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The Role of Trust in Inter-Project Knowledge Transfer

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1. ABSTRACT

Knowledge is a powerful organisational asset yet intangible and hard to manage, particularly in a project environment where there is a tendency to repeat the same mistakes rather than learn from previous project lessons. A lack of effective knowledge sharing across projects causes reinventions that are costly, and time consuming. Research on knowledge transfer has focused mainly on functional organisations and only recent attention has been directed towards knowledge transfer in projects. Furthermore, there is little evidence in the literature which examines trust in the knowledge transfer processes. This paper studies how the three types of trust - ability, benevolence, and integrity impact on knowledge transfer from the inter-project perspective. Three case studies investigated the matter. A detailed description of the work undertaken and an analysis of interviews with project professionals from large project-based organisations are presented in this paper. The key finding identifies the positive impact of ability trust on knowledge transfer. However, it was also found that perception on both integrity and benevolence varied across organisations suggesting that there can be a possible impact of organisational factors on the way trust is perceived in inter-project knowledge transfer. The paper concludes with a discussion and recommendations regarding the development of trust for inter-project environment.

2. KEYWORDS

Ability, benevolence, case study, integrity, inter-project knowledge transfer, trust

3. INTRODUCTION

Research on project learning, and practitioners have both indicated the need for knowledge transfer within and between projects [1-4]. Despite a project's uniqueness, the experiences gained throughout the project can be reused in other projects, providing valuable lessons. For this reason, it is important to share knowledge across projects in order to avoid unnecessary reinventions of what has been already done [5]. Project-based organisations (PBOs) face serious knowledge needs in their projects. They tend to repeat the same mistakes too often because of the lack of effective knowledge transfer which in fact could potentially be found in other projects within the same organisation [6, 7]. Poor performance of knowledge transfer results in knowledge being wasted and unsuitable for reuse in other related projects. Lack of efficient knowledge transfer causes, in effect, unnecessary reinventions, errors, and time wastage. For example, the cost of rework in Australian construction projects has been reported as being up to 35% of total project costs and contributes as much as 50% of a project's total overrun costs. In fact, rework is one of the primary factors contributing to the Australian construction industry's poor performance and productivity [8].

It has been found in the literature that trust has a considerable impact on knowledge transfer and communication [9-12] and it is recognised as an important element in project management [13-15]. Hoffman et al. [16] concluded that trust is a part of the human dimension of project management; and is one of the most important determinant of project success. Furthermore, literature provides considerable evidence that trusting relationships lead to greater knowledge exchange: when trust exists, people are more willing to give useful knowledge [9, 17, 18]. When the source is not perceived as reliable or trustworthy

initiating a transfer from that source will be more difficult and the advice and example are likely to be challenged and resisted [Walton in 19].

Pinto [14] conducted empirical study that investigated the impact of trust between project owners and contractors in a number of large construction projects in Canada concluding that for owners, both integrity and competence trust are important determinants of healthy relationships. Levin & Cross [9] found that benevolence-based trust improves the usefulness of both tacit and explicit knowledge exchange, and competence-based trust is especially important for tacit knowledge exchange. While Holste and Fields [20] explored the impact of affect-based and cognition-based trust on the willingness to share and use tacit knowledge. The results revealed that both types of trust are involved in decisions affecting transfer and use of tacit knowledge.

Project management literature focuses rather on trust in projects [14, 15, 21], examining trust as one-dimensional concept [13, 18, 21], whereas it was found that there are in fact many trust dimensions [11, 22-24]. To date none has examined the effect of the different trust dimensions on knowledge transfer for inter-project context.

Furthermore, most of the existing research on trust only confirms the stated hypothesis on the importance of trust in a range of different situations [9, 13, 14, 18, 20]. Additionally these past research used surveys with only close-type questions providing just a snap-shot of the situation, yielding little information on the underlying meaning of the data [25]. In this research semi-structured interviews provided valuable comments and rich insight into the complex issue of trust in inter-project knowledge transfer.

