizational project management maturity cannot be identified as the sole source of competitive advantages as there are many other factors involved. This claim was also supported by Agresti and Kateri (2014) in that a standard latent model treats the observed variable (level of organizational project management maturity) and latent variable (perceived competitive advantages) as a nominal scale and not taking into account any ordering that may exist. Consequently, the addition or any other form of manipulation of the data is
not possible based on the conclusions drawn by Field (2013) and Agresti and Kateri (2014). Therefore, the respondents were required to answer questions based on their experiences in the second component of the survey on whether if they believe that organizational project management maturity was in fact one source of competitive advantages that they can rely on when submitting tenders.

The data collected from this study was then analyzed through the statistical software SPSS. The confidence interval (alpha) was set at 5% and alpha inflation was auto corrected by the statistical software automatically. As competitive advantages cannot be directly measured and are considered as a latent variable (Field, 2013), then a factor analysis is an appropriate method for statistical analysis. For the hypotheses, the Eigenvalues were determined by the number of survey questions and the computations by SPSS (Field, 2013). Mathur, Jugdev and Fung (2013) further suggested that by examining the Cronbach’s alpha, it is possible to gain an appreciation on how well the question relates to a unidimensional latent construct, and in this study, the perception of competition advantages.

An eigenvalue of greater than one suggests a significant relationship with the corresponding factor (Field, 2013) therefore suggesting that the population agree or highly agree with the corresponding survey question (statement) and Nunnally (1978) suggested that new research topic with a Cronbach’s alpha of 0.5 would be adequate to determine the reliability of the study.

**Presentation of Results:**

**Case Processing Summary**

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>109</td>
<td>83.9</td>
</tr>
<tr>
<td>Excluded</td>
<td>21</td>
<td>16.2</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Note.** n = 109

In accordance to the research protocols, the Cronbach’s alpha was calculated to be 0.615 therefore suggesting that this study has a sufficiently reliable result compared to a pre-determined 0.5 as the acceptable criteria.

**Reliability Statistics**

<table>
<thead>
<tr>
<th>Cronbach’s alpha</th>
<th>Cronbach’s alpha based on standardized items</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.615</td>
<td>0.584</td>
<td>11</td>
</tr>
</tbody>
</table>

The total variance calculated by SPSS identified two components with an eigenvalue greater than one. The two components as identified by SPSS were able to explain 68.5% of the variance in this study with each component being able to explain 58.3% and 10.2% of the variance respectively.

**Total Variance**

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
</tr>
</thead>
</table>

Paper: Effects of Organisational Project Management Maturity on Competitive Advantages: a quantitative descriptive study
<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>% of Variance</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6.413</td>
<td>58.299</td>
<td>58.299</td>
</tr>
<tr>
<td>2</td>
<td>1.121</td>
<td>10.187</td>
<td>68.486</td>
</tr>
<tr>
<td>3</td>
<td>.757</td>
<td>6.879</td>
<td>75.365</td>
</tr>
<tr>
<td>4</td>
<td>.707</td>
<td>6.424</td>
<td>81.789</td>
</tr>
<tr>
<td>5</td>
<td>.478</td>
<td>4.346</td>
<td>86.134</td>
</tr>
<tr>
<td>6</td>
<td>.425</td>
<td>3.867</td>
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</tr>
<tr>
<td>7</td>
<td>.302</td>
<td>2.748</td>
<td>92.749</td>
</tr>
<tr>
<td>8</td>
<td>.270</td>
<td>2.453</td>
<td>95.202</td>
</tr>
<tr>
<td>9</td>
<td>.206</td>
<td>1.873</td>
<td>97.075</td>
</tr>
<tr>
<td>10</td>
<td>.191</td>
<td>1.734</td>
<td>98.808</td>
</tr>
<tr>
<td>11</td>
<td>.131</td>
<td>1.192</td>
<td>100.000</td>
</tr>
</tbody>
</table>

