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Uncovering the Impact of Organisational Culture Types on the Willingness to Share Knowledge between Projects

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Abstract

Current literature has established that organisational culture influences knowledge management efforts; however, it is only recently that research on project management has focused its interest on organisational culture in the context of knowledge sharing and some preliminary studies have been conducted. In response, this paper adds a significant contribution by providing rich empirical evidence of the relationships between culture and the willingness to share knowledge, demonstrating which cultural values are more and which are less likely to improve inter-project knowledge sharing behaviours. The use of interviews and the Organisational Culture Assessment Instrument (OCAI) (Cameron & Quinn, 2005) in the cross-case examination of culture in four participating cases has resulted in rich empirical contributions. Furthermore, this paper adds to the project management literature by introducing the Competing Values Framework (CVF) of Cameron and Quinn (2005) to evaluate knowledge sharing in the inter-project context.

Keywords: Competing Values Framework; inter-project knowledge sharing; organisational culture

Introduction

Research and practice in the project management field have revealed the need for knowledge sharing within and between projects and, for over a decade, studies have been conducted in this area (Bower & Walker, 2007; Kotnour, 1999; Schindler & Eppler, 2003; Walker, Wilson, & Srikanathan, 2004). Projects have been identified as an important locus for organisational learning (Newell, Goussevskaia, Swan, Bresnen, & Obembe, 2008). Lessons from past projects can offer valuable knowledge due to capturing unexpected actions, unique approaches, or problem experiences during project phases. Applying knowledge from past projects helps to avoid unnecessary reinventions that are costly and time consuming (Carrillo, 2005; Walker, et al., 2004).

Nevertheless, although the importance of knowledge sharing within project-based organisations (PBOs) has been recognised, the knowledge sharing between projects takes place to only a limited extent; it is generally poor and actually results in knowledge wastage (Eskerod & Skriver, 2007; Newell, Bresnen, Edelman, Scarbrough, & Swan, 2006; Turner, Keegan, & Crawford, 2000). PBOs still face serious knowledge needs in their projects, which could have been overcome by more effective inter-project knowledge sharing. Instead, projects tend to repeat the same mistakes because they do not learn from each other (Landaeta, 2008), which results in unnecessary reinventions, errors, and time overruns.

Current studies on inter-project knowledge sharing focus primarily on mechanisms such as lessons learned and post project reviews as the source of knowledge for future projects (Kotnour, 1999; Purdon, 2008; Sharif, Zakaria, Ching, & Fung, 2005; Turner, et al., 2000). Some preliminary research has been carried out on the roles of the PMO (Dai & Wells, 2004; Souza & Evaristo, 2006; Liu & Yetton, 2007; Walker & Christenson, 2005), and Communities of Practice (Fong & Wong, 2009; Love, Edwards, Love, & Irani, 2011); however, it is not just the mechanisms that are important for effective knowledge sharing and successful project delivery. For example, Ndoni and Elhag (2010) suggest that collaborative relationships can help to achieve effective knowledge management and enhance project performance. Previous studies have revealed that organisational culture has a significant influence on project performance and the long-term success of organisations (Yazici, 2010). Only recently has the research on project management focused its interest on organisational culture in the inter-project knowledge sharing context, and some preliminary theoretical (Ajmal & Koskinen, 2008) and empirical (Eskerod & Skriver, 2007) studies have been conducted. The overall view of these studies is that organisational culture is still largely under-examined in project management research (Yazici, 2010). Based on that view, this research aims to explore how culture influences inter-project knowledge sharing behaviours and investigates which cultural values are more likely to drive this knowledge sharing to occur.

Organisational Culture

An organisation's culture consists of practices, symbols, values, and assumptions that the members of the organisation share with regard to appropriate behaviour (Schein, 1990). Literature provides evidence that organisational culture influences knowledge sharing behaviour (De Long & Fahey, 2000; Friesl, Sackmann, & Kremser, 2011; Gray & Densten,

2005; Issa & Haddad, 2008; Keskin, Akgun, Gonsel, & Imamoglu, 2005) by shaping patterns and qualities of interactions needed to leverage knowledge among individuals (2000).