The aim of this paper is to report findings on the impact of trust on knowledge transfer in the inter-project setting. Findings come from three case studies conducted in large project-based organisations in Australia. The paper begins by outlining the aspect of knowledge transfer in projects, followed by extensive review of the current research on trust, focusing on the trust definition and dimensions. Further, a detailed description of methods and a type of analysis used in the study are provided. Finally, findings from three project-base organisations are presented and discussions on the development of trust for inter-project environment are provided.

4. NATURE OF TRUST

Trust is fragile: it is difficult to initiate, slow to grow and always easy to break [26], and intangible [15]. According to Inkpen and Tsang [27] and Smyth et al. [15] trust is based on social judgments that dependent upon a range of factors, for example, trustee competency and social skills, benevolence, or goodwill.

In the literature there are many attempts to define trust. The most commonly cited has been proposed by Mayer and colleagues who defined trust as the willingness of a party to be vulnerable [11]. Thus there are two steps to trust: first is a willingness to be vulnerable and second is the prospect to explore whether the other party takes the opportunity to be trusting or to take advantage. Accordingly, Smyth [12] defines trust "as a disposition and attitude, giving to a belief, concerning the willingness to be vulnerable in relation to another party or circumstance". Furthermore, Blomqvist [26] defined trust for business contexts as an actor's expectation of the other party's competence and goodwill (benevolence). Furthermore, Blomqvist acknowledged, in a business context, trust without some level of conscious judgement of the other party's competence and goodwill would seem rather naive.

4.1. Trust typologies

It was found in previous studies that trust is multidimensional [11, 22-24]. Meyer [11] categorised three trust domains: ability, benevolence and integrity. Ability includes skills, competencies, and characteristics that allow a person, group or organisation to have influence within some area [28].

Ability (competence-based trust) is rooted in the perception that another party is knowledgeable or possesses a certain level of competence. The relevant competence (knowledge, skills and know-how) is a necessary antecedent and base for trust in professional relationships [29].

Benevolence relates to the perception that another party would keep the best interests of the trustor at heart. Benevolence is the extent to which a trustee is believed to want to do good to the trustor, aside from an egocentric profit motive and suggests that the trustee has some specific attachment to the trustor [11]. If an employee believes a manager cares about his/her interests, the manager will be seen as having benevolence for the employee [28]. According to Blomqvist [29] signs of benevolence, moral responsibility and positive intentions toward the other, are necessary for the trusting party to be able to accept a potentially vulnerable position. In some literature benevolence is often referred to goodwill [11, 15, 26, 30].

Integrity has been defined as the trustor's perception that the trustee adheres to a set of principles that the trustor finds acceptable [11]. As noted by Bhattacharjee [23] integrity is similar to honesty, fairness, and credibility. He further confirms that these attributes have been widely used to describe integrity in the range of literature.

Another commonly used trust typology was introduced by McAllister [24]. She developed and tested empirically two types of trust: affect-based trust and cognition-based trust. Affect-based trust is grounded in mutual care and concern between workers. It involves emotional elements and social skills of trustee, and describe close social relationships [31]. Affect-based trust is similar to benevolence dimension proposed by Mayer et al. [11]. Cognition-based trust is described by co-worker reliability and competence and is similar to ability and integrity dimensions combined. In the literature many authors have applied measures established by McAllister to measure competence-based (ability) trust [9, 14].

Current studies on trust differ in their operational measurement of trust. Some authors measure trust as a one-dimensional concept, for example [13, 18, 21]. Majority of those who investigate trust as a multidimensional approach apply measures developed by McAllister [24] and Mayer and Davis [28]. This paper adopted Mayer’s typology to investigate impact of ability, benevolence, and integrity on inter-project knowledge transfer. Furthermore, this study used three indicators to ask questions about ability trust: competence, skills and experience, used also by [9, 14, 24, 32, 33]. Willingness to help and positive intentions used by [9, 28, 34] indicated the benevolent trust, while credibility and honesty in information sharing used also by [28, 35] described integrity trust. Table 1 summarises the three trust dimensions and their indicators used in this paper.