*Note.* Number of Components identified = 2

*Relevant Survey Questions – Component One*

<table>
<thead>
<tr>
<th>Question number</th>
<th>Survey question</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Your organization’s project management capabilities have been a beneficial factor when bidding for contracts / jobs?</td>
</tr>
<tr>
<td>11</td>
<td>The organization has always invested in the professional development of project managers as a source of competitive advantages</td>
</tr>
<tr>
<td>13</td>
<td>The organization can only win contracts / jobs if the price is lower than it’s competitors</td>
</tr>
<tr>
<td>14</td>
<td>The organization can be competitive in all its organizational project management capabilities with its nearest competitor</td>
</tr>
<tr>
<td>15</td>
<td>The organization is winning contracts / jobs based on its organizational project management maturity / capabilities</td>
</tr>
<tr>
<td>17</td>
<td>The organization often benchmarks its own organizational project management maturity for the purpose of continuous improvement (eg: continuous professional development, workshops, staff education)</td>
</tr>
<tr>
<td>18</td>
<td>The organization has created new business opportunities because of its organizational project management maturity</td>
</tr>
<tr>
<td>19</td>
<td>Do you agree with the statement: “Organizational project management maturity has given the organization a competitive edge?”</td>
</tr>
</tbody>
</table>
Component two as identified by the Eigenvalue calculation suggested that question 16 shows a high degree of variance to the overall calculations as seen in Table 6.

### Relevant Survey Questions – Component Two

<table>
<thead>
<tr>
<th>Question number</th>
<th>Survey question</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>The organization is winning contracts / jobs based on its other services (eg: soft skills such as client relationship, stakeholder management, communications ability)</td>
</tr>
</tbody>
</table>

### Independent Samples T Test:

Based on the independent sample T test as calculated by SPSS, a p-value of <0.0001 (99.99% confident) was obtained and that the results of this study to reject the null hypothesis was achieved. Therefore, this study rejected the null hypothesis $H_0$: Organizational project management maturity has no effect on competitive advantages as perceived by the project managers. Suggesting that there is a relationship between organizational project management maturity and the perceived competitive advantages by the surveyed project managers.

### Mean and Significance (2 tailed)

<table>
<thead>
<tr>
<th>Mean</th>
<th>Significance (2 tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances not assumed</td>
<td>.000</td>
</tr>
</tbody>
</table>

### Additional Findings:

SPSS identified two components with an eigenvalue greater than one therefore suggesting that there are two factors that are significant in this study. The second component based on the calculations by SPSS identified 10.2% of the variance (eigenvalue of 1.121) and is therefore significant. This component relates to survey question which addresses the impact of soft skills towards the ability to win contracts / jobs. With a score of 4.30 (agree to strongly agree), it should be noted that the perception of the surveyed project managers suggested that this is an important aspect of competitive advantages.

### Conclusion and Recommendation:

Whether if organizational project management maturity can be relied upon as the single source of competitive advantages is not a conclusion of this study. Based on the independent sample T test as calculated by SPSS, a p-value of <0.0001 (99.99% confident) was obtained and that the results of this study to reject the null hypothesis was achieved. Therefore, this study rejected the null hypothesis $H_0$: Organizational project management maturity has no effect on competitive advantages as perceived by the project managers. Suggesting that there is a relationship between organizational project management maturity and the perceived competitive advantages by the surveyed project managers. Furthermore, all of the participants suggested that the soft skills of project management such as client relationships (with an overall average of 4.30), stakeholder management and
communications ability are also very important factors to consider when analysing the competitive advantages of an organization.

References


Organisational Culture and the Project Manager: the sponsor’s perception

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Abstract

Organisations have an ever-increasing reliance on the capabilities and competencies of the project manager. This is due to the dramatic growth in the business importance and economic contribution of project work across the economy and reinforces the importance of project management as a key business and economic factor. Despite the advances in project management practices and the profession, projects continue to have an unacceptably high failure rates. Industry and academia have responded to the high failure rates by focusing on the technocratic and rationalistic aspects of project management functionality to improve project outcomes, this strategy has resulted in little improvement in the outcome of projects. This paper is part of a doctoral study investigating the impact of the project managers’ person-environment fit from the perspective of executives and senior managers. Navigating difficult and socially complex project environments the project manager needs to be competent in both technical and interpersonal skills. The study identified that most participants placed a higher value on the project manager’s technical skills while a minority of participants recognised that a competent project manager must be aware of the organisational culture as they are engaged with the project’s stakeholder community in which the project is conducted.

