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# Challenges and competencies for project management in the Australian public service

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#### Abstract

**Purpose** – Public sector projects still fail to meet delivery expectations, and the lack of significant project management experience in the Australian public service (APS) has been identified as a contributing factor. The purpose of this paper is to investigate the importance of competencies required for delivering public sector projects, as well as challenges faced by the project managers when operating in a public context.

**Design/methodology/approach** – Qualitative semi-structured interviews were used to enlighten the social and operating construct in APS. In parallel, a quantitative survey was used to determine the relative importance of various competencies to effective project delivery.

**Findings** – The research concludes that communication, accountability, business alignment, scope and deliverables, change, and project and program orientation are the most important competencies in APS project delivery. Furthermore, there is evidence that the operating environment acts as a barrier to successful project delivery, noting that it does not let project management practice deploy its full potential for increased effectiveness and efficiency.

**Practical implications** – The research findings noted that the specific needs, values and functions of project management in the APS are not well defined, and therefore there were limited criteria against which public sector project management competencies could be designed and measured.

**Originality/value** – This empirical research contributes to the open dialogue of improving efficiency in project management within the APS context. The findings point to the conflict between the operational nature of APS agencies and their project activities, and how they struggle to define themselves as project organizations rather than lack of appreciation to individual competencies.

Keywords Project management, Barriers, Competences, Challenges, Public service organizations Paper type Research paper

## 1. Introduction

In the last 20 years, the public service has changed its approach to program delivery to respond to the increasing and evolving expectations of government and the public. Known as new public management (NPM), this changed approach borrows heavily on private sector financial and management practice, shifting away from a traditional stewardship focus toward performance based on outcomes and efficiency (Halligan, 1997). In the same way that commercial entities realize change through projects, the delivery of the key policies of Government has become projectized. In recognition of this and building on lessons learned by relevant transformation efforts in Europe (Jones, 2006; Maddock and Morgan, 1998), the Australian public service commission (APSC) added project management to the suite of skills required of public service leaders (Australian Public Service Commission, 2014a). Despite the focus on project delivery, for more than a decade and greater than \$100 billion in investment, public projects are failing to meet delivery expectations (Young and Grant, 2015; Young *et al.*, 2012). To mediate this, the APSC supports a nationally recognized qualification, BSB41513 Certificate IV in project management practice, to improve the skills



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of public servants working in project environments (Australian Public Service Commission, 2014b). In addition to training strategies, the APSC has also sought to improve capability by attracting project managers from the private sector into roles with the Australian public service (APS). However, these career project managers may still be at a disadvantage if they have little understanding or experience of the specific complexities of delivering projects in a government environment (Boyne, 2002).

Boyne (2002) identified that public and private sectors operate differently, and therefore tools and techniques must be tailored to consider the specific requirements of public sector project management. While subsequent literature has explored the need for advanced education of project managers (Thomas and Mengel, 2008), how their competency may be assessed (Bartoška *et al.*, 2012; Brière *et al.*, 2015; Wagner, 2012) and analysis of the leadership qualities which make them successful (Müller and Turner, 2010), the outputs are not tailored to a public service environment. Therefore, the need for more specifically focused research still appears to be unmet after reviewing the newer publications.

The aim of this research is to contribute in the effort of improvement of project management in the APS.

The research addresses the aim through exploring the following objectives:

- (1) investigate the challenges in conducting project management in a public context; and
- (2) evaluate the importance of public sector project management competencies as identified by current APS practitioners.

The research aspires to advance the body of knowledge regarding project management in a public service environment by capturing the current understanding of APS practitioners about the competencies required to deliver public sector projects. Others may use this information to identify gaps between current and desired specific public sector project management competency. This could lead to tailored project policy for the sector, specific educational approaches for public servants transitioning to project roles, or on-boarding which may be required to acclimatise private sector project managers to a public service environment.