Furthermore, research has found that organisational structure has an impact on knowledge sharing approaches (Friesl, et al., 2011). For example, De Long and Fahey (2000) argue that different cultural fundamentals influence knowledge sharing on the horizontal level and are different on the vertical level of interactions. PBOs, in contrast to functionally driven organisations, are more horizontal in their structure, and projects operate on similar hierarchical levels. Therefore, knowledge between projects is also typically transferred horizontally. Accordingly, De Long and Fahey (2000) distinguished three cultural fundamentals influencing knowledge sharing on the horizontal level: (1) the volume of interaction, (2) level of collaboration and collective responsibility, and (3) orientation to seek out expertise or knowledge. For example, culture determines the volume of formal and informal interactions, thus leading to different knowledge sharing patterns (De Long & Fahey, 2000). Also, collaboration and collective responsibility lead employees to going that extra mile to avoid letting colleagues down. Finally, cultures that reward individuals for sharing behaviours and encourage the use of existing knowledge create different knowledge sharing patterns than cultures that do not promote such activities (De Long & Fahey, 2000).

The view of culture in a project management context is rather complex, because a project involves a number of experts from various fields, backgrounds, and professions, who typically have their own cultures and ways of working, which are not necessarily in harmony with one another or with the prevailing culture of the whole project (Ajmal & Koskinen, 2008). These cultural differences can either be a source of creativity and enlarged perspectives or they can be a source of difficulties and miscommunication (Anbari, et al., 2010). It is therefore important that PBOs are aware of the type of culture, or cultures, within which projects operate to forecast potential consequences of the cultural-related behaviours on the project performance.

In relation to the effect of organisational culture on knowledge sharing in project environments, Eskerod and Skriver (2007) suggest that organisational subcultures can explain the reluctance found in knowledge transfer activities between project managers. Their research (ibid, 2007) revealed that organising by projects restrains knowledge transfer because a project orientation facilitates knowledge silos and 'lonely cowboys', who do not rely heavily on colleagues (Eskerod & Skriver, 2007). Fong and Kwok (2009) provide a more holistic view, suggesting that in a project management environment, different organisational

culture types may require different knowledge management strategies, and implies that identifying this need is an important step towards developing the theory, but much research is still needed in this area.

Competing Values Framework

From a range of different cultural frameworks, including those proposed by Cameron and Quinn (2005), Denison and Spreitzer (1991), Hofstede (1984), and Schein (1990), the Competing Values Framework (CVF) proposed by Cameron and Quinn (2005) appeared the most suitable for investigating culture in the inter-project knowledge sharing context. CVF provides a holistic view of culture, it was validated in the Australian context (Lamond, 2003), and investigated from the knowledge management perspective (Fong & Kwok, 2009; Gray & Densten, 2005; Keskin, et al., 2005).

The CVF allows assessment of a company’s dominant culture across six key characteristics of overall corporate culture: Dominant Characteristics, Organisational Leadership, Management of Employees, Organisational Glue, Strategic Emphasis, and Criteria of Success. The CVF explains the complex nature of culture according to two dimensions: internal/external focus and stability/flexibility structure. These two dimensions create four quadrants, which represent four culture types: *Clan*, *Adhocracy*, *Hierarchy*, and *Marketing*. Table 1 shows the attributes characterising the four cultural types, according to Cameron and Quinn (2005).

Table 1: Attributes of Clan, Adhocracy, Hierarchy, and Market cultures.

CLAN	ADHOCRACY
<ul style="list-style-type: none"> Mentoring Extended family, nurturing Participation Teamwork Employee Involvement Corporate commitment to employees Rewards based on teams not individuals Participation Commitment, loyalty Informality Job rotation Consensus 	<ul style="list-style-type: none"> Dynamic Entrepreneurial Risk-taking Values innovation Temporary structure Innovative product Rapid change Power is not centralised, it flows from individual to individual or team to team Creativity, innovation Sometimes exist in large organisations that have dominant culture of a different type