Table 1: Trust Dimensions and Indicators

Trust Dimensions	Ability	Benevolence	Integrity
Definition	A perception that another party is knowledgeable or possesses a certain level of competence.	Suggests that the trustee has some specific attachment to the trustor and would keep the best interests of the trustor at heart.	A perception that the trustee adheres to a set of principles that the trustor finds acceptable.
Indicators	competence, skills and experience	positive intentions and willingness to help	honesty and credibility
Used also by	Akgun et al. [33] Kanawattanachai and Yoo [32] Levin and Cross [9] McAllister [24] Pinto et al. [14]	Becerra and Gupta [34] Levin & Cross [9] Mayer and Davis [28]	Doney & Cannon [35] Mayer and Davis [28]

4.2. Trust in projects

In the project management literature it was found that greater level of trust leads to greater level of project success [14] and it is positively related to development of project teams [31]. Pinto [14] argues that trust improves the strength of working relationships, solidifies partnering roles, and increases the willingness of various project stakeholders to cooperate in non-self motivated ways. Akgun et al. [33] examined 69 new product development projects and found that interpersonal trust had a positive influence on team learning. In studies conducted by Foos et al. [13] trust was perceived critical in the success of the tacit knowledge transfer in a project level. Ruuska in Koskinen and colleagues [36] found that over half of project management problems result mostly from poorly handled interactions whereas effective interaction requires the ability, as well as the desire, to communicate. It is therefore required that the project team and other people involved learn to understand each other and regularly contact each other [36]. It was also found that trust in a project environment fosters willingness to cooperate, which consequently reduces transaction costs, being a vital component contributing to risk mitigation in projects [30]. Often projects are distributed in different locations and the team members often have only a limited history of working together and only a small prospect of working together again in future. In this environment the team members have little time to develop trust [17]. Therefore, according to Damm and Schindler, members of the distributed projects often firstly import trust then develop it. The concept is referred to as a swift trust [17]. Stated literature shows evidence that trust has a strong impact on knowledge transfer and project success, focusing on the trust within project teams, or trust between project stakeholders. This paper extends the research on trust by examining the role of three trust dimensions in inter-project knowledge transfer. Accordingly, it is proposed that:

Ability (1), benevolence (2), and integrity (3) increase the likelihood of inter-project knowledge transfer. That means employee from a project will be more likely to turn for knowledge to employee from other project if he/she believes in ability (1), benevolence (2), and integrity (3) of this employee. In contrast, lack of ability, benevolence, and integrity hinder project member from seeking knowledge from members in other projects.

4.3. Organisational culture context

The differences between cultural patterns within the organisation will have an influence on the level of trust between employees. Project-based, in contrast to functional organisation is more vertical in its structure and projects operate on the same level. Therefore knowledge between projects is also transferred vertically. According to De Long & Fahey [37] culture shapes patterns and qualities of interactions needed to leverage knowledge among individuals at the same level in the

organisation. The same authors argue that organisational behaviours based on sharing, teaching, and learning from the mistakes rather than seeing them as failures promote knowledge development. Issa and Haddad [18] surveyed US contractors to assess their perceptions of how organisational culture and trust impact knowledge sharing in construction organisations. Findings revealed that organisational culture will enhance mutual trust in the organisation, which in turn will facilitate knowledge share. Organisational culture provides norms on what is right and what is wrong, stabilises organisational methods of operation [38]. Organisational culture thus ultimately determines how decisions are made, and how staff members respond to the environment [Ott in 38]. Organisational culture can encourage (or discourage) trustworthy behaviour through the structuring of general patterns of communication, coordination, and decision making. That is, certain cultural values and norms, more than others, are likely to engender trustworthy behaviour [39]. According to Grudzewski and colleagues [40] high trust cultures are characterised with common values, common mission and targets, open and authentic leadership, consensus not constraint, atmosphere of play and pleasure, wish of learning not blaming, and honest and authentic communication. Based on this argument it is proposed:

Organisational culture that creates collaborative environment, encourages people to share knowledge, creating friendly, non-competitive atmosphere at work is more likely to improve trusting relationships. In contrast, culture that is empirically driven, based on control, efficiency and measures is less likely to develop trusting relationships.