### 2. Competencies and challenges in public sector project management

Competencies for public sector managers have always been under focus, especially in their relation to those used in the private sector (Hondeghem and Vandermeulen, 2000). The literature has been examined to identify competencies which are common to all project management environments, and assess if there are variations, specifications or additional technical, contextual, or behavioral competencies required for successful delivery of projects in a public setting. Transferring of practices from the private sector to the public sector came to the fore after the introduction of NPM in Australia during the mid-1990s. Critics of NPM initiatives believed that the public and private organizations were fundamentally different and therefore no business practices could be successfully transferred between them. To examine this view, Boyne (2002) collated the results of 34 separate empirical studies in management dating from 1970s to 1980s. The aim was to determine if there were statistically significant differences between public and private practice across four distinct areas: the environment (or context), goals, structures, and values (including ethics). The organizational differences and goals between the public and private sector were often unexplored, sparse, or inconsistent in these studies. Nevertheless, the findings did not support a view that the two sectors were inherently dissimilar. However, it did identify that there were significant differences in values and ethics, approaches to human resource management, and decision-making processes (Boyne, 2002, p. 118). Therefore, this suggested that any attempt to effectively apply private sector competencies to the public sector though NPM would require that processes and techniques be tuned or supplemented for successful transition.

The professional project management community supports the view that private sector practice requires adaptation to be effective in a government setting. The Project Management



Project management in the APS Institute (PMI) recognized that PMBOK did not adequately address the unique characteristics of public sector project management, by developing a government extension to the PMBOK (Project Management Institute (PMI), 2006). The extension follows the existing structure of the text but touches on the size and diversity of public projects, the underpinning legal mandates and associated responsibilities, and stewardship of the public interest. However, the government extension to PMBOK is still largely a process and technically focused project management standard for the public sector, and offers little guidance in contextual or behavioral areas, key gaps specifically highlighted by Boyne (2002).

Clarke (2010) and Kassel and Berman (2010) are among those that support the view that a tailored technical focus alone is not enough to successfully delivery projects in a public sector environment. They stress that public projects must deliver more than products or services but also public value, which is defined as "supporting the public interest, values and ethics, as well as the stewardship of public funds" (Kassel and Berman, 2010, p. 3). In the context of NPM and its later iterations, the question of who delivers public value is critical since public entities may not themselves undertake projects as set out in the PMI definition. Instead, they may deliver products and services through partnerships with the private sector but must remain ultimately accountable for the provision of public value (Kassel and Berman, 2010): to do so, they must enforce the same focus in subcontractors who may have different drivers (Boviard and Loffler, 2009). The efforts of all staff and contractors must be aligned to achieve the required public value, through individual training and competency assessment. An effective way to align the decision-making processes of individual workers is to define, train and assess to a competency typology which is based on the values, functions, and objectives of the organization (de Graaf, 2005). But Wirick (2009) asserts that this area of public project management remains so underexplored that little evidence exists to support the development of a typology which could drive such alignment. Van Der Waldt (2011) agrees by highlighting how the lack of clearly defined public sector project management competencies has inhibited the development of tailored training programs, and how this has ultimately frustrated the ability of the sector to influence and align decision making.

Wagner (2012) points out that such a competency typology must be based on an understanding of the functions government performs to achieve its mission, its supporting systems, the assets that are employed in that process and ultimately the existing organizational values. However, there is little research or literature of public sector values. Van Der Wal et al. (2008) found that few and inconsistent definitions of organizational values were offered. Additionally, they identified that values were arbitrarily assigned to a given sector based on assumptions or ideological views rather than being based on empirical evidence. To address this gap, Van Der Wal et al. (2008) undertook an extensive survey of managers in public and private organizations to test which organizational values were held in common, and if it were possible to identify a distinct set that applied to the public service alone. They established a mixed set of 20 public, private, and common organizational values that rated most highly from amongst the 500 identified in the literature review. More than 1,200 respondents from both sectors were asked to rank the five most important values considered when decisions were made in their organizations. It was found that the organizational values between the private and government sectors were fundamentally different. Among the top prioritized values for the public sector were lawfulness, incorruptibility, and impartiality (Van Der Wal et al., 2008, p. 476), which closely aligns to the current APS values of impartiality, ethical action, accountability (including lawfulness) and respectful committed service. The top prioritized values for the private sector included profitability and innovativeness. While the reasons were not explained in the research, one interesting result was that profitability and innovativeness were not prioritized in the public sector responses, despite being key tenants of NPM.