Introduction

There is an ever-increasing reliance on the capabilities of project managers within organisations, often the very future of the organisations’ products, services, capabilities, organisational restructuring, and other strategic initiatives are dependent upon the skills, capabilities, and competencies of the project manager. As observed by Turner et al. (2010), almost every industry within the economy has seen a dramatic growth in project work, reinforcing the importance project management as an important business and economic factor.

Despite the substantial increase in importance and the penetration of projects into almost every aspect of business (Winter et al., 2006) and the advances in the project management profession, many research studies have shown that projects continue to fall short of their anticipated business goals. There has been only a marginal improvement in the overall success rates of projects since the issue of high failure rates was identified by the UK Industrial Society (Kippenberger, 2000) in the early 1990s. This lack of improvement was reinforced by the Standish Groups’ 1995 Chaos report (Standish_Group, 1995) and continues to be reinforced in their subsequent reports. An effective response to the high failure rates of projects is to recognise that it is not merely a project management problem. Achieving a successful project outcome is a leadership function that is shared between the project sponsor, project governance forum, and the project manager. The high failure rates underline the importance of the role of a competent project manager as both a manager and leader.

A project manager commences a project with an underlying belief that with human endeavour, a combination of a supportive sponsor, skilled resources, coupled with suitable prescriptions and process, the planned results can be achieved (Gaddis, 1997, Hamel and Prahalad, 2013). Nevertheless, due to unexpected events, poor planning, inexperience, and a variety of other reasons, many projects run overtime, over-budget, or fail to achieve the expected outcomes. In response to
the dilemma of high failure rates, industry and academia have been focused on the technocratic and rationalistic aspects of project management functionality for improved project outcomes, namely the prescriptions and process or the hard skills of managing a project (Atkinson et al., 2006, van Donk and Molloy, 2008). However, the prescriptions and process are ineffective at facilitating stakeholder “sense-making” within a project environment, failing to address many of the conflicting issues involving organisational culture. To date this approach has achieved little success in improving project success rates.

Projects operate in socially complex environments consisting of relationships and interactions between individuals and groups who hold different world views, have divergent interests, different levels of skills and competencies, and different levels of organisational power. Project environments are ‘human systems’ where a decision or action from one individual or group may affect related individuals and groups. While hard skills such as technical or domain expertise may be essential in managing a project, it is the soft skills such as tacit knowledge of the organisational culture and clients that provides the most important contribution that a project manager brings to a project (Langer et al., 2008). This is supported by Berson and Linton (2005) who observed in a study on research and development environments that the leadership behavior of a manager is closely related to work satisfaction of the employees. Crawford (2000) posits that a capable and competent project manager is a contributing factor to project success and it has been argued that the selection of a skilled project manager with recognised leadership skills is a critical determinant in the success of a project (Dvir et al., 2006, Thal Jr and Bedingfield, 2010). On the other hand, a study by Turner and Müller (2005) found no empirical evidence within the project management literature to support the proposition that the project manager’s leadership style and competence are directly related to project success.

The culture of an organisation has received a lot of attention for more than three decades due to its potential impact on organisational success. Smircich (1983) observed that there are many competing definitions of "organizational culture." identifying five categories of definitions in her literature review on organisational cultures. Pettigrew (1979) introduced the anthropological concept of organisational culture positing that concepts such as symbolism, myths, and rituals can be employed to analyse organisational behaviour. This construct is a constant theme in the various definitions of organisational culture which is typically defined as a complex set of values, beliefs, assumptions, and symbols that define the way in which a organisation conducts its business (Rossi and O’Higgins, 1980, Deal and Kennedy, 1982, Peters and Waterman, 1982).