5. DESCRIPTION OF WORK UNDERTAKEN

Three case studies were conducted in three large project-based organisations. The study was a part of a broader qualitative investigation of the elements that influence inter-project knowledge transfer categorised into three factors: interpersonal relationships, knowledge transfer tools and organisational factors. This paper reports findings on the aspect of trust, as a part of interpersonal relationship factor, and the role of organisational culture in inter-project knowledge transfer.

Data collection included interviews and review of documents. The purpose of reviewing documents was to better understand each company objectives and a core purpose. Respondents were selected from Project Management Departments of respective organisations and included project leaders, project officers, project members, program managers, and staff of project or program support unit. Prior to interviews, a key contact person at each organisation assisted with the identification of the respondents providing list of contacts. Upon agreement on the list of contacts, potential respondents were contacted by the key contact person. Secondly an e-mail was sent by researcher to state the purpose of the study, approximate interview time, and to arrange the date, time, and place for the interview. Overall 28 semi-structured interviews were conducted. Semi-structured interviews can still remain open-ended, but it is more likely to follow a certain set of questions derived from case study protocol allowing for focused, conversational, two-way communication [41]. This type of interviews is useful where there is a need to clarify responses as well as facilitate respondents in providing valuable comments and insights.

Previous studies conducted by Borgatti & Cross [42] showed survey respondents were uncomfortable to answer questions related to trust. Considering the sensitiveness of the concept questions regarding trust were asked at the end of the interview. Furthermore the word trust was not used during the interviews; instead other synonyms proposed in previous studies were applied.

Most of the existing research on trust only confirms the stated hypothesis on the importance of trust in a range of different situations [9, 13, 14, 18, 20] using surveys with only close-type questions. In this research used of semi-structured interviews allowed for getting a rich insight into the complex issue of trust in inter-project knowledge transfer. Researcher firstly asked each respondent to indicate how important ability, benevolence and integrity each are for inter-project knowledge transfer (confirmatory stage). This insight is from the knowledge seeker perspective. This research then asked respondents to further elaborate on the choice (exploratory stage) thus providing valuable comments and insight. The trust indicators were adopted from [28] and also used in: [9, 14, 32, 33] (competence, skills and experience); [9, 34] (positive intention and willingness to help); [35] (honesty in information sharing and credibility). Organisational culture was also examined, focusing on the behaviours of the company that enable effective knowledge share, proposed by [37, 43] (see the Appendix).

6. DATA COLLECTION

Data was collected in three large organisations, in which performance was driven by projects, here referred to as Company A, B, and C. A PBO is an organisation where projects are launched in different departments within the organisation. The project does not belong to one department and the project manager does not have to obtain people from their “real” functions. Instead, project managers select their project team to perform project activities. They also possess the time for which they have been contracted [44]. Overall 28 respondents participated in the study, n=8 Company A, n=6 Company B, and n=14 Company C.

Company A is a large, matrix organisation, from a building industry that signed a multi-billion dollar contract with government to deliver a number of projects. Company A delivers three types of projects: capabilities, maintenance and process improvement projects. Projects in Company A are large and complex, with AU\$3 – \$15mil budget and up to hundred eighty staff working on a project. Projects duration is approximately two months to three years.

Second Company – B, provides telecommunication services to large businesses delivering small/medium and large projects with the budget range from twenty thousand to one million dollars and more. Company B has sites in major Australian cities

including Brisbane, Sydney, and Melbourne. Most projects are distributed, located on customer site. Project managers are located in different cities. This study conducted interviews in a major capital city site where project managers were co-located in one open plan office area.

The Company C is a large, public sector company providing communication services to government agencies. Company C delivers small/medium projects. Project managers are co-located in one open plan office.

Table 2 provides characteristics of the three case study organisations.