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As noted by Boyne (2002), the public and private sectors perform similar functions but they vary in their approaches. This suggests that an existing and accepted project management competency standard may need to be adapted and supplemented to meet the requirements of public sector project management delivery.

On the same line of thought, Jałocha *et al.* (2014) concluded that, in addition to general management skills, public sector managers need to exhibit competency in areas of integrity, accountability, public service ethos, and change. Furthermore, public sector managers require an understanding of the mission of public good, an ability to manage political influence, and be aware of laws and guidelines. A specific feature of public sector management was the ability to manage and overcome the barriers of a more diverse stakeholder set, and undertake community building through collaborations and coalitions (Jałocha *et al.*, 2014, p. 253). Their analysis showed that public sector management.

Research and literature on public project management competencies remains thin. Further, a lack of government organizational frameworks or agreement on key public sector competencies for project management means that the need for tailored and appropriate training approaches remains unsatisfied. Thus, there is a need for empirical research on the improvement of the education of APS staff in managerial aspects of the delivery of public sector projects.

#### 3. Research method

The research protocol developed, described the research methods to be employed as well as the way in which they would be applied to the current research. The research protocol as presented hereafter, was approved by the researchers' organization ethics team. The ethics approval purpose is to make sure that the ethics is aligned to the Australian Code for the Responsible Conduct of Research.

To map the existing challenges and competencies required for effective project management in the APS, the research employed mixed methods. Qualitative semi-structured interviews formed part of an inductive approach to understanding the social and operating construct, which concluded with an affinity map. In parallel, a quantitative survey was used to determine the relative importance of various competencies to effective project delivery.

To develop both the interview and survey tools, the results of the literature review were compared with the ICB 3.0 (International Project Management Association, 2006) as well as current and publicly available Australian Commonwealth government policy documents, findings and reports that outlined the required project management competencies for APS staff. These inputs directed the development of an interview guide and survey tool that collected the views about the operating context and the importance of various competencies from the perspective of current APS project management practitioners.

The participant group was made up of 45 project workers who were employed full, part time or as contractors within the APS. This cohort was sought from the Commonwealth Project, Programme and Portfolio Management Maturity Model community of practice, which includes public service project management practitioners from across all federal government agencies, as well as members of the Australian Institute of Project Management registered as working within a federal government agency.

The Voice of the Customer approach to semi-structured interviews was used to conduct data collection (Burchill and Brodie, 2005). The process began with the construction of an interview matrix to ensure adequate coverage and perspectives were included to limit gaps in data which would result in incomplete or misleading problem analysis.

An interview guide was developed, including open-ended questions that explored positive, negative and change based on personal experience. This approach offered the



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strongest authentic data for problem exploration, and the structure meant that responses were easily probed during the interview. A transcript from each interview was prepared, reviewed by the interviewee, and a final version was agreed for use in the research. Before processing, all identifying factors were removed from the responses to preserve the confidentiality of participants. Each text was deidentified with an interview code, and then decomposed into multiple images of use and "voices," or desired capabilities. Individual images or voices were transcribed onto cards and marked with an interview code and unique reference number for complete transparency and traceability. Cards from all interviews were combined without prejudice to develop affinity diagrams which identified larger themes and the relationships between these concepts.

Participants from the target group were invited to complete an online survey by following a link from a website or e-mail; responses were collected online, and were not individually identifiable. The survey was structured based on a Likert scale so that participants chose the importance rating most closely aligned to their own experience for each question.

All records containing personal information remain confidential as per the ethics considerations for the research protocol.

#### 3.1 Semi-structured Interviews

Semi-structured interviews were undertaken to seek information about the competencies required to operate projects in the public sector from practitioners with both private and public sector experience. They compared and contrasted their experiences across sectors through a framework of common open-ended questions which offered the flexibility to probe further and let concepts and theories develop as they unfolded (Bryman, 2012, p. 470).