HIERARCHY	MARKET
Structure Control Coordination Efficiency Stability Procedures govern what people do Stability Formal rules and policies	Result oriented Gets job done Values competition and achievement Focus on transaction with external suppliers, customers, contractors Productivity Tough and demanding leaders Emphasis on winning Success is defined in terms of market share and penetration

Organisations are seldom characterised by a single cultural type; they tend to develop a dominant culture over time as they adapt and respond to the challenges and changes in the surrounding environment (Cameron & Quinn, 2005). *Clan culture* has an emphasis on developing shared understanding and commitment instead of a formalised communication process. Typical characteristics of Clan cultures are teamwork and employee involvement programs, whereas the core values represent participation, loyalty, and commitment (Cameron & Quinn, 2005). *Adhocracy culture*, referred to as the open systems perspective, gives importance to flexibility and external competitive position. It emphasises creativeness, entrepreneurship, and adaptability (Keskin, et al., 2005). *Hierarchy culture* is characterised by predictability and an internal focus. The emphasis is on information management, documentation, stability, routines, centralisation, continuity, and control (Keskin, et al., 2005). In a Hierarchy culture, members are bonded together through internal controls and are governed by procedures. The principles of stability, formal rules, and policies hold the organisation together (Cameron & Quinn, 2005). *Market culture* is referred to as the rational goal perspective and is characterised by stability and an external focus (Keskin, et al., 2005). It is oriented towards the external environment, instead of internal affairs (Cameron & Quinn, 2005). Market type organisations value competitiveness, productivity, goal clarity, efficiency, and accomplishment (Cameron & Quinn, 2005; Gray & Densten, 2005), bounding members together through goal orientation and competition.

Gray and Densten (2005) proposed an Organisational Knowledge Management Model that integrates a knowledge creation and conversion model (Nonaka & Takeuchi, 1995) with the Competing Values Framework (Cameron & Quinn, 2005) as a means to understanding how organisational culture drives or enhances the development of organisational knowledge.

Following this approach, different dominant values may therefore lead to different knowledge sharing behaviours.

Based on the literature reviewed above, it can be stated that the current research established that culture influences knowledge efforts (Alavi, Kayworth, & Leidner, 2006; De Long & Fahey, 2000; Gray & Densten, 2005; Issa & Haddad, 2008; Sveiby & Simons, 2002), and it is one of the most important factors that influences knowledge sharing behaviours (Ajmal & Koskinen, 2008; Eskerod & Skriver, 2007; Issa & Haddad, 2008). Nevertheless, only recently has the research on project management focused its interest on culture in the inter-project knowledge sharing context, and to date only a few preliminary theoretical (Ajmal & Koskinen, 2008) and empirical (Eskerod & Skriver, 2007) studies have been conducted. Furthermore, the awareness of how culture influences knowledge sharing behaviours in inter-project knowledge sharing context still appears to be limited. The complexity and context dependency of these two concepts—culture and knowledge sharing—mean that there is still limited empirical evidence establishing and stating the relationships between them. Therefore, this research aims to explore how culture influences inter-project knowledge sharing behaviours, and investigate which cultural values are more likely to drive this knowledge sharing to occur in an inter-project context.

Research Method

The case study research method was used to investigate how different cultural types shape knowledge sharing behaviours in inter-project context. The reason for applying case studies in this research was the contemporary and pre-pragmatic nature of this research, in which the two investigated concepts of culture and knowledge sharing behaviours are still too complex to be fully understood and well defined. Furthermore, other researchers recommend examining culture in its organisational context, because this approach provides valuable insights into the nature of this complex phenomenon (e.g., Alavi, et al., 2006; Eskerod & Skriver, 2007; Sackmann, 1991). The use of multiple case studies provided the possibility to compare data from a number of related cases and generate more compelling results, offering greater potential for explanation, a stronger base for theory building (Yin, 2009, pp 54–60) and a broader exploration of theoretical elaboration (Eisenhardt & Graebner, 2007).