Table 2: Participating Organisations

Characteristics	Company A	Company B	Company C
Description	Multi-billion dollar contract with government	Provide telecommunication services to large businesses	Provide services to government agencies
Type of industry	Building	Telecommunication	Communication Services
Sector	Private	Private	Public
Investigated department	Project Management Unit	Transition and Customer Projects and Business Improvement Department	Project Management Department
Project type	- Capabilities - Maintenance - Process improvement	- Product - Service - Migrating customers - Continuous improvement	Service projects
Project size	Complex	Small/medium, and Complex	Small/medium
Projects' geographical location	Distributed (Construction site)	Distributed (Customer site)	Distributed (Customer site)
Project managers location	Co-located and Distributed	Co-located and Distributed	Co-located

7. ANALYSIS

The average time of the interviews was one hour. All interviews were recorded and later transcribed. Data from the interviews was analysed using NVivo8 package that allowed for arranging and analysing data in an efficient manner. This study used a pattern-matching logic as described by Yin [41] one of the most desirable for a case study analysis. While performing pattern-matching logic empirically based pattern is compared with a predicted one. The prediction was that all three types of trust, ability, benevolence, and integrity positively influence inter-project knowledge transfer. If the pattern matches, the result helps a case study to strengthen its internal validity [41]. To perform pattern-matching logic a range of analytical techniques were used including numerical count analysis, matrix query, memos, and text search query.

Numerical count analysis is used as a proxy indicator to see the importance of the construct. Numerical counts analysis can count the number of times an issue was raised as important or not important, counting the number of references or the number of people raising it [45]. In NVivo a Matrix Query assists to perform numerical count analysis. Matrix query allowed to see all three dimensions of trust separately, and their level of importance across three respective organisations.

8. RESULTS AND DISCUSSION

Across all three organisations two types of trust, ability and integrity have been found important for inter-project knowledge transfer. Overall, 28 remarks were raised stating that ability and 17 stating that integrity trust were important or at least beneficial in knowledge share. There were only 6 comments stated that benevolence positively influenced inter-project knowledge share and the same number indicated benevolence was irrelevant. Nevertheless, there were dissimilarities in perception of trust across companies.

Table 3 summarises number of respondents stating the level of importance of three trust types in Companies A, B and C, and reports the major remarks raised by respondents. In brackets, under the 'Nr of respondents' heading specific codes characterising respondents are listed. For example A3 refers to a respondent number 3 from Company A.

Table 3: Number of references and major remarks on trust

Trust	Rank	Nr of respondents	Major Remarks
ABILITY (competence, skills and experience)	Important	17 (A3, A5, A6, A8, B2, B4, B6, C1, C2, C3, C4, C5, C6, C7, C10, C11, C13)	<p><i>R_{A6}: "If I'm going to ask for advice or guidance from another project manager or indeed senior manager, I would ensure at least in my own mind that it was within their field of competence and they could give you that level of guidance you are looking for."</i></p> <p><i>R_{B2}: "Person has some skills or knowledge so you always turn to them when the person has certain IP. Someone can be your colleague and you know him well, but he will not provide you with the info you need. You don't want to approach person who spends ½ hour explaining something that can take 2 sec. you got to be careful there."</i></p>
	Beneficial	9 (A3, A8, B3, C1, C3, C6, C8, C11, C14)	<p><i>R_{A8}: "It's beneficial and it's nice to have those things [competence, skills and experience] I would expect that if someone is working in the organisation, they are competent, the company has deemed them...they wouldn't have been in that position if they were not competent in their job."</i></p>
BENEVOLENCE (positive intension and willingness to help)	Important	5 (A3, C5, C6, C10, C14)	<p><i>R_{A3}: "people got to be willing to share knowledge and be helpful, that's why it is the most important."</i></p>
	Beneficial	1 (A8)	<p><i>R_{A8}: "Positive intension I ranked beneficial. It's just an expectation that I would have, I would expect people to have those qualities."</i></p>
	Not Important	6 (B4, C5, C6, C9, C10, C13)	<p><i>R_{C10}: I don't want someone who's got good intentions but is going to give me the wrong information.</i></p> <p><i>R_{C13}: "when I'm seeking knowledge, positive intention is almost a critique of it. If I need to know how to do something whether you're positive about it or not doesn't really matter, if I need to know where, what a budget amount is, whether you like it or not doesn't really matter"</i></p>
INTEGRITY (honesty and credibility)	Important	14 (A1, A5, A7, A8, C1, C2, C3, C4, C6, C8, C9, C10, C11)	<p><i>R_{A7}: "Honesty is very important. The information received from other project manager influence the decision that I'm making and I'd be pretty unhappy if I made a wrong decision based on data and the individual who I was talking to knew that. Essentially rug pulling."</i></p> <p><i>R_{C8}: "I think sometimes you're looking for that frank and honest advice. That's what I value from someone being honest and frank with me. If I'm going down the wrong track or yeah. I'd rather that, rather than being nice and not wanting to offend me and giving me wrong information"</i></p>
	Beneficial	5 (A7, B2, B6, C5)	<p><i>R_{A7}: "Credibility I guess is a measure of a person's confidence in another person's eyes. I can make my own assessment as to the weather I should apply the information that's been provided to me."</i></p>
	Not Important	1 (B4)	<p><i>R_{B4}: "Honesty doesn't really matter too much. Nobody within our team would be dishonest in the information sharing because it's black and white, the type of information. It's not as if you're talking about soliciting new customers."</i></p>