Individual interviews were arranged with five project managers, and took approximately one hour each. Interviewees were asked for the same basic demographic information as was collected in the questionnaire, and then spoke about the technical, behavioral or contextual competencies they consider essential for successful management of projects in the public sector through personal stories and examples.

Following introductions, each interview was taped to aid in the preparation of a verbatim transcript, with care taken throughout to avoid any identifying details. A written transcript was prepared from each session, with the identities of the participant codified and any specific detail removed to protect participants' anonymity.

The participants reviewed and approved the written transcripts, which constituted data cleansing and preparation, resulting in data ready for use. Each of the approved transcripts was deconstructed into "images," or written descriptions of situations experienced by interviewees that illustrate a precise idea. Each "image" was given an associated interview code for complete traceability and transparency back to the research and transferred to a lower level card (image). Where there was more than one "image" describing the same idea, the strongest was selected and incorporated for use in later affinity mapping.

The objective of the affinity mapping activity was to establish what challenges project managers or public servants face when undertaking projects in a public context, and the concepts associated with this process are presented in Figure 1.

The individually coded cards that represent single images were combined and rearranged into small natural groupings, describing a common idea (Burchill and Brodie, 2005). A sentence was written to capture the specific relationship between the 2-3 "images" that made up the grouping, resulting in a medium level (main image) statement. Occasionally, single cards sufficiently captured an idea and could stand alone as main images. Medium level (main image) statements and single cards were themselves grouped and labeled, resulting in higher level statements (affinities).



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At the conclusion of the process, the higher level affinity groups labels were arranged and arrows were used to describe the directions of influence and interactions between them. Having identified broader themes and statements through affinity and abstraction (Burchill and Brodie, 2005, p. 256), the research drew conclusions and established an emerging theory about the effect of the operating context on the efficacy of project management practice in the APS.

#### 3.2 Survey

Participants were invited from the target group to voluntarily complete a 20 to 30 minute online survey, resulting in 40 completed questionnaires. Since the responses were collected online with no involvement from the researcher, the responses were not individually identifiable. The questionnaire began with seven general demographic questions on gender, age range, employment status, the size of the Commonwealth agency in which the participant worked, the category of their job role, their broad level of training, and years of experience in project management. They were also asked to review a list of 59 competencies and identify the relative importance of each to successful delivery of projects in the APS. The competency section was structured based on a five-point Likert scale so that participants chose the importance rating most closely aligned to their own experience for each question.

The Likert responses to each competency were converted to numeric values to test if there were any statistically significant trends which would influence the design or tailoring of public sector specific project management education.

#### 4. Research findings

#### 4.1 Understanding the social and operating construct in the APS

Five project management practitioners were interviewed who had experience in both private sector and APS projects, to address the research objective of "investigating the challenges in conducting project management in a public context."

In total, 89 unique "images" (i.e. comments that represent a distinctive idea or position) were captured from the five transcripts, and were subsequently grouped into twelve main



IJPSM affinities as in Figure 2. Analysis of the affinity map found that the standard operating procedures and environment within the APS sub-optimize the effectiveness and efficiency of project management practice, and restrain it from achieving its full potential in delivering desired outcomes. The main images under each affinity are summarized in Table I.

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### 4.2 Competencies importance to effective project delivery

Forty current project management practitioners in the public sector responded to a survey asking them to evaluate the importance of 59 public sector project management competencies required for successful project delivery in the APS.

Based on demographic results, APS project management staff that participated in the survey were relatively evenly distributed across all years of experience groupings (Figure 3). All survey respondents have had some formal or informal project management training. Out of 40 respondents, 87.5 percent of APS project practitioners have a recognized academic qualification or certification in project management, with 35 percent of the total survey group having attained specialized university-level qualifications.

Survey data concluded that increased project manager age was loosely but statistically significantly correlated with increased project manager years of experience (r = 0.402,  $p \leq 0.010$ ). This suggests that current APS project management practitioners make a sustained commitment to working in the discipline throughout their careers. The combined set of 59 competencies, drawn from both the ICB 3.0 and public administration skill sets, were analyzed against each of the key variables: gender, age group, employment status, agency size, role, educational achievement, and years of experience. However, one-way ANOVA testing yielded no statistically significant results. The high level of specialist education across the survey group may have a moderating effect, resulting in the observed consistency of responses to competencies across all tested variables.