Deal and Kennedy (1982) conducted pioneering work on the concept of organisational culture and how an organisation’s values and philosophy can guide the employee’s behaviour towards greater success. That work triggered a number of other studies to identify the nature and type of culture within organisations. Denison (1990) found that certain types of organisational culture could enhance the performance of the organisation, this was supported by Heskett and Kotter (1992) who posited that organisational culture has a long term impact on the performance of an organisation. A literature review conducted by the author into project leadership and organisational culture resulted in the conclusion that project management studies has overlooked the relationship between project leadership, organisational culture, and project performance.

Turner and Müller (2005) were commissioned by the Project Management Institute (PMI) to conduct a study into the competence and leadership styles of project managers as a project success factor. Their study concluded that in the general management literature it has been shown that an appropriate leadership style coupled with the competence and emotional intelligence of the leader delivers better business results while the project management literature largely ignores the project manager, his or her leadership style, and competence. In a later study by Müller and Turner (2006, p. 21), they strengthened their earlier observation by stating “project management literature has almost studiously ignored the contribution of the project manager, and his or her competence to the
success of their project”. Müller and Turner (2006) concluded the study by suggesting that the project manager has a leadership role in creating an effective working environment to facilitate a successful project outcome and that at different stages within a project the project manager may need to exhibit different leadership styles. This infers that the leadership style of a project manager needs to adapt to the organisational culture.

In his book “Leadership”, Burns (1978) introduced the concepts of transactional and transforming leadership styles. Bass (1985), extended the work of Burns (1978) by explaining the psychological mechanisms that underlie transforming and transactional leadership; Bass also used the term "transformational" instead of "transforming". Transactional leadership is task orientated, outcome driven, and maintains the status quo. Burns (1978) described a transactional leader as someone who is focused on the basic management process of controlling, organising, and short-term planning. Unlike the transactional leader, the transformational leader pays greater attention to interacting with followers to create organisational collectivity through a shared vision and they are aware of the organisational culture. They stimulate and motivate team members and stakeholders to come up with new ways to overcome challenges in achieving the goals. Such leaders are rather flexible in working towards the desired outcomes; change will take place when it is needed. Burns (1978) theorised that transforming and transactional leadership were mutually exclusive styles. Transactional leaders usually do not strive for cultural change or understanding, they work in the existing culture while transformational leaders try to understand the organisational culture and if necessary try to change it. Bass (1985) suggested that leadership can simultaneously display both transformational and transactional leadership.

Research context

The research is a part of a doctoral study being completed in the School of Property, Construction and Project Management at RMIT University. This doctoral study is centered on the person-environment fit attributes of a project manager. It is investigating the impact of the emotional intelligence and personality behavioural characteristics of person environment-fit associated with project manager performance and project success outcomes from the perspective of executive and senior management.

The objective of this study is to provide greater clarification of the person-fit attributes that contribute to improving project success, to assist employers, recruiters, and senior management to better understand the attributes of a project manager that best suits a particular project, and to explore whether organisations recognise the value of person-environment fit as project success criteria.

Method

The ever-increasing reliance on the project manager within Australian organisations to deliver new products, services, and implement strategic initiatives has attracted the attention of researchers interested in the human element of project management.

This research explores the project manager from the perspective of executive and senior management. It is qualitative in nature and based on postmodern social constructionist / interpretivist philosophy founded in the study of human based systems (Gergen, 1978, Gergen, 2009, Lewis et al., 2008). The research is premised on Appreciative Inquiry which is a form of participatory management and is typically seen as an approach that may drive positive personal or organisational change (Whitney and Trosten-Bloom, 2003).

The executive and senior management participants were selected through a purposive sampling approach (Miles et al., 2013) to ensure that the selected interview participants came from a broad range of industries. Purposive sampling is a technique that enables the researcher to identify
potential participants from a large parent population by virtue of their knowledge, experience, organisational position, and other significant attributes. Purposive sampling is used when the selected participants sample is fundamental to the quality of the data. This was done to reduce the opportunity of being locked into a particular context or ‘reality’, to enhance the opportunity to ‘generalise’ the study outcomes to other situations, to improve the ‘trustworthiness’ (Lincoln and Guba, 1985, Saldaña, 2015) of the data, to ensure that the key constituencies are covered, and to ensure that there is diversity across a variety of industry sectors.