Four large PBOs from a range of industries were chosen for this research, referred to here as Alpha, Beta, Gamma, and Delta (Table 2). The selection of specific sectors—Heavy Engineering, Telecommunication, Communication Services, and Research—allowed greater

control of environmental variations. The focus on large PBOs constrained variation due to size differences among the companies, as well as allowing the capturing of the complexity of the investigated phenomenon. The unit of investigation in this research was a project management department. This study examined knowledge sharing practices that occurred between projects as well as the relationships between project managers of project management departments in participating cases.

Table 2: Participating organisations.

	Alpha	Beta	Gamma	Delta
Size (# Of Employees)	Large PBO (> 1000)	Large PBO (> 1000)	Large PBO (> 500)	Large PBO (> 1000)
Investigated Sites	Western Australia South Australia	Queensland	Queensland	Queensland
Structure	Matrix	Matrix	Matrix	Matrix
Industry	Heavy Engineering and Building	Telecommunication	Communication Services	Research (Mining)
Project Size Budget - Duration -	< \$3M ≤ 3 Years	< \$1.5 M < 1 Year	< \$1.5M < 1 Year	< \$3M < 1 Year
Unit of Analysis	Project Management Department	Project Management Department	Project Management Department	Project Management Department

This research used multiple sources of evidence to collect empirical data on culture, including a review of documents, focused interviews, and a questionnaire. Review of companies' documents provided a better understanding of the companies' objectives and core purpose and identified the organisational structure. To assess each company's culture, the OCAI (Cameron & Quinn, 2005) was used, which allowed the determination of the dominant culture types in each organisation. In addition to the OCAI, a range of interviews focusing on the companies' behaviours that drive effective knowledge exchange was conducted, proposed by De Long and Fahey (2000) and Gamble and Blackwell (2001), and they include the volume of interaction, level of collaboration, orientation to seek out knowledge, presence of silos, and willingness to share knowledge. Interviews occurred mainly with project managers

as holders of project knowledge who were directly involved in the knowledge sharing process. The use of interviews provided a richer insight into the complex issue of culture.

Case Analysis

Alpha Case

Out of 39 people working in the Project Management Department at Alpha, seven participated in the questionnaire assessing the dominant culture type and eight participated in the interviews. At Alpha, evidence from OCAI revealed that two types of culture are dominant—Hierarchy and Market—suggesting that the culture is focused on stability and control. Data indicated that Hierarchy culture was prevalent in two categories: Dominant Characteristics and Criteria of Success. These results, together with the interview responses, indicate that respondents perceive the organisation as a very controlled and structured environment in which formal procedures govern what people do, and smooth scheduling is essential. Market culture dominated in three categories: Organisational Leadership, Management of Employees, and Organisational Glue. Based on that, it would appear that the leadership in Alpha is results oriented and the management style exemplifies competitiveness, high demands, and achievement. In fact, Alpha's espoused values—performance through excellence and commitment to customers' outcomes—suggest a Market focus.

Interviews at Alpha revealed that some project managers are willing to share knowledge with their colleagues, but some are very protective and believe that 'knowledge is power.' Those more reluctant to share believe that keeping knowledge to themselves sustains their position of importance; thus, sharing too much could potentially jeopardise their competitive position within the organisation. Respondents revealed that some "*like to be portrayed as [a] kind of perfect project manager*"; hence, revealing that they had done something wrong in their projects could compromise that image. There were also comments from interviewees stating that some people view project shortcomings as signs of weakness or even failure; therefore, admitting they did something wrong in their projects could potentially threaten their strong position in the company.

In summary, the examination of culture at Alpha revealed that it has a strong dominance of Hierarchy and Market types and an emphasis on control, structure, achievement, demanding leaders, unwillingness to change, and competition. There was a strong indication that cultural values affect the willingness to share knowledge. Data provided evidence that some project

managers are willing to share knowledge with their colleagues; however, some are very protective and believe that knowledge helps them to sustain a position of expertise. Others believe that revealing project pitfalls is a sign of failure and puts their position of being seen as a perfect project manager at risk.