All the competencies achieved means higher than 3.0 on a five-point Likert scale (refer to Table AI). In total, 25 of the 59 competencies achieved a response mean higher than 4.0.

Of the competencies achieving a mean greater than 4.0, seven also achieved a median of 4.5 or higher (refer to Table AI). This suggests that communication, accountability, business



No.	Affinity	Main images	Project management		
1	The public service culture and structure is not suitable for the project management approach	Project process maturity is low in the public sector Public servants do not always recognize the value of project management The public service has limited exposure to project	in the APS		
2	The public service uses proxies to deliver process structure to link strategies to project objectives	management practice Success measures not adequately defined Lack of clearly defined objectives leads to misdirected efforts Lack of understanding of the importance of planning	293		
3	Operating practice undermines project management efficiency	phase Consultants often undertake a key role Inflexible public service processes Understanding local operating practice is core to the ability to deliver projects Punitive consequences for circumventing operating			
4	Fear of being unable to justify choices in public stewardship creates a risk averse culture which significantly slows the decision-making process	process Decision making in the public sector is impacted by a "fear of the front page" The high level of accountability associated with public stewardship results in deferred or delayed			
5	Significant skill is required to negotiate a path through the proliferation of personal perspectives to create a shared view that achieves the project objectives without position authority	decisions Difficulty in motivating staff Poorly defined outcomes leave considerable room for interpretation about what deliverables are required Change resistance culture Strong alignment between personal values of staff and			
6	The lack of prioritized objectives makes it difficult to determine the chain of activities that optimize public value	Objectives focused on public value, which may or may not be measured economically Lack of understanding about how individual outputs contribute to end value The process for prioritizing effort toward activities			
7	Strong hierarchy inhibits quick access to information and communication	that maximize end value is unclear Communication is limited as "information is used as currency" The hierarchical nature of public organizations restricts horizontal information flow It is important to respect the authority of formal information channels when seeking or sharing			
8	Diversity of stakeholders and procedures make public projects more complex	Information Very significant differences in operating practices between public and private sectors Stakeholders in public sector projects are more			
9	Current accountability mechanisms do not help managers significantly to manage performance	Limited consequences for poor performance Little consequence for failing to commit to project			
10	Resource allocation is done on a reactive basis	Outcomes Ongoing conflict between operational functions and project delivery Little visibility or understanding of resource capacity Struggle to allocate resources between operations and projects			
11	Inability to rephase government allocations across financial years	Competition for finite funds Funding practice is driven by government's annual	Table I.		
12	Private sector's tools need alignment before used on public projects	Project management business qualifications are not enough Basic project management methodologies should be tuned to the public sector operating environment	affinities related to public sector project management challenges		





alignment, scope and deliverables, change, project orientation, and program orientation were particularly important to respondents, with 50 percent of survey participants rating these competencies 5.0 on a five-point Likert scale.

The relatively high means and medians for ICB 3.0 competencies offer support that they are valid and needed in the public sector project management context. However, several public administration competencies were also rated equally highly, suggesting that these areas of expertise are just as essential. Therefore, project management competencies to describe the full set of skills needed to successfully deliver projects in the APS.

#### 5. Results and discussion

Participants in the study confirm Boyne's (2002) earlier research that while public sector and private sector environments perform similar functions, they are dissimilar in their approaches. Specifically, external consultants or project managers entering the APS find an environment "more different than similar" (interviewee response) to their experience of the private sector. While they can "draw on the fundamentals [...] there is tuning to be done" (interviewee response) to apply those approaches effectively in the public service. This supports Gomes *et al.* (2008) who found that although Portuguese project managers in the public sector showed familiarity with the processes of effective project management practices, they highlighted the specific nature of public sector operational systems and their influence on their use.

Specific differences were observed in this research between public and private sector practice in the areas of accountability, communication, finance, procedures, stakeholder management and decision making, and confirm the need for tailored approaches and thus education to manage these differences.