The author interviewed thirty-six participants. Thirty-three of which were executives and senior business managers who act as project sponsors for projects of significance within their respective organisations. Three of the participants were from tier-one recruiter organisations who perform the ‘front-end’ candidate screening of senior project managers to the executives and senior managers’ organisations.

A semi-structured interview process was deemed to be the most appropriate means of obtaining a detailed account of the participant’s experiences as it would allow the participant the freedom to describe their experiences. The interviews followed a narrative style, which may be regarded as a conversational partnership between the researcher and the individual participant.

Results and Discussion

The interviews were conducted in a semi-structured narrative style encouraging the participants to express their perceptions and concepts of what makes a competent project manager. The resulting analysis of the interview data identified a number of ideas held by the participants that in their view describe a competent project manager, one of those attributes was that a project manager should be aware of the prevailing organisational culture. As shown in Table 2, under one third of the participants identified awareness of the organisational culture as an attribute of a competent project manager.

Table 2: Participants who addressed organisational cultural awareness as a project management competency

| Participant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cultural Awareness | x | x | x | x | x | x | x | x | x |

The participants who addressed organisational culture did so using forthright expressions such as “…it’s the cultural fit” and “…there is the cultural element … whether they will blend in”.

Organisational culture forms an integral component of the general functioning of an organisation and as observed by Zalami (2005), the culture can either facilitate or inhibit change.

Contracted project managers are the dominate source of project management expertise within the participants’ organisations. These participants recognised that with the increase of contracted project managers into their organisation that the possibility of a person-organisation misalignment between the organisational culture and the project manager increases. They recognised that their organisation is a complex social environment, with that in mind they openly acknowledged that a person-organisation misalignment can cause problems in the management and implementation of a project, may even result in the possibility of a failed project, and that a poor fit between the project manager and the organisation may result in a “cultural push-back” that blunts or even significantly alters the intended impact of the project.

A participant from an organisation whose management style is relatively “laissez faire” observed that even when care has been taken to minimise the opportunity for organisational misalignment there may still be issues between the expectations of the organisation and the project management rigor...
demanded by the project manager. In this case the misalignment is deeper and at an operational level.

This group of participants clearly understood that a competent project manager is an individual who demonstrates a mix of hard and soft skills. As one participant remarked that hard skills, “…are the ticket to the dance”. A participant pointed out that after they have established a candidate project manager as suitability ‘technically’ skilled, the participant then takes the project manager’s personality into consideration in determining whether they would be a good fit with the organisation and able to work well with the various stakeholders. To this cohort of participants, the fit between the project manager and the organisational culture was a key selection criterion, its importance was summed up by one participant when they said “…it is really important to build that relationship, to understand the culture of an organisation … I’d say it was almost 60% cultural”.

In describing the importance of cultural fit, one participant commented on their past employment experiences saying, “I thought that you had to be aggressive …if I step back I realise that I was not good at my job, I was in the wrong culture”. The participant went on to explain how they are a ‘tight’ fit to their organisation and exclaimed “I’m getting stuff done”. This approach to cultural fit was reflected across the cohort, they recognised that a competent project manager’s leadership role has two key aspects; task orientated leadership, and relationship and participative leadership. The task orientated leadership role refers to the management of the project activities while the relationship and participatory leadership role is supportive and involves the human-elements associated with the project such as delegation, empowerment, and relationship building. The cohort conjectured that a project manager who is culturally aware and engages in relationship building is positively linked to the performance of the project and hence a successful project outcome.

Figure 6 is an influence diagram that explains the organisational cultural feedback loop that the participants inferred when they speculated that cultural awareness is positively linked to performance.