8.1. Case study – Company A

In Company A, three trust dimensions were perceived as important or at least beneficial for inter-project knowledge transfer. No respondent reported trust needless. Respondents also indicated that honesty and credibility, which correspond to the integrity dimension, are essential for inter-project knowledge transfer. One respondent explained that information received from knowledge source did indeed influence the decision made. That is why honesty is very important. He continued, *“I’d be pretty unhappy if I made a wrong decision based on data and the individual who I was talking to knew that.”* Furthermore, respondents reported that they base the value of the info they receive on the source past credibility. One person reported: *“If I don’t feel that they’ve got any credibility or they were lying to me before then I tend to question what they’ve told me.”* Therefore it is critical that the knowledge source is honest and credible. According to Company A not only integrity, but also ability increases knowledge share. The majority of respondents hold knowledge source’s ability in high regard. Ability refers to the trustor’s perception of the trustee’s competence, skills, and experience. Most respondents agreed that trust in knowledge source competence is a major factor in turning to that person for knowledge. One respondent concluded: *“If I’m going to ask for advice or guidance from another project manager or indeed senior manager, I would ensure at least in my own mind that it was within their field of competence and they could give you that level of guidance you are looking for.”* Furthermore, benevolence was not as valuable as the ability and integrity. However, no one stated that benevolence is unnecessary and one person commented that it’s important to approach the person who will be helpful and willing to share their knowledge. Someone can be competent and experienced in the area, but would choose to protect his/her knowledge and expertise rather than going out of the way to help others. Generally it was reported that in Company A people are willing to share knowledge with their colleagues, although some are still very protective and believe that knowledge retains a position of importance.

8.2. Case study – Company B

There were limited comments on trust from Company B respondents and only ability was regarded as important for inter-project knowledge transfer. Company B respondents did not reflect on benevolence or integrity as having significant impact in knowledge share at all and one project leader commented, *“Nobody within our team would be dishonest in the information sharing because it’s black and white, the type of information. It’s not as if you’re talking about soliciting new customers. So the environment I work in defines that is a low priority”*. Company B has well defined processes, rigour and discipline, and evidence based culture. It was reported, *“when it cannot be measured it is not worth doing it”*, and that information is really valuable when hard coded and documented. *“When we later discuss things with [the] director, there is a need for data, for supporting evidence.”* Interestingly, even in relation to ability trust, respondents referred to its importance in transfer of codified knowledge. Overall it was interesting to note that while Company B respondents did not reflect on benevolence and integrity; ability trust was referred to as only important in the transfer of codified knowledge.