Supplemented project methodologies, such as PMI's government extension to the PMBOK (PMI, 2006), offer some direction about how practice differs between government projects, but they do not fully address the requirement for specific contextual tailoring. This research shows that unless project management methodology is customized to and integrated with ongoing operating practice and organization values, the environment overwhelms the individual efforts of project management practitioners. This results in sub-optimal project outcomes which directly undermine the confidence in both the staff themselves and project management as a discipline.

The research also sought to evaluate the relative importance of public sector project management competencies as identified by current APS practitioners. Specifically, the survey tested for any competency gaps in ICB 3.0 (International Project Management Association, 2006) by supplementing the standard with public sector project manager



competencies identified by Jałocha *et al.*'s (2014) desktop study. Though the research findings from the survey cannot be regarded conclusive, it provides partial validation of the importance and relevance of the competencies as set out in ICB 3.0 (International Project Management Association, 2006) standard to the public sector. However, the relatively high ranking of public administration competencies by APS project management practitioners lends support to the view that formal standards must be supplemented with specialist competencies to address the specific challenges of this context (Jałocha *et al.*, 2014).

In addition to technical and contextual competence, the research also strongly supported the need for high levels of behavioral competency to achieve project management success in the APS. Affinity groups five and nine described the public sector as a low-accountability environment where there is considerable freedom for staff to interpret objectives, select and choose how they deliver their work. These conditions require project managers to have particularly well developed levels of behavioral competency, or emotional intelligence, to negotiate past personal choice to create alignment and achieve project objectives without position authority. The criticality of these soft skills to project success supports Clarke's (2010) earlier findings that higher emotional intelligence, or behavioral competencies, results in more effective project delivery.

The use of project management consultants and proxies to deliver public projects was revealed in affinity group two, and showed that proxies and contractors are engaged for their expertise and occasionally to bridge and overcome relatively low-project management practice maturity. Many projects are delivered through such partnerships, but Kassel and Berman (2010) highlight that government remains ultimately accountable for public value. This is achieved through the effective management and direction of contractor effort, including aligning their value sets to those of the public sector (Van Der Wal *et al.*, 2008). The results from this study describe a critical weakness across these areas, noting the APS often does not set the tone of contract relationships, but instead relies on contractors to help shape them. This often results in poorly defined objectives, and since little direction is provided to proxies, leads to off-specification work and misdirected efforts which jeopardize project outcomes: "after a four-month engagement, we were doing the wrong thing" (interviewee response).

Further, the values of the APS are often not understood or shared by proxies, who often "come into an environment whose culture and values they don't understand or share" (interviewee response). However, there is little observed formal orientation offered to speed their acclimatization. Potential behaviors such as creating dependency or seeking to expand their presence that runs contrary to the APS needs and values are rarely directly managed. While the intent of employing contractors is to supplement capacity to deliver public value, failing to orient and acclimatize them to the public service operating environment jeopardizes this aim.

The strongest finding from the research was how clearly current APS project managers identified the operating environment as a barrier to successful project delivery in the public service, noting that it does not let project management practice deploy its full potential for increased effectiveness and efficiency. For example, strong hierarchies mean that "communication has to go up and down the (hierarchical) chain" (interviewee response) frustrating collaboration. Further, Wagner (2012) noted that organizational competency is a precondition for the development of personal competencies as these typologies must be based on the specific needs, values, and functions of a given organization (Van Der Waldt, 2011; Wirick, 2009). However, the research shows the conflict between the operational nature of APS agencies and their project activities, and how they struggle to define themselves as project organizations. The confusion and tension around this role clarity results in over commitment which negatively impacts outcomes. An optimistic "magic pudding resourcing model (is applied) [...] where you keep taking and it never gets smaller" (interviewee response),



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and many areas operate at "more than 150% capacity" (interviewee response). Inability to balance operational and project requirements systemically illustrates that conditions of organizational competency have not yet been met. The strong focus on building individual project manager competencies may act as a distraction from the underlying issue of organizational competency, which was observed in the affinity map to have more direct and negative impact on project delivery.