Beta Case

Six respondents from Beta's Project Management Department participated in the interviews and seven filled out the questionnaire. Subsequent examination of the culture profile at Beta revealed that the Market type is the dominant, suggesting that culture is results oriented, focused on achievement and transactions with external customers. Data acquired during interviews supported findings from the questionnaire, indicating that Beta is typically viewed as a controlled and structured place, where the main concern is getting the job done. It is characterised by a competitive and achievement-oriented environment, where formal procedures govern what people do. Interviews revealed that at Beta, employees follow formal rules and policies, and the company's focus is on providing good customer service.

Additional findings from the questionnaire showed that Hierarchy and Market types had the same high scores in Dominant Characteristics and Organisational Glue categories, suggesting that formal rules and policies, as well as the emphasis on achievement and goal accomplishment are those dominant within Beta. This was also supported by the interviews, which revealed that Beta is driven by well-defined processes, labour efficiencies, rigour and discipline, and the company's values are focused on measurement, error detection, process control, and the use of quality tools.

Data showed that Beta's upper level management encourages, but does not actively contribute to, facilitating inter-project knowledge sharing. Although open plan office architecture was found to enable frequent communication and knowledge sharing, there was some evidence that project managers are unwilling to reveal their projects' pitfalls. At least two respondents reported that there are project managers who are reluctant to share knowledge; they are focused on their careers and perceive knowledge as a source of power and as a way to a promotion. It was also reported that people have a tendency to be defensive and do not necessarily want to provide any information about their project pitfalls; instead, sometimes they try to blame others for project failures and believe that admitting failure puts their position in the organisation at risk.

Gamma Case

Overall, 16 respondents participated in the interview and questionnaire, out of a total of 27 people working in the Project Management Department. Evidence from the OCAI revealed that the culture profile at Gamma was balanced, with a shift towards the Clan type. Data from the interviews at Gamma strongly suggest that culture is focused on teamwork, employee involvement, and employee recognition. The organisation provides mentoring sessions and job rotation is frequently practiced. Respondents constantly reported that employees at Gamma work together, they are honest and willing to help their colleagues, and Gamma's culture was described "*as a supportive environment [where people] want to grow and get better in the project management [field].*" Analysis provided a strong indication that project managers are open and willing to share knowledge. The culture in the organisation is not to create blame, but rather to encourage learning from mistakes and recognition of opportunities for improvement. Many respondents commented that shortcomings in projects "*are not failures, they're just opportunities to improve things.*" Analysis revealed that this culture of not blaming and rewarding for sharing encouraged people to freely exchange their knowledge, even if it was related to their project pitfalls.

Overall, the evidence from the data at Gamma suggested that the values related to Clan type culture, which emphasises teamwork, consensus, openness and collaboration, and encouraging a non-blaming approach towards potential project failures, creates the foundation for frequent social interactions, and that these social gatherings, both arranged and unintended, play an important role in facilitating cross-project knowledge sharing.

Delta Case

Fifteen respondents from Delta's Project Management Department participated in the questionnaire and nine in the interviews. Data from OCAI revealed that the dominant culture at Delta is shifted towards the Clan type. There was a range of evidence suggesting that informality (an attribute of Clan-type culture) was prevalent at Delta. At least three respondents reported that most of the formal processes to transfer knowledge from one project to another do not work and tend to be resisted by employees. Furthermore, there was no formal induction process; the way it was done in Delta was that newcomers joined a team working on a particular project and the team's duty was to provide mentoring for the new colleague. Moreover, face-to-face informal interactions were the most commonly used means to interact and share knowledge. Other characteristics like wearing of casual outfits and the

use of informal language, suggested a high level of informality at Delta. At least five respondents from Delta stated that colleagues within their group are willing to share their experiences and shortcomings. Overall, these data provided a strong indication that at Delta, the dominance of values related to Clan culture was the reason that project managers were generally open and willing to share knowledge, even if it was related to their project shortcomings.

Organisational Culture Influence on Inter-project Knowledge Sharing Behaviours

When considered together, the results from within the case analyses indicate that Market culture appears to have a strong impact on knowledge sharing behaviours in Alpha and Beta cases, whereas in Gamma and Delta cases, the dominance of Clan-type values has significantly shaped knowledge sharing patterns, (Table 3).

Table 3: Mapping knowledge sharing behaviours in participating cases with CVF.