8.3. Case study – Company C

In Company C ability and integrity was perceived as necessary in knowledge transfer. One project manager reported, *“You needn’t necessarily have been exposed to that particular project environment but it doesn’t mean you don’t have a valid point to make or a credible opinion on it. You might be coming at it from a different perspective”* and continued *“if they have credibility [it] would make me more comfortable in taking their advice or knowledge or whatever they have to pass on.”* Another respondent admitted, *“I think sometimes you’re looking for that frank and honest advice. That’s what I value from someone being honest and frank with me. If I’m going down the wrong track I’d rather that, rather than being nice and not wanting to offend me and giving me wrong information”*. While benevolence trust had many advocates, there were also opponents. Few respondents stated that benevolence trust is not important for inter-project knowledge transfer and one project manager declared, *“I don’t want someone who’s got good intentions but is going to give me the wrong information.”* Another added, *“Sometimes people get so passionate and want to do things and basically they become more emotional than logical and I think that is risky.”* On the other hand the majority of respondents reported that people are encouraged to talk amongst themselves and that new ideas are welcomed. The organisation built a knowledge transfer focused culture by providing support to newcomers and rewarding those who have gone the extra mile to help another team member. Furthermore, it was stressed by many that the open plan work environment enables frequent communication and knowledge exchange as well as help establish trusting relationships. According to all respondents, this open environment means people are likely to *“bounce ideas off each other”*. It was also reported in Company C that honesty and credibility *“it’s something I guess we assume at our company”*. That is employees of Company C do not perceive honesty and credibility critical because it is assumed.

8.4. Towards building trust

The results confirmed stated proposition that ability was perceived as having a great impact on inter-project knowledge transfer in the three organisations; this is from the knowledge seeker perspective. This finding is consistent with prior research suggesting that competence is important for knowledge share [9, 20].

However, comments on integrity and benevolence varied across all three cases. Further investigation brought to light different organisational factors, such as organisational culture can influence people’s perception of the role of benevolence and integrity in inter-project knowledge transfer. Analysis revealed that in Company B culture is evidence based and knowledge is mainly acquired from databases where everything is *“black and white”* and honesty and willingness are low priorities. On the other hand positive intention and honesty are simply assumed in Company C and therefore considered not as critical. According to

Whitener et al [39] organisational culture may indirectly encourage (or discourage) trustworthy behaviour through the structuring of general patterns of communication, coordination, and decision making. That is, certain cultural values and norms, more than others, are likely to engender trustworthy behaviour.

Overall analysis confirmed that trust has a strong impact on knowledge transfer in inter-project context. It was found that when trust exists people are more willing to seek and more confident to apply knowledge received from others to a project. Study also revealed that ability, benevolence, and integrity facilitate and improve working relationships between members from different projects, which in turn has a positive effect on project outcomes. For example competence and skills are highly valued because if a person is not competent there is a risk that he/she will provide wrong information. In this circumstances knowledge receiver will be reluctant to base the decision on that person's expertise. Also, if a project member does not give an honest advice, loses credibility, and will not be asked for an opinion again.

Projects operate in an environment of uncertainty where risk must be constantly assessed. Trusting relationships improve knowledge transfer, and so create more opportunities to avoid the risk in projects. In addition, Smyth [15] claims that trust is assessed based on past experience, and people in insecure and uncertain environment (project being ideal example of uncertainty) first look for good reasons to trust, or at least not distrust, rather than doubt.

The finding that trust is a vital element to inter-project knowledge transfer emphasises the need for encouraging project members to build and maintain trusting relationships with their colleagues from other projects. According to Blomqvist and Ståhle [46] methods to develop trust in business environment are the very basic building blocks of human and organisational interaction, but to build trust is neither quick nor easy [28]. Despite that it is difficult to intentionally create trust or manage another party's propensity to trust, it is possible to enhance conditions for trust-building [46]. Trust is context and person-specific; hence the appropriate means and methods for building trust should be considered carefully [46]. Literature provides a range of practices to build trust for business environment that can be appropriate for inter-project context. For example Sydow [47] advocates positive attitude towards colleagues and own organisation, and support and advice in a workplace help building organisational trust. According to Jarvenpaa and Leidner [48] distributed teams with a high rate of communication and interaction develop trust faster than teams with a weak rate. Furthermore, Jones and George [49] advise that socialization, personal interaction, and blending cultures are the drivers for trusting relationships. While O'Brien [50] recommends sharing sensitive information increases trust. These references suggest that the social dialogue among members notably supports the development of trust.