#### 6. Conclusions

Despite significant investment over a decade, public sector projects have failed to meet delivery expectations, and the lack of significant project management experience in the APS has been identified as a contributing factor. The Commonwealth government has sought to address these gaps and improve future outcomes by increasing project management competency in the APS through training.

This research explored the importance of various competencies required for delivery of public sector projects as well as challenges faced by the project managers when operating in a public context.

Both Boyne (2002) and Gomes *et al.* (2008) identified that while project management principles are generally the same between the public and private sectors, existing operational practice significantly impacts their application. The results of this research strongly confirm this view, noting the largest challenges identified as barriers by project managers in the APS are the operating practices and culture, which deoptimize project management practice.

Wagner (2012) notes that organizations must have clarity about their roles, functions, and values as a critical input before developing a competency set. However, the operational emphasis, and therefore culture, structures, and processes of the APS are tuned for service delivery. This outlook is often in opposition with a project delivery focus, and agencies may struggle to define their own needs and requirements in this area. The effect of this lack of organizational competency in project management means that the supporting systems and practices are often absent or ill-defined, and the operating environment overwhelms the efforts of individual project managers even if they attempt to tailor their tools and techniques. In a nutshell, it is concluded here that until the APS achieves to resolve the tension between its operational and project roles, any efforts to define required competencies may be premature; focus may be better placed on systemic clarification.

While APS sector project managers rated all competencies relatively highly, emphasis was placed on communication, accountability, business alignment, scope and deliverables, change, and project and program orientation. These competencies corresponded to specific challenges in the operating environment identified through the interview process. The relative importance placed on these competencies by APS project management practitioners in the survey may reflect areas that are most challenging when delivering projects, or areas where they observe a need for improved organizational practice.

This study has offered insight into how project management operates in the APS, but because of the approach, has some limitations. The cohort that participated in the research was self-selected from the membership of professional project management and peer groups, and was already predisposed to be highly engaged and thoughtful about this topic. Interviewing and surveying APS staff who are not members of such networks and societies but act in project roles may confirm if the views and experiences represented here are broadly representative of all project managers in a public setting.

The research findings noted that the specific needs, values, and functions of project management in the APS are not well defined, and therefore there were limited criteria against which public sector project management competencies could be designed and measured. Therefore, it may not be possible to establish the definitive composition of a



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public sector project management competency typology for the APS until organizational requirements are further advanced. Further opportunities for research include the definition of the operating model for project management in the APS, with a particular focus on how project management should smoothly intersect with the operational environment. There is also scope to take the PMBOK (PMI, 2006) work further, to provide specific detailed guidance about how standard project management practices should be tuned to work within the constraints of the public system.