<p style="text-align: center;">CLAN</p> <p>Values: Informality, teamwork, collaboration, employee involvement, non-competitive environment</p> <p>Strong evidence on the willingness to share any kinds of knowledge</p> <ul style="list-style-type: none"> • Gamma case • Delta case 	<p style="text-align: center;">ADHOCRACY</p>
<p style="text-align: center;">HIERARCHY</p>	<p style="text-align: center;">MARKET</p> <p>Values: competitiveness, achievement, demanding leaders, winning</p> <p>Some evidence of knowledge hoarding</p> <ul style="list-style-type: none"> • Alpha case • Beta case

According to DeLong and Fahey (2000), cultures that emphasise the willingness to share knowledge, collaboration, and frequency of interactions, will have greater knowledge sharing outcomes. This pattern was found at Gamma and Delta, whose cultures were shifted towards

the Clan type and whose focus on employee involvement and teamwork was perceived to improve knowledge sharing outcomes. Within-case analysis revealed that project managers from Gamma and Delta were normally open and willing to share any kind of knowledge, and no one indicated that people are hesitant to share. At Gamma, project pitfalls were viewed as areas for improvement rather than failures, and collaboration and knowledge sharing were endorsed by the unit manager. Similarly, at Delta, no one indicated that people are hesitant to share.

The pattern was different in the Alpha and Beta cases, whose people reported evidence of hesitancy to share knowledge. Data from the interviews at Alpha and Beta strongly suggested that some project managers are very protective and unwilling to share knowledge. The data also provided evidence that in these two companies there are project managers who are reluctant to share their project pitfalls because they want to retain their reputation and position of importance in the company; others, focused on their careers, recognised knowledge as power and withholding knowledge as being a way to career advancement.

Also, at Alpha and Beta, the indicator of Market culture was high, whereas the Clan culture was relatively low, demonstrating competitive and goal-oriented cultures, where there is no place for failure and the focus is on winning and success. This can explain why project leaders of Alpha and Beta were sometimes reluctant to share knowledge, especially that related to their projects' shortcomings. Furthermore, the performance measures in Market-type cultures are normally based on numbers and tangible achievements; thus, some employees are reluctant to share because they do not want to give their secrets away to others because this could jeopardise their career advancement.

Conclusions and Managerial Implications

Results from this research showed that organisational culture affects inter-project knowledge sharing. Cultures that display Market type values, such as competitiveness and achievement, and that focus on performance measures are likely to show evidence of hesitancy to share knowledge. On the other hand, cultures with Clan-type characteristics, working in a collaborative environment in which people are encouraged to communicate and that create a friendly, non-competitive atmosphere at work, are likely to openly share knowledge even related to project shortcomings.

Based on the findings from this research, different cultural values may lead to different inter-project knowledge sharing patterns. Accordingly, this paper emphasises the need for

awareness of the dominant culture type as being a determinant of different inter-project knowledge sharing patterns. It is therefore, recommended for a PBO to evaluate its dominant culture characteristics. This will uncover knowledge sharing patterns specific for a given culture type. Application of Cameron and Quinn (2005) Competing Values Framework may be useful in determining the dominant culture.

Furthermore, in order to achieve greater knowledge sharing outcomes and improve the willingness to share knowledge, managers from Market-driven cultures should be supportive and participative. Support from leaders can endorse feelings of belonging, enhance the collaborative climate, and help project managers recognise they are not competing among themselves, but are parts of a team who, by sharing knowledge, will build its knowledge capabilities and gain a competitive position in the market.

Although this research offered interesting insights into the role of organisational culture in inter-project knowledge sharing, further investigations are required to fully understand the complexity of this phenomenon. The somewhat limited number of cases, representing only two cultural dimensions—Clan and Market—means that more research is required to investigate knowledge sharing behaviours for the Adhocracy and Hierarchy culture types. Furthermore, this study was limited to the project managers' perspectives because of their key role in knowledge sharing. Nevertheless, it is acknowledged that other project members play an important role in inter-project knowledge sharing. Accordingly, future studies could consider investigating the roles of other project members, taking into account project complexity and the varying backgrounds of these individuals.

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