A strong person-organisation fit increases the probability of project success
Project success reinforces the organisational culture and the selection of the project manager
A competent project manager can adapt to the organisational culture
A strong organisational culture influences the selection of the project manager

The participants were also pragmatic in that they recognised that in certain situations they need to insert a project manager who was a poor cultural fit, someone who would create some ‘creative abrasion’ and actively challenge the established ideas and order. This idea was best expressed by a participant who stated, “sometimes project managers, in my view, are more effective if they don’t fit the organisational culture necessarily because they’ve got a specific task to achieve”.

With over two thirds of the participants not addressing organisational culture there appears to be a clear difference in the participants’ views of the attributes that compose a competent project manager and this may be a reflection of the prevailing organisational culture within their respective organisations or their particular management style.
Many organisations support cultures that value the maintenance of the status quo and are not adaptable to change, these organisations are often lead by executives who have limited experience with change or are change adverse and as Schwartz and Davis (1981) observed, many executives are not particularly skilled or experienced at managing change and they might find even a modest project deceptively difficult. Referring to the participants and their respective organisations, the participants can be grouped into two distinct generic groups of participative and authoritarian management. This broadly aligns to McGregor’s theory X and theory Y of management where the participants who identified organisational culture as a key attribute of a competent project manager are aligned with theory Y and expressed a participative management style during the interviews, encouraging a more collaborative, trust-based relationship between the Sponsor and the project manager. According to Burns (1978) and Bass (1985) these participants could be described as transformational managers. Whereas most participants are aligned to theory X and expressed a more directive and centralised style of management and could be described as transactional managers.

The organisational culture is an important consideration when managing a project and the project manager has a role in supporting and maintaining the organisational culture. The culture plays a large role in determining whether the project environment and the organisation can work well together. A strong and supportive organisational culture emerges when there is strong unifying behaviour, values, and beliefs within the organisation. A strong culture results in consistent behaviour, reduced conflicts, and creates a healthy and respectful working environment (Kane-Urrabazo, 2006).

The project manager, in their relationship and participatory leadership role, contributes to the maintenance of the organisational culture through communicating and promoting the project’s vision and its alignment to the organisation’s vision within the project environment to influence the work behaviour and attitude of the project team.

Concluding Remarks

Project environments are difficult and complex social environments and, to a greater or lesser extent, the environment is always in a state of instability. To manage the project environment, in addition to technical skills, the project manager needs leadership skills including an awareness of the organisational cultural environment to lead the project team and stakeholders to a successful project outcome.

In a climate were contracted project managers often dominate the project expertise within an organisation, slightly less than one third of the participants identified organisational cultural awareness as an attribute of a competent project manager. These participants demonstrated a strong affinity for the association between person-organisation fit and project success, acknowledging that the individual project manager can ‘make or break’ a project, they acknowledged that interpersonal skills are key skills and actively seek project managers with strong inter-personal skills. To this minority of the participants, the project manager’s understanding of organisational culture and how to operate within different cultures is a key selection criterion and key skill for a competent project manager.

During the discussion on what makes a competent project manager, two thirds of participants overlooked organisational culture as an attribute. Several of these participants demonstrated a ‘deliberate indifference’ between person-organisational fit and the probability of project success. The indifference may be due to a ‘conforming’ behaviour, that is conforming to the dominate organisational cultural influences within their respective organisations. Several others demonstrated a lack of awareness of the concept of person-organisational fit and its potential to influence project success, these participants expressed a tendency to select ‘people’ like themselves. They employed a trait based selection process where people select people like themselves, focused on information.
that supported their position and confirmation of their views. This could be a form of ‘positive assortative behaviour’ where the individual seeks similarity on dimensions such as: age, political, and religious attitudes, education and general intelligence. It has been found to be a consistently strong predictor of relationship satisfaction.

As studies have shown a linkage between a positive organisational culture and organisational performance, I’m drawn to the conclusion that several of the participants were exercising willful ignorance on the matter of the importance of organisational culture when discussing the attributes of a competent project manager.

While the findings represent only a portion of the whole study, they provide a basis from which further research may occur in understanding the participant’s perceptions of the ‘what’ constitutes a competent project manager. A further study can be undertaken to investigate the relationship, if any, between project leadership, organisational cultural awareness, and project success.

References