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# Appendix

المتسارات

Project management in the APS

Survey ranking	Competency name	Competency Source Type		п	Statistica Median	ıl analys Mean	sis SD		
1	Communication	ICD 2.0		00	5.00	4.50	0.077	000	
1	Communication	ICB 3.0		30	5.00	4.56	0.877	299	
2	Accountability Puginggo plignment	ICP 20	D C	30 25	5.00	4.44	0.909		
3	Soons and deliverenties			30	5.00	4.34	0.838		
4	Scope and deriverables			30	5.00	4.28	1.005		
18	Change Desired entertien	ICD 3.0		30	4.50	4.08	1.105		
50	Project orientation	ICD 3.0	C	30	4.50	3.01	1.070		
54 5	Program orientation	ICD 3.0		30	4.50	3.33	1.000		
Э С	Collaboration	ICD 3.0 DCDM		30 26	4.00	4.20	0.900		
0	Conaboration Deguite orientation	LCD 20		20	4.00	4.22	0.000		
0	Control and reporting	ICD 3.0	D T	20	4.00	4.22	0.090		
0	Drobity and integrity	DCD 3.0	D I	20	4.00	4.19	0.920		
9	Project ergenization	LCD 20	D T	20	4.00	4.17	1.000		
10	Project of gamzation		T T	20	4.00	4.17	1.000		
11	Fibble Fibble	ICD 3.0	D I	20	4.00	4.14	0.944		
12	Ethics		D C	30	4.00	4.14	0.901		
13	Finance			30	4.00	4.14	0.931		
14	Leadership	ICB 3.0	Б	30	4.00	4.14	0.961		
15	Project requirements and objectives	ICB 3.0		30	4.00	4.14	1.046		
10	1 eamwork	ICB 3.0		30	4.00	4.14	0.990		
1/	Resources	ICB 3.0		30	4.00	4.11	0.950		
19	Engagement	ICB 3.0	В	30	4.00	4.08	0.906		
20	Negotiation	ICB 3.0	Б	30	4.00	4.08	0.937		
21	Startup Desision melling	ICB 3.0		30	4.00	4.08	1.052		
22	Decision making	PSPM	Б	30	4.00	4.00	0.955		
23	Time and Phases	ICB 3.0		30	4.00	4.03	1.055		
24	Health security safety environment	ICB 3.0		30	4.00	4.00	1.042		
25	Project structures	ICB 3.0	I D	30	4.00	4.00	1.121		
26	Efficiency	ICB 3.0	В	30	4.00	3.97	1.082		
27	Procurement and contract management	ICB 3.0	I D	30	4.00	3.97	1.082		
28	Reliability	ICB 3.0	В	30	4.00	3.97	1.055		
29	Interested parties	ICB 3.0	I	30	4.00	3.92	1.079		
30	Quality	ICB 3.0	I	30	4.00	3.89	1.008		
31	Risk and opportunity	ICB 3.0	I	35	4.00	3.89	1.078		
32	Closure Democrate comparison tion	ICB 3.0		30	4.00	3.80	1.240		
33 24	Permanent organization			30	4.00	3.80	1.150		
34	Openness Conflict and activity	ICB 3.0	Б	30	4.00	3.83	0.971		
30 20		DCDM	D C	30	4.00	3.81	1.117		
30 27	Government policy	PSPM ICD 20		30	4.00	3.81	0.0051		
37	values appreciation		D	30	4.00	3.81	0.951		
38 20	Self-control Dedulia a duration traction	DCDM	D	30	4.00	3.80	1.079		
39	Public administration	DCDM		30	4.00	3.10	0.989		
40	Public standing	DCDM	C	30	4.00	3.78	0.989		
41	Political acumen	PSPM ICD 20	C	30	4.00	3.73	1.100	Table AI	
4Z	Systems products and Technology	DCDM	C	30	4.00	3.73	0.907	Ranked survey results	
43	Fai mership and coalition	LCD 30	C	30 96	4.00	3.1Z 2.79	0.974	for "competencies	
44	Personnel management	ICD 3.0	C	30 96	4.00	3.12	1,111	required for effective	
40	Formation and documentation	ICD 3.0		30 25	4.00	3.09	0.980	project management	
40	Information and documentation	ICB 20	C I	25 25	4.00	3.09	1.100	in the Australian	
41	Legai	ICD 3.0	U	50	4.00	5.09	0.903	public service", noting competency source	

(continued)

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and type

111 2111			Compe	Competency			Statistical analysis		
30,3	Survey ranking	Competency name	Source	Type	п	Median	Mean	SD	
	48	Policy deployment	PSPM	С	36	4.00	3.67	0.894	
	49	PM success	ICB 3.0	Т	36	4.00	3.64	1.125	
	51	Long range thinking	PSPM	В	36	4.00	3.56	1.132	
•	52	P3 implementation	ICB 3.0	С	36	4.00	3.56	1.107	
300	53	Relaxation	ICB 3.0	В	36	4.00	3.56	1.157	
	55	Public consultation	PSPM	Т	36	4.00	3.53	1.158	
	57	Creativity	ICB 3.0	В	36	4.00	3.40	1.090	
	56	Public good	PSPM	С	36	3.00	3.50	1.056	
	58	Diversity	PSPM	С	36	3.00	0.34	1.225	
	59	Public ethos	PSPM	С	35	3.00	3.23	1.031	
	Notes: ICB 3.0,	IPMA competence baseline for project r	managers ve	rsion 3.	0; PS	PM, public	c sector	project	
Table AI	D haharianal aa	tency set based on Jalocha et al. (201	(4) and own	i resear	cn;	I, technic	ai comp	etency;	

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