9. PRACTICAL RECOMMENDATIONS

Evaluating development of trust from the project-based organisation perspective, it is important to consider the viewpoint on time. Projects are time orientated, and project managers, and project members are primarily focused on delivering projects on time without wasting it on informal discussion. Such an environment makes it difficult for trust to develop. Eskerod and Skriver [51] concluded that project orientation facilitates knowledge silos and "lonely cowboys" –project managers who prefer making decisions alone without getting feedback from others. Their study showed that project managers were reluctant to discuss different approaches with others. They were very keen to start their meetings on time and not waste time waiting. There was very little communication and project managers did not leverage knowledge from their colleagues. It is for this reason why project-based organisations should increase interactions between projects and encourage people from different projects to meet more frequently. Creating collaborative and a non-competitive atmosphere at work will break silos and help develop relationships based on kindness and friendship. In this collaborative environment people will not hesitate to turn for knowledge and fear a loss of reputation, or being concerned that the other party will use the occasion to harm them. Others will be ready to share knowledge trusting that its receiver will not take advantage and/or spread gossip about this person's lack of knowledge or ability. Strong working relationships develop when people feel comfortable with each other. In this environment it is easier to build confidence in one's competence, and which in time develop relationships based on honesty and credibility.

This study concludes that organisations play important roles in building trusting relationships. Therefore, it is recommended for managers in project-based organisations to create collaborative relationships promoting socialization and personal interaction that will enable people from different projects to build trust. Knowledge repositories are impersonal and cannot assist building trust as effectively as face-to-face interactions.

Reviewing norms and practices that encourage or discourage high frequency of interaction and collaboration can be a starting point for managers. Furthermore, endorsing and maintaining friendly and non-competitive atmosphere at work and wish of learning not blaming will increase comfort and security among employees that will help develop open and trusting relationships. Leadership engagement that supports and acknowledge knowledge sharing initiatives can play a pivotal role in building such relationships.

10. CONCLUSIONS

Investigating the role of three types of trust - ability, benevolence and integrity in inter-project knowledge transfer means this research is innovative. In that this paper provides valuable comments and insights from respondents at three project-based

companies. The findings indicate that although ability trust was perceived as important in all three organisations, the perception of both benevolence and integrity varied across organisations. However, overall it was found that trusting relationships contribute to greater knowledge share, and so it is essential for project-based organisations to build trust or at least create conditions for trusting relationships to develop. Future research should investigate the impact of organisational culture on the benevolence and integrity dimensions to a greater extent as well as investigate what are the conditions that allow building trusting relationships for inter-project environment.

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13. APPENDIX

Organisational culture

- How does the organisation facilitate knowledge share between projects?
- Does the company organise workshops, seminars where people from different projects/other project managers can meet and exchange knowledge? What are they?
- What is normally done to help new employees to get up on speed?
- Does the organisation reward individuals for knowledge transfer activities? In what way?
- How would you describe the relationships with other project managers/members from other projects?
- How often do you turn for knowledge or information about your project to people from other projects?
- Are project managers/members from other projects willing to share shortcomings that occurred in their projects? - (Can you give examples?)
- How does the organisation react to projects shortcomings?

Observations, review of organisational norms and values, and semi-structure interviews assisted in examining organisational culture. Questions concerning organisational culture were designed focusing on the behaviours of the company that enable effective knowledge share, proposed by [37, 43].

Trust

- When do you turn for knowledge, related to a project you currently work on, to a person from **other project** how important for you are the following characteristics of this person?

Attributes	Important	Beneficial	Not Important
Competence			
Skills and experience			
Positive intention			
Willingness to help			
Honesty in information sharing			
Credibility			

- Please explain why [*this attribute*] is [*Important/Beneficial/Not important*] for you?

Trust indicators were adopted from [28] and also used in: [9, 14, 32, 33] (competence, skills and experience); [9, 34] (positive intention and willingness to help); [35] (honesty in information sharing and credibility).